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

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

- **1.1 Product identifier**
- **Trade name Akkusäure 1,285**
- **Article number:** 1000410434002
- **CAS Number:** 7664-93-9
- **EINECS Number:** 231-639-5
- **Index number:** 016-020-00-8
- **REACh-Registration number** 01-2119458838-20
- **UFI:** MCJ1-40CR-C00U-8EPD
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
  For details on the identifiable uses according to EC-regulation No. 1907/2006 see annex of this safety data sheet.
- **Application of the substance / the mixture**
  Restrictions on use apply to this product according to Regulation (EU) no. 1907/2006 Annex XVII (see section 15)
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
  Stockmeier Chemie GmbH & Co.KG
  Am Stadtholz 37
  D-33609 Bielefeld
  Phone: + 49(0)521/3037-0
  Fax: + 49 (0)521/3037-159
- **Informing department:**
  Product safety department. Tel.: 0049 / 521 / 3037-381
  E-mail: ehs-bielefeld@stockmeier.de
- **1.4 Emergency telephone number:**
  This is an English-language document designed for the European region. For the emergency number and other country-specific data, please refer to the specific national versions of this safety data sheet.
  Counselling Centre for Poisoning, Mainz
  Tel. (+49) 61 31 / 19 240.

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.

Eye Dam. 1 H318 Causes serious eye damage.

- **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

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- **Hazard statements**
H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
- **Precautionary statements**
P260 Do not breathe mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or 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/doctor.
- **Additional information:**
Product contains: Restricted explosives precursors. Making available, introduction, possession and use according to Regulation (EU) 2019/1148, Article 5 (1) and (3).
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

- **3.2 Mixtures**
- **Description:** Mixture of the substances listed below with harmless additions

- **Dangerous components:**

CAS: 7664-93-9 EINECS: 231-639-5 Index number: 016-020-00-8 Reg.nr.: 01-2119458838-20	sulphuric acid Met. Corr.1, H290; Skin Corr. 1A, H314 Specific concentration limits: Skin Corr. 1A; H314: C ≥ 15 % Skin Irrit. 2; H315: 5 % ≤ C < 15 % Eye Irrit. 2; H319: 5 % ≤ C < 15 %	25-50%

- **Additional information** For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General advice:**
Instantly remove any clothing soiled by the product.
In case of unconsciousness bring patient into stable side position for transport.
In case of persistent symptoms receive medical treatment.
- **After inhalation**
Take affected persons into the open air and position comfortably.
Drink plenty of water.
Seek medical treatment.
In case of unconsciousness bring patient into stable side position for transport.
Supply fresh air; consult doctor in case of symptoms.
- **After skin contact**
Instantly wash with water and soap and rinse thoroughly.
Immediate medical treatment necessary. Failure to treat burns can prevent wounds from healing.
Instantly wash with water and soap and rinse thoroughly. If skin irritation persists, seek medical advice.
Remove contaminated clothing immediately. Wash affected areas with plenty of water und soap. If irritation continues, contact a doctor.

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- ***After eye contact***
  Rinse opened eye for several minutes under running water.
  Remove contact lenses.
  Use eye protection.
  Call a doctor immediately.
  Rinse immediately opened eye for several minutes under running water. Then consult doctor.
- ***After swallowing***
  Rinse out mouth and then drink plenty of water.
  Drink copious amounts of water and provide fresh air. Instantly call for doctor.
  Do not induce vomiting. Drink plenty of water. Call for medical help.
- ***Information for doctor***
  In cases of irritation to the respiratory sytems, initial treatment with Dexametason metered aerosol.
- ***4.2 Most important symptoms and effects, both acute and delayed***
  Burning effect and pain to eyes, skin and mucous membranes. After swallowing serious irritation to oral cavity and throat as well as danger of perforation of the gullet.
- ***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***
  Use fire fighting measures that suit the environment.
  CO2, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.
  Use fire fighting measures that suit the environment.
- ***5.2 Special hazards arising from the substance or mixture***
  Can be released in case of fire:
  sulphur oxides (SOx)
  Reacts with base metals forming readily flammable hydrogen.
  The substance is highly corrosive and reacts violently with water and foam. Strong heating on contact with water and alkalis.
- ***5.3 Advice for firefighters***
- ***Protective equipment:***
  Wear self-contained breathing apparatus.
  Wear full protective suit with self-contained breathing apparatus.
- ***Additional information***
  Cool endangered containers with water spray jet.
  Collect contaminated fire fighting water separately. Do not allow to enter drains.
  Avoid direct exposure to water.
  Endangered containers in the surrounding area should be cooled with a water-hose.

SECTION 6: Accidental release measures

- ***6.1 Personal precautions, protective equipment and emergency procedures***
  Avoid contact with skin, eyes and clothes.
  Particular danger of slipping on leaked/spilled product.
  Ensure adequate ventilation
  Use breathing protection against the effects of fumes/dust/aerosol.
  Wear protective equipment and keep unprotected persons away.
- ***6.2 Environmental precautions:***
  Do not allow to enter drainage system, surface or ground water.
  If large amounts are released, the authorities must be informed.

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- **6.3 Methods and material for containment and cleaning up:**
Absorb with inert absorbent material (sand, diatomite, acid binders, universal binders). Do not use combustible/oxidizable substances.
Pump large quantities.
Send for recovery or disposal in suitable containers.
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Use neutralising agent.
Ensure adequate ventilation.
Contaminated material has to be disposed as waste (see item 13).
- **6.4 Reference to other sections**
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Keep containers tightly sealed.
Prevent formation of aerosols.
Avoid contact with eyes and skin.
- **Information about protection against explosions and fires:**
The product is not flammable
Keep ignition sources away - Do not smoke.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage** Store in cool, dry conditions in well sealed containers.
- **Requirements to be met by storerooms and containers:**
Observe official regulations on storage and handling of water harzardous substances
Provide acid-resistant floor.
Use only containers specifically permitted for this substance/product.
- **Information about storage in one common storage facility:**
Store away from foodstuffs.
Keep away from alkalis, metals, and organic compounds.
Pay attention to regulations / technical guidelines on mixed storage of toxic substances
- **Further information about storage conditions:**
Protect from humidity and keep away from water.
This product is hygroscopic.
Must be stored in a collecting room.
Keep container tightly sealed.
- **Storage class** 8 B L (VCI - Konzept, 2007)
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**
- **Additional information about design of technical systems:** No further data; see item 7.

- **Components with critical values that require monitoring at the workplace:**	
7664-93-9 sulphuric acid	
IOELV (European Union)	Long-term value: 0.05 mg/m³

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- **DNELs**		
7664-93-9 sulphuric acid		
Inhalative	DNEL (worker)	0.1 mg/m³ (Acute, local effects) 0.05 mg/m³ (Long-term - local effects)

- **PNECs**	
7664-93-9 sulphuric acid	
PNEC water	0.0025 mg/l (freshwater) 0.25 mg/l (marine water)
PNEC sediment	0.002 mg/kg (freshwater) 0.002 mg/kg (marine water)
PNEC STP	8.8 mg/l (sewage plant)

- **Additional information:** The lists that were valid during the compilation were used as basis.

