

This safety data sheet was created pursuant to the requirements of:
UK REACH Regulations (SI 2019/758 as amended)

Supersedes date 04-Sep-2020

Revision date 24-Mar-2025

Revision Number 4

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

1.1. Product identifier

Product Code(s)	1386
Safety data sheet number	1386
Product Name	SODIUM HYDROGENSULPHATE
Index No	016-046-00-X
EC Number	231-665-7
CAS No	7681-38-1
Synonyms	SODIUM BISULPHATE, SODIUM BISULPHATE BE, SODIUM BISULPHATE FR, SODIUM BISULPHATE ZW, SODIUM BISULPHATE DNX, SODIUM BISULPHATE HEI, SODIUM BISULFATE, ANHYDROUS, TECHNICAL GRADE
Pure substance/mixture	Substance
Molecular weight	120.06 g/mol

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

Recommended use	Industrial use pH control Metal cleaning Manufacture of substance Formulation & (re)packing of substances and mixtures. Cleaning agent For further information, see attached Exposure Scenario
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1.3. Details of the supplier of the safety data sheet

Supplier

Univar Solutions UK Ltd
Aquarius House
6 Mid Point Business Park
Bradford
GBR

For further information, please contact

E-mail address	SDS.EMEA@univarsolutions.com
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306

1.4. Emergency telephone number

Emergency Telephone	SGS - +32 (0)3 575 55 55 (24h)
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SECTION 2: Hazards identification**2.1. Classification of the substance or mixture**

Serious eye damage/eye irritation

Category 1 - (H318)

2.2. Label elements**Signal word**

Danger

Hazard statements

H318 - Causes serious eye damage

Precautionary statements

P102 - Keep out of reach of children

P262 - Do not get in eyes, on skin, or on clothing

P260 - Do not breathe dust/fume/gas/mist/vapours/spray

P280 - Wear protective gloves/protective clothing and eye/face protection

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P310 - Immediately call a POISON CENTER or doctor

Additional information

This product requires child resistant fastenings if supplied to the general public. This product requires tactile warnings if supplied to the general public.

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients**3.1 Substances**

Chemical name	Weight-%	EC No (EU Index No)	UK REACH registration number	Classification according to GB CLP (SI 2020/1567 as amended)	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
SODIUM HYDROGENSULPHATE 7681-38-1	>= 90 %	231-665-7 (016-046-00-X)	-	Eye Dam. 1 (H318)	-	-	-

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

This product does not contain candidate substances of very high concern at a concentration >= 0.1% (UK REACH Article 59)

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Rinse mouth thoroughly with water. If breathing is irregular or stopped, administer artificial respiration. Place unconscious person on the side in the recovery position and ensure breathing can take place. Get medical attention immediately if symptoms occur. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Eye contact	Remove affected person from source of contamination. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if symptoms occur.
Skin contact	Remove affected person from source of contamination. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. Get medical attention if symptoms occur.
Ingestion	Rinse mouth thoroughly with water. Do NOT induce vomiting. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Place unconscious person on the side in the recovery position and ensure breathing can take place. Get medical attention immediately if symptoms occur. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Self-protection of the first aider	No action shall be taken involving any personal risk or without suitable training.

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

Eyes	Causes serious eye damage. May cause permanent damage if eye is not immediately irrigated. Causes eye burns. Overexposure may cause the following adverse effects. May cause redness and tearing of the eyes. Pain.
Dermal	Overexposure may cause the following adverse effects. Pain. Irritation. Redness. Blistering.
Ingestion	Overexposure may cause the following adverse effects Stomach pain

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

Note to doctors	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
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SECTION 5: Firefighting measures**5.1. Extinguishing media**

Suitable Extinguishing Media	Dry chemical, CO ₂ , alcohol-resistant foam or water spray. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Large Fire	CAUTION: Use of water spray when fighting fire may be inefficient.
Unsuitable extinguishing media	Do not scatter spilled material with high pressure water streams.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	When heated and in case of fire, toxic vapours/gases may be formed.
Hazardous combustion products	Sodium Oxides. Oxides of sulphur.

