

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

Printing date 21.11.2012

Version number 1

Revision: 01.06.2011

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

- **1.1 Product identifier**
- **Trade name** Akkumulatorensäure 1.23
- **Article number:** 100105
- **1.2 Relevant determined uses of the substance or mixture; and uses advised against:**  
No further relevant information available.
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Chemische Fabrik Wocklum Gebr. Hertin GmbH & Co. KG  
D-58802 Balve, Glärbach 2, Germany  
Phone: +49 (0)2375 / 925-0  
Telefax: +49 (0)2375 / 925-100  
E-Mail: [sdb@wocklum.de](mailto:sdb@wocklum.de)
- **Informing department:**  
Product Safety Department  
Phone: +49 (0) 2375 / 925 – 126
- **1.4 Emergency telephone number:**  
Poison emergency service: Berliner Betrieb für Zentrale Gesundheitliche Aufgaben (BBGes)  
Phone: +49 (0)30 / 19240 (day and night). Email: [mail@giftnotruf.de](mailto:mail@giftnotruf.de). Internet: [www.bbges.de](http://www.bbges.de)  
as from 2013 /01/01  
Emergency Call:  
Poison Control Center Mainz - 24 hour emergency service - Tel: +49 (0) 6131/19240

**SECTION 2: Hazards identification**

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**  
Met. Corr.1 H290 May be corrosive to metals.  
Skin Corr. 1A H314 Causes severe skin burns and eye damage.
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**  
C; Corrosive  
R35: Causes severe burns.
- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**  
The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



GHS05

- **Signal word** *Danger*
- **Hazard-determining components of labelling:**  
*sulphuric acid*
- **Hazard statements**  
H290 May be corrosive to metals.  
H314 Causes severe skin burns and eye damage.

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- **Precautionary statements**

- P280 *Wear protective gloves/protective clothing/eye protection/face protection.*
- P303+P361+P353 *IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.*
- 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/physician.*

- **2.3 Other hazards**



- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### SECTION 3: Composition/information on ingredients

- **3.2 Chemical characterization: Mixtures**

- **Dangerous components:**

CAS: 7664-93-9	sulphuric acid	31.4%
EINECS: 231-639-5	 C R35	
Index number: 016-020-00-8	 Met. Corr. 1, H290; Skin Corr. 1A, H314	
Reg.nr.: 01-2119458838-20		

### SECTION 4: First aid measures

- **4.1 Description of first aid measures**

- **General information** Instantly remove any clothing soiled by the product.

- **After inhalation**

Supply fresh air or oxygen; call for doctor.

In case of unconsciousness bring patient into stable side position for transport.

- **After skin contact**

Instantly wash with water and soap and rinse thoroughly.

Cover wound with a sterile dressing.

Immediate medical treatment necessary. Failure to treat burns can prevent wounds from healing.

- **After eye contact**

Rinse opened eye for several minutes under running water.

Consult an eye specialist immediately.

- **After swallowing** Drink copious amounts of water and provide fresh air. Instantly call for doctor.

- **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.

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

No further relevant information available.

### SECTION 5: Firefighting measures

- **5.1 Extinguishing media**

- **Suitable extinguishing agents** No restriction in fire situations.

- **For safety reasons unsuitable extinguishing agents** Water.

- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.

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- **5.3 Advice for firefighters**
- **Protective equipment:** Wear self contained breathing apparatus.

### SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment (see section 8).  
Keep unprotected persons away.
- **6.2 Environmental precautions:** Do not allow product to reach sewage system or water bodies.
- **6.3 Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose of contaminated material as waste according to item 13.
- **6.4 Reference to other sections**  
See Section 8 for information on personal protection equipment.

### SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.  
Keep container dry and tightly closed.
- **Information about protection against explosions and fires:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and containers:** Store only in the original container.
- **Information about storage in one common storage facility:**  
Keep away from: Alkali, metals, organic substances.
- **Further information about storage conditions:** No.
- **7.3 Specific end use(s)** No further relevant information available.

### SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **8.1 Control parameters**
- **Components with critical values that require monitoring at the workplace:**  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

#### · DNELs

##### 7664-93-9 sulphuric acid

Inhalative	DNEL Arbeitnehmer (lokal, Kurzzeit)	0.1 mg/m <sup>3</sup> (/)
	DNEL Arbeitnehmer (lokal, Langzeit)	0.05 mg/m <sup>3</sup> (/)

#### · PNECs

##### 7664-93-9 sulphuric acid

PNEC Auswirkungen auf Abwasserreinigungsanlagen	8.8 mg/l (/)
PNEC Gewässer (Meerwasser)	0.25 mg/l (/)

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PNEC Gewässer (Süßwasser)	0.0025 mg/l (/)
PNEC Sediment (Meerwasser)	0.002 mg/kg (/)
PNEC Sediment (Süßwasser)	0.002 mg/kg (/)

· **8.2 Exposure controls**

· **Personal protective equipment**

· **General protective and hygienic measures**

Instantly remove any soiled and impregnated garments.

Avoid contact with the eyes and skin.

· **Breathing equipment:**

In case of brief exposure or low pollution use breathing filter apparatus. In case of intensive or longer exposure use breathing apparatus that is independent of circulating air.

· **Protection of hands:**

Use protective gloves. The glove material has to be sufficiently impermeable and resistant to the substance. Check for leaks before use. Gloves in use have to be pre-cleaned before taking them off, then stored well ventilated. Note skin protection.

· **Material of gloves**

(Penetration time  $\geq$  8 hours)

chloroprene rubber - CR (0,5 mm)

nitrile rubber - NBR (0,35 mm)

butyl rubber - BR (0,5 mm)

polyvinyl chloride - PVC (0,5 mm)

fluorcarbon rubber (0,4 mm)

· **Penetration time of glove material**

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

· **Eye protection:** Tightly sealed safety glasses (DIN EN 166)

· **Body protection:** Acid resistant protective clothing

**SECTION 9: Physical and chemical properties**

· **9.1 Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

· <b>Form:</b>	Fluid
· <b>Colour:</b>	Colourless
· <b>Smell:</b>	Odourless

· **pH-value at 20°C:** < 1

· **Change in condition**

· <b>Melting point/Melting range:</b>	-40°C
· <b>Boiling point/Boiling range:</b>	105°C

· **Flash point:** Not applicable.

· **Inflammability (solid, gaseous)** Product is not inflammable.

· **Ignition temperature:** Not determined.

· **Decomposition temperature:** Not determined.

· **Self-inflammability:** Product is not selfigniting.

· **Danger of explosion:** Product is not explosive.

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· <b>Critical values for explosion:</b>	
Lower:	Not applicable
Upper:	Not applicable
· <b>Oxidizing properties</b>	not classified as oxidising
· <b>Steam pressure:</b>	Not determined.
· <b>Density at 20°C</b>	1.23 g/cm <sup>3</sup>
· <b>Vapour density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with Water:</b>	Fully miscible
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
dynamic:	Not determined.
· <b>9.2 Other information</b>	No further relevant information available.

### SECTION 10: Stability and reactivity

- **10.1 Reactivity** The substance is stable under normal conditions of use.
- **10.2 Chemical stability**
- **Conditions to be avoided:** No decomposition if intended stored and handled.
- **10.3 Possibility of hazardous reactions**  
Exothermic reaction with water and alkalis.  
Reacts with metals forming hydrogen
- **10.4 Conditions to avoid** No further information, sh. Item 7.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** None known.

### SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

**7664-93-9 sulphuric acid**

Oral	LD50	2140 mg/kg (Ratte)
Inhalative	LC50/4h	0.375 mg/l (Ratte)

- **Primary irritant effect:**
- **on the skin:** Strong caustic effect on skin and mucous membranes.
- **on the eye:** Strong caustic effect.
- **Sensitisation:** No sensitising effect known.