- **8.2 Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures**
Keep away from food, beverages and fodder.
Instantly remove any soiled and impregnated garments.
Wash hands during breaks and at the end of the work.
Avoid contact with the eyes and skin.
Gases, fumes and aerosols should not be inhaled.
- **Breathing equipment:**
Use breathing protection only when aerosol or mist is formed.
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.
Respiratory protection in case of release of vapours/aerosols
- **Recommended filter device for short term use:** Combination filter E-P2
- **Protection of hands:**
Check the permeability prior to each anewed use of the glove.
Protective gloves.
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- **Material of gloves**
Fluorocarbon rubber (Viton), recommended thickness of the material: ≥ 0.4 mm, penetration time: ≥ 480 min.
Butylrubber, BR, recommended thickness of the material: ≥ 0.5 mm, penetration time: ≥ 480 min.
Chloroprene rubber, CR, recommended thickness of the material: ≥ 0.5 mm, penetration time: ≥ 480 min.
Nitrile rubber, NBR, recommended thickness of the material: ≥ 0.35 mm, penetration time: ≥ 480 min.
Polyvinylchlorid (PVC), recommended thickness of the material: ≥ 0.5 mm, penetration time: ≥ 480 Min.
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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- **Penetration time of glove material**
Note information regarding permeation rate, penetration times and the degradation supplied by the manufacturer of gloves just as workplace-specific conditions.
Change gloves if notice sign of disenchantment.

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Material of gloves is recommended for a short-term single use to protect from splashes. For permanent usage contact manufacturer of gloves.
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **For the permanent contact gloves made of the following materials are suitable:**
Fluorocarbon rubber (Viton) with 0.7 mm coating thickness (recommended: protective index 6, corresponding to > 480 minutes of permeation time according to EN 374).
Attention! Due to conditions (stressing, temperature) the practical usage of chemical protective gloves may be much shorter than the permeation time according to EN 374.
- **Not suitable are gloves made of the following materials:** Natural rubber, NR
- **Eye protection:** Tightly sealed safety glasses.
- **Body protection:**
Standard proctective clothing. Chemical resistant safety-shoes or boots. If skin contact is possible, wear inpenetrable protective clothing against this solvent.

SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**	
- **General Information**	
- **Appearance:**	
Form:	Fluid
Colour:	Colourless
- **Smell:**	Odourless
- **Odour threshold:**	Not determined.
- **pH-value at 20 °C:**	<1
- **Melting point/freezing point:**	65 °C
- **Initial boiling point and boiling range:**	112 °C
- **Flash point:**	Product is non-flammable nor potentially explosive
- **Inflammability (solid, gaseous)**	Not applicable.
- **Decomposition temperature:**	340 °C
- **Self-inflammability:**	Product is not selfigniting.
- **Explosive properties:**	Product is not potentially explosive
- **Critical values for explosion:**	
Lower:	Not determined.
Upper:	Not determined.
- **Oxidising properties**	No oxidizing properties
- **Vapour pressure:**	Not determined.
- **Density at 20 °C**	1.285 g/cm³
- **Relative density**	Not determined.
- **Vapour density**	Not determined.
- **Evaporation rate**	Not determined.
- **Solubility in / Miscibility with**	
Water:	Fully miscible
- **Partition coefficient: n-octanol/water:**	Not determined.
- **Viscosity:**	
dynamic:	Not determined.

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kinematic:	Not determined.
- **Solvent content:**	
Water:	63.0 %
Solids content:	0.0 %
- **9.2 Other information**	No further relevant information available.

SECTION 10: Stability and reactivity

- **10.1 Reactivity** see section 10.3
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
To avoid thermal decomposition do not overheat.
Thermal decomposition: > 500 °C
- **10.3 Possibility of hazardous reactions**
Violent reactions with strong alkalis and oxidizing agents
Corrosive action on metals
When diluting, always add acid to water, never vice versa
Heating occurs when water is added
Reacts with metals forming hydrogen
Acts as an oxidizing agent on organic materials such as wood, paper and fats
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:**
base metals
alkalies
Reactions with strong oxidising agents.
- **10.6 Hazardous decomposition products:**
Hydrogen
Sulphur oxides (SOx)
- **Additional information:** The solution is hygroscopic

* SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.

- **LD/LC50 values that are relevant for classification:**		
7664-93-9 sulphuric acid		
Oral	LD50	2,140 mg/kg (rat) (OECD TG 401)

- **Primary irritant effect:**
- **Skin corrosion/irritation**
Causes severe skin burns and eye damage.
- **Serious eye damage/irritation**
Causes serious eye damage.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **Experience with humans:**
In certain processes involving the formation of mists of strong inorganic acids, which also contain sulphuric acid, there is a risk of cancer to the respiratory tract in humans, according to the IARC.
- **Additional toxicological information:**
- **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
According to literature: Animal tests have not revealed any carcinogenic effects.

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Ames-test: non mutagenic
From animal studies, there is no indication of a fertility impairing effect.
- ***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.*

SECTION 12: Ecological information

- ***12.1 Toxicity***

- ***Aquatic toxicity:***	
7664-93-9 sulphuric acid	
LC 50 / 96 h	*16-28 mg/l (Lepomis macrochirus)*
EC 50 / 48 h	*>100 mg/l (Daphnia magna) (OECD 202)*
IC 50 / 72 h	*>100 mg/l (Desmodesmus subspicatus) (ECD 201)*

- ***12.2 Persistence and degradability*** *Inorganic product: not biodegradable.*
- ***12.3 Bioaccumulative potential*** *No bioaccumulation*
- ***12.4 Mobility in soil*** *No further relevant information available.*
- ***Ecotoxical effects:*** *fish, plancton and waterorganism could be damaged by pH - shift*
- ***Other information:***
Inhibition of degradation activity in activated sludge is not to be anticipated during correct introduction of low concentrations.
- ***Additional ecological information:***
Does not cause any biological oxygen consumption. After neutralization, the toxicity is reduced. Toxic effects refer to pH-values below pH<6 or above pH>9.
- ***AOX-indication:*** *Product does not contain organic bound halogens which could lead to AOX-values.*
- ***General notes:***
Do not allow to enter drainage system, surface or ground water
Water hazard class 1 (Self-assessment): slightly hazardous for water.
Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.
- ***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***
The following advice is related to new material and not to any processed products. In case of a mixture with other products other disposal methods may become necessary. If in doubt seek advice from product supplier or from local authorities.
- ***Recommendation***
A used product should be recycled or used in other contexts, otherwise be handed over to an appropriate disposal, e.g. neutralisation.
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

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- **Waste disposal key number:**
Since 01/01/99 the waste code numbers have not only been product-related but are also essentially application-related. The valid waste code number of the application can be obtained from the European waste catalogue.
- **Uncleaned packagings:** Disposal must be made according to official regulations.
- **Recommendation:**
After complete emptying and cleaning, send to be reconditioned or recycled.
Rented packaging: After optimal emptying, close immediately and return to the supplier without cleaning. Care should be taken that no other materials get into the packaging.
Other containers: After complete emptying and cleaning, send to be reconditioned or recycled.
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

SECTION 14: Transport information

- **14.1 UN-Number**	
- **ADR/RID, IMDG, IATA**	UN2796
- **14.2 UN proper shipping name**	
- **ADR/RID**	2796 SULPHURIC ACID
- **IMDG, IATA**	SULPHURIC ACID
- **14.3 Transport hazard class(es)**	
- **ADR/RID**	
- **Class**	8 (C1) Corrosive substances. Corrosive substances.
- **Label**	8
- **IMDG, IATA**	
- **Class**	8 Corrosive substances.
- **Label**	8
- **14.4 Packing group**	
- **ADR/RID, IMDG, IATA**	II
- **14.5 Environmental hazards:**	Not applicable.
- **Marine pollutant:**	No
- **14.6 Special precautions for user**	Warning: Corrosive substances.
- **Kemler Number:**	80
- **EMS Number:**	F-A,S-B
- **Segregation groups**	Strong acids
- **Stowage Category**	B
- **Segregation Code**	SG36 Stow "separated from" SGG18-alkalis. SG49 Stow "separated from" SGG6-cyanides
- **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**	Not applicable.
- **Transport/Additional information:**	
- **ADR/RID**	
- **Limited quantities (LQ)**	1L
- **Excepted quantities (EQ)**	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml

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- **IMDG**	
- **Limited quantities (LQ)**	1L
- **Excepted quantities (EQ)**	Código E4 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
- **UN "Model Regulation":**	UN 2796 SULPHURIC ACID, 8, II

* SECTION 15: Regulatory information

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

P260	Do not breathe mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or 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/doctor.

- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** None of the ingredients is listed.
- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3

- **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**

None of the ingredients is listed.

- **REGULATION (EU) 2019/1148**

- **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**

7664-93-9	sulphuric acid	Limit value: >15-≤40 %	25-50%

- **Regulation (EC) No 273/2004 on drug precursors**

7664-93-9	sulphuric acid	3

- **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**

7664-93-9	sulphuric acid	3

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- ***National regulations***
- ***Information about limitation of use:***
Employment restrictions concerning young persons must be observed.

- ***Other regulations, limitations and prohibitive regulations***
This product is licensed as a raw material for explosives restrictions on disclosure to private end-users according to Regulation EC 98/2013.

- ***Substances of very high concern (SVHC) according to REACH, Article 57***

None of the ingredients is listed.

- ***15.2 Chemical safety assessment:*** *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.

- ***UFI market placements:***
Germany, Bulgaria, Denmark, ESE, Finland, France, Greece, Ireland, ISE, Croatia, Latvia, Lithuania, Malta, Netherland, Norway, Germany, Poland, Portugal, Romania, Sweden, Slovakia, Slovenia, Spain, Czechia, Cyprus
- ***Relevant phrases***
Complete wording of hazard statements and risk phrases (H- and R-phrases) mentioned in section 3. These phrases refer to the constituents. The labelling for this product is stated in section 2.

- ***Department issuing data specification sheet:*** *see item 1: Informing department*
- ***Abbreviations and acronyms:***
RPE: Respiratory Protective Equipment
RCR: Risk Characterisation Ratio (RCR= PEC/PNEC)
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 Harmonized System of Classification and Labelling of Chemicals
CLP: Classification, Labelling and Packaging (Regulation (EC) No. 1272/2008)
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
TRGS: Technische Regeln für Gefahrstoffe (Technical Rules for Dangerous Substances, BAuA, Germany)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
SVHC: Substances of Very High Concern
vPvB: very Persistent and very Bioaccumulative
Met. Corr.1: Corrosive to metals – Category 1
Skin Corr. 1A: Skin corrosion/irritation – Category 1A
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
- **** Data compared to the previous version altered.***
- ***ANNEX***
Exposure Scenarios:
Use as an intermediate in manufacture of inorganic and organic chemicals including fertilizers.
Use as processing aid.
Use for extraction and processing of minerals and ores. (Industrial)
Use for surface treatment. (Industrial)
Use in electrolytic processes. (Industrial)
Use in gas purification.
Use in production of lead acid batteries. (Industrial)
Maintenance of lead acid batteries. (Professional)

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Recycling of lead acid batteries. (Industrial)
Use as laboratory chemical.
Use for industrial cleaning
Use in formulation.
Use of lead acid batteries. (Consumer)

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Annex: Exposure scenario 1

- **Short title of the exposure scenario** Use as processing aid.
- **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
  SU11 Manufacture of rubber products
  SU23 Electricity, steam, gas water supply and sewage treatment
- **Product category**
  PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization 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
  PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
  PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
  PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
  PROC13 Treatment of articles by dipping and pouring
- **Environmental release category**
  ERC6b Use of reactive processing aid at industrial site (no inclusion into or onto article)

- **Conditions of use**
- **Duration and frequency**
- **Worker**
  8 h (full working shift).
  5 workdays/week.
- **Environment** < 365 days/year
- **Physical parameters**
  The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the pure substance.
- **Physical state**
  Liquid
  Vapor pressure: < 0.1 hPa (20 °C)
- **Concentration of the substance in the mixture** Raw material.
- **Used amount per time or activity** 100 000 tons per year
- **Other operational conditions**
- **Other operational conditions affecting environmental exposure**
  Due to the nature of the substance the process should be kept as contained as possible.
- **Other operational conditions affecting worker exposure**
  Due to the nature of the substance the process should be kept as contained as possible.
  Process fully enclosed. (PROC01,PROC03,PROC08b, PROC09)
  Outdoors not close to buildings.(PROC01,PROC02,PROC08a,PROC08b)
  Outdoors close to buildings. (PROC03,PROC04)
  Indoors with good natural ventilation. (PROC09,PROC13)

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- ***Risk management measures***
- ***Worker protection***
- ***Organisational protective measures***
Ensure that activities are executed by specialists or authorised personnel only.
Handling procedures must be well documented.
- ***Technical protective measures***
Use vapour recovery system. (PROC02,PROC04,PROC09)
Use vapour recovery system and local exhaust ventilation. (PROC01,PROC03,PROC08b)
Complete segregation. (PROC01,PROC02)
- ***Personal protective measures***
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.
Bei Konzentrationen über 20 % Säure Atemluftkontrolle möglich mit Prüfröhrchen DRÄGER Schwefelsäure 1/a.
Protective gloves.
Check the permeability prior to each anewed use of the glove.
Fluorocarbon rubber (Viton), recommended thickness of the material: ≥ 0.4 mm, penetration time: ≥ 480 min.
Butylrubber, BR, recommended thickness of the material: ≥ 0.5 mm, penetration time: ≥ 120 min.
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.
Tightly sealed safety glasses.
Do not inhale gases / fumes / aerosols.
Avoid contact with the skin.
Avoid contact with the eyes.
Standard protective working clothes, chemical resistant safety-shoes or wellingtons. If skin contact is possible, wear impenetrable protective clothing.
- ***Environmental protection measures***
- ***Air*** *Air-emission abatement such as scrubbers and filters should be used for waste gas.*
- ***Water***
Generally, prior to the introduction of wastewater into wastewater treatment plants a neutralisation is required.
All contaminated wastewater should be treated before release to surface water or STP by neutralisation
Size of sewage treatment plant (m^3/d): 2000
Sludge treatment : Incineration or in a landfill
- ***Soil*** *Floor should be impervious and resistant to liquid.*
- ***Disposal measures*** *Disposal must be made according to official regulations.*

- ***Exposure estimation***
human
The exposure estimation was carried out in accordance with ECETOC TRA.
The exposure estimation was carried out in accordance with Advanced REACH Tool (Tier 2).
The calculated individual exposure figures are below the DNELs (RCR < 1).
- ***Environment***
The estimation of environmental exposure was carried out in accordance with EUSES.
The calculated value is smaller than the PNEC.

- ***Guidance for downstream users***
Under the above listed conditions the process is deemed safe.
Other conditions should only be considered when measurements or suitable calculations show that the RCR is < 1.

