

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

- **Version number 1.1**
- **1.1. Product identifier**
- **Trade name Battery acid 1.28 (Akkumulatorensäure 1.28)**
- **Article number: 100102**
- **1.2. Relevant determined uses of the substance or mixture; and uses advised against:**
- **Use of the substance or mixture** Electrolyte for lead accumulators
- **Sector of Use**
 - SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
 - SU21 Consumer uses: Private households / general public / consumers
 - SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
- **Product category**
 - PC12 Fertilisers
 - PC14 Metal surface treatment products
 - PC15 Non-metal-surface treatment products
 - PC19 Intermediate
 - PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents
 - PC21 Laboratory chemicals
 - PC23 Leather treatment products
 - PC25 Metal working fluids
 - PC29 Pharmaceuticals
 - PC32 Polymer preparations and compounds
 - PC34 Textile dyes, and impregnating products
 - PC35 Washing and cleaning products (including solvent based products)
 - PC37 Water treatment chemicals
 - PC39 Cosmetics, personal care products
 - PC40 Extraction agents
 - PC0 Other
- **Process category**
 - PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.
 - PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
 - PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
 - PROC4 Chemical production where opportunity for exposure arises
 - PROC5 Mixing or blending in batch processes
 - PROC7 Industrial spraying
 - 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
 - PROC11 Non industrial spraying
 - PROC13 Treatment of articles by dipping and pouring
 - PROC15 Use as laboratory reagent
 - PROC19 Manual activities involving hand contact
 - PROC26 Handling of solid inorganic substances at ambient temperature
- **Environmental release category**
 - ERC1 Manufacture of the substance
 - ERC2 Formulation into mixture
 - ERC3 Formulation into solid matrix
 - ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
 - ERC5 Use at industrial site leading to inclusion into/onto article
 - ERC6a Use of intermediate
 - ERC6b Use of reactive processing aid at industrial site (no inclusion into or onto article)

(Contd. on page 2)

Trade name Battery acid 1.28 (Akkumulatorensäure 1.28)

(Contd. of page 1)

- ERC6c Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article)
- ERC7 Use of functional fluid at industrial site
- ERC8b Widespread use of reactive processing aid (no inclusion into or onto article, indoor)
- ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
- ERC9a Widespread use of functional fluid (indoor)
- ERC9b Widespread use of functional fluid (outdoor)
- **Article category AC3** Electrical batteries and accumulators

· **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

· **Informing department:** Product Safety Department

· **1.4. Emergency telephone number:**

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.
 - 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
- **Hazard statements**
H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
- **Precautionary statements**
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
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.

(Contd. on page 3)

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

Printing date 15.01.2019

Version number 1

Revision: 15.01.2019

Trade name Battery acid 1.28 (Akkumulatorensäure 1.28)

(Contd. of page 2)

- P310 *Immediately call a POISON CENTER/doctor.*
 P406 *Store in a corrosion resistant container / container with a resistant inner liner.*
- **2.3. Other hazards**
 - **Results of PBT and vPvB assessment**
 - **PBT:** Does not meet the criteria in accordance with Regulation 1907/2006 Annex XIII.
 - **vPvB:** Does not meet the criteria in accordance with Regulation 1907/2006 Annex XIII.

SECTION 3: Composition/information on ingredients

- **3.2. Chemical characterisation: Mixtures**
- **Description:** Mixture consisting of the following components.

· **Dangerous components:**

CAS: 7664-93-9 EINECS: 231-639-5 Index number: 016-020-00-8 Reg.nr.: 01-2119458838-20	sulphuric acid	 <i>Met. Corr.1, H290; Skin Corr. 1A, H314</i>	25-50%
--	----------------	---	--------

