

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

1.1. Product identifier

Product form : Mixture
Product name : High Performance MF, VRLA MF, YuMicron & Conventional Series - Dry Charged Lead Battery

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

1.2.1. Relevant identified uses

Use of the substance/mixture : Electric Storage Battery (Power sport)

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Yuasa Battery Sales (UK) Ltd
Unit 13, Hunts Rise, South Marston Industrial Park
SN4TG Swindon
T +448-8708-500259 - F +44-8708-500317
email: matt.jordan@yuasaeurope.com

1.4. Emergency telephone number

Emergency number : +44(0)1793833562 (09:00 – 17:00 Monday to Friday)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Repr. 1A H360Fd
STOT RE 1 H372
Aquatic Acute 1 H400
Aquatic Chronic 1 H410

Full text of H-phrases: see section 16

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Xn; N; Repr.Cat.1; R60-61-50/53

Full text of R-phrases: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS08

GHS09

Signal word (CLP) : Danger

Hazard statements (CLP) : H360Fd - May damage fertility. Suspected of damaging the unborn child
H372 - Causes damage to organs through prolonged or repeated exposure
H410 - Very toxic to aquatic life with long lasting effects

Precautionary statements (CLP) : P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe dust/fume/gas/mist/vapours/spray
P264 - Wash ... thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P273 - Avoid release to the environment

2.3. Other hazards

other hazards which do not result in classification : Lead may be toxic to blood, kidneys, central nervous system.

Dry Charge Lead Battery

Safety Data Sheet

according to Regulation (EC) No. 453/2010

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification according to Directive 67/548/EEC
Lead	(CAS No) 7439-92-1 (EC no) 231-100-4 (REACH-no) not available	89 - 92	Repr.Cat.1; R60 Repr.Cat.1; R61 Xn; R48/20/22 N; R50/53
Antimony	(CAS No) 7440-36-0 (EC no) 231-146-5 (REACH-no) not available	0,2	Not classified

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Lead	(CAS No) 7439-92-1 (EC no) 231-100-4 (REACH-no) not available	89 - 92	Repr. 1A, H360 STOT RE 1, H372 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 (M=10)
Antimony	(CAS No) 7440-36-0 (EC no) 231-146-5 (REACH-no) not available	0,2	Not classified

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

Note: In normal usage there is no risk to people or the environment from handling and using this article. It is only in the exceptional case of an accident or severe damage that there may be minimal exposure to the constituent materials listed above.

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation	: If a battery ruptures, move to fresh air in case of accidental inhalation of mist. If breathing is irregular or stopped, administer artificial respiration. If breathing is difficult, give oxygen. Seek medical attention immediately.
First-aid measures after skin contact	: Rinse immediately with plenty of water for 15 minutes. Remove contaminated clothing, including shoes, after flushing has begun. If a battery ruptures, do not rub or scratch exposed skin.
First-aid measures after eye contact	: Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If battery ruptures, do not rub or scratch exposed eye.
First-aid measures after ingestion	: If solution of a battery chemicals have been swallowed and the person is conscious, give one glass of water. Do NOT induce vomiting. Vomiting may occur spontaneously. Never give anything by mouth to an unconscious person. Get immediate medical attention.

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

Symptoms/injuries after inhalation	: In case of repeated or prolonged exposure : May cause respiratory irritation.
Symptoms/injuries after skin contact	: Direct contact with internal components of a battery can be severely irritating to the skin and may result in redness, swelling, burns and severe skin damage. Skin contact may aggravate an existing dermatitis condition. Skin contact may aggravate dermatitis.
Symptoms/injuries after eye contact	: Dust from this product may cause eyes irritation.
Symptoms/injuries after ingestion	: Ingestion may cause nausea and vomiting. Abdominal pain. Diarrhea.

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

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Use extinguishing media appropriate for surrounding fire. If a battery ruptures, use dry chemical, soda ash, lime, sand or carbon dioxide.
Unsuitable extinguishing media	: None known.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: On burning formation of metallic fumes. Battery may rupture due to pressure buildup when exposed to excessive heat and may be result in the release of corrosive materials.
Hazardous decomposition products in case of fire	: Toxic gases and fumes may be released in a fire.

5.3. Advice for firefighters

Protective equipment for firefighters	: Use self-contained breathing apparatus and chemically protective clothing.
---------------------------------------	--

Dry Charge Lead Battery

Safety Data Sheet

according to Regulation (EC) No. 453/2010

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Avoid contact with spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective equipment.

6.1.1. For non-emergency personnel

Protective equipment : Wear suitable protective clothing, gloves and eye/face protection.

Emergency procedures : Evacuate area.

6.1.2. For emergency responders

Protective equipment : Wear suitable protective clothing, gloves and eye/face protection.