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Annex: Exposure scenario 2

- **Short title of the exposure scenario** Use for extraction and processing of minerals and ores. (Industrial)
- **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 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents
  PC40 Extraction agents
- **Process category**
  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
- **Environmental release category**
  ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
  ERC6b Use of reactive processing aid at industrial site (no inclusion into or onto article)

- **Conditions of use**
- **Duration and frequency**
- **Worker**
  8 h (full working shift).
  5 workdays/week.
- **Environment** < 365 days/year
- **Physical parameters**
  The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the pure substance.
- **Physical state**
  Liquid
  Vapor pressure: < 0.1 hPa (20 °C)
- **Concentration of the substance in the mixture** Raw material.
- **Used amount per time or activity** 438 tons per year
- **Other operational conditions**
- **Other operational conditions affecting environmental exposure**
  Due to the nature of the substance the process should be kept as contained as possible.
- **Other operational conditions affecting worker exposure**
  Due to the nature of the substance the process should be kept as contained as possible.
  Process may involve high temperature. (PROC03)
  Process fully enclosed. (PROC03)
  Outdoors not close to buildings.(PROC02,PROC03,PROC04)

- **Risk management measures**
- **Worker protection**
- **Organisational protective measures**
  Ensure that activities are executed by specialists or authorised personnel only.
  Handling procedures must be well documented.
- **Technical protective measures**
  Use vapour recovery system. (PROC02,PROC04)
  Use vapour recovery system and local exhaust ventilation. (PROC02)
  Complete segregation. (PROC02)
- **Personal protective measures**
  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.
  Bei Konzentrationen über 20 % Säure Atemluftkontrolle möglich mit Prüfröhrchen DRÄGER Schwefelsäure

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1/a.
Protective gloves.
Check the permeability prior to each anewed use of the glove.
Fluorocarbon rubber (Viton), recommended thickness of the material: ≥ 0.4 mm, penetration time: ≥ 480 min.
Butylrubber, BR, recommended thickness of the material: ≥ 0.5 mm, penetration time: ≥ 120 min.
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.
Tightly sealed safety glasses.
Do not inhale gases / fumes / aerosols.
Avoid contact with the skin.
Avoid contact with the eyes.
Standard protective working clothes, chemical resistant safety-shoes or wellingtons. If skin contact is possible, wear impenetrable protective clothing.

- ***Environmental protection measures***
- ***Air*** *Air-emission abatement such as scrubbers and filters should be used for waste gas.*
- ***Water***

Generally, prior to the introduction of wastewater into wastewater treatment plants a neutralisation is required.
All contaminated wastewater should be treated before release to surface water or STP by neutralisation
Size of sewage treatment plant (m³/d): 2000
Sludge treatment : Incineration or in a landfill

- ***Soil*** *Floor should be impervious and resistant to liquid.*
- ***Disposal measures*** *Disposal must be made according to official regulations.*

- ***Exposure estimation***

human
The exposure estimation was carried out in accordance with ECETOC TRA.
The exposure estimation was carried out in accordance with Advanced REACH Tool (Tier 2).
The calculated individual exposure figures are below the DNELs (RCR < 1).

- ***Environment***

The estimation of environmental exposure was carried out in accordance with EUSES.
The calculated value is smaller than the PNEC.

- ***Guidance for downstream users***

Under the above listed conditions the process is deemed safe.
Other conditions should only be considered when measurements or suitable calculations show that the RCR is < 1.

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Annex: Exposure scenario 3

- **Short title of the exposure scenario** Use for surface treatment. (Industrial)
- **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
  PC15 Non-metal-surface treatment products
- **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
  PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
  PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
  PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
  PROC13 Treatment of articles by dipping and pouring
- **Environmental release category**
  ERC6b Use of reactive processing aid at industrial site (no inclusion into or onto article)

- **Conditions of use**
- **Duration and frequency**
- **Worker**
  8 h (full working shift).
  5 workdays/week.
- **Environment** < 365 days/year
- **Physical parameters**
  The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the pure substance.
- **Physical state**
  Liquid
  Vapor pressure: < 0.1 hPa (20 °C)
- **Concentration of the substance in the mixture** Raw material.
- **Used amount per time or activity** 10 000 tons per year
- **Other operational conditions**
- **Other operational conditions affecting environmental exposure**
  Due to the nature of the substance the process should be kept as contained as possible.
- **Other operational conditions affecting worker exposure**
  Avoid contact with the skin and eyes.
  Due to the nature of the substance the process should be kept as contained as possible.
  Process may involve high temperature. (PROC01, PROC02, PROC03, PROC04)
  Process fully enclosed. (PROC01, PROC03, PROC08, PROC09)
  Outdoors not close to buildings.(PROC01,PROC02,PROC08a,PROC09)
  Outdoors close to buildings. (PROC03, PROC13)

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- ***Risk management measures***
- ***Worker protection***
- ***Organisational protective measures***
Ensure that activities are executed by specialists or authorised personnel only.
Handling procedures must be well documented.
- ***Technical protective measures***
Ensure that suitable extractors are available on processing machines
Use vapour recovery system. (PROC02, PROC04, PROC09)
Use vapour recovery system and local exhaust ventilation. (PROC01, PROC03, PROC08b)
Complete segregation. (PROC01, PROC02)
- ***Personal protective measures***
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.
Protective gloves.
Check the permeability prior to each anewed use of the glove.
Fluorocarbon rubber (Viton), recommended thickness of the material: ≥ 0.4 mm, penetration time: ≥ 480 min.
Butylrubber, BR, recommended thickness of the material: ≥ 0.5 mm, penetration time: ≥ 120 min.
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.
Tightly sealed safety glasses.
Do not inhale gases / fumes / aerosols.
Avoid contact with the skin.
Avoid contact with the eyes.
Standard proctective clothing. Chemical resistant safety-shoes or boots. If skin contact is possible, wear inpenetrable protective clothing against this solvent.
Tightly sealed safety glasses.
- ***Environmental protection measures***
- ***Air*** *Air-emission abatement such as scrubbers and filters should be used for waste gas.*
- ***Water***
Generally, prior to the introduction of wastewater into wastewater treatment plants a neutralisation is required.
All contaminated wastewater should be treated before release to surface water or STP by neutralisation
Size of sewage treatment plant (m^3/d): 2000
Sludge treatment : Incineration or in a landfill
- ***Soil*** *Floor should be impervious and resistant to liquid.*
- ***Disposal measures*** *Disposal must be made according to official regulations.*

- ***Exposure estimation***
human
The exposure estimation was carried out in accordance with ECETOC TRA.
The exposure estimation was carried out in accordance with Advanced REACH Tool (Tier 2).
The calculated individual exposure figures are below the DNELs (RCR < 1).
- ***Environment***
The estimation of environmental exposure was carried out in accordance with EUSES.
The calculated value is smaller than the PNEC.

- ***Guidance for downstream users***
Under the above listed conditions the process is deemed safe.
Other conditions should only be considered when measurements or suitable calculations show that the RCR is < 1.

