



SAFETY DATA SHEET

SODIUM METABISULPHITE FG

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Compilation date: 29/11/2010

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Revision No: 5.1

Section 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name: SODIUM METABISULPHITE FG

REACH registered number(s): 01-2119531326-45-XXXX

CAS number: 7651-57-4

EINECS number: 231-673-0

Index number: 016-663-00-2

Product code: 8450-025 (T)

Synonyms: E223

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of substance / mixture: Dechlorinating agent for water and wastewater Floatation depressant. Food preservative. Photographic developer preservative. Sterilising agent (beer, wine, vinegar, glucose syrup).

1.3. Details of the supplier of the safety data sheet

Company name: Resource Chemical Ltd

Resource House

76 High Street

Brackley

Northants

NN13 7DS

Tel: +44(0)1280 843800

Fax: +44(0)1280 701745

Email: sales@resourcechemical.ltd.uk

1.4. Emergency telephone number

Emergency tel: +44(0)1270 502891

Section 2: Hazards identification

2.1. Classification of the substance or mixture

Classification under CLP: Acute Tox. 4: H302; Eye Dam. 1: H318; -: EUH031

Classification under CHIP: Xn: R22; -: R31; Xi: R41

Most important adverse effects: Harmful if swallowed. Causes serious eye damage. Contact with acids liberates toxic gas.

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2.2. Label elements

Label elements under CLP:

Hazard statements: H302: Harmful if swallowed.
H318: Causes serious eye damage.
EUH031: Contact with acids liberates toxic gas.

Signal words: Danger

Hazard pictograms: GHS05: Corrosion
GHS07: Exclamation mark



Precautionary statements: P102: Keep out of reach of children.
P280: Wear protective gloves.
P301: IF SWALLOWED:
P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P402+404: Store in a dry place. Store in a closed container.
P501: Dispose of contents/container to hazardous or special waste collection point.

2.3. Other hazards

PBT: This product is not identified as a PBT/vPvB substance.

Section 3: Composition/information on ingredients

3.1. Substances

Chemical identity: SODIUM METABISULPHITE

CAS number: 7651-57-4

EINECS number: 231-673-0

REACH registered number(s): 01-2119531326-45-XXXX

Section 4: First aid measures

4.1. Description of first aid measures

Skin contact: Wash immediately with plenty of soap and water.

Eye contact: Bathe the eye with running water for 15 minutes.

Ingestion: Wash out mouth with water. Do not induce vomiting. If conscious, give half a litre of water to drink immediately. Transfer to hospital as soon as possible.

Inhalation: Remove casualty from exposure ensuring one's own safety whilst doing so. Consult a doctor.

4.2. Most important symptoms and effects, both acute and delayed

Skin contact: There may be mild irritation at the site of contact.
There may be irritation and redness.

[cont...]

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Ingestion: There may be soreness and redness of the mouth and throat. There may be difficulty swallowing. Nausea and stomach pain may occur. There may be vomiting.

Inhalation: Absorption through the lungs can occur causing symptoms similar to those of ingestion.

Delayed / immediate effects: Immediate effects can be expected after short-term exposure.

4.3. Indication of any immediate medical attention and special treatment needed

Immediate / special treatment: Eye bathing equipment should be available on the premises.

Section 5: Fire-fighting measures

5.1. Extinguishing media

Extinguishing media: Suitable extinguishing media for the surrounding fire should be used.

5.2. Special hazards arising from the substance or mixture

Exposure hazards: In combustion emits toxic fumes.

5.3. Advice for fire-fighters

Advice for fire-fighters: Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes.

Section 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: Refer to section 8 of SDS for personal protection details. Do not create dust. Mark out the contaminated area with signs and prevent access to unauthorised personnel. If outside do not approach from downwind.

6.2. Environmental precautions

Environmental precautions: Do not discharge into drains or rivers.

6.3. Methods and material for containment and cleaning up

Clean-up procedures: Transfer to a closable, labelled salvage container for disposal by an appropriate method.

6.4. Reference to other sections

Reference to other sections: Refer to section 8 of SDS.

Section 7: Handling and storage

7.1. Precautions for safe handling

Handling requirements: Ensure there is sufficient ventilation of the area. Avoid the formation or spread of dust in the air. Avoid direct contact with the substance.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store in cool, well ventilated area. Keep container tightly closed.

[cont...]

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7.3. Specific end use(s)

Specific end use(s): No data available.

Section 8: Exposure controls/personal protection

8.1. Control parameters

Hazardous ingredients:

SODIUM METABISULPHITE

Workplace exposure limits:

Respirable dust

State	8 hour TWA	15 min. STEL	8 hour TWA	15 min. STEL
UK	5 mg/m ³	-	-	-

DNEL/PNEC Values

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Type	Exposure	Value	Population	Effect
DNEL	Inhalation	225mg/m ³	Workers	Systemic
PNEC	Fresh water	1 mg/l	-	-
PNEC	Marine water	0.1 mg/l	-	-

8.2. Exposure controls

Engineering measures: Ensure there is sufficient ventilation of the area.

Respiratory protection: Respiratory protective device with particle filter.

Hand protection: PVC gloves. Butyl gloves.

Eye protection: Safety glasses. Ensure eye bath is to hand.

Skin protection: Protective clothing with elasticated cuffs and closed neck.

Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

State: Powder

Colour: White

Odour: Pungent

Oxidising: Non-oxidising (by EC criteria)

Solubility in water: Soluble

Also soluble in: Ethanol. Methanol. Acetone.

Melting point/range °C: 150

Relative density: 2.36

pH: 3.5-5

9.2. Other information

Other information: No data available.

[cont...]

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Section 10: Stability and reactivity

10.1. Reactivity

Reactivity: Stable under recommended transport or storage conditions.

10.2. Chemical stability

Chemical stability: Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous reactions: Hazardous reactions will not occur under normal transport or storage conditions.
Decomposition may occur on exposure to conditions or materials listed below.

10.4. Conditions to avoid

Conditions to avoid: Heat.

10.5. Incompatible materials

Materials to avoid: Strong oxidising agents. Strong acids.

10.6. Hazardous decomposition products

Haz. decomp. products: In combustion emits toxic fumes of sulphur oxides.

Section 11: Toxicological information

11.1. Information on toxicological effects

Toxicity values:

Route	Species	Test	Value	Units
DUST/MIST	RAT	LD50	5.5	mg/kg
ORL	RAT	LD50	1540	mg/kg
SKN	RAT	LD50	>2000	mg/kg

Hazardous ingredients:

SODIUM METABISULPHITE

IVN	RAT	LD50	115	mg/kg
ORL	RAT	LD50	1131	mg/kg
SKN	RAT	LD50	>2	gm/kg

Relevant hazards for substance:

Hazard	Route	Basis
Acute toxicity (ac. tox. 4)	ING	Based on test data
Serious eye damage/irritation	OPT	Based on test data

Symptoms / routes of exposure

Skin contact: There may be mild irritation at the site of contact.
There may be irritation and redness.

[cont...]

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Ingestion: There may be soreness and redness of the mouth and throat. There may be difficulty swallowing. Nausea and stomach pain may occur. There may be vomiting.

Inhalation: Absorption through the lungs can occur causing symptoms similar to those of ingestion.

Delayed / immediate effects: Immediate effects can be expected after short-term exposure.

Section 12: Ecological information

12.1. Toxicity

Ecotoxicity values:

Species	Test	Value	Units
RAINBOW TROUT	96H LC50	>150	mg/l

12.2. Persistence and degradability

Persistence and degradability: Biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential: No bioaccumulation potential.

12.4. Mobility in soil

Mobility: Soluble in water.

12.5. Results of PBT and vPvB assessment

PBT identification: This product is not identified as a PBT/vPvB substance.

12.6. Other adverse effects

Other adverse effects: Negligible ecotoxicity.

Section 13: Disposal considerations

13.1. Waste treatment methods

Disposal operations: Mix or dissolve with a combustible material and burn in a chemical incinerator equipped with afterburners and scrubbers.

Disposal of packaging: Dispose of in a regulated landfill site or other method for hazardous or toxic wastes.

NB: The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

Section 14: Transport information

Transport class: This product does not require a classification for transport.

Section 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Specific regulations: Not applicable.

15.2. Chemical Safety Assessment

Chem A chemical safety assessment has not been carried out for the substance by the supplier.

[cont...]

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Section 16: Other information

Other information

Other information: This safety data sheet is prepared in accordance with Commission Regulation (EU) No 453/2010.

This safety data sheet is prepared in accordance with Commission Regulation (EC) No 1272/2008.

Phrases used in s.2 and s.3: EUH031: Contact with acids liberates toxic gas.

H302: Harmful if swallowed.

H318: Causes serious eye damage.

R22: Harmful if swallowed.

R31: Contact with acids liberates toxic gas.

R41: Risk of serious damage to eyes.

Legend to abbreviations: PNEC = predicted no effect level

DNEL = derived no effect level

LD50 = median lethal dose

LC50 = median lethal concentration

EC50 = median effective concentration

IC50 = median inhibitory concentration

dw = dry weight

bw = body weight

cc = closed cup

oc = open cup

MUS = mouse

GPG = guinea pig

RBT = rabbit

HAM = hamster

HMN = human

MAM = mammal

PGN = pigeon

IVN = intravenous

SCU = subcutaneous

SKN = skin

DRM = dermal

OCC = ocular/corneal

PCP = physico-chemical properties

Legal disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.

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according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010

Sodium Metabisulphite

**Exposure scenario 1:
Manufacture of substance and industrial uses (physical state:
slurries and pastes)**

List of use descriptors

Sector of uses [SU]:

- SU1: Agriculture, forestry, fishery
- SU2a: Mining (without offshore industries)
- SU2b: Offshore industries
- SU3: Industrial uses
- SU4: Manufacture of food products
- SU5: Manufacture of textiles, leather, fur
- SU6a: Manufacture of wood and wood products
- SU6b: Manufacture of pulp, paper and paper products
- SU7: Printing and reproduction of recorded media
- SU8: Manufacture of bulk, large scale chemicals (including petroleum products)
- SU9: Manufacture of fine chemicals
- SU10: Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
- SU11: Manufacture of rubber products
- SU12: Manufacture of plastics products, including compounding and conversion
- SU13: Manufacture of other non-metallic mineral products, e.g. plasters, cement
- SU14: Manufacture of basic metals, including alloys
- SU15: Manufacture of fabricated metal products, except machinery and equipment
- SU16: Manufacture of computer, electronic and optical products, electrical equipment
- SU17: General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment
- SU18: Manufacture of furniture
- SU19: Building and construction work
- SU20: Health services
- SU23: Electricity, steam, gas water supply and sewage treatment

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Product Categories:

- PC1: Adhesives, sealants
- PC2: Adsorbents
- PC3: Air care products
- PC4: Anti-freeze and de-icing products
- PC7: Base metals and alloys
- PC8: Biocidal products
- PC9a: Coatings and paints, thinners, paint removers
- PC9b: Fillers, putties, plasters, modelling clay
- PC12: Fertilizers
- PC13: Fuels
- PC14: Metal surface treatment products, including galvanic and electroplating products
- PC15: Non-metal-surface treatment products
- PC17: Hydraulic fluids
- PC18: Ink and toners
- PC19: Intermediate
- PC20: Products such as ph-regulators, flocculants, precipitants, neutralization agents
- PC23: Leather tanning, dye, finishing, impregnation and care products
- PC24: Lubricants, greases, release products
- PC25: Metal working fluids
- PC26: Paper and board dye, finishing and impregnation products: including bleaches and other processing aids
- PC28: Perfumes, fragrances
- PC30: Photo-chemicals
- PC31: Polishes and wax blends
- PC32: Polymer preparations and compounds
- PC34: Textile dyes, finishing and impregnating products; including bleaches and other processing aids
- PC35: Washing and cleaning products (including solvent based products)
- PC37: Water treatment chemicals
- PC38: Welding and soldering products (with flux coatings or flux cores), flux products
- PC39: Cosmetics, personal care products
- PC40: Extraction agents

Application

Contributing Scenarios:

- 1 Use in closed process, no likelihood of exposure (worker)
- 2 Use in closed, continuous process with occasional controlled exposure (worker)
- 3 Use in closed batch process (synthesis or formulation) (worker)
- 4 Use in batch and other process (synthesis) where opportunity for exposure arises (worker)
- 5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) (worker)
- 6 Industrial spraying (worker)
- 7 Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities (worker)
- 8 Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities (worker)
- 9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (worker)
- 10 Roller application or brushing (worker)
- 11 Use of blowing agents in manufacture of foam (worker)
- 12 Treatment of articles by dipping and pouring (worker)