SECTION 4: First aid measures

- **4.1. Description of first aid measures**
- **General information**
Personal protection for the First Aider.
Instantly remove any clothing soiled by the product.
Remove breathing apparatus only after soiled clothing has been completely removed.
If unconscious but breathing recovery position.
Cardiac arrest immediate cardiopulmonary resuscitation (CPR) Initiate.
In case of irregular breathing or respiratory arrest provide artificial respiration.
Move out of dangerous area.
Never give anything by mouth to an unconscious person or a person with cramps.
- **After inhalation**
Supply fresh air. If patient has difficulty in breathing, administer oxygen, keep him calm and protect him from loss of warmth. If there difficult in breathing, medical attention should be obtained.
In case of unconsciousness bring patient into stable side position for transport.
- **After skin contact**
Wash immediately with plenty of water and then rinse well.
Cover wound with a sterile dressing.
Immediate medical treatment necessary. Failure to treat burns can prevent wounds from healing.
- **After eye contact**
Remove contact lenses, if present and easy to do. Rinse opened eye for several (at least 10) minutes under running water. Then consult doctor.
Use eye protection.
- **After swallowing**
Rinse mouth out immediately and drink plenty of water. Do not induce vomiting. Pay attention to risk of aspiration after vomiting. Keep the respiratory tract free. In any case consult a physician.
- **Information for doctor**
- **4.2. Most important symptoms and effects, both acute and delayed** Irritation and corrosivity
- **4.3. Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

GB

(Contd. on page 4)

Trade name Battery acid 1.28 (Akkumulatorensäure 1.28)

(Contd. of page 3)

SECTION 5: Firefighting measures

- **5.1. Extinguishing media**
- **Suitable extinguishing agents**
Product / material does not burn. Fire extinguishing measures according to environmental conditions.
- **5.2. Special hazards arising from the substance or mixture**
Can be released in case of fire:
Sulfur oxides (SO_x)
Reaction with metals hydrogen is released.
- **5.3. Advice for firefighters**
- **Protective equipment:** Wear self contained breathing apparatus.
- **Additional information**
Fight fire in early stages if safe to do so. Containers at risk from fire should be cooled with water and, if possible, removed from the danger area. When extinguishing with water pay attention to caustic burns. Do not let enter contaminated extinguishing water into the soil, groundwater or surface waters. Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures

- **6.1. Personal precautions, protective equipment and emergency procedures**
Wear protective equipment (see section 8).
Keep unprotected persons away.
Ensure adequate ventilation.
Avoid contact with skin and eyes.
Avoid breathing fume/ gas/ mist/ vapours/ aerosols.
- **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:**
Dam up acids with sand, dilute with plenty of water, neutralize with lime or sodium carbonate. Rinse off small quantities with plenty of water. Fill into labelled, sealable containers.
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders).
Use neutralising agent.
Send for recovery or disposal in suitable containers.
- **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

- **Handling**
- **7.1. Precautions for safe handling**
Keep container dry and tightly closed.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:**
The product is not flammable
Usual measures for fire prevention.
- **7.2. Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and containers:**
Keep container tightly closed in a cool, well-ventilated place.
Store only in the original container.

(Contd. on page 5)

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

Printing date 15.01.2019

Version number 1

Revision: 15.01.2019

Trade name Battery acid 1.28 (Akkumulatorensäure 1.28)

(Contd. of page 4)

- **Information about storage in one common storage facility:**
Keep away from: Alkali, metals, organic substances.
- **Further information about storage conditions:** Protect from humidity and keep away from water.
- **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:**

7664-93-9 sulphuric acid

WEL Long-term value: 0.05* mg/m³
*mist: defined as thoracic fraction

- **Regulatory information** WEL: EH40/2018

· DNELs

7664-93-9 sulphuric acid

Inhalative	DNEL Workers (local, short-term)	0.1 mg/m ³ (/)
	DNEL Workers (local, long-term)	0.05 mg/m ³ (/)

· PNECs

7664-93-9 sulphuric acid

PNEC aqua (fresh water)	0.0025 mg/l (/)
PNEC aqua (marine water)	0.25 mg/l (/)
PMEC STP	8.8 mg/l (/)
PNEC sediment (fresh water)	0.002 mg/kg bw (/)
PNEC sediment (marine water)	0.002 mg/kg bw (/)

· 8.2. Exposure controls

· Personal protective equipment

· General protective and hygienic measures

- Instantly remove any soiled and impregnated garments.
- The usual precautionary measures should be adhered to in handling the chemicals.
- Avoid contact with the eyes and skin.
- Keep away from foodstuffs, beverages and food.
- Wash hands during breaks and at the end of the work.
- Do not inhale gases / fumes / aerosols.
- Do not eat, drink or smoke while working.

