

Safety Data Sheet (SDS) Report

SDS Number: P20221024401

Applicant: Laizhou Zhongda Chemical Co., Ltd.
Yongan Industry Zone, Laizhou, Yantai, Shandong, P.R. China

Issue Date: 2022-10-31

EC No: 226-218-8
CAS No: 5329-14-6
Tonnage band: >1000tpa
Registration No: 01-2119488633-28-0003

Sample Description:
The sample information was submitted and identified on client's behalf to be:

Product Name : Sulfamic acid
Physical State : Crystal
Data Received : Oct 24, 2022
Data Reviewed : Oct 31, 2022

Service Requested:

Based on the information provided by the applicant, the Safety Data Sheet (SDS) was generated according to requirements of Regulation (EC) No 1907/2006 (REACH) with its amendment Commission Regulation (EU) 2020/878, Regulation (EC) No 1272/2008, for details please refer to attached pages.

Authorized By:
On Behalf Of Regulatory Affairs in Intertek Testing Services Ltd., Shanghai



Anna Wang
Technical Manager

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Sulfamic acid

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878
Issue date: 2022.10.31 Revision date: 2022.10.31 Version No: 1.0 SDS Number: P20221024401

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

1.1. Product identifier

Product form : Substance
Trade name : Sulfamic acid
Chemical name : Sulphamidic acid
IUPAC Name : Sulfamic acid
CAS-No. : 5329-14-6
EC-No. : 226-218-8
Formula : H3NO3S

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

1.2.1. Relevant identified uses

Use of the substance/mixture : cleaning agent

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Supplier

Laizhou Zhongda Chemical Co., Ltd.
Yongan Industry Zone, Laizhou, Yantai, Shandong, P.R. China
T +86-0535-2172552/+86-15108272133
may@lzzdchem.com

1.4. Emergency telephone number

T+86-0535-2172552

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin corrosion/irritation, Category 2	H315
Serious eye damage/eye irritation, Category 2	H319
Hazardous to the aquatic environment – Chronic Hazard, Category 3	H412

Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

Causes skin irritation. Causes serious eye irritation. Harmful to aquatic life with long lasting effects.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS07

Signal word (CLP) :

Warning

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Hazard statements (CLP)	: H315 - Causes skin irritation. H319 - Causes serious eye irritation. H412 - Harmful to aquatic life with long lasting effects.
Precautionary statements (CLP)	: P264 - Wash hands, forearms and face thoroughly after handling. P273 - Avoid release to the environment. P280 - Wear protective gloves/protective clothing/eye protection/face protection. P302+P352 - If on skin: Wash with plenty of water. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P321 - Specific treatment (see supplemental first aid instruction on this label).

2.3. Other hazards

Contains no PBT/vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	: Sulfamic acid
CAS-No.	: 5329-14-6
EC-No.	: 226-218-8

Name	Product identifier	%
Sulfamic acid	CAS-No.: 5329-14-6 EC-No.: 226-218-8 EC Index-No.: 016-026-00-0	99.5 – 99.8

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Allow affected person to breathe fresh air. Allow the victim to rest.
First-aid measures after skin contact	: Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Wash skin with plenty of water. Take off contaminated clothing. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects	: Not expected to present a significant hazard under anticipated conditions of normal use.
Symptoms/effects after skin contact	: Irritation.
Symptoms/effects after eye contact	: Eye irritation.

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

Treat symptomatically.

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SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : On combustion forms: carbon oxides, nitrogen oxides, sulfur oxides.
Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.
Protective equipment for firefighters : Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment : Wear recommended personal protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures : Ventilate spillage area. Evacuate unnecessary personnel. Avoid contact with skin and eyes.

6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures : Ventilate area.

6.2. Environmental precautions

Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Mechanically recover the product. On land, sweep or shovel into suitable containers. Minimise generation of dust. Store away from other materials.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". For disposal of residues refer to section 13 : "Disposal considerations".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Ensure good ventilation of the work station. Provide good ventilation in process area to prevent formation of vapour. Avoid contact with skin and eyes. Wear personal protective equipment.
Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

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7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed in a cool, well-ventilated place. Keep container closed when not in use.

Suitable packaging material : polytetrafluoroethylene

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

No additional information available

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
acetic acid	Inhalation 70.5 mg/m ³ (Systemic, Chronic) Dermal 10 mg/kg bw/day (Systemic, Chronic)	1.8 mg/L (Water (Fresh)) 0.18 mg/L (Water (Marine)) 8.36 mg/kg sediment dw (Sediment (Fresh Water)) 0.84 mg/kg sediment dw (Sediment (Marine)) 5 mg/kg soil dw (Soil) 20 mg/L (STP)

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Personal protective equipment:

Avoid all unnecessary exposure.

8.2.2.1. Eye and face protection

Eye protection:

Chemical goggles or safety glasses. Use eye protection according to EN 166. Safety glasses

8.2.2.2. Skin protection

Skin and body protection:

Wear suitable protective clothing

Hand protection:

Wear protective gloves. Wear suitable gloves tested to EN374

8.2.2.3. Respiratory protection

Respiratory protection:

Wear appropriate mask

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8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: White crystal
Colour	: White
Odour	: Not available
Odour threshold	: Not available
Melting point	: 205 °C
Freezing point	: Not applicable
Boiling point	: Decomposes at 209 °C before boiling
Flammability	: Not flammable.
Explosive limits	: Not applicable
Lower explosion limit	: Not applicable
Upper explosion limit	: Not applicable
Flash point	: Not applicable
Auto-ignition temperature	: Not applicable
Decomposition temperature	: Not available
pH	: Not available
pH solution	: Not available
Viscosity, kinematic	: Not applicable
Solubility	: 181.4 g/L at 20 °C in water
Partition coefficient n-octanol/water (Log Kow)	: Not available
Vapour pressure	: 0.8 Pa at 20 °C
Vapour pressure at 50°C	: Not available
Density	: 2.13 g/cm ³
Relative density	: Not available
Relative vapour density at 20°C	: Not applicable
Particle size	: Not available
Particle size distribution	: Not available
Particle shape	: Not available
Particle aspect ratio	: Not available
Particle aggregation state	: Not available
Particle agglomeration state	: Not available
Particle specific surface area	: Not available
Particle dustiness	: Not available

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

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10.2. Chemical stability

The product is stable at normal handling and storage conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. Hazardous polymerization will not occur.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity (oral) : Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (dermal) : Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation) : Not classified (Based on available data, the classification criteria are not met)

Sulfamic acid (5329-14-6)

LD50 oral rat	2140 mg/kg bw
LD50 dermal rat	> 2000 mg/kg OECD Guideline 402
Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation. Rabbit: Category 2 (irritating to eyes) OECD Guideline 405
Respiratory or skin sensitisation	: Not classified (Based on available data, the classification criteria are not met)
Germ cell mutagenicity	: Not classified (Based on available data, the classification criteria are not met) In vitro S. typhimurium, other: TA97, TA98, TA100, TA102, TA104, TA1535, TA1537, TA1538 : Negative OECD Guideline 471 In vivo Mouse: Negative OECD Guideline 474
Carcinogenicity	: Not classified (Based on available data, the classification criteria are not met)
Reproductive toxicity	: Not classified (Based on available data, the classification criteria are not met) Rat: No effects observed OECD Guideline 443
STOT-single exposure	: Not classified (Based on available data, the classification criteria are not met)
STOT-repeated exposure	: Not classified (Based on available data, the classification criteria are not met)
Aspiration hazard	: Not classified (Based on available data, the classification criteria are not met)

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

No additional information available

11.2.2. Other information

Other information : Likely routes of exposure: ingestion, inhalation, skin and eye

SECTION 12: Ecological information

12.1. Toxicity

Hazardous to the aquatic environment, short-term (acute) : Not classified (Based on available data, the classification criteria are not met)

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Hazardous to the aquatic environment, long-term (chronic) : Harmful to aquatic life with long lasting effects.

Sulfamic acid (5329-14-6)

LC50 - Fish [1]	70.3 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static]) OECD Guideline 203
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12.2. Persistence and degradability

Sulfamic acid

Persistence and degradability	Not established.
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12.3. Bioaccumulative potential

Sulfamic acid

Bioaccumulative potential	Not established.
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12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

Additional information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials	: Avoid release to the environment.

SECTION 14: Transport information






In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
UN 2967	UN 2967	UN 2967	UN 2967	UN 2967
14.2. UN proper shipping name				
SULPHAMIC ACID	SULPHAMIC ACID	Sulphamic acid	SULPHAMIC ACID	SULPHAMIC ACID
Transport document description				
UN 2967 SULPHAMIC ACID, 8, III, (E)	UN 2967 SULPHAMIC ACID, 8, III	UN 2967 Sulphamic acid, 8, III	UN 2967 SULPHAMIC ACID, 8, III	UN 2967 SULPHAMIC ACID, 8, III
14.3. Transport hazard class(es)				
8	8	8	8	8

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ADR	IMDG	IATA	ADN	RID
				
14.4. Packing group				
III	III	III	III	III
14.5. Environmental hazards				
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No	Dangerous for the environment: No	Dangerous for the environment: No
No supplementary information available				

14.6. Special precautions for user

Overland transport

Classification code (ADR)	: C2
Limited quantities (ADR)	: 5kg
Excepted quantities (ADR)	: E1
Packing instructions (ADR)	: P002, IBC08, LP02, R001
Special packing provisions (ADR)	: B3
Mixed packing provisions (ADR)	: MP10
Portable tank and bulk container instructions (ADR)	: T1
Portable tank and bulk container special provisions (ADR)	: TP33
Tank code (ADR)	: SGAV
Vehicle for tank carriage	: AT
Transport category (ADR)	: 3
Special provisions for carriage - Bulk (ADR)	: VC1, VC2, AP7
Hazard identification number (Kemler No.)	: 80
Orange plates	: 
Tunnel restriction code (ADR)	: E

Transport by sea

Limited quantities (IMDG)	: 5 kg
Excepted quantities (IMDG)	: E1
Packing instructions (IMDG)	: P002, LP02
IBC packing instructions (IMDG)	: IBC08
IBC special provisions (IMDG)	: B3
Tank instructions (IMDG)	: T1
Tank special provisions (IMDG)	: TP33
EmS-No. (Fire)	: F-A
EmS-No. (Spillage)	: S-B
Stowage category (IMDG)	: A
Segregation (IMDG)	: SGG1, SG36, SG49
Properties and observations (IMDG)	: White crystalline powder. Soluble in water. Decomposes when heated, evolving toxic fumes. Causes burns to skin, eyes and mucous membranes.