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Annex: Exposure scenario 4

- **Short title of the exposure scenario** Use in electrolytic processes. (Industrial)
- **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
  PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization 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
  PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
  PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
  PROC13 Treatment of articles by dipping and pouring
- **Environmental release category**
  ERC5 Use at industrial site leading to inclusion into/onto article
  ERC6b Use of reactive processing aid at industrial site (no inclusion into or onto article)

- **Conditions of use**
- **Duration and frequency**
- **Worker**
  8 h (full working shift).
  5 workdays/week.
- **Environment** < 365 days/year
- **Physical parameters**
  The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the pure substance.
- **Physical state**
  Liquid
  Vapor pressure: < 0.1 hPa (20 °C)
- **Concentration of the substance in the mixture** Raw material.
- **Used amount per time or activity** 2 306 000 tons per year
- **Other operational conditions**
- **Other operational conditions affecting environmental exposure**
  Due to the nature of the substance the process should be kept as contained as possible.
- **Other operational conditions affecting worker exposure**
  Avoid contact with the skin and eyes.
  Due to the nature of the substance the process should be kept as contained as possible.
  Process may involve high temperature. (PROC01,PROC02)
  Process fully enclosed. (PROC01, PROC8b, PROC09)
  Outdoors not close to buildings.(PROC01,PROC02,PROC8a,PROC08b)
  Indoors with good natural ventilation. (PROC09,PROC13)

- **Risk management measures**
- **Worker protection**
- **Organisational protective measures**
  Ensure that activities are executed by specialists or authorised personnel only.
  Handling procedures must be well documented.
- **Technical protective measures**
  Ensure that suitable extractors are available on processing machines

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Use vapour recovery system. (PROC02, PROC09)
Use vapour recovery system and local exhaust ventilation. (PROC01, PROC08b)
Complete segregation. (PROC01,PROC02)

- ***Personal protective measures***

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.
Bei Konzentrationen über 20 % Säure Atemluftkontrolle möglich mit Prüfröhrchen DRÄGER Schwefelsäure 1/a.
Protective gloves.
Check the permeability prior to each anewed use of the glove.
Fluorocarbon rubber (Viton), recommended thickness of the material: ≥ 0.4 mm, penetration time: ≥ 480 min.
Butylrubber, BR, recommended thickness of the material: ≥ 0.5 mm, penetration time: ≥ 120 min.
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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
Tightly sealed safety glasses.
Do not inhale gases / fumes / aerosols.
Avoid contact with the skin.
Avoid contact with the eyes.
Standard proctective clothing. Chemical resistant safety-shoes or boots. If skin contact is possible, wear inpenetrable protective clothing against this solvent.

- ***Environmental protection measures***
- ***Air*** *Air-emission abatement such as scrubbers and filters should be used for waste gas.*
- ***Water***

Generally, prior to the introduction of wastewater into wastewater treatment plants a neutralisation is required.
All contaminated wastewater should be treated before release to surface water or STP by neutralisation
Size of sewage treatment plant (m³/d): 2000
Sludge treatment : Incineration or in a landfill

- ***Soil*** *Floor should be impervious and resistant to liquid.*
- ***Disposal measures*** *Disposal must be made according to official regulations.*

- ***Exposure estimation***

human
The exposure estimation was carried out in accordance with ECETOC TRA.
The exposure estimation was carried out in accordance with Advanced REACH Tool (Tier 2).
The calculated individual exposure figures are below the DNELs (RCR < 1).

- ***Environment***

The estimation of environmental exposure was carried out in accordance with EUSES.
The calculated value is smaller than the PNEC.

- ***Guidance for downstream users***

Under the above listed conditions the process is deemed safe.
Other conditions should only be considered when measurements or suitable calculations show that the RCR is < 1.

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Annex: Exposure scenario 5

- **Short title of the exposure scenario**
  Use in gas purification.
  Industrial
- **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 Processing aids such as pH-regulators, flocculants, precipitants, neutralization 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
  PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
- **Environmental release category** ERC7 Use of functional fluid at industrial site

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- **Conditions of use**
- **Duration and frequency**
- **Worker**
  8 h (full working shift).
  5 workdays/week.
- **Environment** < 365 days/year
- **Physical parameters**
  The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the pure substance.
- **Physical state**
  Liquid
  Vapor pressure: < 0.1 hPa (20 °C)
- **Concentration of the substance in the mixture** Raw material.
- **Used amount per time or activity** 30 000 tons per year
- **Other operational conditions**
- **Other operational conditions affecting environmental exposure**
  Due to the nature of the substance the process should be kept as contained as possible.
- **Other operational conditions affecting worker exposure**
  Avoid contact with the skin and eyes.
  Due to the nature of the substance the process should be kept as contained as possible.
  Process may involve high temperature. (PROC01,PROC08b)
  Outdoors not close to buildings.(PROC01,PROC02,PROC08a,PROC08b)
  Outdoors close to buildings. (PROC01,PROC02,PROC08b)

- **Risk management measures**
- **Worker protection**
- **Organisational protective measures**
  Ensure that activities are executed by specialists or authorised personnel only.
  Handling procedures must be well documented.
- **Technical protective measures**
  Ensure that suitable extractors are available on processing machines
  Use vapour recovery system. (PROC02)
  Use vapour recovery system and local exhaust ventilation. (PROC01,PROC08b)
  Complete segregation. (PROC01,PROC02)
- **Personal protective measures**
  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.
  Bei Konzentrationen über 20 % Säure Atemluftkontrolle möglich mit Prüfröhrchen DRÄGER Schwefelsäure

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1/a.
Protective gloves.
Check the permeability prior to each anewed use of the glove.
Fluorocarbon rubber (Viton), recommended thickness of the material: ≥ 0.4 mm, penetration time: ≥ 480 min.
Butylrubber, BR, recommended thickness of the material: ≥ 0.5 mm, penetration time: ≥ 120 min.
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.
Tightly sealed safety glasses.
Do not inhale gases / fumes / aerosols.
Avoid contact with the skin.
Avoid contact with the eyes.
Standard protective working clothes, chemical resistant safety-shoes or wellingtons. If skin contact is possible, wear impenetrable protective clothing.

- ***Environmental protection measures***
- ***Air*** *Air-emission abatement such as scrubbers and filters should be used for waste gas.*
- ***Water***

Generally, prior to the introduction of wastewater into wastewater treatment plants a neutralisation is required.
All contaminated wastewater should be treated before release to surface water or STP by neutralisation
Size of sewage treatment plant (m³/d): 2000
Sludge treatment : Incineration or in a landfill

- ***Soil*** *Floor should be impervious and resistant to liquid.*
- ***Disposal measures*** *Disposal must be made according to official regulations.*

- ***Exposure estimation***

human
The exposure estimation was carried out in accordance with ECETOC TRA.
The exposure estimation was carried out in accordance with Advanced REACH Tool (Tier 2).
The calculated individual exposure figures are below the DNELs (RCR < 1).

- ***Environment***

The estimation of environmental exposure was carried out in accordance with EUSES.
The calculated value is smaller than the PNEC.

- ***Guidance for downstream users***

Under the above listed conditions the process is deemed safe.
Other conditions should only be considered when measurements or suitable calculations show that the RCR is < 1.