Emergency procedures : Evacuate unnecessary personnel.

6.2. Environmental precautions

Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Wet clean or vacuum up solids.

Methods for cleaning up : Use clean-up methods that avoid dust generation (vacuum wet). Collect all waste in suitable and labelled containers and dispose according to local legislation.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Protect from physical damage.

Precautions for safe handling : Avoid all eye and skin contact and do not breathe vapour and mist. Since emptied containers retain product residue, follow label warnings even after container is emptied. Proper grounding procedures to avoid static electricity should be followed. Non-static creating clothing and conductive shoes should be worn.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Provide local exhaust or general room ventilation.

Storage conditions : Store in a dry, cool and well-ventilated place. Keep away from heat and direct sunlight. Protect containers against damage.

Incompatible products : Strong bases. Strong acids.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Lead (7439-92-1)		
Austria	MAK (mg/m ³)	0,1 mg/m ³ (inhalable fraction)
Austria	MAK Short time value (mg/m ³)	0,4 mg/m ³ (inhalable fraction)
Bulgaria	OEL TWA (mg/m ³)	0,05 mg/m ³
Croatia	GVI (grani na vrijednost izloženosti) (mg/m ³)	0,15 mg/m ³
Cyprus	OEL TWA (mg/m ³)	0,15 mg/m ³
Czech Republic	Expozi ní limity (PEL) (mg/m ³)	0,05 mg/m ³
Denmark	Grænseværdie (langvarig) (mg/m ³)	0,05 mg/m ³ (dust, fume and powder)
Estonia	OEL TWA (mg/m ³)	0,1 mg/m ³ (total dust) 0,05 mg/m ³ (respirable dust)
Finland	HTP-arvo (8h) (mg/m ³)	0,1 mg/m ³ (all works)
France	VME (mg/m ³)	0,1 mg/m ³ (restrictive limit)
Germany	TRGS 903 (BGW)	300 µg/l (Medium: whole blood - Time: no restriction - Parameter: Lead (women age below 45 years) 400 µg/l (Medium: whole blood - Time: no restriction - Parameter: Lead (women 45 years and older)
Gibraltar	OEL TWA (mg/m ³)	0,15 mg/m ³
Greece	OEL TWA (mg/m ³)	0,15 mg/m ³
Hungary	AK-érték	0,15 mg/m ³

Dry Charge Lead Battery

Safety Data Sheet

according to Regulation (EC) No. 453/2010

Lead (7439-92-1)		
Ireland	OEL (8 hours ref) (mg/m ³)	0,15 mg/m ³
Ireland	OEL (15 min ref) (mg/m ³)	0,45 mg/m ³ (calculated)
Italy	OEL TWA (mg/m ³)	0,075 mg/m ³
Latvia	OEL TWA (mg/m ³)	0,005 mg/m ³
Lithuania	IPRV (mg/m ³)	0,15 mg/m ³ (inhalable fraction) 0,07 mg/m ³ (respirable fraction)
Luxembourg	OEL TWA (mg/m ³)	0,15 mg/m ³
Poland	NDS (mg/m ³)	0,05 mg/m ³
Portugal	OEL TWA (mg/m ³)	0,15 mg/m ³ (mandatory indicative limit value)
Romania	OEL TWA (mg/m ³)	0,05 mg/m ³
Romania	OEL STEL (mg/m ³)	0,10 mg/m ³
Slovakia	NPHV (priemerná) (mg/m ³)	0,15 mg/m ³
Slovenia	OEL TWA (mg/m ³)	0,1 mg/m ³ (inhalable fraction)
Slovenia	OEL STEL (mg/m ³)	0,4 mg/m ³ (inhalable fraction)
Spain	VLA-ED (mg/m ³)	0,15 mg/m ³
Sweden	nivågränsvärde (NVG) (mg/m ³)	0,1 mg/m ³ (total inhalable dust) 0,05 mg/m ³ (total respirable dust)
United Kingdom	WEL TWA (mg/m ³)	0,15 mg/m ³
United Kingdom	WEL STEL (mg/m ³)	0,45 mg/m ³ (calculated)
Norway	Gjennomsnittsverdier (AN) (mg/m ³)	0,05 mg/m ³ (dust and fume)
Norway	Gjennomsnittsverdier (Korttidsverdi) (mg/m ³)	0,15 mg/m ³ (dust and fume)
Switzerland	VME (mg/m ³)	0,1 mg/m ³ (inhalable)
Switzerland	VLE (mg/m ³)	0,8 mg/m ³ (inhalable)
Australia	TWA (mg/m ³)	0,15 mg/m ³ (dust and fume)
Canada (Quebec)	VEMP (mg/m ³)	0,05 mg/m ³
USA - ACGIH	ACGIH TWA (mg/m ³)	0,05 mg/m ³
USA - IDLH	US IDLH (mg/m ³)	100 mg/m ³
USA - NIOSH	NIOSH REL (TWA) (mg/m ³)	0,050 mg/m ³
USA - OSHA	OSHA PEL (TWA) (mg/m ³)	50 µg/m ³