Air transport

PCA Excepted quantities (IATA)	: E1
PCA Limited quantities (IATA)	: Y845
PCA limited quantity max net quantity (IATA)	: 5kg
PCA packing instructions (IATA)	: 860
PCA max net quantity (IATA)	: 25kg
CAO packing instructions (IATA)	: 864

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CAO max net quantity (IATA) : 100kg
Special provisions (IATA) : A803
ERG code (IATA) : 8L

Inland waterway transport

Classification code (ADN) : C2
Limited quantities (ADN) : 5 kg
Excepted quantities (ADN) : E1
Equipment required (ADN) : PP, EP
Number of blue cones/lights (ADN) : 0

Rail transport

Classification code (RID) : C2
Limited quantities (RID) : 5kg
Excepted quantities (RID) : E1
Packing instructions (RID) : P002, IBC08, LP02, R001
Special packing provisions (RID) : B3
Mixed packing provisions (RID) : MP10
Portable tank and bulk container instructions (RID) : T1
Portable tank and bulk container special provisions (RID) : TP33
Tank codes for RID tanks (RID) : SGAV
Transport category (RID) : 3
Special provisions for carriage – Bulk (RID) : VC1, VC2, AP7
Colis express (express parcels) (RID) : CE11
Hazard identification number (RID) : 80

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

Not listed on REACH Annex XVII

REACH Annex XIV (Authorisation List)

Not listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Not listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Not listed on the PIC list (Regulation EU 649/2012)

POP Regulation (Persistent Organic Pollutants)

Not listed on the POP list (Regulation EU 2019/1021)

Ozone Regulation (1005/2009)

Not listed on the Ozone Depletion list (Regulation EU 1005/2009)

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

15.1.2. National regulations

No additional information available

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15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Abbreviations and acronyms:

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Effective concentration for 50 percent of test population (median effective concentration)
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Lethal concentration for 50 percent of test population (median lethal concentration)
LD50	Lethal dose for 50 percent of test population (median lethal dose)
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulation concerning the International Carriage of Dangerous Goods by Railways
SDS	Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disrupting properties

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Full text of H- and EUH-statements:

Aquatic Chronic 3	Hazardous to the aquatic environment – Chronic Hazard, Category 3
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H412	Harmful to aquatic life with long lasting effects.
Skin Irrit. 2	Skin corrosion/irritation, Category 2

Safety Data Sheet (SDS), EU

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

Sulphamidic acid

Exposure Scenario 1: Formulation: cleaning agent, surface treatment agent, biocidal products

List of use descriptors

Sector of uses [SU]: SU3: Industrial uses

Application

- Contributing Scenarios:
- 1 Formulation (environment)
 - 2 Use in closed batch process (synthesis or formulation) (worker)
 - 3 Use in batch and other process (synthesis) where opportunity for exposure arises (worker)
 - 4 Mixing or blending in batch processes (worker)
 - 5 Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities (worker)
 - 6 Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities (worker)
 - 7 Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (worker)
 - 8 Use as laboratory reagent (worker)

Contributing exposure scenario 1

Formulation (environment)

List of use descriptors

Environmental release categories [ERC]:

ERC2: Formulation into mixture

Operational conditions

Duration and frequency of use:

Emission days per year: ≥ 220

Environment factors not influenced by risk management:

Receiving surface water flow: $\geq 18,000 \text{ m}^3/\text{d}$

Release rate (initial release prior to RMM):

Water: 2%

Air: 2.5%

Release rate (release after RMM):

Water: 0.2 %; 9 kg/d

Air: 0.25 %; 112.5 kg/d

Soil: 0.01 %

Other relevant operational conditions:

Daily amount per site: $\leq 9 \text{ t/y}$

Annual amount per site: $\leq 2,000 \text{ t/y}$

Fraction of EU tonnage used in region: 100 %

Sulphamidic acid

Exposure prediction

Exposure estimation and reference to its source:

Exposure concentration (PEC local):
Water (freshwater): 1.11 mg/L
Water (marine water): 0.111 mg/L
Sediment (freshwater): 5.158 mg/kg dw
Sediment (marine water): 0.515 mg/kg dw
Sewage treatment plant: 8.988 mg/L
Agriculture soil: 0.238 mg/kg dw
Man via environment - Inhalation: 0.038 mg/kg
Man via environment - Oral: 2.839 mg/kg bw/d

Risk characterisation ratio (RCR):

RCR water (freshwater): 0.617
RCR water (marine water): 0.615
RCR sediment (freshwater): 0.617
RCR sediment (marine water): 0.613
RCR sewage treatment plant: 0.449
RCR agriculture soil: 0.048
RCR Man via environment - Inhalation: < 0.01
RCR Man via environment - Oral: 0.568
RCR Man via environment - combined routes: 0.57

Disposal considerations

Conditions and measures related to sewage treatment plant:

Municipal sewage treatment plant: yes (effectiveness water: 0.131 %)
Discharge rate: $\geq 2,000$ m³/d
Application of the STP sludge on agricultural soil: yes
Waste water treatment: 90 (effectiveness water: 90 %)

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

Waste disposal: according to national regulation

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, low dustiness

Concentration of the substance in a mixture:

100%

Duration and frequency of use:

Use duration: < 8 hours

Human factors not influenced by risk management:

Exposed skin surface assumed: palm of one hand (240 cm²)

Other information:

Indoor use

Process temperature: ambient temperature

Sulphamidic acid

Exposure prediction

Exposure estimation and reference to its source:

Exposure concentration:

Inhalative, systemic, long-term: 0.1 mg/m³

Dermal, systemic, long-term: 0.069 mg/kg bw/d

Risk characterisation ratio (RCR):

RCR inhalative, systemic, long-term: < 0.01

RCR dermal, systemic, long-term: < 0.01

RCR combined, systemic, long-term: < 0.01

Risk management measures

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

Provide a good standard of general ventilation (1 to 3 air changes per hour).

Local exhaust ventilation: no (effectiveness inhalative: 0 %)

Batch process, closed systems, with occasional controlled exposure.

