

**Safety data sheet
according to 1907/2006/EC, Article 31**

revised on: 03.11.2023

Version number 5

Creation Date: 01.08.2016

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

- **1.1 Product identifier**
- **Trade name: Sodium fluoride**
- **Article number:** 1313, 1319
- **CAS Number:**
7681-49-4
- **EC number:**
231-667-8
- **Index number:**
009-004-00-7
- **Registration number** 01-211953420-47-XXXX
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
The product is not intended for use by consumers
For professional users only
- **Sector of Use**
SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
SU9 Manufacture of fine chemicals
SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
SU24 Scientific research and development
- **Product category**
PC19 Intermediate
PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents
PC21 Laboratory chemicals
PC29 Pharmaceuticals
PC39 Cosmetics, personal care products
PC40 Extraction agents
- **Process category**
PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.
PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
PROC4 Chemical production where opportunity for exposure arises
PROC5 Mixing or blending in batch processes
PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
PROC15 Use as laboratory reagent
- **Environmental release category**
ERC1 Manufacture of the substance
ERC2 Formulation into mixture
ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
ERC6a Use of intermediate
- **Application of the substance / the mixture**
Industrial use
Laboratory chemical
Chemical analytics
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Th. Geyer GmbH & Co. KG
Dornierstr. 4 – 6
D-71272 Renningen

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Tel.: +49(0)7159-1637-0, Fax:+49 (0)7159/18417

www.thgeyer.de

sicherheitsdatenblaetter@thgeyer.de

- **Further information obtainable from:** Product management department

- **1.4 Emergency telephone number:**

National Poisons Information Service

City Hospital

Dudley Road

Birmingham B18 7QH

Tel.:Emergency: (00 44) 87 06 00 62 66

Members of the public seeking specific information on poisons should contact:

In England and Wales: NHS 111 - dial 111

In Scotland: NHS 24 - dial 111

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**

- **Classification according to Regulation (EC) No 1272/2008**



GHS06 skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

- **2.2 Label elements**

- **Labelling according to Regulation (EC) No 1272/2008**

The substance is classified and labelled according to the GB CLP regulation.

- **Hazard pictograms**



GHS06

- **Signal word** Danger

- **Hazard statements**

H301 Toxic if swallowed.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

- **Precautionary statements**

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

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

P308+P311 IF exposed or concerned: Call a POISON CENTER/doctor.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Additional information:**

EUH032 Contact with acids liberates very toxic gas.

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- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

- **3.1 Substances**
- **CAS No. Description**
CAS: 7681-49-4 sodium fluoride
- **Identification number(s)**
- **EC number:** 231-667-8
- **Index number:** 009-004-00-7

SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information:**
First aider needs to protect himself.
Immediately remove any clothing soiled by the product.
Involve doctor immediately.
- **After inhalation:**
Remove person from danger zone.
Supply fresh air.
Administer glucocorticoid dose aerosol in case of lung irritation.
In case of breathing difficulties or respiratory arrest, initiate artificial respiration.
Call a doctor immediately.
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:**
Wash with plenty of soap and water, take off soiled clothes and shoes.
Rub in Ca-gluconate solution or Ca-gluconate gel immediately.
Immediate medical treatment necessary. Failure to treat burns can prevent wounds from healing.
Take into account possible simultaneous inhalation.
- **After eye contact:**
Protect unharmed eye.
Rinse out opened eye for several minutes under running water.
Remove any contact lenses if possible.
Continue rinsing.
Seek medical treatment.
During transport, continue to rinse with isotonic saline solution, alternatively with water.
- **After swallowing:**
Rinse mouth thoroughly with water.
Immediately have 1 - 4 drinking ampoules of "frubiase calcium T" or 1% calcium gluconate solution drunk in small sips (if not available: substitute milk or chalk suspension, otherwise water).
In the meantime, call an emergency doctor to the scene of the accident.
Notify emergency doctor
If swallowed, there is a risk of perforation of the oesophagus and stomach (strong caustic effect).
- **Information for doctor:** Please observe safety data sheet/label.
- **4.2 Most important symptoms and effects, both acute and delayed**
Cramp
Gastric or intestinal disorders
Thirst
Nausea
Asthma attacks
Unconsciousness

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- **Hazards**

- Danger of disturbed cardiac rhythm.

- Danger of impaired breathing.

- Danger of circulatory collapse.

- **4.3 Indication of any immediate medical attention and special treatment needed**

- In case of lung irritation, administer glucocorticoid dose aerosol.

- If necessary oxygen respiration treatment.

- If swallowed, drink the calcium solution in small sips.

- Monitor circulation.

- Symptomatic treatment.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**

- **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.

- **For safety reasons unsuitable extinguishing agents:** Water with full jet.