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Contributing Scenarios:	13	Production of preparations or articles by tableting, compression, extrusion, pelletisation (worker)
	14	Use as laboratory reagent (worker)
	15	Using material as fuel sources, limited exposure to unburned product to be expected (worker)
	16	Lubrication at high energy conditions and in partly open process (worker)
	17	Greasing at high energy conditions (worker)
	18	Hand-mixing with intimate contact and only PPE available (worker)
	19	Manufacture of substance and industrial uses (physical state: slurries and pastes) (environment)

Contributing exposure scenario 1

Use in closed process, no likelihood of exposure (worker)

List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,001 mg/m³

Risk characterisation ratio (RCR):

inhalative: < 0,001

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

closed system

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 2

Use in closed, continuous process with occasional controlled exposure (worker)

List of use descriptors

Process categories [PROC]:

PROC2: Use in closed, continuous process with occasional controlled exposure

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,001 mg/m³

Risk characterisation ratio (RCR):

inhalative: < 0,001

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

closed system

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 3

Use in closed batch process (synthesis or formulation) (worker)

List of use descriptors

Process categories [PROC]:

PROC3: Use in closed batch process (synthesis or formulation)

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

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Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,01 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,001

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

closed system

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 4

Use in batch and other process (synthesis) where opportunity for exposure arises (worker)

List of use descriptors

Process categories [PROC]:

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,05 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,005

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 5

Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) (worker)

List of use descriptors

Process categories [PROC]:

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,05 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,005

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 6

Industrial spraying (worker)

List of use descriptors

Process categories [PROC]:

PROC7: Industrial spraying

Operational conditions

Product characteristics: Paste

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 4,4 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,44

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

local exhaust ventilation - efficiency of at least [%]: 78

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 7

Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities (worker)

List of use descriptors

Process categories [PROC]:

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,05 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,005

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 8

Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities (worker)

List of use descriptors

Process categories [PROC]:

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

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Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,01 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,001

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 9

Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (worker)

List of use descriptors

Process categories [PROC]:

PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,01 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,001

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Sodium Metabisulphite

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 10

Roller application or brushing (worker)

List of use descriptors

Process categories [PROC]:

PROC10: Roller application or brushing

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,05 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,005

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 11

Use of blowing agents in manufacture of foam (worker)

List of use descriptors

Process categories [PROC]:

PROC12: Use of blowing agents in manufacture of foam

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,001 mg/m³

Risk characterisation ratio (RCR):

inhalative: <0,001

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 12

Treatment of articles by dipping and pouring (worker)

List of use descriptors

Process categories [PROC]:

PROC13: Treatment of articles by dipping and pouring

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

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Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,01 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,001

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 13

Production of preparations or articles by tableting, compression, extrusion, pelletisation (worker)

List of use descriptors

Process categories [PROC]:

PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,01 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,001

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 14

Use as laboratory reagent (worker)

List of use descriptors

Process categories [PROC]:

PROC15: Use as laboratory reagent

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,01 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,001

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 15

Using material as fuel sources, limited exposure to unburned product to be expected (worker)

List of use descriptors

Process categories [PROC]:

PROC16: Using material as fuel sources, limited exposure to unburned product to be expected

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,01 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,001

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 16

Lubrication at high energy conditions and in partly open process (worker)

List of use descriptors

Process categories [PROC]:

PROC17: Lubrication at high energy conditions and in partly open process

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

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Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,1 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,01

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 17

Greasing at high energy conditions (worker)

List of use descriptors

Process categories [PROC]:

PROC18: Greasing at high energy conditions

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,1 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,01

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 18

Hand-mixing with intimate contact and only PPE available (worker)

List of use descriptors

Process categories [PROC]:

PROC19: Hand-mixing with intimate contact and only PPE available

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,05 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,005

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not applicable

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 19

Manufacture of substance and industrial uses (physical state: slurries and pastes) (environment)

List of use descriptors

Environmental release categories [ERC]:

ERC1: Manufacture of substances

ERC2: Formulation of preparations

ERC3: Formulation in materials

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

ERC5: Industrial use resulting in inclusion into or onto a matrix

ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)

ERC6b: Industrial use of reactive processing aids

ERC6c: Industrial use of monomers for manufacture of thermoplastics

ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers

ERC7: Industrial use of substances in closed systems

ERC8a: Wide dispersive indoor use of processing aids in open systems

ERC8b: Wide dispersive indoor use of reactive substances in open systems

ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix

ERC8d: Wide dispersive outdoor use of processing aids in open systems

ERC8e: Wide dispersive outdoor use of reactive substances in open systems

ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix

ERC9a: Wide dispersive indoor use of substances in closed systems

ERC9b: Wide dispersive outdoor use of substances in closed systems

ERC10a: Wide dispersive outdoor use of long-life articles and materials with low release

Operational conditions

Product characteristics: solid, powder

Duration and frequency of use:

300 d/y

Environment factors not influenced by risk management:

Flow rate of receiving surface water: 18000 m³/d

Local freshwater dilution factor: 10

Local marine water dilution factor 100

Other relevant operational conditions:

Amounts used: max. 8600 t/y

Other information:

During the industrial use of the substance, it is assumed that a substantial fraction of the substance reacts/oxidizes. A minimum fraction of 94% (receiving water: freshwater) and 88% (receiving water: marine) is taken forward in the ES when on-site OR municipal treatment is available. When treated in on-site AND consequently in municipal treatment, there is no need to take oxidation during the industrial use into account.

A removal of 99% is considered relevant for the treatment of sulfite/dithionite compounds.

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Exposure prediction

Exposure estimation and reference to its source:

worst case assumption: ERC4

Predicted environmental concentration, local (mg sulfite/L):

PEC water (freshwater): 2,52

PEC water (marine water): 0,57

PEC sewage treatment plant (freshwater): 25,2

PEC sewage treatment plant (marine water): 57,06

Risk characterisation ratio (RCR):

water (freshwater): 0,9

water (marine water): 0,2

sewage treatment plant (freshwater): 0,4

sewage treatment plant (marine water): 0,9

Risk management measures

Operational conditions and risk management measures:

Regular inspection and maintenance of equipment and machines.

Regular cleaning of equipment. Regular cleaning of work area.

Knock down dust with water spray jet.

Take care that activity is executed only by specialists or authorised personnel.

Provide specific activity training to operators to minimise exposures.

Disposal considerations

Conditions and measures related to municipal sewage treatment plant:

Municipal STP and/or onsite STP: efficiency of 99%

Conditions and measures related to external treatment of waste for disposal:

Dispose of as hazardous waste in compliance with local and national regulations.

Conditions and measures related to external recovery of waste:

none

Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Exposure estimation, workers: MEASE

Exposure estimation, Ecological information: EUSES

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**Exposure scenario 2:
Manufacture of substance and industrial uses (physical state:
solid, powder - low dustiness)**

List of use descriptors

Sector of uses [SU]:

- SU1: Agriculture, forestry, fishery
- SU2a: Mining (without offshore industries)
- SU2b: Offshore industries
- SU3: Industrial uses
- SU4: Manufacture of food products
- SU5: Manufacture of textiles, leather, fur
- SU6a: Manufacture of wood and wood products
- SU6b: Manufacture of pulp, paper and paper products
- SU7: Printing and reproduction of recorded media
- SU8: Manufacture of bulk, large scale chemicals (including petroleum products)
- SU9: Manufacture of fine chemicals
- SU10: Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
- SU11: Manufacture of rubber products
- SU12: Manufacture of plastics products, including compounding and conversion
- SU13: Manufacture of other non-metallic mineral products, e.g. plasters, cement
- SU14: Manufacture of basic metals, including alloys
- SU15: Manufacture of fabricated metal products, except machinery and equipment
- SU16: Manufacture of computer, electronic and optical products, electrical equipment
- SU17: General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment
- SU18: Manufacture of furniture
- SU19: Building and construction work
- SU20: Health services
- SU23: Electricity, steam, gas water supply and sewage treatment

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Product Categories:	PC1: Adhesives, sealants
	PC2: Adsorbents
	PC3: Air care products
	PC4: Anti-freeze and de-icing products
	PC7: Base metals and alloys
	PC8: Biocidal products
	PC9a: Coatings and paints, thinners, paint removers
	PC9b: Fillers, putties, plasters, modelling clay
	PC12: Fertilizers
	PC13: Fuels
	PC14: Metal surface treatment products, including galvanic and electroplating products
	PC15: Non-metal-surface treatment products
	PC17: Hydraulic fluids
	PC18: Ink and toners
	PC19: Intermediate
	PC20: Products such as ph-regulators, flocculants, precipitants, neutralization agents
	PC23: Leather tanning, dye, finishing, impregnation and care products
	PC24: Lubricants, greases, release products
	PC25: Metal working fluids
	PC26: Paper and board dye, finishing and impregnation products: including bleaches and other processing aids
	PC28: Perfumes, fragrances
	PC30: Photo-chemicals
	PC31: Polishes and wax blends
	PC32: Polymer preparations and compounds
	PC34: Textile dyes, finishing and impregnating products; including bleaches and other processing aids
	PC35: Washing and cleaning products (including solvent based products)
	PC37: Water treatment chemicals
	PC38: Welding and soldering products (with flux coatings or flux cores), flux products
	PC39: Cosmetics, personal care products
	PC40: Extraction agents

Application

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Contributing exposure scenario 1

Use in closed process, no likelihood of exposure (worker)

List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,01 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,001

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

closed system

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 2

Use in closed, continuous process with occasional controlled exposure (worker)

List of use descriptors

Process categories [PROC]:

PROC2: Use in closed, continuous process with occasional controlled exposure

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,01 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,001

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

closed system

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 3

Use in closed batch process (synthesis or formulation) (worker)

List of use descriptors

Process categories [PROC]:

PROC3: Use in closed batch process (synthesis or formulation)

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,1 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,01

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

closed system

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 4

Use in batch and other process (synthesis) where opportunity for exposure arises (worker)

List of use descriptors

Process categories [PROC]:

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

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according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010

Sodium Metabisulphite

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,05

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 5

Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) (worker)

List of use descriptors

Process categories [PROC]:

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,05

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010

Sodium Metabisulphite

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 6

Calendering operations (worker)

List of use descriptors

Process categories [PROC]:

PROC6: Calendering operations

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,1 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,01

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010

Sodium Metabisulphite

Contributing exposure scenario 7

Industrial spraying (worker)

List of use descriptors

Process categories [PROC]:

PROC7: Industrial spraying

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 1 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,1

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 8

Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities (worker)

List of use descriptors

Process categories [PROC]:

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

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according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010

Sodium Metabisulphite

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,05

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 9

Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities (worker)

List of use descriptors

Process categories [PROC]:

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,1 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,01

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according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010

Sodium Metabisulphite

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 10

Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (worker)

List of use descriptors

Process categories [PROC]:

PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,1 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,01

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according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010

Sodium Metabisulphite

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 11

Roller application or brushing (worker)

List of use descriptors

Process categories [PROC]:

PROC10: Roller application or brushing

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,05

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Sodium Metabisulphite

Contributing exposure scenario 12

Treatment of articles by dipping and pouring (worker)

List of use descriptors

Process categories [PROC]:

PROC13: Treatment of articles by dipping and pouring

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,1 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,01

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 13

Production of preparations or articles by tableting, compression, extrusion, pelletisation (worker)

List of use descriptors

Process categories [PROC]:

PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

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Sodium Metabisulphite

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,1 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,01

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 14

Use as laboratory reagent (worker)

List of use descriptors

Process categories [PROC]:

PROC15: Use as laboratory reagent

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,1 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,01

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Sodium Metabisulphite

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 15

Using material as fuel sources, limited exposure to unburned product to be expected (worker)

List of use descriptors

Process categories [PROC]:

PROC16: Using material as fuel sources, limited exposure to unburned product to be expected

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,1 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,01

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Sodium Metabisulphite

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 16

Lubrication at high energy conditions and in partly open process (worker)

List of use descriptors

Process categories [PROC]:

PROC17: Lubrication at high energy conditions and in partly open process

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 1 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,1

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 17

Greasing at high energy conditions (worker)

List of use descriptors

Process categories [PROC]:

PROC18: Greasing at high energy conditions

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 1 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,1

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 18

Hand-mixing with intimate contact and only PPE available (worker)

List of use descriptors

Process categories [PROC]:

PROC19: Hand-mixing with intimate contact and only PPE available

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

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Sodium Metabisulphite

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,05

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not applicable

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 19

Low energy manipulation of substances bound in materials and/or articles (worker)

List of use descriptors

Process categories [PROC]:

PROC21: Low energy manipulation of substances bound in materials and/or articles

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,05

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Sodium Metabisulphite

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 20

Potentially closed processing operations with minerals/metals at elevated temperature; industrial setting (worker)

List of use descriptors

Process categories [PROC]:

PROC22: Potentially closed processing operations with minerals/metals at elevated temperature; industrial setting

Operational conditions

Product characteristics: solid, powder, molten

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 7 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,7

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Sodium Metabisulphite

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 21

Open processing and transfer operations with minerals/metals at elevated temperature (worker)