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### SECTION 12: Ecological information

#### 12.1 Toxicity

##### Aquatic toxicity:

##### 7664-93-9 sulphuric acid

EC50 (48h)	> 100 mg/l (Daphnia magna (großer Wasserfloh))
IC50 (72h)	> 100 mg/l (Alge (Senedesmus capricornutum))
LC50 (96h)	16-28 mg/l (Lepomis macrochirus (Bl. Sonnenbarsch))

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 Other adverse effects No further relevant information available.

### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods

Recommendation Must be specially treated under adherence to official regulations.

##### Waste disposal key number:

The waste code according to the Waste Catalogue Ordinance (AVV) must be determined by the waste producer, it depends on the type of use/ type of waste generation and may be different for a particular product.

##### European waste catalogue

The appropriate code according to the European Waste Catalogue (EWC) should be used.

16 06 06*	separately collected electrolyte from batteries and accumulators
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##### Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

### SECTION 14: Transport information

#### 14.1 UN-Number

ADR, IMDG, IATA 2796

#### 14.2 UN proper shipping name

ADR 2796 SULPHURIC ACID

IMDG, IATA SULPHURIC ACID

#### 14.3 Transport hazard class(es)

ADR, IMDG, IATA



Class

8 Corrosive substances.

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· <b>Label</b>	8
· <b>14.4 Packing group</b> · <b>ADR, IMDG, IATA</b>	II
· <b>14.5 Environmental hazards:</b> · <b>Marine pollutant:</b>	no
· <b>14.6 Special precautions for user</b> · <b>Kemler Number:</b> · <b>EMS Number:</b> · <b>Segregation groups</b>	Not applicable. 80 F-A,S-B Acids
· <b>14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>	
· <b>ADR</b> · <b>Limited quantities (LQ)</b> · <b>Transport category</b> · <b>Tunnel restriction code</b>	LQ22 2 E
· <b>UN "Model Regulation":</b>	UN2796, SULPHURIC ACID, 8, II

**SECTION 15: Regulatory information**

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **National regulations**
- **Water hazard class:** Water hazard class 1 (L): Slightly hazardous to water.
- **15.2 Chemical safety assessment:**  
A chemical safety assessment has been carried out for:  
sulphuric acid  
A Chemical Safety Assessment has been carried out.

**SECTION 16: Other information**

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases**  
H290 May be corrosive to metals.  
H314 Causes severe skin burns and eye damage.  
R35 Causes severe burns.
- **Department issuing data specification sheet:** Environment protection department.
- **Abbreviations and acronyms:**  
RTECS - Registry of Toxic Effects of Chemical Substances  
ADR: Accord européen sur le transport 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 Harmonized System of Classification and Labelling of Chemicals  
DNEL: Derived No-Effect Level (REACH)  
PNEC: Predicted No-Effect Concentration (REACH)  
LC50: Lethal concentration, 50 percent

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*LD50: Lethal dose, 50 percent*

*\* Data compared to the previous version altered. Safety editorially amended*

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### Annex: Exposure scenario 1

- **Short title of the exposure scenario**
- **Sector of Use**
  - SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
  - SU4 Manufacture of food products
  - SU6b Manufacture of pulp, paper and paper products
  - SU8 Manufacture of bulk, large scale chemicals (including petroleum products)
  - SU9 Manufacture of fine chemicals
  - SU14 Manufacture of basic metals, including alloys
- **Product category** PC19 Intermediate
- **Process category**
  - 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
  - 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)
- **Environmental release category** ERC6b Industrial use of reactive processing aids
- **Physical parameters**
  - The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the substance.
- **Used amount per time or activity** 300 000 tons per year

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### Annex: Exposure scenario 2