5.3. Advice for firefighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation. Use personal protection recommended in Section 8. Avoid contact with eyes, skin and clothing. Avoid breathing dust. Do not handle until all safety precautions have been read and understood. No action shall be taken involving any personal risk or without suitable training. Evacuate personnel to safe areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. In case of inadequate ventilation wear respiratory protection.

Other information Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

6.3. Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Move containers from fire area if you can do it without risk. Keep upwind. Do not allow run-off from fire-fighting to enter drains or water courses. Avoid generation of dust. Remove spillage with vacuum cleaner. If not possible, collect spillage with shovel, broom or the like. Pick up and transfer to properly labelled containers.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections See section 8 for more information. See section 13 for more information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling Ensure adequate ventilation. Use personal protection recommended in Section 8. Avoid contact with eyes, skin and clothing. Do not breathe dust. Do not swallow. Keep container closed when not in use. Handle in accordance with good industrial hygiene and safety practice. Avoid direct contact with the substance.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and immediately after handling the product. Remove contaminated clothing and protective equipment before entering eating areas. When using do not eat, drink or smoke.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place. Hygroscopic. Keep away from food, drink and animal feedingstuffs. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Store away from the following materials. Strong bases. Strong oxidising agents.

7.3. Specific end use(s)

Specific use(s)

See section 1 for more information.

Risk Management Methods (RMM) The information required is contained in this Safety Data Sheet.**SECTION 8: Exposure controls/personal protection****8.1. Control parameters****Exposure Limits** This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.**Biological occupational exposure limits** This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.**Derived No Effect Level (DNEL) - Workers** No information available**Derived No Effect Level (DNEL) - General Public** No information available.**Predicted No Effect Concentration (PNEC)**

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
SODIUM HYDROGENSULPHATE 7681-38-1	11.09 mg/l	17.66 mg/l	1.109 mg/l		

Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
SODIUM HYDROGENSULPHATE 7681-38-1	40.2 mg/kg	4.02 mg/kg	800 mg/l	1.54 mg/kg	

8.2. Exposure controls**Engineering controls** No information available.**Personal protective equipment****Eye/face protection** Wear safety glasses with side shields (or goggles). Use eye protection according to EN 166.**Hand protection** Wear suitable gloves. Gloves must conform to standard EN 374.

Gloves			
Duration of contact	PPE - Glove material	Glove thickness	Break through time
Long term (repeated)	Wear protective nitrile rubber gloves	> 0.11 mm	480 minutes
Short term	Wear protective nitrile rubber gloves	> 0.11 mm	480 minutes

Skin and body protection Wear appropriate clothing to prevent reasonably probable skin contact.**Respiratory protection** Use appropriate respiratory protection.
Recommended filter type: Particulate filter P1. or. Particulate filter P3. Particulates filter conforming to EN 143.**General hygiene considerations** Handle in accordance with good industrial hygiene and safety practice. Wash hands before

breaks and immediately after handling the product. Remove contaminated clothing and protective equipment before entering eating areas. When using do not eat, drink or smoke.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid
Appearance	solid Crystalline powder Dusty powder
Colour	White/off-white To Light (or pale) yellow
Odour	Odourless. To. Fresh. To. Pungent.
Odour threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Melting point / freezing point	177 - 315 °C	
Initial boiling point and boiling range		No information available.
Flammability		No information available.
Flammability Limit in Air		No information available.
Upper flammability or explosive limits		
Lower flammability or explosive limits		
Flash point		No information available.
Autoignition temperature		No information available.
Decomposition temperature	> 350 °C	
pH	<= 1.0	solution (5 %). @ 20 °C.
pH (as aqueous solution)		No information available.
Kinematic viscosity		No information available.
Dynamic viscosity		No information available.
Water solubility	partially soluble To Completely soluble	
Solubility(ies)		No information available.
Partition coefficient		No information available.
Vapour pressure		No information available.
Relative density	1.28 - 2.44	
Bulk density		No information available
Liquid Density	No information available	No information available
Relative vapour density		No information available.
Particle characteristics		No information available.
Particle Size	No information available	
Particle Size Distribution	No information available	
Explosive properties	No information available	
Oxidising properties	No information available	

9.2. Other information

Molecular weight	120.06 g/mol
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SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	No specific test data related to reactivity available for this product or its ingredients.
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10.2. Chemical stability

Stability	Stable under normal conditions.
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Explosion data

Sensitivity to mechanical impact	None.
Sensitivity to static discharge	None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	None under normal processing.
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10.4. Conditions to avoid

Conditions to avoid Protect from moisture. Water. Humidity.