List of use descriptors

Process categories [PROC]:

PROC23: Open processing and transfer operations with minerals/metals at elevated temperature

Operational conditions

Product characteristics: solid, powder, molten

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 2 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,2

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Sodium Metabisulphite

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 22

High (mechanical) energy work-up of substances bound in materials and/or articles (worker)

List of use descriptors

Process categories [PROC]:

PROC24: High (mechanical) energy work-up of substances bound in materials and/or articles

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,55

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 23

Other hot work operations with metals (worker)

List of use descriptors

Process categories [PROC]:

PROC25: Other hot work operations with metals

Operational conditions

Product characteristics: solid, powder, molten

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 2 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,2

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 24

Handling of solid inorganic substances at ambient temperature (worker)

List of use descriptors

Process categories [PROC]:

PROC26: Handling of solid inorganic substances at ambient temperature

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 1,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,15

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 25

Manufacture of substance and industrial uses (physical state: solid, powder - low dustiness) (environment)

List of use descriptors

Environmental release categories [ERC]:

- ERC1: Manufacture of substances
- ERC2: Formulation of preparations
- ERC3: Formulation in materials
- ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
- ERC5: Industrial use resulting in inclusion into or onto a matrix
- ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)
- ERC6b: Industrial use of reactive processing aids
- ERC6c: Industrial use of monomers for manufacture of thermoplastics
- ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers
- ERC7: Industrial use of substances in closed systems
- ERC8a: Wide dispersive indoor use of processing aids in open systems
- ERC8b: Wide dispersive indoor use of reactive substances in open systems
- ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix
- ERC8d: Wide dispersive outdoor use of processing aids in open systems
- ERC8e: Wide dispersive outdoor use of reactive substances in open systems
- ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix
- ERC9a: Wide dispersive indoor use of substances in closed systems
- ERC9b: Wide dispersive outdoor use of substances in closed systems
- ERC10a: Wide dispersive outdoor use of long-life articles and materials with low release

Operational conditions

Product characteristics: solid, powder

Duration and frequency of use:

300 d/y

Environment factors not influenced by risk management:

Flow rate of receiving surface water: 18000 m³/d

Local freshwater dilution factor: 10

Local marine water dilution factor 100

Other relevant operational conditions:

Amounts used: max. 8600 t/y

Other information:

During the industrial use of the substance, it is assumed that a substantial fraction of the substance reacts/oxidizes. A minimum fraction of 94% (receiving water: freshwater) and 88% (receiving water: marine) is taken forward in the ES when on-site OR municipal treatment is available. When treated in on-site AND consequently in municipal treatment, there is no need to take oxidation during the industrial use into account. A removal of 99% is considered relevant for the treatment of sulfite/dithionite compounds.

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Exposure prediction

Exposure estimation and reference to its source:

worst case assumption: ERC4

Predicted environmental concentration, local (mg sulfite/L):

PEC water (freshwater): 2,52

PEC water (marine water): 0,57

PEC sewage treatment plant (freshwater): 25,2

PEC sewage treatment plant (marine water): 57,06

Risk characterisation ratio (RCR):

water (freshwater): 0,9

water (marine water): 0,2

sewage treatment plant (freshwater): 0,4

sewage treatment plant (marine water): 0,9

Risk management measures

Operational conditions and risk management measures:

Regular inspection and maintenance of equipment and machines.

Regular cleaning of equipment. Regular cleaning of work area.

Knock down dust with water spray jet.

Take care that activity is executed only by specialists or authorised personnel.

Provide specific activity training to operators to minimise exposures.

Disposal considerations

Conditions and measures related to municipal sewage treatment plant:

Municipal STP and/or onsite STP: efficiency of 99%

Conditions and measures related to external treatment of waste for disposal:

Dispose of as hazardous waste in compliance with local and national regulations.

Conditions and measures related to external recovery of waste:

none

Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Exposure estimation, workers: MEASE

Exposure estimation, Ecological information: EUSES

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**Exposure scenario 3:
Manufacture of substance and industrial uses (physical state:
solid, powder - medium dustiness)**

List of use descriptors

Sector of uses [SU]:

- SU1: Agriculture, forestry, fishery
- SU2a: Mining (without offshore industries)
- SU2b: Offshore industries
- SU3: Industrial uses
- SU4: Manufacture of food products
- SU5: Manufacture of textiles, leather, fur
- SU6a: Manufacture of wood and wood products
- SU6b: Manufacture of pulp, paper and paper products
- SU7: Printing and reproduction of recorded media
- SU8: Manufacture of bulk, large scale chemicals (including petroleum products)
- SU9: Manufacture of fine chemicals
- SU10: Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
- SU11: Manufacture of rubber products
- SU12: Manufacture of plastics products, including compounding and conversion
- SU13: Manufacture of other non-metallic mineral products, e.g. plasters, cement
- SU14: Manufacture of basic metals, including alloys
- SU15: Manufacture of fabricated metal products, except machinery and equipment
- SU16: Manufacture of computer, electronic and optical products, electrical equipment
- SU17: General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment
- SU18: Manufacture of furniture
- SU19: Building and construction work
- SU20: Health services
- SU23: Electricity, steam, gas water supply and sewage treatment

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Product Categories:	PC1: Adhesives, sealants
	PC2: Adsorbents
	PC3: Air care products
	PC4: Anti-freeze and de-icing products
	PC7: Base metals and alloys
	PC8: Biocidal products
	PC9a: Coatings and paints, thinners, paint removers
	PC9b: Fillers, putties, plasters, modelling clay
	PC12: Fertilizers
	PC13: Fuels
	PC14: Metal surface treatment products, including galvanic and electroplating products
	PC15: Non-metal-surface treatment products
	PC17: Hydraulic fluids
	PC18: Ink and toners
	PC19: Intermediate
	PC20: Products such as ph-regulators, flocculants, precipitants, neutralization agents
	PC23: Leather tanning, dye, finishing, impregnation and care products
	PC24: Lubricants, greases, release products
	PC25: Metal working fluids
	PC26: Paper and board dye, finishing and impregnation products: including bleaches and other processing aids
	PC28: Perfumes, fragrances
	PC30: Photo-chemicals
	PC31: Polishes and wax blends
	PC32: Polymer preparations and compounds
	PC34: Textile dyes, finishing and impregnating products; including bleaches and other processing aids
	PC35: Washing and cleaning products (including solvent based products)
	PC37: Water treatment chemicals
	PC38: Welding and soldering products (with flux coatings or flux cores), flux products
	PC39: Cosmetics, personal care products
	PC40: Extraction agents

Application

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Contributing exposure scenario 1

Use in closed process, no likelihood of exposure (worker)

List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,01 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,001

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

closed system

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 2

Use in closed, continuous process with occasional controlled exposure (worker)

List of use descriptors

Process categories [PROC]:

PROC2: Use in closed, continuous process with occasional controlled exposure

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,05

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

closed system

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 3

Use in closed batch process (synthesis or formulation) (worker)

List of use descriptors

Process categories [PROC]:

PROC3: Use in closed batch process (synthesis or formulation)

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 1 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,1

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

closed system

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 4

Use in batch and other process (synthesis) where opportunity for exposure arises (worker)

List of use descriptors

Process categories [PROC]:

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

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Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 5

Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) (worker)

List of use descriptors

Process categories [PROC]:

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 6

Calendering operations (worker)

List of use descriptors

Process categories [PROC]:

PROC6: Calendering operations

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 7

Industrial spraying (worker)

List of use descriptors

Process categories [PROC]:

PROC7: Industrial spraying

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 4,4 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,44

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: 78

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 8

Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities (worker)

List of use descriptors

Process categories [PROC]:

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

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Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 9

Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities (worker)

List of use descriptors

Process categories [PROC]:

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 10

Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (worker)

List of use descriptors

Process categories [PROC]:

PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 11

Roller application or brushing (worker)

List of use descriptors

Process categories [PROC]:

PROC10: Roller application or brushing

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 12

Treatment of articles by dipping and pouring (worker)

List of use descriptors

Process categories [PROC]:

PROC13: Treatment of articles by dipping and pouring

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 1 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,1

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 13

Production of preparations or articles by tableting, compression, extrusion, pelletisation (worker)

List of use descriptors

Process categories [PROC]:

PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

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Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 1 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,1

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 14

Use as laboratory reagent (worker)

List of use descriptors

Process categories [PROC]:

PROC15: Use as laboratory reagent

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,05

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 15

Using material as fuel sources, limited exposure to unburned product to be expected (worker)

List of use descriptors

Process categories [PROC]:

PROC16: Using material as fuel sources, limited exposure to unburned product to be expected

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 16

Lubrication at high energy conditions and in partly open process (worker)

List of use descriptors

Process categories [PROC]:

PROC17: Lubrication at high energy conditions and in partly open process

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 4,4 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,44

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: 78

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 17

Greasing at high energy conditions (worker)

List of use descriptors

Process categories [PROC]:

PROC18: Greasing at high energy conditions

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 4,4 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,44

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: 78

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 18

Hand-mixing with intimate contact and only PPE available (worker)

List of use descriptors

Process categories [PROC]:

PROC19: Hand-mixing with intimate contact and only PPE available

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

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Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not applicable

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 19

Potentially closed processing operations with minerals/metals at elevated temperature; industrial setting (worker)

List of use descriptors

Process categories [PROC]:

PROC22: Potentially closed processing operations with minerals/metals at elevated temperature; industrial setting

Operational conditions

Product characteristics: solid, powder, molten

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 7 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,7

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 20

Open processing and transfer operations with minerals/metals at elevated temperature (worker)

List of use descriptors

Process categories [PROC]:

PROC23: Open processing and transfer operations with minerals/metals at elevated temperature

Operational conditions

Product characteristics: solid, powder, molten

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 2 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,2

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 21

High (mechanical) energy work-up of substances bound in materials and/or articles (worker)

List of use descriptors

Process categories [PROC]:

PROC24: High (mechanical) energy work-up of substances bound in materials and/or articles

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,55

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 22

Other hot work operations with metals (worker)

List of use descriptors

Process categories [PROC]:

PROC25: Other hot work operations with metals

Operational conditions

Product characteristics: solid, powder, molten

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 2 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,2

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 23

Handling of solid inorganic substances at ambient temperature (worker)

List of use descriptors

Process categories [PROC]:

PROC26: Handling of solid inorganic substances at ambient temperature

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 4 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,4

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 24

Manufacture of substance and industrial uses (physical state: solid, powder - medium dustiness) (environment)

List of use descriptors

Environmental release categories [ERC]:

- ERC1: Manufacture of substances
- ERC2: Formulation of preparations
- ERC3: Formulation in materials
- ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
- ERC5: Industrial use resulting in inclusion into or onto a matrix
- ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)
- ERC6b: Industrial use of reactive processing aids
- ERC6c: Industrial use of monomers for manufacture of thermoplastics
- ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers
- ERC7: Industrial use of substances in closed systems
- ERC8a: Wide dispersive indoor use of processing aids in open systems
- ERC8b: Wide dispersive indoor use of reactive substances in open systems
- ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix
- ERC8d: Wide dispersive outdoor use of processing aids in open systems
- ERC8e: Wide dispersive outdoor use of reactive substances in open systems
- ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix
- ERC9a: Wide dispersive indoor use of substances in closed systems
- ERC9b: Wide dispersive outdoor use of substances in closed systems
- ERC10a: Wide dispersive outdoor use of long-life articles and materials with low release

Operational conditions

Product characteristics: solid, powder

Duration and frequency of use:

300 d/y

Environment factors not influenced by risk management:

Flow rate of receiving surface water: 18000 m³/d

Local freshwater dilution factor: 10

Local marine water dilution factor 100

Other relevant operational conditions:

Amounts used: max. 8600 t/y

Other information:

During the industrial use of the substance, it is assumed that a substantial fraction of the substance reacts/oxidizes. A minimum fraction of 94% (receiving water: freshwater) and 88% (receiving water: marine) is taken forward in the ES when on-site OR municipal treatment is available. When treated in on-site AND consequently in municipal treatment, there is no need to take oxidation during the industrial use into account. A removal of 99% is considered relevant for the treatment of sulfite/dithionite compounds.

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Exposure prediction

Exposure estimation and reference to its source:

worst case assumption: ERC4

Predicted environmental concentration, local (mg sulfite/L):

PEC water (freshwater): 2,52

PEC water (marine water): 0,57

PEC sewage treatment plant (freshwater): 25,2

PEC sewage treatment plant (marine water): 57,06

Risk characterisation ratio (RCR):

water (freshwater): 0,9

water (marine water): 0,2

sewage treatment plant (freshwater): 0,4

sewage treatment plant (marine water): 0,9

Risk management measures

Operational conditions and risk management measures:

Regular inspection and maintenance of equipment and machines.

Regular cleaning of equipment. Regular cleaning of work area.