- **Breathing equipment:** Breathing protection recommended when aerosol and/or fog formation.

· 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)

(Contd. on page 6)

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

Printing date 15.01.2019

Version number 1

Revision: 15.01.2019

Trade name Battery acid 1.28 (Akkumulatorensäure 1.28)

(Contd. of page 5)

- **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Tightly sealed safety glasses (DIN EN 166)
- **Body protection:**
Acid resistant protective clothing
Protective clothing should be selected in their place, depending on concentration and quantity of the hazardous substances. The chemical resistance of protective clothing should be clarified with their suppliers.

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 applicable.
- **pH-value at 20 °C:** < 1
- **Change in condition**

Melting point/freezing point:	-65 °C
Initial boiling point and boiling range:	114 °C
- **Flash point:** Not applicable.
- **Inflammability (solid, gaseous)** Product is not inflammable.
- **Ignition temperature:** No self-heating fuel, according to UN Test N.4.
- **Decomposition temperature:** Not determined.
- **Self-inflammability:** Product is not selfigniting.
- **Explosive properties:** Product is not explosive.
- **Critical values for explosion:**

Lower:	Not applicable
Upper:	Not applicable
- **Oxidising properties** not classified as oxidizing
- **Steam pressure:** Not determined.
- **Density at 20 °C** 1.28 g/cm³
- **Settled apparent density** Not determined.
- **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.
-----------------	-----------------

(Contd. on page 7)

Trade name Battery acid 1.28 (Akkumulatorensäure 1.28)

(Contd. of page 6)

· 9.2. Other information

No further relevant information available.

SECTION 10: Stability and reactivity

· 10.1. Reactivity

The substance is stable under normal conditions of use.

Metal corrosion: Corrosive to metals

· 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

moisture

No further information, sh. Item 7.

· 10.5. Incompatible materials:

Alkali (lye).

water

Reacts with metals forming hydrogen.

· 10.6. Hazardous decomposition products:

In case of fire: see section 5

None known.

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)
	LC50/4h	0.375 mg/l (rat)

· Primary irritant effect:

· Skin corrosion/irritation

Causes severe skin burns and eye damage.

· Serious eye damage/irritation

Causes serious eye damage.

· Sensitisation: Based on available data, the classification criteria are not met.

· CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

· 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.

GB

(Contd. on page 8)

Trade name Battery acid 1.28 (Akkumulatorensäure 1.28)

(Contd. of page 7)

SECTION 12: Ecological information

· 12.1. Toxicity

· Aquatic toxicity:

7664-93-9 sulphuric acid

IC50 (72h) >100 mg/l (Alge (*Senedesmus capricornutum*))

EC50 (48h) >100 mg/l (*Daphnia magna* (großer Wasserfloh))

LC50 (96h) 16-28 mg/l (*Lepomis macrochirus* (Bl. Sonnenbarsch))

· 12.2. **Persistence and degradability** No further relevant information available.

· **Behaviour in environmental systems:**

· 12.3. **Bioaccumulative potential** No further relevant information available.

· 12.4. **Mobility in soil** No further relevant information available.

· **Ecotoxicological effects:**

· **Remark:**

Harmful effect on fish, plankton and sessile organisms due to pH shift. Does not cause oxygen depletion. No inhibition of activity of sewage bacteria after neutralization.

· **Additional ecological information:**

· **General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.

· 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**

Check material recycling.

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
-----------	--

· **Uncleaned packagings:**

· **Recommendation:**

Product residues and uncleaned empty containers should be packaged, sealed, labelled, and disposed of or recycled according to relevant national and local regulations. When uncleaned empty containers are passed on, the recipient must be warned of any possible hazard that may be caused by residues.