Operational conditions and risk management measures:

Occupational Health and Safety Management System: Advanced

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

Hand protection: yes

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness dermal: 90 %)

Respiratory protection: no (effectiveness inhalative: 0 %)

Other information:

Wear suitable protective clothing. (e.g. Overall)

Keep work clothes separately.

Wash contaminated clothing before reuse.

Regular cleaning of work area

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, low dustiness

Concentration of the substance in a mixture:

100%

Duration and frequency of use:

Use duration: < 8 hours

Human factors not influenced by risk management:

Exposed skin surface assumed: palm of both hands (480 cm²)

Other information:

Indoor use

Process temperature: ambient temperature

Exposure prediction

Exposure estimation and reference to its source:

Exposure concentration:

Inhalative, systemic, long-term: 0.5 mg/m³

Dermal, systemic, long-term: 0.686 mg/kg bw/d

Risk characterisation ratio (RCR):

RCR inhalative, systemic, long-term: < 0.01

RCR dermal, systemic, long-term: 0.069

RCR combined, systemic, long-term: 0.076

Sulphamidic acid

Risk management measures

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

Provide a good standard of general ventilation (1 to 3 air changes per hour).
Local exhaust ventilation: no (effectiveness inhalative: 0 %)
Semi-closed process, with occasional controlled exposure.

Operational conditions and risk management measures:

Occupational Health and Safety Management System: Advanced

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

Hand protection: yes
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness dermal: 90 %)
Respiratory protection: no (effectiveness inhalative: 0 %)

Other information:

Wear suitable protective clothing. (e.g. Overall)
Keep work clothes separately.
Wash contaminated clothing before reuse.
Regular cleaning of work area

Contributing exposure scenario 4

Mixing or blending in batch processes (worker)

List of use descriptors

Process categories [PROC]:

PROC5: Mixing or blending in batch processes

Operational conditions

Product characteristics: solid, powder, low dustiness

Concentration of the substance in a mixture:

100%

Duration and frequency of use:

Use duration: < 8 hours

Human factors not influenced by risk management:

Exposed skin surface assumed: palm of both hands (480 cm²)

Other information:

Indoor use
Process temperature: ambient temperature

Exposure prediction

Exposure estimation and reference to its source:

Exposure concentration:

Inhalative, systemic, long-term: 0.5 mg/m³

Dermal, systemic, long-term: 1.371 mg/kg bw/d

Risk characterisation ratio (RCR):

RCR inhalative, systemic, long-term: < 0.01

RCR dermal, systemic, long-term: 0.137

RCR combined, systemic, long-term: 0.144

Sulphamidic acid

Risk management measures

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

Provide a good standard of general ventilation (1 to 3 air changes per hour).

Local exhaust ventilation: no (effectiveness inhalative: 0 %)

Operational conditions and risk management measures:

Occupational Health and Safety Management System: Advanced

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

Hand protection: yes

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness dermal: 90 %)

Respiratory protection: no (effectiveness inhalative: 0 %)

Other information:

Wear suitable protective clothing. (e.g. Overall)

Keep work clothes separately.

Wash contaminated clothing before reuse.

Regular cleaning of work area

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: solid, powder, low dustiness

Concentration of the substance in a mixture:

100%

Duration and frequency of use:

Use duration: < 8 hours

Human factors not influenced by risk management:

Exposed skin surface assumed: both hands (960 cm²)

Other information:

Indoor use

Process temperature: ambient temperature

Exposure prediction

Exposure estimation and reference to its source:

Exposure concentration:

Inhalative, systemic, long-term: 0.5 mg/m³

Dermal, systemic, long-term: 1.371 mg/kg bw/d

Risk characterisation ratio (RCR):

RCR inhalative, systemic, long-term: < 0.01

RCR dermal, systemic, long-term: 0.137

RCR combined, systemic, long-term: 0.144

Sulphamidic acid

Risk management measures

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

Provide a good standard of general ventilation (1 to 3 air changes per hour).

Local exhaust ventilation: no (effectiveness inhalative: 0 %)

Operational conditions and risk management measures:

Occupational Health and Safety Management System: Advanced

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

Hand protection: yes

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness dermal: 90 %)

Respiratory protection: no (effectiveness inhalative: 0 %)

Other information:

Wear suitable protective clothing. (e.g. Overall)

Keep work clothes separately.

Wash contaminated clothing before reuse.

Regular cleaning of work area

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: solid, powder, low dustiness

Concentration of the substance in a mixture:

100%

Duration and frequency of use:

Use duration: < 8 hours

Human factors not influenced by risk management:

Exposed skin surface assumed: both hands (960 cm²)

Other information:

Indoor use

Process temperature: ambient temperature

Exposure prediction

Exposure estimation and reference to its source:

Exposure concentration:

Inhalative, systemic, long-term: 0.1 mg/m³

Dermal, systemic, long-term: 1.371 mg/kg bw/d

Risk characterisation ratio (RCR):

RCR inhalative, systemic, long-term: < 0.01

RCR dermal, systemic, long-term: 0.137

RCR combined, systemic, long-term: 0.138

Sulphamidic acid

Risk management measures

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

Provide a good standard of general ventilation (1 to 3 air changes per hour).
Local exhaust ventilation: no (effectiveness inhalative: 0 %)
Semi-closed process, with occasional controlled exposure.