Knock down dust with water spray jet.

Take care that activity is executed only by specialists or authorised personnel.

Provide specific activity training to operators to minimise exposures.

Disposal considerations

Conditions and measures related to municipal sewage treatment plant:

Municipal STP and/or onsite STP: efficiency of 99%

Conditions and measures related to external treatment of waste for disposal:

Dispose of as hazardous waste in compliance with local and national regulations.

Conditions and measures related to external recovery of waste:

none

Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Exposure estimation, workers: MEASE

Exposure estimation, Ecological information: EUSES

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**Exposure scenario 4:
Manufacture of substance and industrial uses (physical state:
solid, powder - high dustiness)**

List of use descriptors

Sector of uses [SU]:

- SU1: Agriculture, forestry, fishery
- SU2a: Mining (without offshore industries)
- SU2b: Offshore industries
- SU3: Industrial uses
- SU4: Manufacture of food products
- SU5: Manufacture of textiles, leather, fur
- SU6a: Manufacture of wood and wood products
- SU6b: Manufacture of pulp, paper and paper products
- SU7: Printing and reproduction of recorded media
- SU8: Manufacture of bulk, large scale chemicals (including petroleum products)
- SU9: Manufacture of fine chemicals
- SU10: Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
- SU11: Manufacture of rubber products
- SU12: Manufacture of plastics products, including compounding and conversion
- SU13: Manufacture of other non-metallic mineral products, e.g. plasters, cement
- SU14: Manufacture of basic metals, including alloys
- SU15: Manufacture of fabricated metal products, except machinery and equipment
- SU16: Manufacture of computer, electronic and optical products, electrical equipment
- SU17: General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment
- SU18: Manufacture of furniture
- SU19: Building and construction work
- SU20: Health services
- SU23: Electricity, steam, gas water supply and sewage treatment

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Product Categories:	PC1: Adhesives, sealants
	PC2: Adsorbents
	PC3: Air care products
	PC4: Anti-freeze and de-icing products
	PC7: Base metals and alloys
	PC8: Biocidal products
	PC9a: Coatings and paints, thinners, paint removers
	PC9b: Fillers, putties, plasters, modelling clay
	PC12: Fertilizers
	PC13: Fuels
	PC14: Metal surface treatment products, including galvanic and electroplating products
	PC15: Non-metal-surface treatment products
	PC17: Hydraulic fluids
	PC18: Ink and toners
	PC19: Intermediate
	PC20: Products such as ph-regulators, flocculants, precipitants, neutralization agents
	PC23: Leather tanning, dye, finishing, impregnation and care products
	PC24: Lubricants, greases, release products
	PC25: Metal working fluids
	PC26: Paper and board dye, finishing and impregnation products: including bleaches and other processing aids
	PC28: Perfumes, fragrances
	PC30: Photo-chemicals
	PC31: Polishes and wax blends
	PC32: Polymer preparations and compounds
	PC34: Textile dyes, finishing and impregnating products; including bleaches and other processing aids
	PC35: Washing and cleaning products (including solvent based products)
	PC37: Water treatment chemicals
	PC38: Welding and soldering products (with flux coatings or flux cores), flux products
	PC39: Cosmetics, personal care products
	PC40: Extraction agents

Application

Contributing Scenarios:	1	Use in closed process, no likelihood of exposure (worker)	Page 79
	2	Use in closed, continuous process with occasional controlled exposure (worker)	Page 80
	3	Use in closed batch process (synthesis or formulation) (worker)	Page 81
	4	Use in batch and other process (synthesis) where opportunity for exposure arises (worker)	Page 81
	5	Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) (worker)	Page 82
	6	Calendering operations (worker)	Page 83
	7	Industrial spraying (worker)	Page 84
	8	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities (worker)	Page 84
	9	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities (worker)	Page 85
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Contributing exposure scenario 1

Use in closed process, no likelihood of exposure (worker)

List of use descriptors

Process categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,01 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,001

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

closed system

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 2

Use in closed, continuous process with occasional controlled exposure (worker)

List of use descriptors

Process categories [PROC]:

PROC2: Use in closed, continuous process with occasional controlled exposure

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 1 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,1

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

closed system

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 3

Use in closed batch process (synthesis or formulation) (worker)

List of use descriptors

Process categories [PROC]:

PROC3: Use in closed batch process (synthesis or formulation)

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 1 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,1

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

closed system

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 4

Use in batch and other process (synthesis) where opportunity for exposure arises (worker)

List of use descriptors

Process categories [PROC]:

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

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Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,55

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: 78

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 5

Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) (worker)

List of use descriptors

Process categories [PROC]:

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,55

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: 78

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 6

Calendering operations (worker)

List of use descriptors

Process categories [PROC]:

PROC6: Calendering operations

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,55

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: 78

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 7

Industrial spraying (worker)

List of use descriptors

Process categories [PROC]:

PROC7: Industrial spraying

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,55

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: 78

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: Particulates filter P1 according to EN 143. APF=4

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 8

Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities (worker)

List of use descriptors

Process categories [PROC]:

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

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Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 2,75 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,275

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: 78

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: Particulates filter P1 according to EN 143. APF=4

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 9

Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities (worker)

List of use descriptors

Process categories [PROC]:

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,55

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: 78

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 10

Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (worker)

List of use descriptors

Process categories [PROC]:

PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 4,4 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,44

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: 78

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 11

Roller application or brushing (worker)

List of use descriptors

Process categories [PROC]:

PROC10: Roller application or brushing

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 2,2 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,22

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: 78

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 12

Treatment of articles by dipping and pouring (worker)

List of use descriptors

Process categories [PROC]:

PROC13: Treatment of articles by dipping and pouring

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 13

Production of preparations or articles by tableting, compression, extrusion, pelletisation (worker)

List of use descriptors

Process categories [PROC]:

PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

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Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 2,2 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,22

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: 78

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 14

Use as laboratory reagent (worker)

List of use descriptors

Process categories [PROC]:

PROC15: Use as laboratory reagent

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 15

Using material as fuel sources, limited exposure to unburned product to be expected (worker)

List of use descriptors

Process categories [PROC]:

PROC16: Using material as fuel sources, limited exposure to unburned product to be expected

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 2,2 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,22

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: 78

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 16

Lubrication at high energy conditions and in partly open process (worker)

List of use descriptors

Process categories [PROC]:

PROC17: Lubrication at high energy conditions and in partly open process

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 2,75 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,275

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: 78

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: Particulates filter P1 according to EN 143. APF=4

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 17

Greasing at high energy conditions (worker)

List of use descriptors

Process categories [PROC]:

PROC18: Greasing at high energy conditions

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 2,75 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,275

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: 78

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: Particulates filter P1 according to EN 143. APF=4

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 18

Hand-mixing with intimate contact and only PPE available (worker)

List of use descriptors

Process categories [PROC]:

PROC19: Hand-mixing with intimate contact and only PPE available

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

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Sodium Metabisulphite

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 6,25 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,625

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not applicable

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: Particulates filter P1 according to EN 143. APF=4

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 19

Potentially closed processing operations with minerals/metals at elevated temperature; industrial setting (worker)

List of use descriptors

Process categories [PROC]:

PROC22: Potentially closed processing operations with minerals/metals at elevated temperature; industrial setting

Operational conditions

Product characteristics: solid, powder, molten

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 7 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,7

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 20

Open processing and transfer operations with minerals/metals at elevated temperature (worker)

List of use descriptors

Process categories [PROC]:

PROC23: Open processing and transfer operations with minerals/metals at elevated temperature

Operational conditions

Product characteristics: solid, powder, molten

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 2 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,2

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 21

High (mechanical) energy work-up of substances bound in materials and/or articles (worker)

List of use descriptors

Process categories [PROC]:

PROC24: High (mechanical) energy work-up of substances bound in materials and/or articles

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,55

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 22

Other hot work operations with metals (worker)

List of use descriptors

Process categories [PROC]:

PROC25: Other hot work operations with metals

Operational conditions

Product characteristics: solid, powder, molten

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 2 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,2

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 23

Handling of solid inorganic substances at ambient temperature (worker)

List of use descriptors

Process categories [PROC]:

PROC26: Handling of solid inorganic substances at ambient temperature

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 2,2 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,22

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: 78

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 24

Manufacture of substance and industrial uses (physical state: solid, powder - high dustiness) (environment)

List of use descriptors

Environmental release categories [ERC]:

- ERC1: Manufacture of substances
- ERC2: Formulation of preparations
- ERC3: Formulation in materials
- ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
- ERC5: Industrial use resulting in inclusion into or onto a matrix
- ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)
- ERC6b: Industrial use of reactive processing aids
- ERC6c: Industrial use of monomers for manufacture of thermoplastics
- ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers
- ERC7: Industrial use of substances in closed systems
- ERC8a: Wide dispersive indoor use of processing aids in open systems
- ERC8b: Wide dispersive indoor use of reactive substances in open systems
- ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix
- ERC8d: Wide dispersive outdoor use of processing aids in open systems
- ERC8e: Wide dispersive outdoor use of reactive substances in open systems
- ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix
- ERC9a: Wide dispersive indoor use of substances in closed systems
- ERC9b: Wide dispersive outdoor use of substances in closed systems
- ERC10a: Wide dispersive outdoor use of long-life articles and materials with low release

Operational conditions

Product characteristics: solid, powder

Duration and frequency of use:

300 d/y

Environment factors not influenced by risk management:

Flow rate of receiving surface water: 18000 m³/d

Local freshwater dilution factor: 10

Local marine water dilution factor 100

Other relevant operational conditions:

Amounts used: max. 8600 t/y

Other information:

During the industrial use of the substance, it is assumed that a substantial fraction of the substance reacts/oxidizes. A minimum fraction of 94% (receiving water: freshwater) and 88% (receiving water: marine) is taken forward in the ES when on-site OR municipal treatment is available. When treated in on-site AND consequently in municipal treatment, there is no need to take oxidation during the industrial use into account. A removal of 99% is considered relevant for the treatment of sulfite/dithionite compounds.

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Exposure prediction

Exposure estimation and reference to its source:

worst case assumption: ERC4

Predicted environmental concentration, local (mg sulfite/L):

PEC water (freshwater): 2,52

PEC water (marine water): 0,57

PEC sewage treatment plant (freshwater): 25,2

PEC sewage treatment plant (marine water): 57,06

Risk characterisation ratio (RCR):

water (freshwater): 0,9

water (marine water): 0,2

sewage treatment plant (freshwater): 0,4

sewage treatment plant (marine water): 0,9

Risk management measures

Operational conditions and risk management measures:

Regular inspection and maintenance of equipment and machines.

Regular cleaning of equipment. Regular cleaning of work area.

Knock down dust with water spray jet.

Take care that activity is executed only by specialists or authorised personnel.

Provide specific activity training to operators to minimise exposures.

Disposal considerations

Conditions and measures related to municipal sewage treatment plant:

Municipal STP and/or onsite STP: efficiency of 99%

Conditions and measures related to external treatment of waste for disposal:

Dispose of as hazardous waste in compliance with local and national regulations.