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Annex: Exposure scenario 6

- **Short title of the exposure scenario** Use in production of lead acid batteries. (Industrial)
- **Sector of Use** SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
- **Product category** PC0 Other
- **Process category**
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
PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
- **Environmental release category**
ERC2 Formulation into mixture
ERC5 Use at industrial site leading to inclusion into/onto article

- **Conditions of use**
- **Duration and frequency**
- **Worker**
8 h (full working shift).
5 workdays/week.
- **Environment** < 365 days/year
- **Physical parameters**
The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the pure substance.
- **Physical state**
Liquid
Vapor pressure: < 0.1 hPa (20 °C)
- **Concentration of the substance in the mixture** Raw material.
- **Used amount per time or activity** 2 500 tons per year
- **Other operational conditions**
- **Other operational conditions affecting environmental exposure**
Due to the nature of the substance the process should be kept as contained as possible.
- **Other operational conditions affecting worker exposure**
Avoid contact with the skin and eyes.
Due to the nature of the substance the process should be kept as contained as possible.
Process fully enclosed. (PROC02)
Indoors with good natural ventilation. (-)

- **Risk management measures**
- **Worker protection**
- **Organisational protective measures**
Ensure that activities are executed by specialists or authorised personnel only.
Handling procedures must be well documented.
- **Technical protective measures** Ensure that suitable extractors are available on processing machines
- **Personal protective measures**
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.
Bei Konzentrationen über 20 % Säure Atemluftkontrolle möglich mit Prüfröhrchen DRÄGER Schwefelsäure 1/a.
Protective gloves.
Check the permeability prior to each anewed use of the glove.
Fluorocarbon rubber (Viton), recommended thickness of the material: ≥ 0.4 mm, penetration time: ≥ 480 min.
Butylrubber, BR, recommended thickness of the material: ≥ 0.5 mm, penetration time: ≥ 120 min.
The selection of the suitable gloves does not only depend on the material, but also on further marks of

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quality and varies from manufacturer to manufacturer.
Tightly sealed safety glasses.
Do not inhale gases / fumes / aerosols.
Avoid contact with the skin.
Avoid contact with the eyes.
Standard proctective clothing. Chemical resistant safety-shoes or boots. If skin contact is possible, wear inpenetrable protective clothing against this solvent.
Tightly sealed safety glasses.

- ***Environmental protection measures***
- ***Air*** *Air-emission abatement such as scrubbers and filters should be used for waste gas.*
- ***Water***

Generally, prior to the introduction of wastewater into wastewater treatment plants a neutralisation is required.
All contaminated wastewater should be treated before release to surface water or STP by neutralisation
Size of sewage treatment plant (m^3/d): 2000
Sludge treatment : Incineration or in a landfill

- ***Soil*** *Floor should be impervious and resistant to liquid.*
- ***Disposal measures*** *Disposal must be made according to official regulations.*

- ***Exposure estimation***

human
The exposure estimation was carried out in accordance with ECETOC TRA.
The exposure estimation was carried out in accordance with Advanced REACH Tool (Tier 2).
The calculated individual exposure figures are below the DNELs (RCR < 1).

- ***Environment***

The estimation of environmental exposure was carried out in accordance with EUSES.
The calculated value is smaller than the PNEC.

- ***Guidance for downstream users***

Under the above listed conditions the process is deemed safe.
Other conditions should only be considered when measurements or suitable calculations show that the RCR is < 1.

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Annex: Exposure scenario 7

- **Short title of the exposure scenario** Maintenance of lead acid batteries. (Professional)
- **Sector of Use**
  SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
- **Product category** PC0 Other
- **Process category** PROC19 Manual activities involving hand contact
- **Environmental release category**
  ERC8b Widespread use of reactive processing aid (no inclusion into or onto article, indoor)
  ERC9b Widespread use of functional fluid (outdoor)

- **Conditions of use**
- **Duration and frequency**
- **Worker**
  8 h (full working shift).
  5 workdays/week.
- **Environment** < 365 days/year
- **Physical parameters**
  The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the pure substance.
- **Concentration of the substance in the mixture** or in the product: 25-50%
- **Other operational conditions**
- **Other operational conditions affecting environmental exposure**
  Due to the nature of the substance the process should be kept as contained as possible.
- **Other operational conditions affecting worker exposure**
  Avoid contact with the skin and eyes.
  Keep windows open during application to ensure natural ventilation.
  Due to the nature of the substance the process should be kept as contained as possible.

- **Risk management measures**
- **Worker protection**
- **Organisational protective measures**
  Ensure that activities are executed by specialists or authorised personnel only.
  Handling procedures must be well documented.
- **Technical protective measures** Ensure that suitable extractors are available on processing machines
- **Personal protective measures**
  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.
  Bei Konzentrationen über 20 % Säure Atemluftkontrolle möglich mit Prüfröhrchen DRÄGER Schwefelsäure 1/a.
  Protective gloves.
  Check the permeability prior to each anewed use of the glove.
  Fluorocarbon rubber (Viton), recommended thickness of the material: ≥ 0.4 mm, penetration time: ≥ 480 min.
  Butylrubber, BR, recommended thickness of the material: ≥ 0.5 mm, penetration time: ≥ 120 min.
  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.
  Tightly sealed safety glasses.
  Do not inhale gases / fumes / aerosols.
  Avoid contact with the skin.
  Avoid contact with the eyes.
  Standard protective working clothes, chemical resistant safety-shoes or wellingtons. If skin contact is possible, wear impenetrable protective clothing.
- **Environmental protection measures**
- **Air** Air-emission abatement such as scrubbers and filters should be used for waste gas.

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- ***Water***
  Generally, prior to the introduction of wastewater into wastewater treatment plants a neutralisation is required.
  All contaminated wastewater should be treated before release to surface water or STP by neutralisation
  Size of sewage treatment plant (m^3/d): 2000
  Sludge treatment : Incineration or in a landfill
- ***Soil*** *Floor should be impervious and resistant to liquid.*
- ***Disposal measures*** *Disposal must be made according to official regulations.*

- ***Exposure estimation***
  human
  The exposure estimation was carried out in accordance with ECETOC TRA.
  The exposure estimation was carried out in accordance with Advanced REACH Tool (Tier 2).
  The calculated individual exposure figures are below the DNELs (RCR < 1).
- ***Environment***
  The estimation of environmental exposure was carried out in accordance with EUSES.
  The calculated value is smaller than the PNEC.

- ***Guidance for downstream users***
  Under the above listed conditions the process is deemed safe.
  Other conditions should only be considered when measurements or suitable calculations show that the RCR is < 1.

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Annex: Exposure scenario 8

- **Short title of the exposure scenario** Recycling of lead acid batteries. (Industrial)
- **Sector of Use** SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
- **Product category** PC0 Other
- **Process category**
  PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
  PROC4 Chemical production where opportunity for exposure arises
  PROC5 Mixing or blending in batch processes
  PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
- **Environmental release category** ERC1 Manufacture of the substance

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- **Conditions of use**
- **Duration and frequency**
- **Worker**
  8 h (full working shift).
  5 workdays/week.
- **Environment** < 365 days/year
- **Physical parameters**
  The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the pure substance.
- **Physical state**
  Liquid
  Vapor pressure: < 0.1 hPa (20 °C)
- **Concentration of the substance in the mixture** The substance is minor component.
- **Used amount per time or activity** 2 500 tons per year
- **Other operational conditions**
- **Other operational conditions affecting environmental exposure**
  Due to the nature of the substance the process should be kept as contained as possible.
- **Other operational conditions affecting worker exposure**
  Avoid contact with the skin and eyes.
  Due to the nature of the substance the process should be kept as contained as possible.
  Enter closed rooms only if ventilation is adequate.

- **Risk management measures**
- **Worker protection**
- **Organisational protective measures**
  Ensure that activities are executed by specialists or authorised personnel only.
  Handling procedures must be well documented.
- **Technical protective measures** Ensure that suitable extractors are available on processing machines
- **Personal protective measures**
  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.
  Protective gloves.
  Check the permeability prior to each anewed use of the glove.
  Fluorocarbon rubber (Viton), recommended thickness of the material: ≥ 0.4 mm, penetration time: ≥ 480 min.
  Butylrubber, BR, recommended thickness of the material: ≥ 0.5 mm, penetration time: ≥ 120 min.
  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.
  Tightly sealed safety glasses.
  Do not inhale gases / fumes / aerosols.
  Avoid contact with the skin.