Operational conditions and risk management measures:

Occupational Health and Safety Management System: Advanced

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

Hand protection: yes
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness dermal: 90 %)
Respiratory protection: no (effectiveness inhalative: 0 %)

Other information:

Wear suitable protective clothing. (e.g. Overall)
Keep work clothes separately.
Wash contaminated clothing before reuse.
Regular cleaning of work area

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 mixture into small containers (dedicated filling line, including weighing)

Operational conditions

Product characteristics: solid, powder, low dustiness

Concentration of the substance in a mixture:

100%

Duration and frequency of use:

Use duration: < 8 hours

Human factors not influenced by risk management:

Exposed skin surface assumed: palm of both hands (480 cm²)

Other information:

Indoor use
Process temperature: ambient temperature

Exposure prediction

Exposure estimation and reference to its source:

Exposure concentration:

Inhalative, systemic, long-term: 0.1 mg/m³

Dermal, systemic, long-term: 0.686 mg/kg bw/d

Risk characterisation ratio (RCR):

RCR inhalative, systemic, long-term: < 0.01

RCR dermal, systemic, long-term: 0.069

RCR combined, systemic, long-term: 0.07

Sulphamidic acid

Risk management measures

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

Provide a good standard of general ventilation (1 to 3 air changes per hour).
Local exhaust ventilation: no (effectiveness inhalative: 0 %)
Semi-closed process, with occasional controlled exposure.

Operational conditions and risk management measures:

Occupational Health and Safety Management System: Advanced

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

Hand protection: yes
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness dermal: 90 %)
Respiratory protection: no (effectiveness inhalative: 0 %)

Other information:

Wear suitable protective clothing. (e.g. Overall)
Keep work clothes separately.
Wash contaminated clothing before reuse.
Regular cleaning of work area

Contributing exposure scenario 8

Use as laboratory reagent (worker)

List of use descriptors

Process categories [PROC]:

PROC15: Use as laboratory reagent

Operational conditions

Product characteristics: solid, powder, low dustiness

Concentration of the substance in a mixture:

100%

Duration and frequency of use:

Use duration: < 8 hours

Human factors not influenced by risk management:

Exposed skin surface assumed: palm of one hand (240 cm²)

Other information:

Indoor use
Process temperature: ambient temperature

Exposure prediction

Exposure estimation and reference to its source:

Exposure concentration:

Inhalative, systemic, long-term: 0.1 mg/m³

Dermal, systemic, long-term: 0.34 mg/kg bw/d

Risk characterisation ratio (RCR):

RCR inhalative, systemic, long-term: < 0.01

RCR dermal, systemic, long-term: 0.034

RCR combined, systemic, long-term: 0.035

Sulphamidic acid

Risk management measures

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

Provide a good standard of general ventilation (1 to 3 air changes per hour).

Local exhaust ventilation: no (effectiveness inhalative: 0 %)

Operational conditions and risk management measures:

Occupational Health and Safety Management System: Advanced

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

Hand protection: yes

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness dermal: 90 %)

Respiratory protection: no (effectiveness inhalative: 0 %)

Other information:

Wear suitable protective clothing. (e.g. Overall)

Keep work clothes separately.

Wash contaminated clothing before reuse.

Regular cleaning of work area

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

Exposure estimation, workers: ECETOC TRA worker v3

Sulphamidic acid

Exposure Scenario 2: Industrial use of: cleaning agent, surface treatment agent, biocidal products

List of use descriptors

Sector of uses [SU]: SU3: Industrial uses
SU6b: Manufacture of pulp, paper and paper products
SU8: Manufacture of bulk, large scale chemicals (including petroleum products)
SU15: Manufacture of fabricated metal products, except machinery and equipment

Application

Contributing Scenarios:

- 1 Industrial use of: cleaning agent, surface treatment agent, biocidal products (environment)
- 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 (worker)
- 6 Industrial spraying, aqueous solution (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 Treatment of articles by dipping and pouring (aqueous solution) (worker)
- 12 Use as laboratory reagent (worker)
- 13 Hand-mixing with intimate contact and only PPE available (worker)

Contributing exposure scenario 1

Industrial use of: cleaning agent, surface treatment agent, biocidal products (environment)

List of use descriptors

Environmental release categories [ERC]:
ERC6b: Use of reactive processing aid at industrial site (no inclusion into or onto article)

Operational conditions

Duration and frequency of use:

Emission days per year: ≥ 220

Environment factors not influenced by risk management:

Receiving surface water flow: $\geq 18,000 \text{ m}^3/\text{d}$

Release rate (initial release prior to RMM):

Water: 5%

Air: 0.1%

Release rate (release after RMM):

Water: 0.5 %; 15.15 kg/d

Air: 0.1 %; 3.03 kg/d

Soil: 0.025 %

Other relevant operational conditions:

Daily amount per site: $\leq 4.5 \text{ t/d}$

Annual amount per site: $\leq 1,500 \text{ t/y}$

Fraction of EU tonnage used in region: 100 %

Sulphamidic acid

Exposure prediction

Exposure estimation and reference to its source:

Exposure concentration (PEC local):
Water (freshwater): 1.335 mg/L
Water (marine water): 0.1335 mg/L
Sediment (freshwater): 6.202 mg/kg dw
Sediment (marine water): 0.619 mg/kg dw
Sewage treatment plant: 11.24 mg/L
Agriculture soil: 0.206 mg/kg dw
Man via environment - Inhalation: 0.001 mg/kg
Man via environment - Oral: 0.146 mg/kg bw/d

Risk characterisation ratio (RCR):

RCR water (freshwater): 0.742
RCR water (marine water): 0.74
RCR sediment (freshwater): 0.742
RCR sediment (marine water): 0.737
RCR sewage treatment plant: 0.562
RCR agriculture soil: 0.041
RCR Man via environment - Inhalation: < 0.01
RCR Man via environment - Oral: 0.029
RCR Man via environment - combined routes: 0.029