Antimony (7440-36-0)		
Austria	MAK (mg/m ³)	0,5 mg/m ³ (inhalable fraction)
Austria	MAK Short time value (mg/m ³)	5 mg/m ³ (inhalable fraction)
Belgium	Limit value (mg/m ³)	0,5 mg/m ³
Bulgaria	OEL TWA (mg/m ³)	0,5 mg/m ³
Croatia	GVI (grani na vrijednost izloženosti) (mg/m ³)	0,5 mg/m ³
Czech Republic	Expozi ní limity (PEL) (mg/m ³)	0,5 mg/m ³
Denmark	Grænseværdie (langvarig) (mg/m ³)	0,5 mg/m ³ (powder)
Estonia	OEL TWA (mg/m ³)	0,5 mg/m ³
Finland	HTP-arvo (8h) (mg/m ³)	0,5 mg/m ³
France	VME (mg/m ³)	0,5 mg/m ³
Greece	OEL TWA (mg/m ³)	0,5 mg/m ³
Hungary	AK-érték	0,5 mg/m ³
Hungary	CK-érték	2 mg/m ³
Ireland	OEL (8 hours ref) (mg/m ³)	0,5 mg/m ³
Ireland	OEL (15 min ref) (mg/m ³)	1,5 mg/m ³ (calculated)
Latvia	OEL TWA (mg/m ³)	0,2 mg/m ³ (metallic dust)
Lithuania	IPRV (mg/m ³)	0,5 mg/m ³
Netherlands	Grenswaarde TGG 8H (mg/m ³)	0,5 mg/m ³
Poland	NDS (mg/m ³)	0,5 mg/m ³
Portugal	OEL TWA (mg/m ³)	0,5 mg/m ³
Romania	OEL TWA (mg/m ³)	0,20 mg/m ³
Romania	OEL STEL (mg/m ³)	0,50 mg/m ³

Dry Charge Lead Battery

Safety Data Sheet

according to Regulation (EC) No. 453/2010

Antimony (7440-36-0)		
Slovakia	NPHV (priemerná) (mg/m ³)	0,5 mg/m ³ (total dust)
Slovenia	OEL TWA (mg/m ³)	0,5 mg/m ³ (inhalable fraction)
Slovenia	OEL STEL (mg/m ³)	2 mg/m ³ (inhalable fraction)
Spain	VLA-ED (mg/m ³)	0,5 mg/m ³
Sweden	nivågränsvärde (NVG) (mg/m ³)	0,25 mg/m ³ (total inhalable dust)
United Kingdom	WEL TWA (mg/m ³)	0,5 mg/m ³
United Kingdom	WEL STEL (mg/m ³)	1,5 mg/m ³ (calculated)
Norway	Gjennomsnittsverdier (AN) (mg/m ³)	0,5 mg/m ³
Norway	Gjennomsnittsverdier (Korttidsverdi) (mg/m ³)	1,5 mg/m ³
Switzerland	VME (mg/m ³)	0,5 mg/m ³ (inhalable)
Australia	TWA (mg/m ³)	0,5 mg/m ³
Canada (Quebec)	VEMP (mg/m ³)	0,5 mg/m ³
USA - ACGIH	ACGIH TWA (mg/m ³)	0,5 mg/m ³
USA - IDLH	US IDLH (mg/m ³)	50 mg/m ³
USA - NIOSH	NIOSH REL (TWA) (mg/m ³)	0,5 mg/m ³
USA - OSHA	OSHA PEL (TWA) (mg/m ³)	0,5 mg/m ³

8.2. Exposure controls

Appropriate engineering controls	: Mechanical ventilation is recommended. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
Personal protective equipment	: Safety glasses. Gloves. Insufficient ventilation: wear respiratory protection.
Hand protection	: Wear suitable gloves tested to EN374.
Eye protection	: Chemical goggles or face shield with safety glasses. DIN EN 166
Skin and body protection	: Wash contaminated clothing before reuse. IF ON SKIN: Wash with plenty of soap and water.
Respiratory protection	: In case of insufficient ventilation, wear suitable respiratory equipment. Wear a respirator conforming to EN140 with Type A/P2 filter or better.