10.5. Incompatible materials

Incompatible materials Strong acids. Strong bases. Strong oxidising agents. DO NOT MIX dry or concentrated solutions of this product with concentrated solutions of chlorine bleach, ammonia cleansers or similar products.

10.6. Hazardous decomposition products

Hazardous decomposition products Sodium Oxides. Oxides of sulphur.

SECTION 11: Toxicological information**11.1. Information on toxicological effects****Information on likely routes of exposure****Product Information**

Inhalation	Inhalation of dust in high concentration may cause irritation of respiratory system.
Eye contact	Causes serious eye damage. May cause permanent damage if eye is not immediately irrigated. Causes eye burns. Overexposure may cause the following adverse effects. May cause redness and tearing of the eyes. Pain.
Skin contact	Overexposure may cause the following adverse effects. Pain. Irritation. Redness. Blistering.
Ingestion	Overexposure may cause the following adverse effects. Stomach pain.

Symptoms related to the physical, chemical and toxicological characteristics**Symptoms****Acute toxicity****Numerical measures of toxicity**

No information available

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
SODIUM HYDROGENSULPHATE	= 2140 mg/kg (Rat)	-	> 2.4 mg/l (Rat) 4h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Based on available data the classification criteria are not met.

SODIUM HYDROGENSULPHATE (7681-38-1)

Method	Species	Exposure route	Effective dose	Exposure time	Results
OECD Test No. 404: Acute Dermal Irritation/Corrosion	Rabbit	Dermal		4 hours	non-irritant

Serious eye damage/eye irritation Causes serious eye damage. May cause permanent damage if eye is not immediately irrigated. Causes eye burns.

SODIUM HYDROGENSULPHATE (7681-38-1)

Method	Species	Exposure route	Effective dose	Exposure time	Results
OECD Test No. 405: Acute	Rabbit	eye			Causes serious eye

Eye Irritation/Corrosion					damage May cause permanent damage if eye is not immediately irrigated. Causes eye burns
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Respiratory or skin sensitisation Based on available data the classification criteria are not met.

Germ cell mutagenicity Based on available data the classification criteria are not met.

Carcinogenicity Based on available data the classification criteria are not met.

Reproductive toxicity Based on available data the classification criteria are not met.

STOT - single exposure Based on available data the classification criteria are not met.

STOT - repeated exposure Based on available data the classification criteria are not met.

Aspiration hazard Based on available data the classification criteria are not met.

Other adverse effects No information available.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity The environmental impact of this product has not been fully investigated.

Method	Species	Endpoint type	Effective dose	Exposure time	Results
EPA 600/4-90/027	Pimephales promelas	LC50	7960 mg/L	96 hours	sodium sulfate Read-across
EPA 600/R-94/024	Daphnia magna	LC50	1766 mg/L	48 hours	sodium sulfate Read-across
ASTM E 1295-01	Ceriodaphnia dubia	NOEC	1109 mg/L		sodium sulfate Read-across
	Nitzschia linearis	EC50	1900 mg/L	120 hours	sodium sulfate Read-across
	Hyalella azteca	LC50	757 mg/L	96 hours	sodium sulfate Read-across

SODIUM HYDROGENSULPHATE (7681-38-1)

Method	Species	Endpoint type	Effective dose	Exposure time	Results
	Freshwater Algae	EC50	1900 mg/L		
	Toxicity to microorganisms	EC50	8 mg/L		

12.2. Persistence and degradability

Persistence and degradability The methods for determining biodegradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

Bioaccumulation Not likely to bioaccumulate.

12.4. Mobility in soil

Mobility in soil Completely soluble.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment The product does not contain any substance(s) classified as PBT or vPvB.