Conditions and measures related to external recovery of waste:

none

Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Exposure estimation, workers: MEASE

Exposure estimation, Ecological information: EUSES

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Exposure scenario 5: Professional use of substance or mixtures containing the substance (physical state: slurries and pastes)

List of use descriptors

Sector of uses [SU]:	SU22: Professional uses
Product Categories:	PC1: Adhesives, sealants
	PC2: Adsorbents
	PC7: Base metals and alloys
	PC9a: Coatings and paints, thinners, paint removers
	PC9b: Fillers, putties, plasters, modelling clay
	PC12: Fertilizers
	PC14: Metal surface treatment products, including galvanic and electroplating products
	PC15: Non-metal-surface treatment products
	PC17: Hydraulic fluids
	PC18: Ink and toners
	PC20: Products such as ph-regulators, flocculants, precipitants, neutralization agents
	PC23: Leather tanning, dye, finishing, impregnation and care products
	PC24: Lubricants, greases, release products
	PC25: Metal working fluids
	PC26: Paper and board dye, finishing and impregnation products: including bleaches and other processing aids
	PC30: Photo-chemicals
	PC31: Polishes and wax blends
	PC34: Textile dyes, finishing and impregnating products; including bleaches and other processing aids
	PC35: Washing and cleaning products (including solvent based products)
	PC37: Water treatment chemicals
	PC38: Welding and soldering products (with flux coatings or flux cores), flux products
	PC40: Extraction agents

Application

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Contributing Scenarios:	14	Using material as fuel sources, limited exposure to unburned product to be expected (worker)	Page 112
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Contributing exposure scenario 1

Use in closed, continuous process with occasional controlled exposure (worker)

List of use descriptors

Process categories [PROC]:

PROC2: Use in closed, continuous process with occasional controlled exposure

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,001 mg/m³

Risk characterisation ratio (RCR):

inhalative: < 0,001

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

closed system

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 2

Use in closed batch process (synthesis or formulation) (worker)

List of use descriptors

Process categories [PROC]:

PROC3: Use in closed batch process (synthesis or formulation)

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,01 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,001

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

closed system

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 3

Use in batch and other process (synthesis) where opportunity for exposure arises (worker)

List of use descriptors

Process categories [PROC]:

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

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Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,1 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,01

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 4

Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) (worker)

List of use descriptors

Process categories [PROC]:

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,1 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,01

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 5

Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities (worker)

List of use descriptors

Process categories [PROC]:

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,05 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,005

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 6

Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities (worker)

List of use descriptors

Process categories [PROC]:

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,05 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,005

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 7

Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (worker)

List of use descriptors

Process categories [PROC]:

PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,05 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,005

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 8

Roller application or brushing (worker)

List of use descriptors

Process categories [PROC]:

PROC10: Roller application or brushing

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,05 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,005

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 9

Non industrial spraying (worker)

List of use descriptors

Process categories [PROC]:

PROC11: Non industrial spraying

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: Particulates filter P1 according to EN 143. APF=4

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 10

Use of blowing agents in manufacture of foam (worker)

List of use descriptors

Process categories [PROC]:

PROC12: Use of blowing agents in manufacture of foam

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

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Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,001 mg/m³

Risk characterisation ratio (RCR):

inhalative: <0,001

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 11

Treatment of articles by dipping and pouring (worker)

List of use descriptors

Process categories [PROC]:

PROC13: Treatment of articles by dipping and pouring

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,05 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,005

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 12

Production of preparations or articles by tableting, compression, extrusion, pelletisation (worker)

List of use descriptors

Process categories [PROC]:

PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,1 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,01

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 13

Use as laboratory reagent (worker)

List of use descriptors

Process categories [PROC]:

PROC15: Use as laboratory reagent

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,01 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,001

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 14

Using material as fuel sources, limited exposure to unburned product to be expected (worker)

List of use descriptors

Process categories [PROC]:

PROC16: Using material as fuel sources, limited exposure to unburned product to be expected

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,05

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 15

Lubrication at high energy conditions and in partly open process (worker)

List of use descriptors

Process categories [PROC]:

PROC17: Lubrication at high energy conditions and in partly open process

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

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Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 1 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,1

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 16

Greasing at high energy conditions (worker)

List of use descriptors

Process categories [PROC]:

PROC18: Greasing at high energy conditions

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,05

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 17

Hand-mixing with intimate contact and only PPE available (worker)

List of use descriptors

Process categories [PROC]:

PROC19: Hand-mixing with intimate contact and only PPE available

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,05 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,005

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not applicable

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 18

Heat and pressure transfer fluids in dispersive, professional use but closed systems (worker)

List of use descriptors

Process categories [PROC]:

PROC20: Heat and pressure transfer fluids in dispersive, professional use but closed systems

Operational conditions

Product characteristics: Paste

exposure assessment: very low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,001 mg/m³

Risk characterisation ratio (RCR):

inhalative: <0,001

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 19

Professional use of substance or mixtures containing the substance (physical state: slurries and pastes) (environment)

List of use descriptors

Environmental release categories [ERC]:

- ERC1: Manufacture of substances
- ERC2: Formulation of preparations
- ERC3: Formulation in materials
- ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
- ERC5: Industrial use resulting in inclusion into or onto a matrix
- ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)
- ERC6b: Industrial use of reactive processing aids
- ERC6c: Industrial use of monomers for manufacture of thermoplastics
- ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers
- ERC7: Industrial use of substances in closed systems
- ERC8a: Wide dispersive indoor use of processing aids in open systems
- ERC8b: Wide dispersive indoor use of reactive substances in open systems
- ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix
- ERC8d: Wide dispersive outdoor use of processing aids in open systems
- ERC8e: Wide dispersive outdoor use of reactive substances in open systems
- ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix
- ERC9a: Wide dispersive indoor use of substances in closed systems
- ERC9b: Wide dispersive outdoor use of substances in closed systems
- ERC10a: Wide dispersive outdoor use of long-life articles and materials with low release

Operational conditions

Product characteristics: solid, powder

Duration and frequency of use:

300 d/y

Environment factors not influenced by risk management:

Flow rate of receiving surface water: 18000 m³/d

Local freshwater dilution factor: 10

Local marine water dilution factor 100

Other relevant operational conditions:

Amounts used: max. 8600 t/y

Other information:

During the industrial use of the substance, it is assumed that a substantial fraction of the substance reacts/oxidizes. A minimum fraction of 94% (receiving water: freshwater) and 88% (receiving water: marine) is taken forward in the ES when on-site OR municipal treatment is available. When treated in on-site AND consequently in municipal treatment, there is no need to take oxidation during the industrial use into account. A removal of 99% is considered relevant for the treatment of sulfite/dithionite compounds.

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Exposure prediction

Exposure estimation and reference to its source:

worst case assumption: ERC4

Predicted environmental concentration, local (mg sulfite/L):

PEC water (freshwater): 2,52

PEC water (marine water): 0,57

PEC sewage treatment plant (freshwater): 25,2

PEC sewage treatment plant (marine water): 57,06

Risk characterisation ratio (RCR):

water (freshwater): 0,9

water (marine water): 0,2

sewage treatment plant (freshwater): 0,4

sewage treatment plant (marine water): 0,9

Risk management measures

Operational conditions and risk management measures:

Regular inspection and maintenance of equipment and machines.

Regular cleaning of equipment. Regular cleaning of work area.

Knock down dust with water spray jet.

Take care that activity is executed only by specialists or authorised personnel.

Provide specific activity training to operators to minimise exposures.

Disposal considerations

Conditions and measures related to municipal sewage treatment plant:

Municipal STP and/or onsite STP: efficiency of 99%

Conditions and measures related to external treatment of waste for disposal:

Dispose of as hazardous waste in compliance with local and national regulations.

Conditions and measures related to external recovery of waste:

none

Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Exposure estimation, workers: MEASE

Exposure estimation, Ecological information: EUSES

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Exposure scenario 6: Professional use of substance or mixtures containing the substance (physical state: solid, powder - low dustiness)

List of use descriptors

Sector of uses [SU]:	SU22: Professional uses
Product Categories:	PC1: Adhesives, sealants
	PC2: Adsorbents
	PC7: Base metals and alloys
	PC9a: Coatings and paints, thinners, paint removers
	PC9b: Fillers, putties, plasters, modelling clay
	PC12: Fertilizers
	PC14: Metal surface treatment products, including galvanic and electroplating products
	PC15: Non-metal-surface treatment products
	PC17: Hydraulic fluids
	PC18: Ink and toners
	PC20: Products such as ph-regulators, flocculants, precipitants, neutralization agents
	PC23: Leather tanning, dye, finishing, impregnation and care products
	PC24: Lubricants, greases, release products
	PC25: Metal working fluids
	PC26: Paper and board dye, finishing and impregnation products: including bleaches and other processing aids
	PC30: Photo-chemicals
	PC31: Polishes and wax blends
	PC34: Textile dyes, finishing and impregnating products; including bleaches and other processing aids
	PC35: Washing and cleaning products (including solvent based products)
	PC37: Water treatment chemicals
	PC38: Welding and soldering products (with flux coatings or flux cores), flux products
	PC40: Extraction agents

Application

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Contributing exposure scenario 1

Use in closed, continuous process with occasional controlled exposure (worker)

List of use descriptors

Process categories [PROC]:

PROC2: Use in closed, continuous process with occasional controlled exposure

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,01 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,001

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

closed system

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 2

Use in closed batch process (synthesis or formulation) (worker)

List of use descriptors

Process categories [PROC]:

PROC3: Use in closed batch process (synthesis or formulation)

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,1 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,01

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

closed system

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 3

Use in batch and other process (synthesis) where opportunity for exposure arises (worker)

List of use descriptors

Process categories [PROC]:

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 1 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,1

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 4

Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) (worker)

List of use descriptors

Process categories [PROC]:

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

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Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 1 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,1

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 5

Calendering operations (worker)

List of use descriptors

Process categories [PROC]:

PROC6: Calendering operations

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 1 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,1

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010

Sodium Metabisulphite

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 6

Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities (worker)

List of use descriptors

Process categories [PROC]:

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,05

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010

Sodium Metabisulphite

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 7

Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities (worker)

List of use descriptors

Process categories [PROC]:

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,05

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010

Sodium Metabisulphite

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 8

Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (worker)

List of use descriptors

Process categories [PROC]:

PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,05

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010

Sodium Metabisulphite

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 9

Roller application or brushing (worker)

List of use descriptors

Process categories [PROC]:

PROC10: Roller application or brushing

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,05

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010

Sodium Metabisulphite

Contributing exposure scenario 10

Non industrial spraying (worker)

List of use descriptors

Process categories [PROC]:

PROC11: Non industrial spraying

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 1 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,1

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 11

Treatment of articles by dipping and pouring (worker)

List of use descriptors

Process categories [PROC]:

PROC13: Treatment of articles by dipping and pouring

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

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according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010

Sodium Metabisulphite

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,05

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 12

Production of preparations or articles by tableting, compression, extrusion, pelletisation (worker)

List of use descriptors

Process categories [PROC]:

PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 1 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,1

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according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010

Sodium Metabisulphite

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 13

Use as laboratory reagent (worker)

List of use descriptors

Process categories [PROC]:

PROC15: Use as laboratory reagent

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,1 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,01

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Sodium Metabisulphite

Contributing exposure scenario 14

Using material as fuel sources, limited exposure to unburned product to be expected (worker)

List of use descriptors

Process categories [PROC]:

PROC16: Using material as fuel sources, limited exposure to unburned product to be expected

Operational conditions

Product characteristics: solid, powder
exposure assessment: low

Concentration of the substance in a mixture:
not restricted

Duration and frequency of use:
480 minutes

Human factors not influenced by risk management:
Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:
inhalative: 5 mg/m³

Risk characterisation ratio (RCR):
inhalative: 0,5

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 15

Lubrication at high energy conditions and in partly open process (worker)

List of use descriptors

Process categories [PROC]:

PROC17: Lubrication at high energy conditions and in partly open process

Operational conditions

Product characteristics: solid, powder
exposure assessment: low

Concentration of the substance in a mixture:
not restricted

Duration and frequency of use:
480 minutes

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according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010

Sodium Metabisulphite

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 2,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,25

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: Particulates filter P1 according to EN 143. APF=4

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 16

Greasing at high energy conditions (worker)

List of use descriptors

Process categories [PROC]:

PROC18: Greasing at high energy conditions

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010

Sodium Metabisulphite

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 17

Hand-mixing with intimate contact and only PPE available (worker)

List of use descriptors

Process categories [PROC]:

PROC19: Hand-mixing with intimate contact and only PPE available

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,05

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not applicable

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Sodium Metabisulphite

Contributing exposure scenario 18

Low energy manipulation of substances bound in materials and/or articles (worker)

List of use descriptors

Process categories [PROC]:

PROC21: Low energy manipulation of substances bound in materials and/or articles

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,05

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 19

Potentially closed processing operations with minerals/metals at elevated temperature; industrial setting (worker)

List of use descriptors

Process categories [PROC]:

PROC22: Potentially closed processing operations with minerals/metals at elevated temperature; industrial setting

Operational conditions

Product characteristics: solid, powder, molten

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

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according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010

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Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 2,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,25

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: Particulates filter P1 according to EN 143. APF=4

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 20

Open processing and transfer operations with minerals/metals at elevated temperature (worker)

List of use descriptors

Process categories [PROC]:

PROC23: Open processing and transfer operations with minerals/metals at elevated temperature

Operational conditions

Product characteristics: solid, powder, molten

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

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according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010

Sodium Metabisulphite

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 21

High (mechanical) energy work-up of substances bound in materials and/or articles (worker)

List of use descriptors

Process categories [PROC]:

PROC24: High (mechanical) energy work-up of substances bound in materials and/or articles

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,55

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according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010

Sodium Metabisulphite

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 22

Other hot work operations with metals (worker)

List of use descriptors

Process categories [PROC]:

PROC25: Other hot work operations with metals

Operational conditions

Product characteristics: solid, powder, molten

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 4 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,4

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 23

Handling of solid inorganic substances at ambient temperature (worker)

List of use descriptors

Process categories [PROC]:

PROC26: Handling of solid inorganic substances at ambient temperature

Operational conditions

Product characteristics: solid, powder

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 3 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,3

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 24

Professional use of substance or mixtures containing the substance (physical state: solid, powder - low dustiness) (environment)

List of use descriptors

Environmental release categories [ERC]:

ERC1: Manufacture of substances

ERC2: Formulation of preparations

ERC3: Formulation in materials

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

ERC5: Industrial use resulting in inclusion into or onto a matrix

ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)

ERC6b: Industrial use of reactive processing aids

ERC6c: Industrial use of monomers for manufacture of thermoplastics

ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers

ERC7: Industrial use of substances in closed systems

ERC8a: Wide dispersive indoor use of processing aids in open systems

ERC8b: Wide dispersive indoor use of reactive substances in open systems

ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix

ERC8d: Wide dispersive outdoor use of processing aids in open systems

ERC8e: Wide dispersive outdoor use of reactive substances in open systems

ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix

ERC9a: Wide dispersive indoor use of substances in closed systems

ERC9b: Wide dispersive outdoor use of substances in closed systems

ERC10a: Wide dispersive outdoor use of long-life articles and materials with low release

Operational conditions

Product characteristics: solid, powder

Duration and frequency of use:

300 d/y

Environment factors not influenced by risk management:

Flow rate of receiving surface water: 18000 m³/d

Local freshwater dilution factor: 10

Local marine water dilution factor 100

Other relevant operational conditions:

Amounts used: max. 8600 t/y

Other information:

During the industrial use of the substance, it is assumed that a substantial fraction of the substance reacts/oxidizes. A minimum fraction of 94% (receiving water: freshwater) and 88% (receiving water: marine) is taken forward in the ES when on-site OR municipal treatment is available. When treated in on-site AND consequently in municipal treatment, there is no need to take oxidation during the industrial use into account.