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Colour	: Bluish grey metal.
Odour	: No data available
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: 252,2222 - 360 °C
Freezing point	: No data available
Boiling point	: 1380 °C
Flash point	: Non-flammable
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Not applicable
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Density	: 9,6 - 11,3 g/m ³
Solubility	: No data available
Log Pow	: No data available
Viscosity, kinematic	: No data available

Dry Charge Lead Battery

Safety Data Sheet

according to Regulation (EC) No. 453/2010

Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions.

10.2. Chemical stability

Stable at normal conditions.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Overcharging. Remove all sources of ignition. If battery ruptures, avoid contact with organic materials and alkaline materials. Mechanical impact.

10.5. Incompatible materials

If battery ruptures, avoid contact with organic materials and alkaline materials. If battery ruptures, avoid contact with organic materials and alkaline materials.

10.6. Hazardous decomposition products

Toxic fumes may be released.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Not classified
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: May damage fertility. Suspected of damaging the unborn child.
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard	: Not classified

SECTION 12: Ecological information

12.1. Toxicity

Lead (7439-92-1)	
LC50 fish 1	0,44 mg/l (Exposure time: 96 h - Species: Cyprinus carpio [semi-static])
EC50 Daphnia 1	600 µg/l (Exposure time: 48 h - Species: water flea)
LC50 fish 2	1,17 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through])

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

Dry Charge Lead Battery	
Ecology - soil	persistent.

12.5. Results of PBT and vPvB assessment

Dry Charge Lead Battery	
Results of PBT assessment	The PBT and vPvB criteria of Annex XIII to the Regulation does not apply to inorganic substances

Dry Charge Lead Battery

Safety Data Sheet

according to Regulation (EC) No. 453/2010

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

- Regional legislation (waste) : Dispose of contents/container to comply with applicable local, national and international regulations.
- Waste treatment methods : Recycling the product is recommended. Waste must be disposed of in accordance with federal, state, and local environmental control regulations.
- Waste disposal recommendations : Consult the appropriate local waste disposal expert about waste disposal. . Since emptied containers retain product residue, follow label warnings even after container is emptied.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

Proper Shipping Name (All modes) : Not applicable

14.3. Transport hazard class(es)

Transport hazard class(es) : Not applicable

14.4. Packing group

Packing group (All modes) : Not applicable

14.5. Environmental hazards

- Dangerous for the environment : No
- Marine pollutant : No
- Other information : No supplementary information available

14.6. Special precautions for user

14.6.1. Overland transport

Subject to ADR : No

14.6.2. Transport by sea

Subject to IMDG : No

14.6.3. Air transport

Subject to IATA : No

14.6.4. Inland waterway transport

Subject to ADN : No

14.6.5. Rail transport

Subject to RID : No

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

- Contains no substances with Annex XVII restrictions
- Dry Charge Lead Battery is not on the REACH Candidate List
- Contains no substance on the REACH candidate list
- Contains no REACH Annex XIV substances

15.1.2. National regulations

Germany

Water hazard class (WGK) : 2 - hazard to waters

Dry Charge Lead Battery

Safety Data Sheet

according to Regulation (EC) No. 453/2010

15.2. Chemical safety assessment

A chemical safety assessment has been carried out for the substance or the mixture by the supplier

SECTION 16: Other information

Full text of R-, H- and EUH-phrases:

Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
Repr. 1A	Reproductive toxicity, Category 1A
Repr. 1A	Reproductive toxicity, Category 1A
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
H360	May damage fertility or the unborn child
H360Fd	May damage fertility. Suspected of damaging the unborn child
H372	Causes damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
R48/20/22	Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R60	May impair fertility
R61	May cause harm to the unborn child
N	Dangerous for the environment
Xn	Harmful

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

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

1.1. Product identifier

Product form : Mixture
Product name : Battery Acid Pack (Sulfuric Acid)

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

1.2.1. Relevant identified uses

Use of the substance/mixture : Battery Electrolyte

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Yuasa Battery Sales (UK) Ltd
Unit 13, Hunts Rise, South Marston Industrial Park
SN4TG Swindon
T +44-8708-500259 - F +44-8708-500317
email: matt.jordan@yuasaeurope.com

1.4. Emergency telephone number

Emergency number : +44(0)1793833562 (09:00 – 17:00 Monday to Friday)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute Tox. 1 (Inhalation) H330
Skin Corr. 1A H314

Full text of H-phrases: see section 16

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

C; Repr.Cat.1; R35

Full text of R-phrases: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS05

GHS06

Signal word (CLP) : Danger

Hazard statements (CLP) : H314 - Causes severe skin burns and eye damage
H330 - Fatal if inhaled

Precautionary statements (CLP) : P260 - Do not breathe dust/fume/gas/mist/vapours/spray
P264 - Wash ... thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P284 - Wear respiratory protection
P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