SECTION 14: Transport information

· 14.1. **UN-Number**

· **ADR, IMDG, IATA**

UN2796

(Contd. on page 9)

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

Printing date 15.01.2019

Version number 1

Revision: 15.01.2019

Trade name Battery acid 1.28 (Akkumulatorensäure 1.28)

(Contd. of page 8)

<ul style="list-style-type: none"> · 14.2. UN proper shipping name · ADR · IMDG, IATA 	<p>2796 BATTERY FLUID, ACID solution BATTERY FLUID, ACID</p>
<ul style="list-style-type: none"> · 14.3. Transport hazard class(es) · ADR, IMDG, IATA 	
	
<ul style="list-style-type: none"> · Class · Label 	<p>8 Corrosive substances. 8</p>
<ul style="list-style-type: none"> · 14.4. Packing group · ADR, IMDG, IATA 	<p>II</p>
<ul style="list-style-type: none"> · 14.5. Environmental hazards: · Marine pollutant: 	<p>Not applicable. no</p>
<ul style="list-style-type: none"> · 14.6. Special precautions for user · Kemler Number: · EMS Number: · Segregation groups · Stowage Category 	<p>Not applicable. 80 8-06 Acids B</p>
<ul style="list-style-type: none"> · 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code 	<p>Not applicable.</p>
<ul style="list-style-type: none"> · Transport/Additional information: 	
<ul style="list-style-type: none"> · ADR · Limited quantities (LQ) · Excepted quantities (EQ) · Transport category · Tunnel restriction code 	<p>1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml 2 E</p>
<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) 	<p>1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml</p>
<ul style="list-style-type: none"> · UN "Model Regulation": 	<p>UN 2796 BATTERY FLUID, ACID SOLUTION, 8, II</p>

SECTION 15: Regulatory information

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

(Contd. on page 10)

Trade name Battery acid 1.28 (Akkumulatorensäure 1.28)

(Contd. of page 9)

- **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.

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.
- **Department issuing data specification sheet:** Environment protection department.
- **Abbreviations and acronyms:**
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organisation
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 Harmonised System of Classification and Labelling of Chemicals
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)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
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
- **Sources** This information is based on information from suppliers.
- *** Data compared to the previous version altered.** Safety editorially amended

GB

(Contd. on page 11)

Trade name Battery acid 1.28 (Akkumulatorensäure 1.28)

(Contd. of page 10)

Annex: Exposure scenario 1

- **Short title of the exposure scenario** Use for the manufacture 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
- **Description of the activities / processes covered in the Exposure Scenario**
See section 1 of the annex to the Safety Data Sheet.
- **Conditions of use**
- **Duration and frequency**
8hrs (full working shift).
5 workdays/week.
- **Physical parameters**
The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the substance.
- **Physical state**
Fluid
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 properties of the substance, the process should be carried out as close as possible.
- **Other operational conditions affecting worker exposure**
Avoid contact with eyes.
Avoid contact with the skin.
Due to the properties of the substance, the process should be carried out as close as possible.
Process is completely enclosed. (PROC02)
Indoors with good natural ventilation
- **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**
- **Organisational protective measures**
Only trained and authorized personnel should handle the matter.
The process for substance use must be well documented and closely monitored.
- **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)
Protective work clothing.
Detailed measures on hand protection according to Safety Data Sheet, section 8.

(Contd. on page 12)

Trade name Battery acid 1.28 (Akkumulatorensäure 1.28)

(Contd. of page 11)

· **Measures for consumer protection**

Ensure adequate labelling.
Keep locked up and out of the reach of children.

· **Environmental protection measures**

The entire contaminated wastewater must be neutralized before discharge into surface waters or sewage treatment plant.

For exhaust gas purification should be used such as air scrubbers or filters.

The soil should be opaque and fluid resistant.

· **Water**

Generally, prior to the introduction of wastewater into wastewater treatment plants a neutralisation is required.

Size of the wastewater treatment plant (m³ / day): 2 000

Sludge treatment: incineration or landfill

· **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**

man

ECETOC TRA (tier 1) and Advanced REACH Tool (Tier 2)

The calculated figures are below the individual load DNELs (RCR <1).

· **Environment**

EUSES (v2.1, tier 2) and measured data

The predicted exposure concentrations for air, for the aquatic and the terrestrial environment are below the derived PNEC values, leading to RCRs of <1.

· **Consumer** Not relevant for this Exposure Scenario.

· **Guidance for downstream users**

environment:

Among the conditions listed above, the process is considered safe. Other CONDITIONS should be taken only as and when appropriate measurements and calculations show that the RCR is <1.