A removal of 99% is considered relevant for the treatment of sulfite/dithionite compounds.

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Exposure prediction

Exposure estimation and reference to its source:

worst case assumption: ERC4

Predicted environmental concentration, local (mg sulfite/L):

PEC water (freshwater): 2,52

PEC water (marine water): 0,57

PEC sewage treatment plant (freshwater): 25,2

PEC sewage treatment plant (marine water): 57,06

Risk characterisation ratio (RCR):

water (freshwater): 0,9

water (marine water): 0,2

sewage treatment plant (freshwater): 0,4

sewage treatment plant (marine water): 0,9

Risk management measures

Operational conditions and risk management measures:

Regular inspection and maintenance of equipment and machines.

Regular cleaning of equipment. Regular cleaning of work area.

Knock down dust with water spray jet.

Take care that activity is executed only by specialists or authorised personnel.

Provide specific activity training to operators to minimise exposures.

Disposal considerations

Conditions and measures related to municipal sewage treatment plant:

Municipal STP and/or onsite STP: efficiency of 99%

Conditions and measures related to external treatment of waste for disposal:

Dispose of as hazardous waste in compliance with local and national regulations.

Conditions and measures related to external recovery of waste:

none

Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Exposure estimation, workers: MEASE

Exposure estimation, Ecological information: EUSES

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Sodium Metabisulphite

Exposure scenario 7: Professional use of substance or mixtures containing the substance (physical state: solid, powder - medium dustiness)

List of use descriptors

Sector of uses [SU]:	SU22: Professional uses
Product Categories:	PC1: Adhesives, sealants
	PC2: Adsorbents
	PC7: Base metals and alloys
	PC9a: Coatings and paints, thinners, paint removers
	PC9b: Fillers, putties, plasters, modelling clay
	PC12: Fertilizers
	PC14: Metal surface treatment products, including galvanic and electroplating products
	PC15: Non-metal-surface treatment products
	PC17: Hydraulic fluids
	PC18: Ink and toners
	PC20: Products such as ph-regulators, flocculants, precipitants, neutralization agents
	PC23: Leather tanning, dye, finishing, impregnation and care products
	PC24: Lubricants, greases, release products
	PC25: Metal working fluids
	PC26: Paper and board dye, finishing and impregnation products: including bleaches and other processing aids
	PC30: Photo-chemicals
	PC31: Polishes and wax blends
	PC34: Textile dyes, finishing and impregnating products; including bleaches and other processing aids
	PC35: Washing and cleaning products (including solvent based products)
	PC37: Water treatment chemicals
	PC38: Welding and soldering products (with flux coatings or flux cores), flux products
	PC40: Extraction agents

Application

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Contributing exposure scenario 1

Use in closed, continuous process with occasional controlled exposure (worker)

List of use descriptors

Process categories [PROC]:

PROC2: Use in closed, continuous process with occasional controlled exposure

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 1 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,1

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

closed system

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 2

Use in closed batch process (synthesis or formulation) (worker)

List of use descriptors

Process categories [PROC]:

PROC3: Use in closed batch process (synthesis or formulation)

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 1 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,1

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

closed system

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 3

Use in batch and other process (synthesis) where opportunity for exposure arises (worker)

List of use descriptors

Process categories [PROC]:

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

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Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 4

Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) (worker)

List of use descriptors

Process categories [PROC]:

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

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Sodium Metabisulphite

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 5

Calendering operations (worker)

List of use descriptors

Process categories [PROC]:

PROC6: Calendering operations

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 6

Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities (worker)

List of use descriptors

Process categories [PROC]:

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 7

Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities (worker)

List of use descriptors

Process categories [PROC]:

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

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Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 8

Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (worker)

List of use descriptors

Process categories [PROC]:

PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 9

Roller application or brushing (worker)

List of use descriptors

Process categories [PROC]:

PROC10: Roller application or brushing

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 10

Non industrial spraying (worker)

List of use descriptors

Process categories [PROC]:

PROC11: Non industrial spraying

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: Particulates filter P1 according to EN 143. APF=4

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 11

Treatment of articles by dipping and pouring (worker)

List of use descriptors

Process categories [PROC]:

PROC13: Treatment of articles by dipping and pouring

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

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Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 12

Production of preparations or articles by tableting, compression, extrusion, pelletisation (worker)

List of use descriptors

Process categories [PROC]:

PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

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Sodium Metabisulphite

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 13

Use as laboratory reagent (worker)

List of use descriptors

Process categories [PROC]:

PROC15: Use as laboratory reagent

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,05

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Sodium Metabisulphite

Contributing exposure scenario 14

Using material as fuel sources, limited exposure to unburned product to be expected (worker)

List of use descriptors

Process categories [PROC]:

PROC16: Using material as fuel sources, limited exposure to unburned product to be expected

Operational conditions

Product characteristics: solid, powder
exposure assessment: medium

Concentration of the substance in a mixture:
not restricted

Duration and frequency of use:
480 minutes

Human factors not influenced by risk management:
Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:
inhalative: 5 mg/m³

Risk characterisation ratio (RCR):
inhalative: 0,5

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: Particulates filter P1 according to EN 143. APF=4

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 15

Lubrication at high energy conditions and in partly open process (worker)

List of use descriptors

Process categories [PROC]:

PROC17: Lubrication at high energy conditions and in partly open process

Operational conditions

Product characteristics: solid, powder
exposure assessment: medium

Concentration of the substance in a mixture:
not restricted

Duration and frequency of use:
480 minutes

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Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: Particulates filter P2 according to EN 143. APF=10

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 16

Greasing at high energy conditions (worker)

List of use descriptors

Process categories [PROC]:

PROC18: Greasing at high energy conditions

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: Particulates filter P2 according to EN 143. APF=10

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 17

Hand-mixing with intimate contact and only PPE available (worker)

List of use descriptors

Process categories [PROC]:

PROC19: Hand-mixing with intimate contact and only PPE available

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not applicable

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 18

Potentially closed processing operations with minerals/metals at elevated temperature; industrial setting (worker)

List of use descriptors

Process categories [PROC]:

PROC22: Potentially closed processing operations with minerals/metals at elevated temperature; industrial setting

Operational conditions

Product characteristics: solid, powder, molten
exposure assessment: high

Concentration of the substance in a mixture:
not restricted

Duration and frequency of use:
480 minutes

Human factors not influenced by risk management:
Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:
inhalative: 2,5 mg/m³

Risk characterisation ratio (RCR):
inhalative: 0,25

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.
Assumes a good basic standard of occupational hygiene is implemented.
Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: Particulates filter P1 according to EN 143. APF=4
Hand protection: Recommended: protective gloves according to EN 374
Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.
Body protection: Wear suitable protective clothing.

Contributing exposure scenario 19

Open processing and transfer operations with minerals/metals at elevated temperature (worker)

List of use descriptors

Process categories [PROC]:

PROC23: Open processing and transfer operations with minerals/metals at elevated temperature

Operational conditions

Product characteristics: solid, powder, molten
exposure assessment: high

Concentration of the substance in a mixture:
not restricted

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Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 20

High (mechanical) energy work-up of substances bound in materials and/or articles (worker)

List of use descriptors

Process categories [PROC]:

PROC24: High (mechanical) energy work-up of substances bound in materials and/or articles

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,55

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Sodium Metabisulphite

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 21

Other hot work operations with metals (worker)

List of use descriptors

Process categories [PROC]:

PROC25: Other hot work operations with metals

Operational conditions

Product characteristics: solid, powder, molten

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 4 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,4

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 22

Handling of solid inorganic substances at ambient temperature (worker)

List of use descriptors

Process categories [PROC]:

PROC26: Handling of solid inorganic substances at ambient temperature

Operational conditions

Product characteristics: solid, powder

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 8 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,8

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 23

Professional use of substance or mixtures containing the substance (physical state: solid, powder - medium dustiness) (environment)

List of use descriptors

Environmental release categories [ERC]:

ERC1: Manufacture of substances

ERC2: Formulation of preparations

ERC3: Formulation in materials

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

ERC5: Industrial use resulting in inclusion into or onto a matrix

ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)

ERC6b: Industrial use of reactive processing aids

ERC6c: Industrial use of monomers for manufacture of thermoplastics

ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers

ERC7: Industrial use of substances in closed systems

ERC8a: Wide dispersive indoor use of processing aids in open systems

ERC8b: Wide dispersive indoor use of reactive substances in open systems

ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix

ERC8d: Wide dispersive outdoor use of processing aids in open systems

ERC8e: Wide dispersive outdoor use of reactive substances in open systems

ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix

ERC9a: Wide dispersive indoor use of substances in closed systems

ERC9b: Wide dispersive outdoor use of substances in closed systems

ERC10a: Wide dispersive outdoor use of long-life articles and materials with low release

Operational conditions

Product characteristics: solid, powder

Duration and frequency of use:

300 d/y

Environment factors not influenced by risk management:

Flow rate of receiving surface water: 18000 m³/d

Local freshwater dilution factor: 10

Local marine water dilution factor 100

Other relevant operational conditions:

Amounts used: max. 8600 t/y

Other information:

During the industrial use of the substance, it is assumed that a substantial fraction of the substance reacts/oxidizes. A minimum fraction of 94% (receiving water: freshwater) and 88% (receiving water: marine) is taken forward in the ES when on-site OR municipal treatment is available. When treated in on-site AND consequently in municipal treatment, there is no need to take oxidation during the industrial use into account.

A removal of 99% is considered relevant for the treatment of sulfite/dithionite compounds.

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Sodium Metabisulphite

Exposure prediction

Exposure estimation and reference to its source:

worst case assumption: ERC4

Predicted environmental concentration, local (mg sulfite/L):

PEC water (freshwater): 2,52

PEC water (marine water): 0,57

PEC sewage treatment plant (freshwater): 25,2

PEC sewage treatment plant (marine water): 57,06

Risk characterisation ratio (RCR):

water (freshwater): 0,9

water (marine water): 0,2

sewage treatment plant (freshwater): 0,4

sewage treatment plant (marine water): 0,9

Risk management measures

Operational conditions and risk management measures:

Regular inspection and maintenance of equipment and machines.

Regular cleaning of equipment. Regular cleaning of work area.

Knock down dust with water spray jet.

Take care that activity is executed only by specialists or authorised personnel.

Provide specific activity training to operators to minimise exposures.

Disposal considerations

Conditions and measures related to municipal sewage treatment plant:

Municipal STP and/or onsite STP: efficiency of 99%

Conditions and measures related to external treatment of waste for disposal:

Dispose of as hazardous waste in compliance with local and national regulations.