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Avoid contact with the eyes.
Standard protective working clothes, chemical resistant safety-shoes or wellingtons. If skin contact is possible, wear impenetrable protective clothing.

- ***Environmental protection measures***
- ***Air*** *Air-emission abatement such as scrubbers and filters should be used for waste gas.*
- ***Water***

Generally, prior to the introduction of wastewater into wastewater treatment plants a neutralisation is required.
All contaminated wastewater should be treated before release to surface water or STP by neutralisation
Size of sewage treatment plant (m^3/d): 2000
Sludge treatment : Incineration or in a landfill

- ***Soil*** *Floor should be impervious and resistant to liquid.*
- ***Disposal measures*** *Disposal must be made according to official regulations.*

- ***Exposure estimation***

human
The exposure estimation was carried out in accordance with ECETOC TRA.
The exposure estimation was carried out in accordance with Advanced REACH Tool (Tier 2).
The calculated individual exposure figures are below the DNELs (RCR < 1).

- ***Environment***

The estimation of environmental exposure was carried out in accordance with EUSES.
The calculated value is smaller than the PNEC.

- ***Guidance for downstream users***

Under the above listed conditions the process is deemed safe.
Other conditions should only be considered when measurements or suitable calculations show that the RCR is < 1.

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Annex: Exposure scenario 9

- **Short title of the exposure scenario**
  Use as laboratory chemical.
  Professional
- **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 Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)
  ERC8b Widespread use of reactive processing aid (no inclusion into or onto article, indoor)

- **Conditions of use**
- **Duration and frequency**
- **Worker**
  8 h (full working shift).
  5 workdays/week.
- **Environment** < 330 days/year
- **Physical parameters**
  The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the pure substance.
- **Physical state**
  Liquid
  Vapor pressure: < 0.1 hPa (20 °C)
- **Concentration of the substance in the mixture** The substance is main component.
- **Used amount per time or activity** 5 000 tons per year
- **Other operational conditions**
- **Other operational conditions affecting environmental exposure**
  Due to the nature of the substance the process should be kept as contained as possible.
- **Other operational conditions affecting worker exposure**
  Avoid contact with the skin and eyes.
  Due to the nature of the substance the process should be kept as contained as possible.
  Indoors with good natural ventilation. (-)

- **Risk management measures**
- **Worker protection**
- **Organisational protective measures**
  Ensure that activities are executed by specialists or authorised personnel only.
  Handling procedures must be well documented.
- **Technical protective measures** Extractor required on object.
- **Personal protective measures**
  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.
  Bei Konzentrationen über 20 % Säure Atemluftkontrolle möglich mit Prüfröhrchen DRÄGER Schwefelsäure 1/a.
  Protective gloves.
  Check the permeability prior to each anewed use of the glove.
  Fluorocarbon rubber (Viton), recommended thickness of the material: ≥ 0.4 mm, penetration time: ≥ 480 min.
  Butylrubber, BR, recommended thickness of the material: ≥ 0.5 mm, penetration time: ≥ 120 min.
  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.
  Tightly sealed safety glasses.
  Do not inhale gases / fumes / aerosols.

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Avoid contact with the skin.
Avoid contact with the eyes.
Standard protective working clothes, chemical resistant safety-shoes or wellingtons. If skin contact is possible, wear impenetrable protective clothing.

- ***Measures for consumer protection*** *Ensure adequate labelling.*
- ***Environmental protection measures***
- ***Air*** *Air-emission abatement such as scrubbers and filters should be used for waste gas.*
- ***Water***

Generally, prior to the introduction of wastewater into wastewater treatment plants a neutralisation is required.
All contaminated wastewater should be treated before release to surface water or STP by neutralisation
Size of sewage treatment plant (m^3/d): 2000
Sludge treatment : Incineration or in a landfill

- ***Soil*** *Floor should be impervious and resistant to liquid.*
- ***Disposal measures*** *Disposal must be made according to official regulations.*

- ***Exposure estimation***

human
The exposure estimation was carried out in accordance with ECETOC TRA.
The exposure estimation was carried out in accordance with Advanced REACH Tool (Tier 2).
The calculated individual exposure figures are below the DNELs (RCR < 1).

- ***Environment***

The estimation of environmental exposure was carried out in accordance with EUSES.
The calculated value is smaller than the PNEC.

- ***Guidance for downstream users***

Under the above listed conditions the process is deemed safe.
Other conditions should only be considered when measurements or suitable calculations show that the RCR is < 1.

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Annex: Exposure scenario 10

- **Short title of the exposure scenario** Use for industrial cleaning
- **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 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
  PROC5 Mixing or blending in batch processes
  PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
  PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
  PROC9 Transfer of substance or mixture 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 Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)
  ERC8b Widespread use of reactive processing aid (no inclusion into or onto article, indoor)

- **Conditions of use**
- **Duration and frequency**
- **Worker**
  8 h (full working shift).
  5 workdays/week.
- **Environment** < 365 days/year
- **Physical parameters**
  The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the pure substance.
- **Physical state**
  Liquid
  Vapor pressure: < 0.1 hPa (20 °C)
- **Concentration of the substance in the mixture** 10%
- **Used amount per time or activity** 5 000 tons per year
- **Other operational conditions**
- **Other operational conditions affecting environmental exposure**
  Due to the nature of the substance the process should be kept as contained as possible.
- **Other operational conditions affecting worker exposure**
  Avoid contact with the skin and eyes.
  Due to the nature of the substance the process should be kept as contained as possible.
  Indoors with good natural ventilation. (-)

- **Risk management measures**
- **Worker protection**
- **Organisational protective measures**
  Ensure that activities are executed by specialists or authorised personnel only.
  Handling procedures must be well documented.
- **Technical protective measures**
  Extractor required on object.
  (PROC02, PROC05)
- **Personal protective measures**
  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.
  Bei Konzentrationen über 20 % Säure Atemluftkontrolle möglich mit Prüfröhrchen DRÄGER Schwefelsäure 1/a.

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Protective gloves.
Check the permeability prior to each anewed use of the glove.
Fluorocarbon rubber (Viton), recommended thickness of the material: ≥ 0.4 mm, penetration time: ≥ 480 min.
Butylrubber, BR, recommended thickness of the material: ≥ 0.5 mm, penetration time: ≥ 120 min.
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.
Tightly sealed safety glasses.
Do not inhale gases / fumes / aerosols.
Avoid contact with the skin.
Avoid contact with the eyes.
Standard protective working clothes, chemical resistant safety-shoes or wellingtons. If skin contact is possible, wear impenetrable protective clothing.

- ***Measures for consumer protection*** *Ensure adequate labelling.*
- ***Environmental protection measures***
- ***Air*** *Air-emission abatement such as scrubbers and filters should be used for waste gas.*
- ***Water***

Generally, prior to the introduction of wastewater into wastewater treatment plants a neutralisation is required.
All contaminated wastewater should be treated before release to surface water or STP by neutralisation
Size of sewage treatment plant (m³/d): 2000
Sludge treatment : Incineration or in a landfill

- ***Soil*** *Floor should be impervious and resistant to liquid.*
- ***Disposal measures*** *Disposal must be made according to official regulations.*

- ***Exposure estimation***

human
The exposure estimation was carried out in accordance with ECETOC TRA.
The exposure estimation was carried out in accordance with Advanced REACH Tool (Tier 2).
The calculated individual exposure figures are below the DNELs (RCR < 1).