Disposal considerations

Conditions and measures related to sewage treatment plant:

Municipal sewage treatment plant: yes (effectiveness water: 0.131 %)
Discharge rate: $\geq 2,000$ m³/d
Application of the STP sludge on agricultural soil: yes
Waste water treatment: 90 (effectiveness water: 90 %)

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

Waste disposal: according to national regulation

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, low dustiness

Concentration of the substance in a mixture:

100%

Duration and frequency of use:

Use duration: < 8 hours

Human factors not influenced by risk management:

Exposed skin surface assumed: palm of both hands (480 cm²)

Other information:

Indoor use

Process temperature: ambient temperature

Sulphamidic acid

Exposure prediction

Exposure estimation and reference to its source:

Exposure concentration:

Inhalative, systemic, long-term: 0.01 mg/m³

Dermal, systemic, long-term: 0.137 mg/kg bw/d

Risk characterisation ratio (RCR):

RCR inhalative, systemic, long-term: < 0.01

RCR dermal, systemic, long-term: 0.014

RCR combined, systemic, long-term: 0.014

Risk management measures

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

Provide a good standard of general ventilation (1 to 3 air changes per hour).

Local exhaust ventilation: no (effectiveness inhalative: 0 %)

Closed, continuous process, with occasional controlled exposure.

Operational conditions and risk management measures:

Occupational Health and Safety Management System: Advanced

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

Hand protection: yes

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness dermal: 90 %)

Respiratory protection: no (effectiveness inhalative: 0 %)

Other information:

Wear suitable protective clothing. (e.g. Overall)

Keep work clothes separately.

Wash contaminated clothing before reuse.

Regular cleaning of work area

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, low dustiness

Concentration of the substance in a mixture:

100%

Duration and frequency of use:

Use duration: < 8 hours

Human factors not influenced by risk management:

Exposed skin surface assumed: palm of one hand (240 cm²)

Other information:

Indoor use

Process temperature: ambient temperature

Exposure prediction

Exposure estimation and reference to its source:

Exposure concentration:

Inhalative, systemic, long-term: 0.1 mg/m³

Dermal, systemic, long-term: 0.069 mg/kg bw/d

Risk characterisation ratio (RCR):

RCR inhalative, systemic, long-term: < 0.01

RCR dermal, systemic, long-term: < 0.01

RCR combined, systemic, long-term: < 0.01

Sulphamidic acid

Risk management measures

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

Provide a good standard of general ventilation (1 to 3 air changes per hour).

Local exhaust ventilation: no (effectiveness inhalative: 0 %)

Closed, continuous process, with occasional controlled exposure.

Operational conditions and risk management measures:

Occupational Health and Safety Management System: Advanced

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

Hand protection: yes

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness dermal: 90 %)

Respiratory protection: no (effectiveness inhalative: 0 %)

Other information:

Wear suitable protective clothing. (e.g. Overall)

Keep work clothes separately.

Wash contaminated clothing before reuse.

Regular cleaning of work area

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, low dustiness

Concentration of the substance in a mixture:

100%

Duration and frequency of use:

Use duration: < 8 hours

Human factors not influenced by risk management:

Exposed skin surface assumed: palm of both hands (480 cm²)

Other information:

Indoor use

Process temperature: ambient temperature

Exposure prediction

Exposure estimation and reference to its source:

Exposure concentration:

Inhalative, systemic, long-term: 0.5 mg/m³

Dermal, systemic, long-term: 0.686 mg/kg bw/d

Risk characterisation ratio (RCR):

RCR inhalative, systemic, long-term: < 0.01

RCR dermal, systemic, long-term: 0.069

RCR combined, systemic, long-term: 0.076

Sulphamidic acid

Risk management measures

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

Provide a good standard of general ventilation (1 to 3 air changes per hour).
Local exhaust ventilation: no (effectiveness inhalative: 0 %)
Semi-closed process, with occasional controlled exposure.

Operational conditions and risk management measures:

Occupational Health and Safety Management System: Advanced

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

Hand protection: yes
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness dermal: 90 %)
Respiratory protection: no (effectiveness inhalative: 0 %)

Other information:

Wear suitable protective clothing. (e.g. Overall)
Keep work clothes separately.
Wash contaminated clothing before reuse.
Regular cleaning of work area

Contributing exposure scenario 5

Mixing or blending in batch processes (worker)

List of use descriptors

Process categories [PROC]:

PROC5: Mixing or blending in batch processes

Operational conditions

Product characteristics: solid, powder, low dustiness

Concentration of the substance in a mixture:

100%

Duration and frequency of use:

Use duration: < 8 hours

Human factors not influenced by risk management:

Exposed skin surface assumed: palm of both hands (480 cm²)

Other information:

Indoor use
Process temperature: ambient temperature

Exposure prediction

Exposure estimation and reference to its source:

Exposure concentration:

Inhalative, systemic, long-term: 0.5 mg/m³

Dermal, systemic, long-term: 1.371 mg/kg bw/d

Risk characterisation ratio (RCR):

RCR inhalative, systemic, long-term: < 0.01

RCR dermal, systemic, long-term: 0.137

RCR combined, systemic, long-term: 0.144

Sulphamidic acid

Risk management measures

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

Provide a good standard of general ventilation (1 to 3 air changes per hour).

Local exhaust ventilation: no (effectiveness inhalative: 0 %)

Operational conditions and risk management measures:

Occupational Health and Safety Management System: Advanced

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

Hand protection: yes

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness dermal: 90 %)

Respiratory protection: no (effectiveness inhalative: 0 %)

Other information:

Wear suitable protective clothing. (e.g. Overall)

Keep work clothes separately.