Health:

Among the conditions listed above, the process is considered safe. Other conditions should be taken only as and when appropriate measurements or

Calculations show that the RCR is <1

GB

(Contd. on page 13)

Trade name Battery acid 1.28 (Akkumulatorensäure 1.28)

(Contd. of page 12)

Annex: Exposure scenario 2

- **Short title of the exposure scenario** Maintenance of lead-acid batteries (Professionals)
- **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)
- **Description of the activities / processes covered in the Exposure Scenario**
See section 1 of the annex to the Safety Data Sheet.
- **Conditions of use**
- **Duration and frequency**
8hrs (full working shift).
5 workdays/week.
- **Physical parameters**
The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the substance.
- **Physical state**
Fluid
Vapor Pressure: <0.1 hPa (20 ° C)
- **Concentration of the substance in the mixture**
The substance is minor component.
or in the product: 25-50%
- **Used amount per time or activity** 2 500 tons per year
- **Other operational conditions**
- **Other operational conditions affecting environmental exposure**
Due to the properties of the substance, the process should be carried out as close as possible.
- **Other operational conditions affecting worker exposure**
Avoid contact with eyes.
Avoid contact with the skin.
Due to the properties of the substance, the process should be carried out as close as possible.
Keep windows open during application to ensure natural ventilation.
- **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**
- **Organisational protective measures**
Only trained and authorized personnel should handle the matter.
The process for substance use must be well documented and closely monitored.
- **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)
Protective work clothing.
Detailed measures on hand protection according to Safety Data Sheet, section 8.
- **Measures for consumer protection**
Ensure adequate labelling.
Keep locked up and out of the reach of children.
- **Environmental protection measures**
The entire contaminated wastewater must be neutralized before discharge into surface waters or sewage treatment plant.

(Contd. on page 14)

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

Printing date 15.01.2019

Version number 1

Revision: 15.01.2019

Trade name Battery acid 1.28 (Akkumulatorensäure 1.28)

(Contd. of page 13)

For exhaust gas purification should be used such as air scrubbers or filters.

The soil should be opaque and fluid resistant.

· **Water**

Generally, prior to the introduction of wastewater into wastewater treatment plants a neutralisation is required.

Size of the wastewater treatment plant (m³ / day): 2 000

Sludge treatment: incineration or landfill

· **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**

man

ECETOC TRA (tier 1) and Advanced REACH Tool (Tier 2)

The calculated figures are below the individual load DNELs (RCR <1).

· **Environment**

EUSES (v2.1, tier 2) and measured data

The predicted exposure concentrations for air, for the aquatic and the terrestrial environment are below the derived PNEC values, leading to RCRs of <1.

· **Consumer** *Not relevant for this Exposure Scenario.*

· **Guidance for downstream users**

environment:

Among the conditions listed above, the process is considered safe. Other CONDITIONS should be taken only as and when appropriate measurements and calculations show that the RCR is <1.

Health:

Among the conditions listed above, the process is considered safe. Other conditions should be taken only as and when appropriate measurements or

Calculations show that the RCR is <1

GB

(Contd. on page 15)

Trade name Battery acid 1.28 (Akkumulatorensäure 1.28)

(Contd. of page 14)

Annex: Exposure scenario 3

- **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
- **Description of the activities / processes covered in the Exposure Scenario**
See section 1 of the annex to the Safety Data Sheet.
- **Conditions of use**
- **Duration and frequency**
8hrs (full working shift).
5 workdays/week.
- **Physical parameters**
The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the substance.
- **Physical state**
Fluid
Vapor Pressure: <0.1 hPa (20 ° C)
- **Concentration of the substance in the mixture**
The substance is minor component.
or in the product: 25-50%
- **Used amount per time or activity** 2 500 tons per year
- **Other operational conditions**
- **Other operational conditions affecting environmental exposure**
Due to the properties of the substance, the process should be carried out as close as possible.
- **Other operational conditions affecting worker exposure**
Avoid contact with eyes.
Avoid contact with the skin.
Due to the properties of the substance, the process should be carried out as close as possible.
Enter closed rooms only if ventilation is adequate.
- **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**
- **Organisational protective measures**
Only trained and authorized personnel should handle the matter.
The process for substance use must be well documented and closely monitored.
- **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)
Detailed measures on hand protection according to Safety Data Sheet, section 8.
Protective work clothing.
- **Measures for consumer protection**
Ensure adequate labelling.
Keep locked up and out of the reach of children.