Conditions and measures related to external recovery of waste:

none

Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Exposure estimation, workers: MEASE

Exposure estimation, Ecological information: EUSES

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Exposure scenario 8: Professional use of substance or mixtures containing the substance (physical state: solid, powder - high dustiness)

List of use descriptors

Sector of uses [SU]:	SU22: Professional uses
Product Categories:	PC1: Adhesives, sealants
	PC2: Adsorbents
	PC7: Base metals and alloys
	PC9a: Coatings and paints, thinners, paint removers
	PC9b: Fillers, putties, plasters, modelling clay
	PC12: Fertilizers
	PC14: Metal surface treatment products, including galvanic and electroplating products
	PC15: Non-metal-surface treatment products
	PC17: Hydraulic fluids
	PC18: Ink and toners
	PC20: Products such as ph-regulators, flocculants, precipitants, neutralization agents
	PC23: Leather tanning, dye, finishing, impregnation and care products
	PC24: Lubricants, greases, release products
	PC25: Metal working fluids
	PC26: Paper and board dye, finishing and impregnation products: including bleaches and other processing aids
	PC30: Photo-chemicals
	PC31: Polishes and wax blends
	PC34: Textile dyes, finishing and impregnating products; including bleaches and other processing aids
	PC35: Washing and cleaning products (including solvent based products)
	PC37: Water treatment chemicals
	PC38: Welding and soldering products (with flux coatings or flux cores), flux products
	PC40: Extraction agents

Application

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Contributing exposure scenario 1

Use in closed, continuous process with occasional controlled exposure (worker)

List of use descriptors

Process categories [PROC]:

PROC2: Use in closed, continuous process with occasional controlled exposure

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

closed system

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 2

Use in closed batch process (synthesis or formulation) (worker)

List of use descriptors

Process categories [PROC]:

PROC3: Use in closed batch process (synthesis or formulation)

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

closed system

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 3

Use in batch and other process (synthesis) where opportunity for exposure arises (worker)

List of use descriptors

Process categories [PROC]:

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

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Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: Particulates filter P2 according to EN 143. APF=10

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 4

Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) (worker)

List of use descriptors

Process categories [PROC]:

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

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Sodium Metabisulphite

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: Particulates filter P2 according to EN 143. APF=10

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 5

Calendering operations (worker)

List of use descriptors

Process categories [PROC]:

PROC6: Calendering operations

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: Particulates filter P2 according to EN 143. APF=10

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Sodium Metabisulphite

Contributing exposure scenario 6

Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities (worker)

List of use descriptors

Process categories [PROC]:

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: Particulates filter P2 according to EN 143. APF=10

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 7

Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities (worker)

List of use descriptors

Process categories [PROC]:

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

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Sodium Metabisulphite

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: Particulates filter P2 according to EN 143. APF=10

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 8

Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (worker)

List of use descriptors

Process categories [PROC]:

PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: Particulates filter P1 according to EN 143. APF=4

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 9

Roller application or brushing (worker)

List of use descriptors

Process categories [PROC]:

PROC10: Roller application or brushing

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 2,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,25

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: Particulates filter P1 according to EN 143. APF=4

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 10

Non industrial spraying (worker)

List of use descriptors

Process categories [PROC]:

PROC11: Non industrial spraying

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

<60 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 4 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,4

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: Particulates filter P2 according to EN 143. APF=10

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 11

Treatment of articles by dipping and pouring (worker)

List of use descriptors

Process categories [PROC]:

PROC13: Treatment of articles by dipping and pouring

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

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Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 12

Production of preparations or articles by tableting, compression, extrusion, pelletisation (worker)

List of use descriptors

Process categories [PROC]:

PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

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Sodium Metabisulphite

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: Particulates filter P2 according to EN 143. APF=10

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 13

Use as laboratory reagent (worker)

List of use descriptors

Process categories [PROC]:

PROC15: Use as laboratory reagent

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 14

Using material as fuel sources, limited exposure to unburned product to be expected (worker)

List of use descriptors

Process categories [PROC]:

PROC16: Using material as fuel sources, limited exposure to unburned product to be expected

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: Particulates filter P2 according to EN 143. APF=10

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 15

Lubrication at high energy conditions and in partly open process (worker)

List of use descriptors

Process categories [PROC]:

PROC17: Lubrication at high energy conditions and in partly open process

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

<60 minutes

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Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 4 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,4

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: Particulates filter P2 according to EN 143. APF=10

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 16

Greasing at high energy conditions (worker)

List of use descriptors

Process categories [PROC]:

PROC18: Greasing at high energy conditions

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

<60 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 4 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,4

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: Particulates filter P2 according to EN 143. APF=10

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 17

Hand-mixing with intimate contact and only PPE available (worker)

List of use descriptors

Process categories [PROC]:

PROC19: Hand-mixing with intimate contact and only PPE available

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not applicable

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: Particulates filter P2 according to EN 143. APF=10

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 18

Potentially closed processing operations with minerals/metals at elevated temperature; industrial setting (worker)

List of use descriptors

Process categories [PROC]:

PROC22: Potentially closed processing operations with minerals/metals at elevated temperature; industrial setting

Operational conditions

Product characteristics: solid, powder, molten
exposure assessment: high

Concentration of the substance in a mixture:
not restricted

Duration and frequency of use:
480 minutes

Human factors not influenced by risk management:
Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 2,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,25

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: Particulates filter P1 according to EN 143. APF=4

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 19

Open processing and transfer operations with minerals/metals at elevated temperature (worker)

List of use descriptors

Process categories [PROC]:

PROC23: Open processing and transfer operations with minerals/metals at elevated temperature

Operational conditions

Product characteristics: solid, powder, molten
exposure assessment: high

Concentration of the substance in a mixture:
not restricted

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Sodium Metabisulphite

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 20

High (mechanical) energy work-up of substances bound in materials and/or articles (worker)

List of use descriptors

Process categories [PROC]:

PROC24: High (mechanical) energy work-up of substances bound in materials and/or articles

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,55

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Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 21

Other hot work operations with metals (worker)

List of use descriptors

Process categories [PROC]:

PROC25: Other hot work operations with metals

Operational conditions

Product characteristics: solid, powder, molten

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 4 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,4

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 22

Handling of solid inorganic substances at ambient temperature (worker)

List of use descriptors

Process categories [PROC]:

PROC26: Handling of solid inorganic substances at ambient temperature

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: Particulates filter P1 according to EN 143. APF=4

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 23

Professional use of substance or mixtures containing the substance (physical state: solid, powder - high dustiness) (environment)

List of use descriptors

Environmental release categories [ERC]:

- ERC1: Manufacture of substances
- ERC2: Formulation of preparations
- ERC3: Formulation in materials
- ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
- ERC5: Industrial use resulting in inclusion into or onto a matrix
- ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)
- ERC6b: Industrial use of reactive processing aids
- ERC6c: Industrial use of monomers for manufacture of thermoplastics
- ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers
- ERC7: Industrial use of substances in closed systems
- ERC8a: Wide dispersive indoor use of processing aids in open systems
- ERC8b: Wide dispersive indoor use of reactive substances in open systems
- ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix
- ERC8d: Wide dispersive outdoor use of processing aids in open systems
- ERC8e: Wide dispersive outdoor use of reactive substances in open systems
- ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix
- ERC9a: Wide dispersive indoor use of substances in closed systems
- ERC9b: Wide dispersive outdoor use of substances in closed systems
- ERC10a: Wide dispersive outdoor use of long-life articles and materials with low release

Operational conditions

Product characteristics: solid, powder

Duration and frequency of use:

300 d/y

Environment factors not influenced by risk management:

Flow rate of receiving surface water: 18000 m³/d

Local freshwater dilution factor: 10

Local marine water dilution factor 100

Other relevant operational conditions:

Amounts used: max. 8600 t/y

Other information:

During the industrial use of the substance, it is assumed that a substantial fraction of the substance reacts/oxidizes. A minimum fraction of 94% (receiving water: freshwater) and 88% (receiving water: marine) is taken forward in the ES when on-site OR municipal treatment is available. When treated in on-site AND consequently in municipal treatment, there is no need to take oxidation during the industrial use into account. A removal of 99% is considered relevant for the treatment of sulfite/dithionite compounds.

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Sodium Metabisulphite

Exposure prediction

Exposure estimation and reference to its source:

worst case assumption: ERC4

Predicted environmental concentration, local (mg sulfite/L):

PEC water (freshwater): 2,52

PEC water (marine water): 0,57

PEC sewage treatment plant (freshwater): 25,2

PEC sewage treatment plant (marine water): 57,06

Risk characterisation ratio (RCR):

water (freshwater): 0,9

water (marine water): 0,2

sewage treatment plant (freshwater): 0,4

sewage treatment plant (marine water): 0,9

Risk management measures

Operational conditions and risk management measures:

Regular inspection and maintenance of equipment and machines.

Regular cleaning of equipment. Regular cleaning of work area.

Knock down dust with water spray jet.

Take care that activity is executed only by specialists or authorised personnel.

Provide specific activity training to operators to minimise exposures.

Disposal considerations

Conditions and measures related to municipal sewage treatment plant:

Municipal STP and/or onsite STP: efficiency of 99%

Conditions and measures related to external treatment of waste for disposal:

Dispose of as hazardous waste in compliance with local and national regulations.

Conditions and measures related to external recovery of waste:

none

Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Exposure estimation, workers: MEASE

Exposure estimation, Ecological information: EUSES

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according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010

Sodium Metabisulphite

Exposure scenario 9: Consumer use: photo-chemicals

List of use descriptors

Sector of uses [SU]: SU21: Consumer uses
Product Categories: PC30: Photo-chemicals

Application

Contributing Scenarios:	1	Photographic and reprographic articles: Decanting, mixing - Concentrate, liquid (Consumer)	Page 180
	2	Photographic and reprographic articles: Decanting, mixing - Powder (Consumer)	Page 180
	3	Photographic and reprographic articles: Process within closed systems. (Consumer)	Page 181
	4	Photographic and reprographic articles: tray processing (Consumer)	Page 182
	5	Consumer use: photo-chemicals (environment)	Page 182

Contributing exposure scenario 1

Photographic and reprographic articles: Decanting, mixing - Concentrate, liquid (Consumer)

Operational conditions

Product characteristics: liquid

Concentration of the substance in a mixture:

10-20%

Package size: 0,2 mL - 5 L

Duration and frequency of use:

Oral exposure is not expected to occur.

Dermal exposure is considered to be not relevant.

use duration, per task: <15 minutes

uses per day: 1

Human factors not influenced by risk management:

adult (60 kg bw):

exposed skin areas: max. both hands (420-840 cm²)

Other relevant operational conditions:

indoor

room volume: not relevant

ventilation: not relevant

Exposure prediction

Exposure estimation and reference to its source:

Eyes: liquid splashes

inhalation: not to be expected

Risk management measures

Conditions and measures related to information and behavioural advice to consumers:

Avoid contact with eyes.

Keep container tightly closed. Keep out of the reach of children.

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Wash hands and face thoroughly after handling.

Conditions and measures related to personal protection, hygiene and health evaluation:

Tightly sealed goggles according to EN 166.

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Sodium Metabisulphite

Contributing exposure scenario 2

Photographic and reprographic articles: Decanting, mixing - Powder (Consumer)

Operational conditions

Product characteristics: solid, powder

Concentration of the substance in a mixture:

10-20%

Duration and frequency of use:

Oral exposure is not expected to occur.

Dermal exposure is considered to be not relevant.

use duration, per task: <15 minutes

uses per day: 1

Human factors not influenced by risk management:

adult (60 kg bw):

exposed skin areas: max. both hands and main part of the arms, face (840 cm²)

Other relevant operational conditions:

indoor

room volume: 10 m³

ventilation: none

Exposure prediction

Exposure estimation and reference to its source:

Eyes: dust

inhalation: 2,4-24 µg/m³

amount per use: 12-120 µg/m³

Risk management measures

Conditions and measures related to information and behavioural advice to consumers:

Avoid contact with eyes.

Keep container tightly closed. Keep out of the reach of children.

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Wash hands and face thoroughly after handling.

Conditions and measures related to personal protection, hygiene and health evaluation:

Tightly sealed goggles according to EN 166.

Contributing exposure scenario 3

Photographic and reprographic articles: Process within closed systems. (Consumer)

Operational conditions

Product characteristics: liquid

Concentration of the substance in a mixture:

developer, fixing agent - ready-to-use solution: <=10%

Duration and frequency of use:

Oral exposure is not expected to occur.

Dermal exposure is considered to be not relevant.

use duration, per task: <15 minutes

uses per day: 2 - 4

Human factors not influenced by risk management:

adult (60 kg bw): exposed skin areas: both hands (840 cm²)

Other relevant operational conditions:

indoor

room volume: not relevant

ventilation: not relevant

Exposure prediction

Exposure estimation and reference to its source:

s: liquid splashes

lution: not to be expected

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Sodium Metabisulphite

Risk management measures

Conditions and measures related to information and behavioural advice to consumers:

Avoid contact with eyes.
Keep container tightly closed. Keep out of the reach of children.
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Wash hands and face thoroughly after handling.

Conditions and measures related to personal protection, hygiene and health evaluation:

Tightly sealed goggles according to EN 166.

Contributing exposure scenario 4

Photographic and reprographic articles: tray processing (Consumer)

Operational conditions

Product characteristics: liquid

Concentration of the substance in a mixture:

developer, fixing agent - ready-to-use solution: <=10%

Duration and frequency of use:

Oral exposure is not expected to occur.
Dermal exposure is considered to be not relevant.
use duration, per task: 10 minutes
uses per day: 2 - 4

Human factors not influenced by risk management:

adult (60 kg bw):
exposed skin areas: max. both hands (35,7-840 cm²)

Other relevant operational conditions:

indoor
room volume: not relevant
ventilation: not relevant

Exposure prediction

Exposure estimation and reference to its source:

Eyes: liquid splashes
inhalation: not to be expected

Risk management measures

Conditions and measures related to information and behavioural advice to consumers:

Avoid contact with eyes.
Keep container tightly closed. Keep out of the reach of children.
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Wash hands and face thoroughly after handling.