Sulfuric Acid-

Safety Data Sheet

according to Regulation (EC) No. 453/2010

3.2. Mixture

Name	Product identifier	%	Classification according to Directive 67/548/EEC
Water	(CAS No) 7732-18-5 (EC no) 231-791-2	60	Not classified
Sulfuric acid	(CAS No) 7664-93-9 (EC no) 231-639-5 (EC index no) 016-020-00-8 (REACH-no) not available	40	C; R35

Name	Product identifier	Specific concentration limits
Sulfuric acid	(CAS No) 7664-93-9 (EC no) 231-639-5 (EC index no) 016-020-00-8 (REACH-no) not available	(5 =< C < 15) Xi;R36/38 (C >= 15) C;R35

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Water	(CAS No) 7732-18-5 (EC no) 231-791-2	60	Not classified
Sulfuric acid	(CAS No) 7664-93-9 (EC no) 231-639-5 (EC index no) 016-020-00-8 (REACH-no) not available	40	Skin Corr. 1A, H314

Name	Product identifier	Specific concentration limits
Sulfuric acid	(CAS No) 7664-93-9 (EC no) 231-639-5 (EC index no) 016-020-00-8 (REACH-no) not available	(5 =< C < 15) Eye Irrit. 2, H319 (5 =< C < 15) Skin Irrit. 2, H315 (C >= 15) Skin Corr. 1A, H314

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

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation	: If a battery ruptures, move to fresh air in case of accidental inhalation of mist. If breathing is irregular or stopped, administer artificial respiration. If breathing is difficult, give oxygen. Seek medical attention immediately.
First-aid measures after skin contact	: Rinse immediately with plenty of water for 15 minutes. Remove contaminated clothing, including shoes, after flushing has begun. If a battery ruptures, do not rub or scratch exposed skin. Immediately call a POISON CENTER or doctor/physician.
First-aid measures after eye contact	: Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If battery ruptures, do not rub or scratch exposed eye.
First-aid measures after ingestion	: If solution of a battery chemicals have been swallowed and the person is conscious, give one glass of water. Do NOT induce vomiting. Vomiting may occur spontaneously. Never give anything by mouth to an unconscious person. Get immediate medical attention.

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

Symptoms/injuries after inhalation	: If a battery ruptures, may be harmful or fatal if inhaled in a confined area. May cause severe irritation and burns of the nose, throat and respiratory tract.
Symptoms/injuries after skin contact	: Direct contact with internal components of a battery can be severely irritating to the skin and may result in redness, swelling, burns and severe skin damage. Skin contact may aggravate an existing dermatitis condition. Skin contact may aggravate dermatitis.
Symptoms/injuries after eye contact	: If a battery ruptures, direct contact with the liquid or exposure to vapours or mists may cause tearing, redness, swelling, corneal damage and irreversible eye damage. May cause severe burns.
Symptoms/injuries after ingestion	: Severe irritation or burns to the mouth, throat, oesophagus, and stomach. May be fatal if swallowed.

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

Aspiration of this material may cause chemical pneumonia.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Use extinguishing media appropriate for surrounding fire. If a battery ruptures, use dry chemical, soda ash, lime, sand or carbon dioxide.
Unsuitable extinguishing media	: None known.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: Sulfuric acid will not burn but can start fires with organic material, nitrates, carbides, chlorates, and metal powders.
-------------	--

Sulfuric Acid-

Safety Data Sheet

according to Regulation (EC) No. 453/2010

- Explosion hazard : Reacts violently with water. It can react explosively with organic materials. . Reacts with most metals to produce hydrogen gas, which can form an explosive mixture with air. Hydrogen may accumulate in containers, avoid ignition sources. Addition of water to acid causes heat and potentially explosive mixtures. Spill over into sewers may generate hydrogen gas or sulfides.
- Hazardous decomposition products in case of fire : Sulfur oxides.

5.3. Advice for firefighters

- Protective equipment for firefighters : Use self-contained breathing apparatus and chemically protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Avoid contact with spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective equipment.

6.1.1. For non-emergency personnel

- Protective equipment : Wear suitable protective clothing, gloves and eye/face protection.
- Emergency procedures : Evacuate area.