Chemical name	PBT and vPvB assessment
SODIUM HYDROGENSULPHATE	PBT assessment does not apply

12.6. Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

SECTION 14: Transport information

IATA

14.1 UN number or ID number Not regulated

14.2

14.3 Transport hazard class(es) Not regulated

14.4 Packing group Not regulated

14.5 Environmental hazards No

14.6 Special precautions for user
Special Provisions None

IMDG

14.1 UN number or ID number Not regulated

14.3 Transport hazard class(es) Not regulated

14.4 Packing group Not regulated

14.5 Environmental hazards No

14.6 Special precautions for user
Special Provisions None

14.7 Maritime transport in bulk according to IMO instruments No information available

RID

14.1 UN number or ID number Not regulated

14.2 UN proper shipping name Not regulated

14.3 Transport hazard class(es) Not regulated

14.4 Packing group Not regulated

14.5 Environmental hazards No

14.6 Special precautions for user
Special Provisions None

ADR

14.1 UN number or ID number Not regulated

14.2 UN proper shipping name Not regulated

14.3 Transport hazard class(es) Not regulated

14.4 Packing group Not regulated

14.5 Environmental hazards	No
14.6 Special precautions for user Special Provisions	None

SECTION 15: Regulatory information

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

National regulations

Authorisations and/or restrictions on use:

This product does not contain substances subject to authorisation (UK REACH - Annex XIV).

This product does not contain substances subject to restriction (UK REACH - Annex XVII).

Persistent Organic Pollutants

Not applicable

Export Notification requirements

Not applicable

Named dangerous substances per COMAH Regulations 2015 (as amended)

Not applicable

The Ozone-Depleting Substances Regulations 2015

Not applicable

The Biocidal Products Regulations 2001 (as amended)

Not applicable

The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (as amended)

Not applicable

Poisons Act 1972 (Explosive Precursors) Regulations (as Amended)

Not applicable

International Inventories

TSCA	Contact supplier for inventory compliance status
DSL/NDSL	Contact supplier for inventory compliance status
EINECS/ELINCS	Contact supplier for inventory compliance status
ENCS	Contact supplier for inventory compliance status
IECSC	Contact supplier for inventory compliance status
KECI	Contact supplier for inventory compliance status
PICCS	Contact supplier for inventory compliance status
AIIC	Contact supplier for inventory compliance status
NZIoC	Contact supplier for inventory compliance status

Legend:

TSCA	- United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL	- Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS	- European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS	- Japan Existing and New Chemical Substances
IECSC	- China Inventory of Existing Chemical Substances
KECL	- Korean Existing and Evaluated Chemical Substances
PICCS	- Philippines Inventory of Chemicals and Chemical Substances
AIIC	- Australian Inventory of Industrial Chemicals
NZIoC	- New Zealand Inventory of Chemicals

15.2. Chemical safety assessment

Chemical Safety Report A Chemical Safety Assessment has been carried out for this substance

SECTION 16: Other information**Key or legend to abbreviations and acronyms used in the safety data sheet****Legend**

SVHC: Substances of Very High Concern for Authorisation:

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
+	Sensitisers		

Revision Note [SDS sections updated 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16](#)**Classification procedure**

Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - vapour	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitisation	Calculation method
Skin sensitisation	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	Calculation method
Ozone	Calculation method

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
 U.S. Environmental Protection Agency ChemView Database
 European Food Safety Authority (EFSA)
 European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
 European Chemicals Agency (ECHA) (ECHA_API)
 Environmental Protection Agency
 Acute Exposure Guideline Level(s) (AEGL(s))
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
 U.S. Environmental Protection Agency High Production Volume Chemicals
 Food Research Journal
 Hazardous Substance Database
 International Uniform Chemical Information Database (IUCLID)
 National Institute of Technology and Evaluation (NITE)
 Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
 NIOSH (National Institute for Occupational Safety and Health)
 National Library of Medicine's ChemID Plus (NLM CIP)
 National Library of Medicine's PubMed database (NLM PUBMED)
 U.S. National Toxicology Program (NTP)
 New Zealand's Chemical Classification and Information Database (CCID)
 Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications
 Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme
 Organisation for Economic Co-operation and Development Screening Information Data Set
 World Health Organization