- **5.2 Special hazards arising from the substance or mixture**

- Formation of toxic gases is possible during heating or in case of fire.

- In case of fire, the following can be released:

- Hydrogen fluoride (HF)

- Under certain fire conditions, traces of other toxic gases cannot be excluded.

- **5.3 Advice for firefighters**

- **Protective equipment:**

- Mouth respiratory protective device.

- Wear self-contained respiratory protective device.

- Do not inhale explosion gases or combustion gases.

- **Additional information**

- Cool endangered receptacles with water spray.

- Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

- Safely prevent extinguishing water from entering groundwater or surface water.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**

- Avoid formation of dust.

- Keep people at a distance and stay on the windward side.

- Clear the danger zone.

- Involve experts.

- Note for emergency personnel: For protective equipment see section 8.

- Ensure adequate ventilation.

- Avoid contact with eyes and skin.

- Do not breathe dust.

- Mount respiratory protective device.

- **6.2 Environmental precautions:** Do not allow to enter sewers/surface or ground water.

- **6.3 Methods and material for containment and cleaning up:**

- Cover the sewerage system.

- Prevent spreading over an area (e.g. by damming or oil booms).

- Avoid dust formation.

- Dispose contaminated material as waste according to section 13.

- Dispose of the material collected according to regulations.

- **6.4 Reference to other sections**

- See Section 7 for information on safe handling.

- See Section 8 for information on personal protection equipment.

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See Section 13 for disposal information.

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SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Store in cool, dry place in tightly closed receptacles.
- Keep away from heat and direct sunlight.
- Apply the general protective and hygienic measures when handling chemicals.
- Prevent formation of dust.

Information about fire - and explosion protection:

- Substance itself does not burn, adapt extinguishing measures to surroundings

7.2 Conditions for safe storage, including any incompatibilities

Storage:

- Requirements to be met by storerooms and receptacles:** Store only in the original receptacle.

Information about storage in one common storage facility:

- Store away from oxidising agents.
- Store away from water.
- Do not store together with acids.

Further information about storage conditions:

- Store in dry conditions.
- Protect from humidity and water.
- Keep container tightly sealed.

Storage class: 6.1 D

7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:

CAS: 7681-49-4 sodium fluoride

WEL	Long-term value: 2.5 mg/m ³ as F
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PNECs

- PNEC 0,9 mg/l freshwater short-term (single instance)
- PNEC 51 mg/l sewage treatment plant (STP) short-term (single instance)
- PNEC 11 mg/kg soil short-term (single instance)
- Additional information:** The lists valid during the making were used as basis.

8.2 Exposure controls

- Appropriate engineering controls** No further data; see section 7.
- Individual protection measures, such as personal protective equipment**

General protective and hygienic measures:

- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing
- Wash hands before breaks and at the end of work.
- Avoid contact with the eyes and skin.

Respiratory protection:

- In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device. If air-purifying respiratory protection is required according to the risk assessment, wear a respirator with full-face mask with combination filter (US) or with filter type ABEK (EN 14387) filter cartridge. If the respirator is the only protective measure, an ambient air self-contained breathing apparatus with a full face mask must be worn. Respirators and components must be approved to appropriate government standards (for example, NIOSH (US) or CEN (EU)). Translated with www.DeepL.com/Translator (free version)

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· Hand protection

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· Material of gloves

Information on suitable glove materials is not available at present.

However, experience has shown that the glove materials polychloroprene, nitrile rubber, butyl rubber, fluororubber and polyvinyl chloride are suitable for protection against undissolved solids.

The following data apply to aqueous, saturated solutions of the substance

Butyl rubber, BR

Fluorocarbon rubber (Viton)

Nitrile rubber, NBR

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye/face protection

Safety glasses

Tightly sealed goggles

· Body protection:

Protective work clothing (e. g. safety shoes EN ISO 20345, long-sleeved protective working garments).

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties**· General Information****· Physical state**

Solid

· Colour:

White

· Odour:

Odourless

· Melting point/freezing point:

1,012 °C

· Boiling point or initial boiling point and boiling range

1,704 °C

· Flammability

Product is not flammable.

· Lower and upper explosion limit**· Lower:**

Not determined.

· Upper:

Not determined.

· Flash point:

Not applicable.

· Decomposition temperature:

Not determined.

· pH

Not applicable.

· Viscosity:**· Kinematic viscosity**

Not applicable.

· Dynamic:

Not applicable.

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- **Solubility**
- **water at 20 °C:** 42 g/l
- **Partition coefficient n-octanol/water (log value)** Not determined.
- **Vapour pressure at 1077 °C:** 1 hPa
- **Density and/or relative density**
- **Density at 20 °C:** 2.79 g/cm³
- **Relative density** Not determined.
- **Vapour density** Not applicable.
- **Particle characteristics**
- See section 3.