Wash contaminated clothing before reuse.

Regular cleaning of work area

Contributing exposure scenario 6

Industrial spraying, aqueous solution (worker)

List of use descriptors

Process categories [PROC]:

PROC7: Industrial spraying

Operational conditions

Product characteristics: solid, powder, low dustiness

Concentration of the substance in a mixture:

100%

Duration and frequency of use:

Use duration: < 8 hours

Human factors not influenced by risk management:

Exposed skin surface assumed: hands and forearms (1500 cm²)

Other information:

Indoor use

Process temperature: ambient temperature

Exposure prediction

Exposure estimation and reference to its source:

Exposure concentration:

Inhalative, systemic, long-term: 1 mg/m³

Dermal, systemic, long-term: 4.286 mg/kg bw/d

Risk characterisation ratio (RCR):

RCR inhalative, systemic, long-term: 0.014

RCR dermal, systemic, long-term: 0.429

RCR combined, systemic, long-term: 0.443

Sulphamidic acid

Risk management measures

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

Provide a good standard of general ventilation (1 to 3 air changes per hour).

Local exhaust ventilation: no (effectiveness inhalative: 0 %)

Operational conditions and risk management measures:

Occupational Health and Safety Management System: Advanced

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

Hand protection: yes

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness dermal: 90 %)

Respiratory protection: no (effectiveness inhalative: 0 %)

Other information:

Wear suitable protective clothing. (e.g. Overall)

Keep work clothes separately.

Wash contaminated clothing before reuse.

Regular cleaning of work area

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: solid, powder, low dustiness

Concentration of the substance in a mixture:

100%

Duration and frequency of use:

Use duration: < 8 hours

Human factors not influenced by risk management:

Exposed skin surface assumed: both hands (960 cm²)

Other information:

Indoor use

Process temperature: ambient temperature

Exposure prediction

Exposure estimation and reference to its source:

Exposure concentration:

Inhalative, systemic, long-term: 0.5 mg/m³

Dermal, systemic, long-term: 1.371 mg/kg bw/d

Risk characterisation ratio (RCR):

RCR inhalative, systemic, long-term: < 0.01

RCR dermal, systemic, long-term: 0.137

RCR combined, systemic, long-term: 0.144

Sulphamidic acid

Risk management measures

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

Provide a good standard of general ventilation (1 to 3 air changes per hour).

Local exhaust ventilation: no (effectiveness inhalative: 0 %)

Operational conditions and risk management measures:

Occupational Health and Safety Management System: Advanced

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

Hand protection: yes

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness dermal: 90 %)

Respiratory protection: no (effectiveness inhalative: 0 %)

Other information:

Wear suitable protective clothing. (e.g. Overall)

Keep work clothes separately.

Wash contaminated clothing before reuse.

Regular cleaning of work area

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: solid, powder, low dustiness

Concentration of the substance in a mixture:

100%

Duration and frequency of use:

Use duration: < 8 hours

Human factors not influenced by risk management:

Exposed skin surface assumed: both hands (960 cm²)

Other information:

Indoor use

Process temperature: ambient temperature

Exposure prediction

Exposure estimation and reference to its source:

Exposure concentration:

Inhalative, systemic, long-term: 0.1 mg/m³

Dermal, systemic, long-term: 1.371 mg/kg bw/d

Risk characterisation ratio (RCR):

RCR inhalative, systemic, long-term: < 0.01

RCR dermal, systemic, long-term: 0.137

RCR combined, systemic, long-term: 0.138

Sulphamidic acid

Risk management measures

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

Provide a good standard of general ventilation (1 to 3 air changes per hour).
Local exhaust ventilation: no (effectiveness inhalative: 0 %)
Semi-closed process, with occasional controlled exposure.

Operational conditions and risk management measures:

Occupational Health and Safety Management System: Advanced

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

Hand protection: yes
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness dermal: 90 %)
Respiratory protection: no (effectiveness inhalative: 0 %)

Other information:

Wear suitable protective clothing. (e.g. Overall)
Keep work clothes separately.
Wash contaminated clothing before reuse.
Regular cleaning of work area

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 mixture into small containers (dedicated filling line, including weighing)

Operational conditions

Product characteristics: solid, powder, low dustiness

Concentration of the substance in a mixture:

100%

Duration and frequency of use:

Use duration: < 8 hours

Human factors not influenced by risk management:

Exposed skin surface assumed: palm of both hands (480 cm²)

Other information:

Indoor use
Process temperature: ambient temperature

Exposure prediction

Exposure estimation and reference to its source:

Exposure concentration:
Inhalative, systemic, long-term: 0.1 mg/m³
Dermal, systemic, long-term: 0.686 mg/kg bw/d

Risk characterisation ratio (RCR):

RCR inhalative, systemic, long-term: < 0.01
RCR dermal, systemic, long-term: 0.069
RCR combined, systemic, long-term: 0.07

Sulphamidic acid

Risk management measures

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

Provide a good standard of general ventilation (1 to 3 air changes per hour).
Local exhaust ventilation: no (effectiveness inhalative: 0 %)
Semi-closed process, with occasional controlled exposure.