Prepared By Lisa Bland**Supersedes date** 04-Sep-2020**Revision date** 24-Mar-2025**This material safety data sheet complies with the requirements of UK REACH Regulations (SI 2019/758 as amended)**

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	SODIUM BISULPHATE
Chemical name	Sodium hydrogensulphate
Pure substance/mixture	Substance
REACH registration number	01-2119552465-36-XXXX
CAS No	7681-38-1
EC No (EU Index No)	231-665-7
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Manufacture of substance and Industrial use
Type	Worker
Main user group	Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies)	ERC1 - Manufacture of substances ERC2 - Formulation of preparations (mixtures) 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 ERC12a - Industrial processing of articles with abrasive techniques (low release) ERC12b - Industrial processing of articles with abrasive techniques (high release)
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure PROC3 - Use in closed batch process (synthesis or formulation) PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact) PROC7 - Industrial spraying PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10 - Roller application or brushing PROC12 - Use of blow agents in manufacture of foam PROC13 - Treatment of articles by dipping and pouring PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising PROC15 - Use as laboratory reagent PROC17 - Lubrication at high energy conditions and in partly open process PROC19 - Hand-mixing with intimate contact and only PPE available PROC21 - Low energy manipulation of substances bound in materials and/or articles PROC24 - High (mechanical) energy work-up of substances bound in materials and/or articles
Product category(ies)	PC14 - Metal surface treatment products, including galvanic and electroplating products PC15 - Non-metal-surface treatment products PC19 - Intermediate PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents PC21 - Laboratory chemicals PC25 - Metal working fluids PC35 - Washing and cleaning products (including solvent based products) PC36 - Water softeners PC37 - Water treatment chemicals

Product Name	SODIUM BISULPHATE
Sector(s) of use	SU2a - Mining (without offshore industries) SU2b - Offshore industries SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites SU4 - Manufacture of food products SU5 - Manufacture of textiles, leather, fur 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 SU13 - Manufacture of other non-metallic mineral products SU15 - Manufacture of fabricated metal products, except machinery and equipment SU16 - Manufacture of computer, electronic and optical products, electrical equipment SU17 - General manufacturing SU19 - Building and construction work SU20 - Health services SU23 - Recycling

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

- Environmental release category(ies)** - ERC1 - Manufacture of substances
- ERC2 - Formulation of preparations (mixtures)
 - 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
 - ERC12a - Industrial processing of articles with abrasive techniques (low release)
 - ERC12b - Industrial processing of articles with abrasive techniques (high release)

Other operational conditions of use affecting environmental exposure

Type	Intermittent or Continuous use/release
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Operational conditions

Remarks	Receiving surface water flow is 18000 m3/d
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Conditions and measures related to municipal sewage treatment plant

Type	Onsite STP
Assumed on-site sewage treatment plant flow	2000 m3/d

Control measures to prevent releases

Water	Onsite wastewater treatment required pH control
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Conditions and measures related to external treatment of waste for disposal

Disposal	Recover or recycle if possible Dispose of waste product or used containers according to local regulations
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Control of worker exposure

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Physical form of product	Solid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS
Conditions and measures related to	S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection

personal protection, hygiene and health evaluation	Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Physical form of product	Solid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Physical form of product	Solid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Physical form of product	Solid

Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Physical form of product	Solid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS

Process category(ies)	PROC7 - Industrial spraying
Physical form of product	Solid Powder
Exposure duration	Avoid carrying out activities involving exposure for more than 1 hour
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system Ensure segregation of worker from the source Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment

Organisational measures to prevent /limit releases, dispersion and exposure	Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS
Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Physical form of product	Solid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS
Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Physical form of product	Solid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS
Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Physical form of product	Solid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS
Conditions and measures related to	S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection

personal protection, hygiene and health evaluation	Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS

Process category(ies)	PROC10 - Roller application or brushing
Physical form of product	Solid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS

Process category(ies)	PROC12 - Use of blow agents in manufacture of foam
Physical form of product	Solid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Physical form of product	Solid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).