6.1.2. For emergency responders

- Protective equipment : Wear suitable protective clothing, gloves and eye/face protection.
- Emergency procedures : Evacuate unnecessary personnel.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

- For containment : For small spills, absorb or cover with dry earth, sand, or other inert non-combustible absorbent material and place into waste containers for later disposal.
- Methods for cleaning up : Small spills: collect all released material in a plastic lined metal container. . Take up liquid spill into absorbent material or Neutralize with sodium bicarbonate. Large spills: contain liquid using absorbent material, by digging trenches. Take up liquid spill into inert absorbent material, e.g.: sand/earth. Dispose in a safe manner in accordance with local/national regulations.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Additional hazards when processed : Protect from physical damage.
- Precautions for safe handling : Avoid all eye and skin contact and do not breathe vapour and mist. Since emptied containers retain product residue, follow label warnings even after container is emptied. Non-static creating clothing and conductive shoes should be worn.
- Hygiene measures : Do not eat, drink or smoke when using this product. Wash contaminated clothing prior to re-use. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Provide local exhaust or general room ventilation.
- Storage conditions : Store in a dry, cool and well-ventilated place. Keep away from heat and direct sunlight.
- Incompatible products : alkaline substances.
- Special rules on packaging : Store in original container or corrosive resistant and/or lined container.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Sulfuric acid (7664-93-9)		
EU	IOELV TWA (mg/m ³)	0,05 mg/m ³ (taking into account potential limitations and interferences which take place in the presence of other Sulphur compounds-mist)
Austria	MAK (mg/m ³)	0,1 mg/m ³ (corresponds to 0.05 mg/m ³ Thoracic-inhalable fraction)
Austria	MAK Short time value (mg/m ³)	0,2 mg/m ³ (inhalable fraction)
Belgium	Limit value (mg/m ³)	0,2 mg/m ³

Sulfuric Acid-

Safety Data Sheet

according to Regulation (EC) No. 453/2010

Sulfuric acid (7664-93-9)		
Bulgaria	OEL TWA (mg/m ³)	0,05 mg/m ³ (When choosing a suitable method for monitoring exposure should take into account potential constraints and interactions that may occur in the presence of other sulfur compounds-respirable aerosol)
Croatia	GVI (grani na vrijednost izloženosti) (mg/m ³)	0,05 mg/m ³
Cyprus	OEL TWA (mg/m ³)	0,05 mg/m ³ (vapor)
Czech Republic	Expozi ní limity (PEL) (mg/m ³)	1 mg/m ³ 0,05 mg/m ³ (concentrated-mist)
Denmark	Grænseværdie (langvarig) (mg/m ³)	0,05 mg/m ³ (thoracic fraction-mist)
Estonia	OEL TWA (mg/m ³)	1 mg/m ³ (fume)
Finland	HTP-arvo (8h) (mg/m ³)	0,05 mg/m ³
Finland	HTP-arvo (15 min)	0,1 mg/m ³
France	VME (mg/m ³)	0,05 mg/m ³ (thoracic fraction)
France	VLE (mg/m ³)	3 mg/m ³
Germany	TRGS 900 Occupational exposure limit value (mg/m ³)	0,1 mg/m ³ (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed-inhalable fraction)
Gibraltar	OEL TWA (mg/m ³)	0,05 mg/m ³ (when selecting an appropriate exposure monitoring method, account should be taken of potential limitations and interferences that may arise in the presence of other sulphur compounds-thoracic fraction)
Greece	OEL TWA (mg/m ³)	0,05 mg/m ³ (mist)
Hungary	AK-érték	0,05 mg/m ³
Ireland	OEL (8 hours ref) (ppm)	0,05 ppm
Ireland	OEL (15 min ref) (ppm)	0,15 ppm (calculated)
Italy	OEL TWA (mg/m ³)	0,05 mg/m ³ (When choosing a suitable method for monitoring exposure should take into account potential constraints and interactions that may occur in the presence of other sulfur compounds, respirable fraction-thoracic fraction, mist)
Latvia	OEL TWA (mg/m ³)	0,05 mg/m ³ (choosing an appropriate exposure monitoring method, there should be taken into account the possible limitations and the impact that may result from the presence of other sulfur components-fog, which is defined as the thoracic fraction)
Lithuania	IPRV (mg/m ³)	0,05 mg/m ³ (vapor)
Lithuania	TPRV (mg/m ³)	3 mg/m ³ (fog-vapor)
Luxembourg	OEL TWA (mg/m ³)	0,05 mg/m ³
Malta	OEL TWA (mg/m ³)	0,05 mg/m ³ (mist)
Netherlands	Grenswaarde TGG 8H (mg/m ³)	0,05 mg/m ³ (defined as thoracic fraction-mist)
Poland	NDS (mg/m ³)	0,05 mg/m ³ (thoracic fraction)
Portugal	OEL TWA (mg/m ³)	0,05 mg/m ³ (thoracic fraction-mist)
Romania	OEL TWA (mg/m ³)	0,05 mg/m ³
Slovakia	NPHV (priemerná) (mg/m ³)	0,1 mg/m ³
Slovenia	OEL TWA (mg/m ³)	0,05 mg/m ³ (inhalable fraction, fog)
Spain	VLA-ED (mg/m ³)	0,05 mg/m ³ (indicative limit value; it is prohibited the partial or complete commercialization or use of this substance as a phytosanitary or biocide compound; limitations and interferences can arise from other Sulfur compounds-mist)
Sweden	nivågränsvärde (NVG) (mg/m ³)	0,1 mg/m ³
Sweden	kortidsvärde (KTV) (mg/m ³)	0,2 mg/m ³
United Kingdom	WEL TWA (mg/m ³)	0,05 mg/m ³ (mist)
Norway	Gjennomsnittsverdier (AN) (mg/m ³)	0,1 mg/m ³ (inhalable fraction)
Norway	Gjennomsnittsverdier (Kortidsverdi) (mg/m ³)	0,3 mg/m ³ (inhalable fraction)
Switzerland	VME (mg/m ³)	0,1 mg/m ³ (inhalable)
Switzerland	VLE (mg/m ³)	0,1 mg/m ³ (inhalable)