- **9.2 Other information**
- **Appearance:**
- **Form:** Crystalline
- **Important information on protection of health and environment, and on safety.**
- **Ignition temperature:** Not determined.
- **Explosive properties:** Product does not present an explosion hazard.
- **Molecular weight** 41.99 g/mol
- **Change in condition**
- **Evaporation rate** Not applicable.

- **Information with regard to physical hazard classes**
- **Explosives** Void
- **Flammable gases** Void
- **Aerosols** Void
- **Oxidising gases** Void
- **Gases under pressure** Void
- **Flammable liquids** Void
- **Flammable solids** Void
- **Self-reactive substances and mixtures** Void
- **Pyrophoric liquids** Void
- **Pyrophoric solids** Void
- **Self-heating substances and mixtures** Void
- **Substances and mixtures, which emit flammable gases in contact with water** Void
- **Oxidising liquids** Void
- **Oxidising solids** Void
- **Organic peroxides** Void
- **Corrosive to metals** Void
- **Desensitised explosives** Void

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability** Stable when stored and handled properly.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** Reacts with acids.
- **10.4 Conditions to avoid**
Heat, flames and sparks.
Protect from moisture.
- **10.5 Incompatible materials:** Avoid contact with other chemicals.

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- **10.6 Hazardous decomposition products:** In case of fire: see section 5.

SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity** Toxic if swallowed.

- **LD/LC50 values relevant for classification:**

Oral	LD50	52 mg/kg (rat)
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- **Skin corrosion/irritation** Causes skin irritation.
- **Serious eye damage/irritation** Causes serious eye irritation.
- **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.
- **11.2 Information on other hazards**
- **Endocrine disrupting properties** Substance is not listed.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:**
acute
EC50 48 mg/l aquatic invertebrates ECHA 96 h
Chronic
NOEC 4 mg/l fish ECHA 21 d
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Endocrine disrupting properties**
The product does not contain substances with endocrine disrupting properties.
- **12.7 Other adverse effects**
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
Observe local (country-specific) regulations and laws.
This product and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
Chemicals must be disposed of in accordance with the respective national regulations.

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· European waste catalogue	
06 00 00	WASTES FROM INORGANIC CHEMICAL PROCESSES
06 03 00	wastes from the MFSU of salts and their solutions and metallic oxides
06 03 99	wastes not otherwise specified
HP4	Irritant - skin irritation and eye damage
HP6	Acute Toxicity
HP12	Release of an acute toxic gas

- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

· 14.1 UN number or ID number · ADR, IMDG, IATA	UN1690
· 14.2 UN proper shipping name · ADR · IMDG · IATA	1690 SODIUM FLUORIDE, SOLID SODIUM FLUORIDE, SOLID, MARINE POLLUTANT SODIUM FLUORIDE, SOLID
· 14.3 Transport hazard class(es) · ADR	
	
· Class · Label	6.1 (T5) Toxic substances. 6.1
· IMDG	
 	
· Class · Label	6.1 Toxic substances. 6.1
· IATA	
	
· Class · Label	6.1 Toxic substances. 6.1
· 14.4 Packing group · ADR, IMDG, IATA	III
· 14.5 Environmental hazards: · Marine pollutant:	Symbol (fish and tree)
· 14.6 Special precautions for user · Hazard identification number (Kemler code): · EMS Number:	Warning: Toxic substances. 60 F-A,S-A

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· Stowage Category	A
· Segregation Code	SG35 Stow "separated from" SGG1-acids
· 14.7 Maritime transport in bulk according to IMO instruments	Not applicable.
· Transport/Additional information:	
· ADR	
· Limited quantities (LQ)	5 kg
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· Transport category	2
· Tunnel restriction code	E
· IMDG	
· Limited quantities (LQ)	5 kg
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· UN "Model Regulation":	UN 1690 SODIUM FLUORIDE, SOLID, 6.1, III

SECTION 15: Regulatory information

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

· Inventory of Hazardous Chemicals

CAS: 7681-49-4 | sodium fluoride

- **Poisons Act**
- **Regulated explosives precursors** Substance is not listed.
- **Regulated poisons** Substance is not listed.
- **Reportable explosives precursors** Substance is not listed.
- **Reportable poisons** Listed
- **Labelling according to Regulation (EC) No 1272/2008**
The substance is classified and labelled according to the GB CLP regulation.
- **Hazard pictograms**