Technical conditions and measures to control dispersion from source towards the worker	Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS

Process category(ies)	PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising
Physical form of product	Solid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS

Process category(ies)	PROC15 - Use as laboratory reagent
Physical form of product	Solid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented

	For further specification, refer to section 8 of the SDS
Process category(ies)	PROC17 - Lubrication at high energy conditions and in partly open process
Physical form of product	Solid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS
Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Physical form of product	Solid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS
Process category(ies)	PROC21 - Low energy manipulation of substances bound in materials and/or articles
Physical form of product	Solid dust
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin

	See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS
Process category(ies)	PROC24 - High (mechanical) energy work-up of substances bound in materials and/or articles
Physical form of product	Solid dust
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS

Section 3 - Exposure estimation

Environmental release category(ies) - ERC1 - Manufacture of substances

- ERC2 - Formulation of preparations (mixtures)

- 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

- ERC12a - Industrial processing of articles with abrasive techniques (low release)

- ERC12b - Industrial processing of articles with abrasive techniques (high release)

Predicted No Effect Concentration (PNEC)

Freshwater	11.09 mg/l
Freshwater sediment	40.2 mg/kg dw
Marine water	1.109 mg/l
Marine sediment	4.02 mg/kg dw
Soil	1.54 mg/kg dw
Impact on Sewage Treatment	800 mg/l
Intermittent release	17.66 mg/l

Remarks Qualitative approach used to conclude safe use

Derived No Effect Level (DNEL):

Calculation method

MEASE

Remarks

Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	SODIUM BISULPHATE
Chemical name	Sodium hydrogensulphate
Pure substance/mixture	Substance
REACH registration number	01-2119552465-36-XXXX
CAS No	7681-38-1
EC No (EU Index No)	231-665-7
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Professional use
Type	Worker
Main user group	Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies)	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 ERC10b - Wide dispersive outdoor use of long-life articles and materials with high or intended release 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
Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure PROC3 - Use in closed batch process (synthesis or formulation) PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact) PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10 - Roller application or brushing PROC11 - Non industrial spraying PROC12 - Use of blow agents in manufacture of foam PROC13 - Treatment of articles by dipping and pouring PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising PROC15 - Use as laboratory reagent PROC17 - Lubrication at high energy conditions and in partly open process PROC19 - Hand-mixing with intimate contact and only PPE available PROC21 - Low energy manipulation of substances bound in materials and/or articles PROC24 - High (mechanical) energy work-up of substances bound in materials and/or articles
Product category(ies)	PC14 - Metal surface treatment products, including galvanic and electroplating products PC15 - Non-metal-surface treatment products PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents PC35 - Washing and cleaning products

Product Name (including solvent based products) PC37 - Water treatment chemicals
Sector(s) of use SODIUM BISULPHATE
 SU22 - Professional uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - 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
 - ERC10b - Wide dispersive outdoor use of long-life articles and materials with high or intended release
 - 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

Operational conditions

Remarks	Receiving surface water flow is 18000 m3/d
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Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
Assumed domestic sewage treatment plant flow	2000 m3/d

Control measures to prevent releases

Water	pH control
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Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of worker exposure

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Physical form of product	Solid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Physical form of product	Solid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Physical form of product	Solid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Physical form of product	Solid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection

	<p>Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment</p>
Organisational measures to prevent /limit releases, dispersion and exposure	<p>Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS</p>
Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Physical form of product	Solid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	<p>Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS</p>
Conditions and measures related to personal protection, hygiene and health evaluation	<p>S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment</p>
Organisational measures to prevent /limit releases, dispersion and exposure	<p>Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS</p>
Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Physical form of product	Solid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	<p>Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS</p>
Conditions and measures related to personal protection, hygiene and health evaluation	<p>S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment</p>
Organisational measures to prevent /limit releases, dispersion and exposure	<p>Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS</p>
Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Physical form of product	Solid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to	Local exhaust ventilation - efficiency of at least 78%

control dispersion from source towards the worker	No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS

Process category(ies)	PROC10 - Roller application or brushing
Physical form of product	Solid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS

Process category(ies)	PROC11 - Non industrial spraying
Physical form of product	Solid Powder
Exposure duration	Avoid carrying out activities involving exposure for more than 1 hour
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system Ensure segregation of worker from the source Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent	Do not ingest. If swallowed then seek immediate medical assistance