Sulfuric Acid-

Safety Data Sheet

according to Regulation (EC) No. 453/2010

Sulfuric acid (7664-93-9)		
Australia	TWA (mg/m ³)	1 mg/m ³
Australia	STEL (mg/m ³)	3 mg/m ³
Canada (Quebec)	VECD (mg/m ³)	3 mg/m ³
Canada (Quebec)	VEMP (mg/m ³)	1 mg/m ³
USA - ACGIH	ACGIH TWA (mg/m ³)	0,2 mg/m ³ (thoracic fraction)
USA - IDLH	US IDLH (mg/m ³)	15 mg/m ³
USA - NIOSH	NIOSH REL (TWA) (mg/m ³)	1 mg/m ³
USA - OSHA	OSHA PEL (TWA) (mg/m ³)	1 mg/m ³

8.2. Exposure controls

Appropriate engineering controls	: Mechanical ventilation is recommended. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
Personal protective equipment	: Safety glasses. Gloves. Insufficient ventilation: wear respiratory protection. Protective clothing.
Materials for protective clothing	: Plastic apron or overall. neoprene/natural rubber
Hand protection	: Wear suitable gloves tested to EN374. Use neoprene gloves
Eye protection	: Chemical goggles or face shield with safety glasses. DIN EN 166
Skin and body protection	: Wash contaminated clothing before reuse. IF ON SKIN: Wash with plenty of soap and water.
Respiratory protection	: In case of insufficient ventilation, wear suitable respiratory equipment. half-mask with filter according to EN 149.



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Clear. liquid.
Colour	: transparent.
Odour	: penetrating. Sharp. pungent.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: < 1
Melting point	: No data available
Freezing point	: No data available
Boiling point	: 95 - 95,5 °C
Flash point	: Non-flammable
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: 10 mm Hg
Relative vapour density at 20 °C	: > 1
Relative density	: No data available
Density	: 1,215 - 1,35 g/m ³
Solubility	: Soluble in water. Water: 100 %
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

Sulfuric Acid-

Safety Data Sheet

according to Regulation (EC) No. 453/2010

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions.

10.2. Chemical stability

Stable at normal conditions.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Mechanical impact. Heat sources.

10.5. Incompatible materials

alkali. metals. Combustible materials. Organic materials. Oxidising agents. amines. Bases. Chlorates. iron. Nitrates. Perchlorates. Permanganates. Phosphorus. Steel. zinc. Peroxides. cyanides. nitromethane. Benzene.

10.6. Hazardous decomposition products

carbon oxides. Sulphur oxides. Toxic and irritating gases are released following thermal decomposition or combustion.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Inhalation: Fatal if inhaled.

Sulfuric Acid-	
LD50 oral rat	2140 mg/kg bodyweight
LC50 inhalation rat (mg/l)	510 mg/m ³
ATE CLP (vapours)	0,050 mg/l/4h
ATE CLP (dust,mist)	0,005 mg/l/4h

Sulfuric acid (7664-93-9)	
LD50 oral rat	2140 mg/kg
LC50 inhalation rat (mg/l)	510 mg/m ³ (Exposure time: 2 h)

Skin corrosion/irritation : Causes severe skin burns and eye damage.

Serious eye damage/irritation : Serious eye damage, category 1, implicit

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

Sulfuric acid (7664-93-9)	
LC50 fish 1	82 mg/l (Exposure time:24 h - Species: Brachydanio rerio [static])

12.2. Persistence and degradability

Sulfuric Acid-	
Persistence and degradability	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise. The products of degradation are more Toxic.