- **Short title of the exposure scenario**
- **Sector of Use**
  - 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
  - SU8 Manufacture of bulk, large scale chemicals (including petroleum products)
  - SU9 Manufacture of fine chemicals
  - SU11 Manufacture of rubber products
  - SU23 Electricity, steam, gas water supply and sewage treatment
- **Product category PC20** Products such as ph-regulators, flocculants, precipitants, neutralization agents
- **Process category**
  - 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
  - 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)
  - PROC13 Treatment of articles by dipping and pouring
- **Environmental release category ERC6b** Industrial use of reactive processing aids
- **Physical parameters**

The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the substance.
- **Used amount per time or activity** 100 000 tons per year

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**Annex: Exposure scenario 3**

- **Short title of the exposure scenario**
- **Sector of Use**
  - SU2a Mining, (without offshore industries)
  - SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
  - SU14 Manufacture of basic metals, including alloys
- **Product category**
  - PC20 Products such as ph-regulators, flocculants, precipitants, neutralization agents
  - PC40 Extraction agents
- **Process category**
  - 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
- **Environmental release category**
  - ERC4 Industrial use of processing aids in processes and products, not becoming part of articles
  - ERC6b Industrial use of reactive processing aids
- **Physical parameters**

The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the substance.
- **Used amount per time or activity** 438 tons per year

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### Annex: Exposure scenario 4

- **Short title of the exposure scenario**
- **Sector of Use**
  - SU2a Mining, (without offshore industries)
  - SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
  - SU14 Manufacture of basic metals, including alloys
  - SU15 Manufacture of fabricated metal products, except machinery and equipment
  - SU16 Manufacture of computer, electronic and optical products, electrical equipment
- **Product category**
  - PC14 Metal surface treatment products, including galvanic and electroplating products
  - PC15 Non-metal-surface treatment products
- **Process category**
  - 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
  - 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)
  - PROC13 Treatment of articles by dipping and pouring
- **Environmental release category** ERC6b Industrial use of reactive processing aids
- **Description of the activities / processes covered in the Exposure Scenario**  
See section 1 of the annex to the Safety Data Sheet.
- **Physical parameters**  
The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the substance.
- **Used amount per time or activity** 10000 tons per year
- **Other operational conditions**
- **Other operational conditions affecting worker exposure**  
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**
- **Technical protective measures** Ensure that suitable extractors are available on processing machines
- **Personal protective measures**  
Do not inhale gases / fumes / aerosols.  
Avoid contact with the skin.  
Avoid contact with the eyes.  
Tightly sealed safety glasses (DIN EN 166)
- **Measures for consumer protection**  
Ensure adequate labelling.  
Keep locked up and out of the reach of children.
- **Environmental protection measures**
- **Water**  
Generally, prior to the introduction of wastewater into wastewater treatment plants a neutralisation is required.
- **Disposal measures** Disposal must be made according to official regulations.

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- **Disposal procedures**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Waste type** Partially emptied and uncleaned packaging
- **Exposure estimation**
- **Consumer** Not relevant for this Exposure Scenario.

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### Annex: Exposure scenario 5

- **Short title of the exposure scenario**
- **Sector of Use**
  - SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
  - SU14 Manufacture of basic metals, including alloys
  - SU15 Manufacture of fabricated metal products, except machinery and equipment
  - SU17 General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment
- **Product category**
  - PC14 Metal surface treatment products, including galvanic and electroplating products
  - PC20 Products such as ph-regulators, flocculants, precipitants, neutralization agents
- **Process category**
  - PROC1 Use in closed process, no likelihood of exposure
  - PROC2 Use in closed, continuous process with occasional controlled exposure
  - 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)
  - PROC13 Treatment of articles by dipping and pouring
- **Environmental release category**
  - ERC5 Industrial use resulting in inclusion into or onto a matrix
  - ERC6b Industrial use of reactive processing aids
- **Description of the activities / processes covered in the Exposure Scenario**  
See section 1 of the annex to the Safety Data Sheet.
- **Physical parameters**  
The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the substance.
- **Used amount per time or activity** 2 306 000 tons per year
- **Other operational conditions**
- **Other operational conditions affecting worker exposure**  
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**
- **Technical protective measures** Ensure that suitable extractors are available on processing machines
- **Personal protective measures**  
Do not inhale gases / fumes / aerosols.  
Avoid contact with the skin.  
Avoid contact with the eyes.  
Tightly sealed safety glasses (DIN EN 166)
- **Measures for consumer protection**  
Ensure adequate labelling.  
Keep locked up and out of the reach of children.
- **Environmental protection measures**
- **Water**  
Generally, prior to the introduction of wastewater into wastewater treatment plants a neutralisation is required.
- **Disposal measures** Disposal must be made according to official regulations.
- **Disposal procedures**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Waste type** Partially emptied and uncleaned packaging