GHS06

- **Signal word** Danger
- **Hazard statements**
H301 Toxic if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
- **Precautionary statements**
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P311 IF exposed or concerned: Call a POISON CENTER/doctor.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** Substance is not listed.
- **Seveso category H2 ACUTE TOXIC**
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 50 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t
- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 75
- **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**
Substance is not listed.
- **REGULATION (EU) 2019/1148**
- **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**
Substance is not listed.
- **Annex II - REPORTABLE EXPLOSIVES PRECURSORS** Substance is not listed.
- **Regulation (EC) No 273/2004 on drug precursors** Substance is not listed.
- **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**
Substance is not listed.
- **National regulations:**
- **Information about limitation of use:**
Employment restrictions concerning juveniles must be observed.
Employment restrictions concerning pregnant and lactating women must be observed.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship. The application, use and processing of our products are beyond our control and are therefore exclusively your responsibility.

- **Department issuing SDS:** Product management
- **Contact:** Product management
- **Abbreviations and acronyms:**
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
PNEC: Predicted No-Effect Concentration (UK REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Acute Tox. 3: Acute toxicity – Category 3
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
- *** Data compared to the previous version altered.**

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Annex: Exposure scenario

- **Short title of the exposure scenario** Chemicals for laboratory and industry
- **Sector of Use**
 - SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
 - SU9 Manufacture of fine chemicals
 - SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
 - SU24 Scientific research and development
- **Product category**
 - PC19 Intermediate
 - PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents
 - PC21 Laboratory chemicals
 - PC29 Pharmaceuticals
 - PC39 Cosmetics, personal care products
 - PC40 Extraction agents
- **Process category**
 - PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.
 - PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
 - PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
 - PROC4 Chemical production where opportunity for exposure arises
 - PROC5 Mixing or blending in batch processes
 - PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
 - PROC15 Use as laboratory reagent
- **Environmental release category**
 - ERC1 Manufacture of the substance
 - ERC2 Formulation into mixture
 - ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
 - ERC6a Use of intermediate
- **Description of the activities / processes covered in the Exposure Scenario**
 - See section 1 of the annex to the Safety Data Sheet.
- **Conditions of use**
- **Duration and frequency**
 - 8hrs (full working shift).
 - 5 workdays/week.
- **Environment** The product may not be released into the environment without control.
- **Physical parameters**
- **Physical state** Solid
- **Concentration of the substance in the mixture** Raw material.
- **Other operational conditions** Observe the general safety regulations when handling chemicals.
- **Other operational conditions affecting environmental exposure**
 - Observe section 6 of the Safety Data Sheet (Accidental release measures).
- **Other operational conditions affecting worker exposure**
 - Do not breathe gas/fume/vapour/aerosol.
 - Handle and open container with care.
 - Avoid contact with eyes.
 - Avoid contact with the skin.
- **Other operational conditions affecting consumer exposure** Keep out of the reach of children.
- **Other operational conditions affecting consumer exposure during the use of the product**
 - Not applicable.
- **Risk management measures**
- **Worker protection** Observe section 7.1 and 8.1-8.2 of the safety data sheet.
- **Organisational protective measures**
 - Deploy only trained chemical workers.
 - Provide Internal Plant Instruction.

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- Employment restrictions concerning pregnant and lactating women must be observed.
Employment restrictions concerning women of child-bearing age must be observed.
- **Technical protective measures** Ensure that suitable extractors are available on processing machines
 - **Personal protective measures**
 - Do not inhale dust / smoke / mist.
 - Avoid contact with the skin.
 - Avoid contact with the eyes.
 - Tightly sealed goggles
 - Protective gloves
 - The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
 - Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
 - **Measures for consumer protection**
 - Ensure adequate labelling.
 - Keep locked up and out of the reach of children.
 - **Environmental protection measures**
 - **Water** Do not allow to reach ground water, water bodies or sewage system.
 - **Soil** Prevent contamination of soil.
 - **Notes** In case of unintended release of the product: See section 6 of the Safety Data Sheet.
 - **Disposal measures** Ensure that waste is collected and contained.
 - **Disposal procedures**
 - Must not be disposed together with household garbage. Do not allow product to reach sewage system.
 - **Waste type** Partially emptied and uncleaned packaging
 - **Exposure estimation**
 - **Worker (oral)** Detailed information on the exposure estimation can be found at <http://www.ecetoc.org/tra>.
 - **Worker (dermal)** Detailed information on the exposure estimation can be found at <http://www.ecetoc.org/tra>.
 - **Worker (inhalation)**
 - Detailed information on the exposure estimation can be found at <http://www.ecetoc.org/tra>.
 - **Environment**
 - Detailed information on the estimation of the environmental exposure can be found at <http://ecb.jrc.ec.europa.eu/euses/>.
 - **Consumer** Not relevant for this Exposure Scenario.
 - **Guidance for downstream users** No further relevant information available.