- ***Environment***

The estimation of environmental exposure was carried out in accordance with EUSES.
The calculated value is smaller than the PNEC.

- ***Guidance for downstream users***

Under the above listed conditions the process is deemed safe.
Other conditions should only be considered when measurements or suitable calculations show that the RCR is < 1.

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Annex: Exposure scenario 11

- **Short title of the exposure scenario**
  Use in formulation.
  Industrial
- **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 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.
  PROC5 Mixing or blending in batch processes
  PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
  PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
  PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
- **Environmental release category** ERC2 Formulation into mixture

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- **Conditions of use**
- **Duration and frequency**
- **Worker**
  8 h (full working shift).
  5 workdays/week.
- **Environment** < 365 days/year
- **Physical parameters**
  The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the pure substance.
- **Physical state**
  Liquid
  Vapor pressure: < 0.1 hPa (20 °C)
- **Concentration of the substance in the mixture** Raw material.
- **Used amount per time or activity** 300 000 tons per year
- **Other operational conditions**
- **Other operational conditions affecting environmental exposure**
  Due to the nature of the substance the process should be kept as contained as possible.
- **Other operational conditions affecting worker exposure**
  Avoid contact with the skin and eyes.
  Due to the nature of the substance the process should be kept as contained as possible.
  Process may involve high temperature. (PROC01,PROC03)
  Process fully enclosed. (PROC01,PROC03,PROC08b,PROC09)
  Outdoors not close to buildings.(PROC01,PROC08a,PROC08b)
  Outdoors close to buildings. (PROC03)
  Indoors with good natural ventilation. (PROC05,PROC09)

- **Risk management measures**
- **Worker protection**
- **Organisational protective measures**
  Ensure that activities are executed by specialists or authorised personnel only.
  Handling procedures must be well documented.
- **Technical protective measures**
  Use vapour recovery system. (PROC02,PROC09)
  Use vapour recovery system and local exhaust ventilation. (PROC01,PROC03,PROC08b)
  Complete segregation. (PROC01)

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- ***Personal protective measures***
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.
Protective gloves.
Check the permeability prior to each anewed use of the glove.
Fluorocarbon rubber (Viton), recommended thickness of the material: ≥ 0.4 mm, penetration time: ≥ 480 min.
Butylrubber, BR, recommended thickness of the material: ≥ 0.5 mm, penetration time: ≥ 120 min.
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.
Tightly sealed safety glasses.
Do not inhale gases / fumes / aerosols.
Avoid contact with the skin.
Avoid contact with the eyes.
Standard protective working clothes, chemical resistant safety-shoes or wellingtons. If skin contact is possible, wear impenetrable protective clothing.
- ***Measures for consumer protection*** *Ensure adequate labelling.*
- ***Environmental protection measures***
- ***Air*** *Air-emission abatement such as scrubbers and filters should be used for waste gas.*
- ***Water***
Generally, prior to the introduction of wastewater into wastewater treatment plants a neutralisation is required.
All contaminated wastewater should be treated before release to surface water or STP by neutralisation
Size of sewage treatment plant (m^3/d): 2000
Sludge treatment : Incineration or in a landfill
- ***Soil*** *Floor should be impervious and resistant to liquid.*
- ***Disposal measures*** *Disposal must be made according to official regulations.*

- ***Exposure estimation***
human
The exposure estimation was carried out in accordance with ECETOC TRA.
The exposure estimation was carried out in accordance with Advanced REACH Tool (Tier 2).
The calculated individual exposure figures are below the DNELs (RCR < 1).
- ***Environment***
The estimation of environmental exposure was carried out in accordance with EUSES.
The calculated value is smaller than the PNEC.

- ***Guidance for downstream users***
Under the above listed conditions the process is deemed safe.
Other conditions should only be considered when measurements or suitable calculations show that the RCR is < 1.

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Annex: Exposure scenario 12

- **Short title of the exposure scenario** Use of lead acid batteries. (Consumer)
- **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 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.
  PROC5 Mixing or blending in batch processes
  PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
  PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
  PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
- **Environmental release category** ERC2 Formulation into mixture

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- **Conditions of use**
- **Duration and frequency**
- **Worker**
  8 h (full working shift).
  5 workdays/week.
- **Environment** < 365 days/year
- **Physical parameters**
  The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the pure substance.
- **Physical state**
  Liquid
  Vapor pressure: < 0.1 hPa (20 °C)
- **Concentration of the substance in the mixture**
  Raw material.
  25-40%
- **Used amount per time or activity** 2 500 tons per year
- **Other operational conditions**
- **Other operational conditions affecting environmental exposure**
  Due to the nature of the substance the process should be kept as contained as possible.
- **Other operational conditions affecting worker exposure**
  Avoid contact with the skin and eyes.
  Due to the nature of the substance the process should be kept as contained as possible.
  Indoors with good natural ventilation. (-)
  Do not get in eyes, on skin or on clothing.
  Batteries should only be opened in a well-ventilated place.
  Batteries should not be opened unnecessarily.
  Batteries should be placed on solid ground to prevent leakage.
- **Other operational conditions affecting consumer exposure during the use of the product**
  Wear suitable coveralls to avoid contact with the skin.
  Acid resistant gloves must be worn.
  Wear safety goggles to protect against splashes.

- **Risk management measures**
- **Worker protection**
- **Organisational protective measures**
  Ensure that activities are executed by specialists or authorised personnel only.
  Handling procedures must be well documented.
- **Personal protective measures**
  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.
  Bei Konzentrationen über 20 % Säure Atemluftkontrolle möglich mit Prüfröhrchen DRÄGER Schwefelsäure

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1/a.
Protective gloves.
Check the permeability prior to each anewed use of the glove.
Fluorocarbon rubber (Viton), recommended thickness of the material: ≥ 0.4 mm, penetration time: ≥ 480 min.
Butylrubber, BR, recommended thickness of the material: ≥ 0.5 mm, penetration time: ≥ 120 min.
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.
Tightly sealed safety glasses.
Do not inhale gases / fumes / aerosols.
Avoid contact with the skin.
Avoid contact with the eyes.
Standard protective working clothes, chemical resistant safety-shoes or wellingtons. If skin contact is possible, wear impenetrable protective clothing.

- **Measures for consumer protection** Ensure adequate labelling.
- **Environmental protection measures**
- **Water**

Generally, prior to the introduction of wastewater into wastewater treatment plants a neutralisation is required.
Size of sewage treatment plant (m^3/d): 2000
Sludge treatment : Incineration or in a landfill

- **Disposal measures** Disposal must be made according to official regulations.

- **Exposure estimation**

human
The exposure estimation was carried out in accordance with ECETOC TRA.
The exposure estimation was carried out in accordance with Advanced REACH Tool (Tier 2).
The calculated individual exposure figures are below the DNELs (RCR < 1).

- **Environment**

The estimation of environmental exposure was carried out in accordance with EUSES.
The calculated value is smaller than the PNEC.

- **Guidance for downstream users**

Under the above listed conditions the process is deemed safe.
Other conditions should only be considered when measurements or suitable calculations show that the RCR is < 1.