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- **Exposure estimation**
- **Consumer** Not relevant for this Exposure Scenario.

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### Annex: Exposure scenario 6

- **Short title of the exposure scenario**
- **Sector of Use**
  - SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
  - SU8 Manufacture of bulk, large scale chemicals (including petroleum products)
- **Product category** PC20 Products such as ph-regulators, flocculants, precipitants, neutralization agents
- **Process category**
  - PROC1 Use in closed process, no likelihood of exposure
  - PROC2 Use in closed, continuous process with occasional controlled exposure
  - PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
- **Environmental release category** ERC7 Industrial use of substances in closed systems
- **Description of the activities / processes covered in the Exposure Scenario**  
See section 1 of the annex to the Safety Data Sheet.
- **Physical parameters**  
The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the substance.
- **Used amount per time or activity** 30 000 tons per year
- **Other operational conditions**
- **Other operational conditions affecting worker exposure**  
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**
- **Technical protective measures** Ensure that suitable extractors are available on processing machines
- **Personal protective measures**  
Do not inhale gases / fumes / aerosols.  
Avoid contact with the skin.  
Avoid contact with the eyes.  
Tightly sealed safety glasses (DIN EN 166)
- **Measures for consumer protection**  
Ensure adequate labelling.  
Keep locked up and out of the reach of children.
- **Environmental protection measures**
- **Water**  
Generally, prior to the introduction of wastewater into wastewater treatment plants a neutralisation is required.
- **Disposal measures** Disposal must be made according to official regulations.
- **Disposal procedures**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Waste type** Partially emptied and uncleaned packaging
- **Exposure estimation**
- **Consumer** Not relevant for this Exposure Scenario.

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### Annex: Exposure scenario 7

- **Short title of the exposure scenario**
- **Sector of Use SU3** Industrial uses: Uses of substances as such or in preparations at industrial sites
- **Product category PC0** Other
- **Process category**
  - 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
  - PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
- **Environmental release category**
  - ERC2 Formulation of preparations
  - ERC5 Industrial use resulting in inclusion into or onto a matrix
- **Description of the activities / processes covered in the Exposure Scenario**  
See section 1 of the annex to the Safety Data Sheet.
- **Physical parameters**  
The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the substance.
- **Used amount per time or activity** 2 500 tons per year
- **Other operational conditions**
- **Other operational conditions affecting worker exposure**  
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**
- **Technical protective measures** Ensure that suitable extractors are available on processing machines
- **Personal protective measures**  
Do not inhale gases / fumes / aerosols.  
Avoid contact with the skin.  
Avoid contact with the eyes.  
Tightly sealed safety glasses (DIN EN 166)
- **Measures for consumer protection**  
Ensure adequate labelling.  
Keep locked up and out of the reach of children.
- **Environmental protection measures**
- **Water**  
Generally, prior to the introduction of wastewater into wastewater treatment plants a neutralisation is required.
- **Disposal measures** Disposal must be made according to official regulations.
- **Disposal procedures**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Waste type** Partially emptied and uncleaned packaging
- **Exposure estimation**
- **Consumer** Not relevant for this Exposure Scenario.