/limit releases, dispersion and exposure	Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS
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Process category(ies)	PROC12 - Use of blow agents in manufacture of foam
Physical form of product	Solid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Physical form of product	Solid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS

Process category(ies)	PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising
Physical form of product	Solid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143

	<p>Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment</p>
Organisational measures to prevent /limit releases, dispersion and exposure	<p>Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS</p>

Process category(ies)	PROC15 - Use as laboratory reagent
Physical form of product	Solid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	<p>Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS</p>
Conditions and measures related to personal protection, hygiene and health evaluation	<p>S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment</p>
Organisational measures to prevent /limit releases, dispersion and exposure	<p>Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS</p>

Process category(ies)	PROC17 - Lubrication at high energy conditions and in partly open process
Physical form of product	Solid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	<p>Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS</p>
Conditions and measures related to personal protection, hygiene and health evaluation	<p>S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment</p>
Organisational measures to prevent /limit releases, dispersion and exposure	<p>Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS</p>

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Physical form of product	Solid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to	Local exhaust ventilation - efficiency of at least 78%

control dispersion from source towards the worker	No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS

Process category(ies)	PROC21 - Low energy manipulation of substances bound in materials and/or articles
Physical form of product	Solid dust
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS

Process category(ies)	PROC24 - High (mechanical) energy work-up of substances bound in materials and/or articles
Physical form of product	Solid dust
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Local exhaust ventilation - efficiency of at least 78% No Compressed Air Methods for cleaning up Ensure operatives are trained to minimise exposures For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection Contaminated work clothing must not be allowed out of the workplace Filtering Half-face mask (DIN EN 149) Particulates filter conforming to EN 143 Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training Use suitable eye protection Wear suitable face shield Wear suitable coveralls to prevent exposure to the skin See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Do not ingest. If swallowed then seek immediate medical assistance Do not inhale spray vapour Do not eat, drink or smoke when using the product. Assumes a good basic standard of occupational hygiene is implemented

For further specification, refer to section 8 of the SDS

Section 3 - Exposure estimation

- Environmental release category(ies) - 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
- ERC10b - Wide dispersive outdoor use of long-life articles and materials with high or intended release
- 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

Predicted No Effect Concentration (PNEC)

Freshwater	11.09 mg/l
Freshwater sediment	40.2 mg/kg dw
Marine water	1.109 mg/l
Marine sediment	4.02 mg/kg dw
Soil	1.54 mg/kg dw
Impact on Sewage Treatment	800 mg/l
Intermittent release	17.66 mg/l

Remarks Qualitative approach used to conclude safe use

Derived No Effect Level (DNEL):

Calculation method MEASE
Remarks Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	SODIUM BISULPHATE
Chemical name	Sodium hydrogensulphate
Pure substance/mixture	Substance
REACH registration number	01-2119552465-36-XXXX
CAS No	7681-38-1
EC No (EU Index No)	231-665-7
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Consumer use Use in cleaning agents
Type	Consumer
Main user group	Consumer uses: Private households (= general public = consumers)
Environmental release category(ies)	ERC8a - Wide dispersive indoor use of processing aids in open systems
Product category(ies)	PC35 - Washing and cleaning products (including solvent based products)
Product Name	SODIUM BISULPHATE
Sector(s) of use	SU21 - Consumer uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of consumer exposure

Product categories [PC]	PC35 - Washing and cleaning products (including solvent based products)
Covers concentrations up to	6%
Physical form of product	Liquid
Amounts used	12 - 22 g/L
Exposure duration	Avoid carrying out operation for more than 20 minutes
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). Covers use up to 7 days per week
Risk management measures	Avoid contact with eyes, skin and clothing Keep container tightly closed Keep away from children In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice Wash hands thoroughly after handling Wear goggles/face shield.
Covers skin contact area up to	857.5 cm ²

Product categories [PC]	PC35 - Washing and cleaning products (including solvent based products)
Covers concentrations up to	10%
Physical form of product	Solid, low dustiness
Level of dustiness	Very low