(Contd. on page 16)

Trade name Battery acid 1.28 (Akkumulatorensäure 1.28)

(Contd. of page 15)

· **Environmental protection measures**

The entire contaminated wastewater must be neutralized before discharge into surface waters or sewage treatment plant.

For exhaust gas purification should be used such as air scrubbers or filters.

The soil should be opaque and fluid resistant.

· **Water**

Generally, prior to the introduction of wastewater into wastewater treatment plants a neutralisation is required.

Size of the wastewater treatment plant (m³ / day): 2 000

Sludge treatment: incineration or landfill

· **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**

man

ECETOC TRA (tier 1) and Advanced REACH Tool (Tier 2)

The calculated figures are below the individual load DNELs (RCR <1).

· **Environment**

EUSES (v2.1, tier 2) and measured data

The predicted exposure concentrations for air, for the aquatic and the terrestrial environment are below the derived PNEC values, leading to RCRs of <1.

· **Consumer** *Not relevant for this Exposure Scenario.*

· **Guidance for downstream users**

environment:

Among the conditions listed above, the process is considered safe. Other CONDITIONS should be taken only as and when appropriate measurements and calculations show that the RCR is <1.

Health:

Among the conditions listed above, the process is considered safe. Other conditions should be taken only as and when appropriate measurements or

Calculations show that the RCR is <1

GB

(Contd. on page 17)

Trade name Battery acid 1.28 (Akkumulatorensäure 1.28)

(Contd. of page 16)

Annex: Exposure scenario 4

- **Short title of the exposure scenario** Use of lead-acid batteries (consumers)
- **Sector of Use SU21** Consumer uses: Private households / general public / consumers
- **Environmental release category ERC9b** Widespread use of functional fluid (outdoor)
- **Description of the activities / processes covered in the Exposure Scenario**
See section 1 of the annex to the Safety Data Sheet.
- **Conditions of use**
- **Duration and frequency** 4 hrs (half working shift).
- **Physical parameters**
The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the substance.
- **Physical state**
Fluid
Vapor Pressure: <0.1 hPa (20 ° C)
- **Used amount per time or activity** 2500 tons per year
- **Other operational conditions**
- **Other operational conditions affecting environmental exposure**
Due to the properties of the substance, the process should be carried out as close as possible.
- **Other operational conditions affecting worker exposure**
Avoid contact with eyes.
Avoid contact with the skin.
Indoors with good natural ventilation
Do not get in eyes, on the skin and get to the clothes.
Batteries should only be opened in a well-ventilated place.
Batteries should not be opened unnecessarily.
Batteries should be on a solid surface to prevent leakage.
- **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**
Wear suitable overalls, to avoid contact with skin.
Acid-resistant gloves must be worn.
To protect against splash goggles.
- **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.
- **Environmental protection measures**
- **Water**
Size of the wastewater treatment plant (m³ / day): 2 000
Sludge treatment: incineration or landfill
- **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**
man
ECETOC TRA (tier 1) and Advanced REACH Tool (Tier 2)
The calculated figures are below the individual load DNELs (RCR <1).

(Contd. on page 18)

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

Printing date 15.01.2019

Version number 1

Revision: 15.01.2019

Trade name Battery acid 1.28 (Akkumulatorensäure 1.28)

(Contd. of page 17)

· **Environment**

EUSES (v2.1, tier 2) and measured data

The predicted exposure concentrations for air, for the aquatic and the terrestrial environment are below the derived PNEC values, leading to RCRs of <1.

· **Consumer** *Not relevant for this Exposure Scenario.*

· **Guidance for downstream users**

environment:

Among the conditions listed above, the process is considered safe. Other CONDITIONS should be taken only as and when appropriate measurements and calculations show that the RCR is <1.

Health:

Among the conditions listed above, the process is considered safe. Other conditions should be taken only as and when appropriate measurements or

Calculations show that the RCR is <1

GB