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### Annex: Exposure scenario 8

- **Short title of the exposure scenario**
- **Sector of Use**  
*SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)*
- **Product category** *PC0 Other*
- **Process category** *PROC19 Hand-mixing with intimate contact and only PPE available*
- **Environmental release category**  
*ERC8b Wide dispersive indoor use of reactive substances in open systems*  
*ERC9b Wide dispersive outdoor use of substances in closed systems*
- **Description of the activities / processes covered in the Exposure Scenario**  
*See section 1 of the annex to the Safety Data Sheet.*
- **Physical parameters**  
*The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the substance.*
- **Used amount per time or activity** *2 500 tons per year*
- **Other operational conditions**
- **Other operational conditions affecting worker exposure**  
*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**
- **Technical protective measures** *Ensure that suitable extractors are available on processing machines*
- **Personal protective measures**  
*Do not inhale gases / fumes / aerosols.*  
*Avoid contact with the skin.*  
*Avoid contact with the eyes.*  
*Tightly sealed safety glasses (DIN EN 166)*
- **Measures for consumer protection**  
*Ensure adequate labelling.*  
*Keep locked up and out of the reach of children.*
- **Environmental protection measures**
- **Water**  
*Generally, prior to the introduction of wastewater into wastewater treatment plants a neutralisation is required.*
- **Disposal measures** *Disposal must be made according to official regulations.*
- **Disposal procedures**  
*Must not be disposed of together with household garbage. Do not allow product to reach sewage system.*
- **Waste type** *Partially emptied and uncleaned packaging*
- **Exposure estimation**
- **Consumer** *Not relevant for this Exposure Scenario.*

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### Annex: Exposure scenario 9

- **Short title of the exposure scenario**
- **Sector of Use SU3** Industrial uses: Uses of substances as such or in preparations at industrial sites
- **Product category PC0** Other
- **Process category**
  - PROC2 Use in closed, continuous process with occasional controlled exposure
  - 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 (multistage and/or significant contact)
  - PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
- **Environmental release category ERC1** Manufacture of substances
- **Description of the activities / processes covered in the Exposure Scenario**  
See section 1 of the annex to the Safety Data Sheet.
- **Physical parameters**  
The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the substance.
- **Used amount per time or activity** 2 500 tons per year
- **Other operational conditions**
- **Other operational conditions affecting worker exposure**  
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**
- **Technical protective measures** Ensure that suitable extractors are available on processing machines
- **Personal protective measures**  
Do not inhale gases / fumes / aerosols.  
Avoid contact with the skin.  
Avoid contact with the eyes.  
Tightly sealed safety glasses (DIN EN 166)
- **Measures for consumer protection**  
Ensure adequate labelling.  
Keep locked up and out of the reach of children.
- **Environmental protection measures**
- **Water**  
Generally, prior to the introduction of wastewater into wastewater treatment plants a neutralisation is required.
- **Disposal measures** Disposal must be made according to official regulations.
- **Disposal procedures**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Waste type** Partially emptied and uncleaned packaging
- **Exposure estimation**
- **Consumer** Not relevant for this Exposure Scenario.

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### Annex: Exposure scenario 10

- **Short title of the exposure scenario**
- **Sector of Use**  
*SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)*
- **Product category** *PC21 Laboratory chemicals*
- **Process category** *PROC15 Use as laboratory reagent*
- **Environmental release category**  
*ERC8a Wide dispersive indoor use of processing aids in open systems*  
*ERC8b Wide dispersive indoor use of reactive substances in open systems*
- **Description of the activities / processes covered in the Exposure Scenario**  
*See section 1 of the annex to the Safety Data Sheet.*
- **Physical parameters**  
*The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the substance.*
- **Used amount per time or activity** *5 000 tons per year*
- **Other operational conditions**
- **Other operational conditions affecting worker exposure**  
*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**
- **Personal protective measures**  
*Do not inhale gases / fumes / aerosols.*  
*Avoid contact with the skin.*  
*Avoid contact with the eyes.*  
*Tightly sealed safety glasses (DIN EN 166)*
- **Measures for consumer protection**  
*Ensure adequate labelling.*  
*Keep locked up and out of the reach of children.*
- **Disposal measures** *Disposal must be made according to official regulations.*
- **Disposal procedures**  
*Must not be disposed of together with household garbage. Do not allow product to reach sewage system.*
- **Waste type** *Partially emptied and uncleaned packaging*
- **Exposure estimation**
- **Consumer** *Not relevant for this Exposure Scenario.*