Conditions and measures related to personal protection, hygiene and health evaluation:

Tightly sealed goggles according to EN 166.

Contributing exposure scenario 5

Consumer use: photo-chemicals (environment)

List of use descriptors

Environmental release categories [ERC]:

ERC8b: Wide dispersive indoor use of reactive substances in open systems

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Sodium Metabisulphite

Operational conditions

Concentration of the substance in a mixture:

liquid, concentrated: 10-20%
solid, powder: 10-20% (emission factor: 12-120µg/m³)
liquid (developer, fixing agent - ready-to-use solution): ≤10%

Package size:

liquid, concentrated: 0,2 mL - 5 L
solid, powder: 0,25-1 kg

Duration and frequency of use:

365 d/y

Environment factors not influenced by risk management:

Flow rate of receiving surface water: 18000 m³/d
Local freshwater dilution factor: 10
Local marine water dilution factor: 100

Other relevant operational conditions:

Amounts used: 7,12 t/y
Total, EU: 35514 t/y
Total, regional: 3551,4 t/y
Total, standard town: 1,78 t/y

Other information:

Typical release to water after RMM: 2%

Exposure prediction

Exposure estimation and reference to its source:

Predicted environmental concentration, local (mg sulfite/L):
PEC water (freshwater): 16,4
PEC water (marine water): 1,64
C sewage treatment plant (freshwater): 0,16
PEC sewage treatment plant (marine water): 0,16

Risk characterisation ratio (RCR):

water (freshwater): 0,01
water (marine water): <0,01
sewage treatment plant (freshwater): <0,01
sewage treatment plant (marine water): <0,01

Risk management measures

Conditions and measures related to information and behavioural advice to consumers:

Avoid contact with eyes.
Keep container tightly closed. Keep out of the reach of children.
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Wash hands and face thoroughly after handling.

Conditions and measures related to personal protection, hygiene and health evaluation:

Tightly sealed goggles according to EN 166.

Disposal considerations

Conditions and measures related to municipal sewage treatment plant:

sewage treatment plant: none

Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Exposure estimation, Ecological information: EUSES

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according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010

Sodium Metabisulphite

Exposure scenario 10: Industrial use: manufacture of furniture

List of use descriptors

Sector of uses [SU]: SU3: Industrial uses
SU6a: Manufacture of wood and wood products
SU18: Manufacture of furniture

Application

Contributing Scenarios:	1	Use in batch and other process (synthesis) where opportunity for exposure arises (worker)	Page 184
	2	Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) (worker)	Page 185
	3	Calendering operations (worker)	Page 186
	4	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities (worker)	Page 187
	5	Low energy manipulation of substances bound in materials and/or articles (worker)	Page 187
	6	High (mechanical) energy work-up of substances bound in materials and/or articles (worker)	Page 188
	7	Industrial use: manufacture of wood and wood products (environment)	Page 189

Contributing exposure scenario 1

Use in batch and other process (synthesis) where opportunity for exposure arises (worker)

List of use descriptors

Process categories [PROC]: PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

Operational conditions

Product characteristics: solid, powder
exposure assessment: high

Concentration of the substance in a mixture:
not restricted

Duration and frequency of use:
480 minutes

Human factors not influenced by risk management:
Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:
inhalative: 5,5 mg/m³

Risk characterisation ratio (RCR):
inhalative: 0,55

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Sodium Metabisulphite

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: 78

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 2

Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) (worker)

List of use descriptors

Process categories [PROC]:

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,55

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Sodium Metabisulphite

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: 78

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 3

Calendering operations (worker)

List of use descriptors

Process categories [PROC]:

PROC6: Calendering operations

Operational conditions

Product characteristics: solid

exposure assessment: medium

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,5

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

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Sodium Metabisulphite

Contributing exposure scenario 4

Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities (worker)

List of use descriptors

Process categories [PROC]:

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

Operational conditions

Product characteristics: solid, powder

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,55

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: 78

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 5

Low energy manipulation of substances bound in materials and/or articles (worker)

List of use descriptors

Process categories [PROC]:

PROC21: Low energy manipulation of substances bound in materials and/or articles

Operational conditions

Product characteristics: solid

exposure assessment: low

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

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Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 0,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,05

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 6

High (mechanical) energy work-up of substances bound in materials and/or articles (worker)

List of use descriptors

Process categories [PROC]:

PROC24: High (mechanical) energy work-up of substances bound in materials and/or articles

Operational conditions

Product characteristics: solid

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,55

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 7

Industrial use: manufacture of wood and wood products (environment)

List of use descriptors

Environmental release categories [ERC]:

ERC1: Manufacture of substances

ERC2: Formulation of preparations

ERC3: Formulation in materials

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

ERC5: Industrial use resulting in inclusion into or onto a matrix

ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)

ERC6b: Industrial use of reactive processing aids

ERC6c: Industrial use of monomers for manufacture of thermoplastics

ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers

ERC7: Industrial use of substances in closed systems

ERC8a: Wide dispersive indoor use of processing aids in open systems

ERC8b: Wide dispersive indoor use of reactive substances in open systems

ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix

ERC8d: Wide dispersive outdoor use of processing aids in open systems

ERC8e: Wide dispersive outdoor use of reactive substances in open systems

ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix

ERC9a: Wide dispersive indoor use of substances in closed systems

ERC9b: Wide dispersive outdoor use of substances in closed systems

ERC10a: Wide dispersive outdoor use of long-life articles and materials with low release

Operational conditions

Product characteristics: solid, powder

Duration and frequency of use:

300 d/y

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Environment factors not influenced by risk management:

Flow rate of receiving surface water: 18000 m³/d

Local freshwater dilution factor: 10

Local marine water dilution factor 100

Other relevant operational conditions:

Amounts used: max. 8600 t/y

Other information:

During the industrial use of the substance, it is assumed that a substantial fraction of the substance reacts/oxidizes. A minimum fraction of 94% (receiving water: freshwater) and 88% (receiving water: marine) is taken forward in the ES when on-site OR municipal treatment is available. When treated in on-site AND consequently in municipal treatment, there is no need to take oxidation during the industrial use into account.

A removal of 99% is considered relevant for the treatment of sulfite/dithionite compounds.

Exposure prediction

Exposure estimation and reference to its source:

worst case assumption: ERC4

Predicted environmental concentration, local (mg sulfite/L):

PEC water (freshwater): 2,52

PEC water (marine water): 0,57

PEC sewage treatment plant (freshwater): 25,2

PEC sewage treatment plant (marine water): 57,06

Risk characterisation ratio (RCR):

water (freshwater): 0,9

water (marine water): 0,2

sewage treatment plant (freshwater): 0,4

sewage treatment plant (marine water): 0,9

Risk management measures

Operational conditions and risk management measures:

Regular inspection and maintenance of equipment and machines.

Regular cleaning of equipment. Regular cleaning of work area.

Knock down dust with water spray jet.

Take care that activity is executed only by specialists or authorised personnel.

Provide specific activity training to operators to minimise exposures.

Disposal considerations

Conditions and measures related to municipal sewage treatment plant:

Municipal STP and/or onsite STP: efficiency of 99%

Conditions and measures related to external treatment of waste for disposal:

Dispose of as hazardous waste in compliance with local and national regulations.

Conditions and measures related to external recovery of waste:

none

Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Exposure estimation, workers: MEASE

Exposure estimation, Ecological information: EUSES

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Exposure scenario 11: Professional use: manufacture of furniture

List of use descriptors

Sector of uses [SU]: SU22: Professional uses
SU6a: Manufacture of wood and wood products
SU18: Manufacture of furniture

Application

Contributing Scenarios:	1	Low energy manipulation of substances bound in materials and/or articles (worker)	Page 191
	2	High (mechanical) energy work-up of substances bound in materials and/or articles (worker)	Page 192
	3	Industrial use: manufacture of wood and wood products (environment)	Page 192

Contributing exposure scenario 1

Low energy manipulation of substances bound in materials and/or articles (worker)

List of use descriptors

Process categories [PROC]: PROC21: Low energy manipulation of substances bound in materials and/or articles

Operational conditions

Product characteristics: solid
exposure assessment: low

Concentration of the substance in a mixture:
not restricted

Duration and frequency of use:
480 minutes

Human factors not influenced by risk management:
Inhalable fraction: 10 m³ per shift (8 hours)

Other information: at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:
inhalative: 0,5 mg/m³

Risk characterisation ratio (RCR):
inhalative: 0,05

Risk management measures

Technical conditions and measures at process level (source) to prevent release:
Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:
Avoid skin contact, oral ingestion, as well as inhalation.
Assumes a good basic standard of occupational hygiene is implemented.
Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:
Respiratory protection: not required
Hand protection: Recommended: protective gloves according to EN 374
Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.
Body protection: Wear suitable protective clothing.

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Contributing exposure scenario 2

High (mechanical) energy work-up of substances bound in materials and/or articles (worker)

List of use descriptors

Process categories [PROC]:

PROC24: High (mechanical) energy work-up of substances bound in materials and/or articles

Operational conditions

Product characteristics: solid

exposure assessment: high

Concentration of the substance in a mixture:

not restricted

Duration and frequency of use:

480 minutes

Human factors not influenced by risk management:

Inhalable fraction: 10 m³ per shift (8 hours)

Other information:

at pH<7: formation of sulphur dioxide. Avoid exceeding WEL threshold levels.

Exposure prediction

Exposure estimation and reference to its source:

inhalative: 5,5 mg/m³

Risk characterisation ratio (RCR):

inhalative: 0,55

Risk management measures

Technical conditions and measures at process level (source) to prevent release:

Local exhaust ventilation - efficiency of at least [%]: not required

Operational conditions and risk management measures:

Avoid skin contact, oral ingestion, as well as inhalation.

Assumes a good basic standard of occupational hygiene is implemented.

Regular cleaning of equipment. Regular cleaning of work area. When using do not eat, drink or smoke. Wear suitable protective clothing. Wash hands and face before breaks and after work and take a shower if necessary. Contaminated work clothing should not be allowed out of the workplace. Do not use compressed air for cleaning purposes.

Conditions and measures related to personal protection, hygiene and health evaluation:

Respiratory protection: not required

Hand protection: Recommended: protective gloves according to EN 374

Eye protection: Tightly sealed goggles according to EN 166. Wear suitable face shield.

Body protection: Wear suitable protective clothing.

Contributing exposure scenario 3

Industrial use: manufacture of wood and wood products (environment)

List of use descriptors

Environmental release categories [ERC]:

ERC11a: Wide dispersive indoor use of long-life articles and materials with low release

ERC11b: Wide dispersive indoor use of long-life articles and materials with high or intended release (including abrasive processing)

Operational conditions

Product characteristics: solid, powder

Duration and frequency of use:

300 d/y

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No 453/2010

Sodium Metabisulphite

Environment factors not influenced by risk management:

Flow rate of receiving surface water: 18000 m³/d

Local freshwater dilution factor: 10

Local marine water dilution factor 100

Other relevant operational conditions:

Amounts used: max. 8600 t/y

Other information:

During the industrial use of the substance, it is assumed that a substantial fraction of the substance reacts/oxidizes. A minimum fraction of 94% (receiving water: freshwater) and 88% (receiving water: marine) is taken forward in the ES when on-site OR municipal treatment is available. When treated in on-site AND consequently in municipal treatment, there is no need to take oxidation during the industrial use into account.

A removal of 99% is considered relevant for the treatment of sulfite/dithionite compounds.

Exposure prediction

Exposure estimation and reference to its source:

worst case assumption: ERC4

Predicted environmental concentration, local (mg sulfite/L):

PEC water (freshwater): 2,52

PEC water (marine water): 0,57

PEC sewage treatment plant (freshwater): 25,2

PEC sewage treatment plant (marine water): 57,06

Risk characterisation ratio (RCR):

water (freshwater): 0,9

water (marine water): 0,2

sewage treatment plant (freshwater): 0,4

sewage treatment plant (marine water): 0,9

Risk management measures

Operational conditions and risk management measures:

Regular inspection and maintenance of equipment and machines.

Regular cleaning of equipment. Regular cleaning of work area.

Knock down dust with water spray jet.

Take care that activity is executed only by specialists or authorised personnel.

Provide specific activity training to operators to minimise exposures.

Disposal considerations

Conditions and measures related to municipal sewage treatment plant:

Municipal STP and/or onsite STP: efficiency of 99%

Conditions and measures related to external treatment of waste for disposal:

Dispose of as hazardous waste in compliance with local and national regulations.

Conditions and measures related to external recovery of waste:

none

Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Exposure estimation, workers: MEASE

Exposure estimation, Ecological information: EUSES