12.3. Bioaccumulative potential

Sulfuric acid (7664-93-9)	
BCF fish 1	(no bioaccumulation)

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

Sulfuric Acid-

Safety Data Sheet

according to Regulation (EC) No. 453/2010

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste)	:	Dispose of contents/container to comply with applicable local, national and international regulations.
Waste treatment methods	:	Recycling the product is recommended. Waste must be disposed of in accordance with federal, state, and local environmental control regulations.
Waste disposal recommendations	:	Consult the appropriate local waste disposal expert about waste disposal. . Since emptied containers retain product residue, follow label warnings even after container is emptied.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

UN-No. (ADR)	:	2796
UN-No. (IMDG)	:	2796
UN-No.(IATA)	:	2796
UN-No.(ADN)	:	2796
UN-No. (RID)	:	2796

14.2. UN proper shipping name

Proper Shipping Name (ADR)	:	SULPHURIC ACID / BATTERY FLUID, ACID
Proper Shipping Name (IMDG)	:	SULPHURIC ACID
Proper Shipping Name (IATA)	:	Sulphuric acid
Proper Shipping Name (ADN)	:	Not applicable
Proper Shipping Name (RID)	:	Not applicable
Transport document description (ADR)	:	UN 2796 SULPHURIC ACID / BATTERY FLUID, ACID, 8, II, (E)
Transport document description (ADR) (IMDG)	:	UN 2796 SULPHURIC ACID, 8, II

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR)	:	8
Danger labels (ADR)	:	8



IMDG

Transport hazard class(es) (IMDG)	:	8
Danger labels (IMDG)	:	8



IATA

Transport hazard class(es) (IATA)	:	8
Hazard labels (IATA)	:	8



ADN

Sulfuric Acid-

Safety Data Sheet

according to Regulation (EC) No. 453/2010

Transport hazard class(es) (ADN) : Not applicable

RID

Transport hazard class(es) (RID) : 8

Danger labels (RID) : 8



14.4. Packing group

Packing group (ADR) : II
Packing group (IMDG) : II
Packing group (IATA) : II
Packing group (ADN) : Not applicable
Packing group (RID) : Not applicable

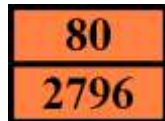
14.5. Environmental hazards

Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available

14.6. Special precautions for user

14.6.1. Overland transport

Classification code (ADR) : C1
Limited quantities (ADR) : 11
Excepted quantities (ADR) : E2
Packing instructions (ADR) : P001, IBC02
Mixed packing provisions (ADR) : MP15
Portable tank and bulk container instructions (ADR) : T8
Portable tank and bulk container special provisions (ADR) : TP2
Tank code (ADR) : L4BN
Vehicle for tank carriage : AT
Transport category (ADR) : 2
Hazard identification number (Kemler No.) : 80
Orange plates :



Tunnel restriction code (ADR) : E
EAC code : 2R

14.6.2. Transport by sea

Limited quantities (IMDG) : 1 L
Excepted quantities (IMDG) : E2
Packing instructions (IMDG) : P001
IBC packing instructions (IMDG) : IBC02
IBC special provisions (IMDG) : B20
Tank instructions (IMDG) : T8
Tank special provisions (IMDG) : TP2
EmS-No. (Fire) : F-A
EmS-No. (Spillage) : S-B
Stowage category (IMDG) : B
Properties and observations (IMDG) : Colourless liquid, mixture not exceeding 1.405 relative density. Highly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.
MFAG-No : 157

Sulfuric Acid-

Safety Data Sheet

according to Regulation (EC) No. 453/2010

14.6.3. Air transport

PCA Excepted quantities (IATA)	: E2
PCA Limited quantities (IATA)	: Y840
PCA limited quantity max net quantity (IATA)	: 0.5L
PCA packing instructions (IATA)	: 851
PCA max net quantity (IATA)	: 1L
CAO packing instructions (IATA)	: 855
CAO max net quantity (IATA)	: 30L
ERG code (IATA)	: 8L

14.6.4. Inland waterway transport

Not subject to ADN : No

14.6.5. Rail transport

Carriage prohibited (RID) : No

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Contains no substances with Annex XVII restrictions
Sulfuric Acid- is not on the REACH Candidate List
Contains no substance on the REACH candidate list
Contains no REACH Annex XIV substances

15.1.2. National regulations

Germany

Water hazard class (WGK) : 3 - severe hazard to waters

15.2. Chemical safety assessment

CSA has not been established

SECTION 16: Other information

Full text of R-, H- and EUH-phrases:

Acute Tox. 1 (Inhalation)	Acute toxicity (inhalation) Category 1
Skin Corr. 1A	Skin corrosion/irritation Category 1A
H314	Causes severe skin burns and eye damage
H330	Fatal if inhaled
R35	Causes severe burns
C	Corrosive

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product