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### Annex: Exposure scenario 11

- **Short title of the exposure scenario**
- **Sector of Use SU3** Industrial uses: Uses of substances as such or in preparations at industrial sites
- **Product category PC35** Washing and cleaning products (including solvent based products)
- **Process category**
  - PROC2 Use in closed, continuous process with occasional controlled exposure
  - PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage 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
  - PROC13 Treatment of articles by dipping and pouring
- **Environmental release category**
  - ERC8a Wide dispersive indoor use of processing aids in open systems
  - ERC8b Wide dispersive indoor use of reactive substances in open systems
- **Description of the activities / processes covered in the Exposure Scenario**  
See section 1 of the annex to the Safety Data Sheet.
- **Physical parameters**  
The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the substance.
- **Used amount per time or activity** 5 000 tons per year
- **Other operational conditions**
- **Other operational conditions affecting worker exposure**  
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**
- **Personal protective measures**  
Do not inhale gases / fumes / aerosols.  
Avoid contact with the skin.  
Avoid contact with the eyes.  
Tightly sealed safety glasses (DIN EN 166)
- **Measures for consumer protection**  
Ensure adequate labelling.  
Keep locked up and out of the reach of children.
- **Disposal measures** Disposal must be made according to official regulations.
- **Disposal procedures**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Waste type** Partially emptied and uncleaned packaging
- **Exposure estimation**
- **Consumer** Not relevant for this Exposure Scenario.

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### Annex: Exposure scenario 12

- **Short title of the exposure scenario**
- **Sector of Use**  
  - SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
  - SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
- **Process category**  
  - PROC1 Use in closed process, no likelihood of exposure
  - PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage 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)
- **Environmental release category** ERC2 Formulation of preparations
- **Description of the activities / processes covered in the Exposure Scenario**  
  - See section 1 of the annex to the Safety Data Sheet.
- **Physical parameters**  
  - The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the substance.
- **Used amount per time or activity** 300 000 tons per year
- **Other operational conditions**
- **Other operational conditions affecting worker exposure**  
  - 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**
- **Personal protective measures**  
  - Do not inhale gases / fumes / aerosols.
  - Avoid contact with the skin.
  - Avoid contact with the eyes.
  - Tightly sealed safety glasses (DIN EN 166)
- **Measures for consumer protection**  
  - Ensure adequate labelling.
  - Keep locked up and out of the reach of children.
- **Disposal measures** Disposal must be made according to official regulations.
- **Disposal procedures**  
  - Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Waste type** Partially emptied and uncleaned packaging
- **Exposure estimation**
- **Consumer** Not relevant for this Exposure Scenario.

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### Annex: Exposure scenario 13

- **Short title of the exposure scenario**
- **Sector of Use SU21** Consumer uses: Private households / general public / consumers
- **Environmental release category ERC9b** Wide dispersive outdoor use of substances in closed systems
- **Description of the activities / processes covered in the Exposure Scenario**  
See section 1 of the annex to the Safety Data Sheet.
- **Physical parameters**  
The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the substance.
- **Used amount per time or activity** 2500 tons per year
- **Other operational conditions**
- **Other operational conditions affecting worker exposure**  
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**
- **Personal protective measures**  
Do not inhale gases / fumes / aerosols.  
Avoid contact with the skin.  
Avoid contact with the eyes.
- **Measures for consumer protection**  
Ensure adequate labelling.  
Keep locked up and out of the reach of children.
- **Disposal measures** Disposal must be made according to official regulations.
- **Disposal procedures**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Waste type** Partially emptied and uncleaned packaging
- **Exposure estimation**
- **Consumer** Not relevant for this Exposure Scenario.