Amounts used	8 g/L
Exposure duration	Avoid carrying out operation for more than 20 minutes
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). Covers use up to 7 days per week
Risk management measures	Avoid contact with eyes, skin and clothing Keep container tightly closed Keep away from children In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice Wash hands thoroughly after handling Wear goggles/face shield.
Covers skin contact area up to	857.5 cm ²

Product categories [PC]	PC35 - Washing and cleaning products (including solvent based products)
Covers concentrations up to	80%
Physical form of product	Solid, low dustiness
Level of dustiness	Very low
Amounts used	20 - 30 g
Exposure duration	Avoid carrying out operation for more than 1 minutes
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). Covers use up to 2 days per week
Risk management measures	Avoid contact with eyes, skin and clothing Keep container tightly closed Keep away from children In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice Wash hands thoroughly after handling Wear goggles/face shield.

Section 3 - Exposure estimation

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems

Predicted No Effect Concentration (PNEC)

Freshwater	11.09 mg/l
Freshwater sediment	40.2 mg/kg dw
Marine water	1.109 mg/l
Marine sediment	4.02 mg/kg dw
Soil	1.54 mg/kg dw
Impact on Sewage Treatment	800 mg/l
Intermittent release	17.66 mg/l

Remarks Qualitative approach used to conclude safe use

Derived No Effect Level (DNEL):

Remarks Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	SODIUM BISULPHATE
Chemical name	Sodium hydrogensulphate
Pure substance/mixture	Substance
REACH registration number	01-2119552465-36-XXXX
CAS No	7681-38-1
EC No (EU Index No)	231-665-7
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Consumer use Products such as pH-regulators, flocculants, precipitants, neutralisation agents
Type	Consumer
Main user group	Consumer uses: Private households (= general public = consumers)
Environmental release category(ies)	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
Product category(ies)	PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents PC37 - Water treatment chemicals
Product Name	SODIUM BISULPHATE
Sector(s) of use	SU21 - Consumer uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - 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

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of consumer exposure

Product categories [PC]	PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents PC37 - Water treatment chemicals
Covers concentrations up to	100%
Physical form of product	Solid, low dustiness
Level of dustiness	Very low

Amounts used	10 g
Exposure duration	Avoid carrying out operation for more than 1.33 minutes
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). Covers use up to 1 days per week
Risk management measures	Avoid contact with eyes, skin and clothing Keep container tightly closed Keep away from children Wash hands thoroughly after handling pH control Wear goggles/face shield.
Covers skin contact area up to	430 cm ²

Product categories [PC] PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents PC37 - Water treatment chemicals

Covers concentrations up to	50%
Physical form of product	Liquid
Amounts used	1 kg/10L
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Risk management measures	Avoid contact with eyes, skin and clothing Keep container tightly closed Keep away from children Wash hands thoroughly after handling pH control Wear goggles/face shield.

Product categories [PC] PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents PC37 - Water treatment chemicals

Use frequency	Covers daily exposures up to 8 hours (unless stated differently). Covers use up to 0.25 days per week
Risk management measures	Avoid contact with eyes, skin and clothing Keep container tightly closed Keep away from children Wash hands thoroughly after handling pH control Wear goggles/face shield.
Covers skin contact area up to	860 cm ²

Product categories [PC] PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents PC37 - Water treatment chemicals

Amounts used	0.05 L/h
Exposure duration	Avoid carrying out operation for more than 5 hours
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 365 days per year
Risk management measures	Avoid contact with eyes, skin and clothing Keep container tightly closed Keep away from children Wash hands thoroughly after handling pH control Wear goggles/face shield.

Section 3 - Exposure estimation

- Environmental release category(ies) - 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

Predicted No Effect Concentration

(PNEC)

Freshwater	11.09 mg/l
Freshwater sediment	40.2 mg/kg dw
Marine water	1.109 mg/l
Marine sediment	4.02 mg/kg dw
Soil	1.54 mg/kg dw
Impact on Sewage Treatment	800 mg/l
Intermittent release	17.66 mg/l

Remarks Qualitative approach used to conclude safe use

Derived No Effect Level (DNEL):

Remarks Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.