Operational conditions and risk management measures:

Occupational Health and Safety Management System: Advanced

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

Hand protection: yes
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness dermal: 90 %)
Respiratory protection: no (effectiveness inhalative: 0 %)

Other information:

Wear suitable protective clothing. (e.g. Overall)
Keep work clothes separately.
Wash contaminated clothing before reuse.
Regular cleaning of work area

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: solid, powder, low dustiness

Concentration of the substance in a mixture:

100%

Duration and frequency of use:

Use duration: < 8 hours

Human factors not influenced by risk management:

Exposed skin surface assumed: both hands (960 cm²)

Other information:

Indoor use
Process temperature: ambient temperature

Exposure prediction

Exposure estimation and reference to its source:

Exposure concentration:

Inhalative, systemic, long-term: 0.5 mg/m³

Dermal, systemic, long-term: 2.743 mg/kg bw/d

Risk characterisation ratio (RCR):

RCR inhalative, systemic, long-term: < 0.01

RCR dermal, systemic, long-term: 0.274

RCR combined, systemic, long-term: 0.281

Sulphamidic acid

Risk management measures

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

Provide a good standard of general ventilation (1 to 3 air changes per hour).

Local exhaust ventilation: no (effectiveness inhalative: 0 %)

Operational conditions and risk management measures:

Occupational Health and Safety Management System: Advanced

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

Hand protection: yes

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness dermal: 90 %)

Respiratory protection: no (effectiveness inhalative: 0 %)

Other information:

Wear suitable protective clothing. (e.g. Overall)

Keep work clothes separately.

Wash contaminated clothing before reuse.

Regular cleaning of work area

Contributing exposure scenario 11

Treatment of articles by dipping and pouring (aqueous solution) (worker)

List of use descriptors

Process categories [PROC]:

PROC13: Treatment of articles by dipping and pouring

Operational conditions

Product characteristics: solid, powder, low dustiness

Concentration of the substance in a mixture:

100%

Duration and frequency of use:

Use duration: < 8 hours

Human factors not influenced by risk management:

Exposed skin surface assumed: palm of both hands (480 cm²)

Other information:

Indoor use

Process temperature: ambient temperature

Exposure prediction

Exposure estimation and reference to its source:

Exposure concentration:

Inhalative, systemic, long-term: 0.1 mg/m³

Dermal, systemic, long-term: 1.371 mg/kg bw/d

Risk characterisation ratio (RCR):

RCR inhalative, systemic, long-term: < 0.01

RCR dermal, systemic, long-term: 0.137

RCR combined, systemic, long-term: 0.138

Sulphamidic acid

Risk management measures

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

Provide a good standard of general ventilation (1 to 3 air changes per hour).

Local exhaust ventilation: no (effectiveness inhalative: 0 %)

Operational conditions and risk management measures:

Occupational Health and Safety Management System: Advanced

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

Hand protection: yes

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness dermal: 90 %)

Respiratory protection: no (effectiveness inhalative: 0 %)

Other information:

Wear suitable protective clothing. (e.g. Overall)

Keep work clothes separately.

Wash contaminated clothing before reuse.

Regular cleaning of work area

Contributing exposure scenario 12

Use as laboratory reagent (worker)

List of use descriptors

Process categories [PROC]:

PROC15: Use as laboratory reagent

Operational conditions

Product characteristics: solid, powder, low dustiness

Concentration of the substance in a mixture:

100%

Duration and frequency of use:

Use duration: < 8 hours

Human factors not influenced by risk management:

Exposed skin surface assumed: palm of one hand (240 cm²)

Other information:

Indoor use

Process temperature: ambient temperature

Exposure prediction

Exposure estimation and reference to its source:

Exposure concentration:

Inhalative, systemic, long-term: 0.1 mg/m³

Dermal, systemic, long-term: 0.034 mg/kg bw/d

Risk characterisation ratio (RCR):

RCR inhalative, systemic, long-term: < 0.01

RCR dermal, systemic, long-term: < 0.01

RCR combined, systemic, long-term: < 0.01

Sulphamidic acid

Risk management measures

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

Provide a good standard of general ventilation (1 to 3 air changes per hour).

Local exhaust ventilation: no (effectiveness inhalative: 0 %)

Operational conditions and risk management measures:

Occupational Health and Safety Management System: Advanced

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

Hand protection: yes

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness dermal: 90 %)

Respiratory protection: no (effectiveness inhalative: 0 %)

Other information:

Wear suitable protective clothing. (e.g. Overall)

Keep work clothes separately.

Wash contaminated clothing before reuse.

Regular cleaning of work area

Contributing exposure scenario 13

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, low dustiness

Concentration of the substance in a mixture:

100%

Duration and frequency of use:

Use duration: < 8 hours

Human factors not influenced by risk management:

Exposed skin surface assumed: hands and forearms (1980 cm²)

Other information:

Indoor use

Process temperature: ambient temperature

Exposure prediction

Exposure estimation and reference to its source:

Exposure concentration:

Inhalative, systemic, long-term: 0.3 mg/m³

Dermal, systemic, long-term: 8.486 mg/kg bw/d

Risk characterisation ratio (RCR):

RCR inhalative, systemic, long-term: < 0.01

RCR dermal, systemic, long-term: 0.849

RCR combined, systemic, long-term: 0.853

Sulphamidic acid

Risk management measures

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

Provide a good standard of general ventilation (1 to 3 air changes per hour).

Local exhaust ventilation: no (effectiveness inhalative: 0 %)

Operational conditions and risk management measures:

Occupational Health and Safety Management System: Advanced

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

Hand protection: yes

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness dermal: 90 %)

Respiratory protection: no (effectiveness inhalative: 0 %)

Other information:

Wear suitable protective clothing. (e.g. Overall)

Keep work clothes separately.

Wash contaminated clothing before reuse.

Regular cleaning of work area

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

Exposure estimation, workers: ECETOC TRA worker v3