

Battery Electrolyte (Sulfuric Acid)

According to Regulation (EC) No 2015/830

Version : 3

Issue date : 02/12/2019

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 and uses advised against:

1.2.1 Identified uses: Battery Electrolyte
1.2.2 Uses advised against: Not available.

1.3 Details of the supplier of the safety data sheet:

Supplier: **BS BATTERY S.a.s**
Address: 23 bis rue Edouard Nieuport
92150 Suresnes
France
Telephone: (France) +33 1 83 62 45 55

1.4 Emergency telephone Number:

CHEMTREC(US, Canada & Mexico) 0086-1-800-424-9300

CHEMTREC (International) 0086-1-703-527-3887

Available outside office hours? YES NO **Section 2 Hazards Identification****2.1 Classification of the substance/mixture:****2.1.1 Classification:**

The mixture is classified according to regulation (EC) No 1272/2008 [CLP] Mixture/Substance : SDS EU 2015: According to Regulation (EU) 2015/830 (REACH Annex II)

| | |
|---------------------------|---|
| 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 |

2.2 label elements: Hazard Pictograms:

GHS05

Signal word (CLP)

Danger

Hazard statements (CLP)

H314 - Causes severe skin burns and eye damage



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

Substance/Mixture:

Mixture

Ingredient(s):

| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|---------------|---|--|---|
| Water | (CAS No) 7732-18-5 (EC no) 231-791-2 | 60-70 | Not classified |
| Sulfuric acid | (CAS No) 7664-93-9 (EC no) 231-639-5 (EC index no) 016-020-00-8 (REACH-no) | 30-40 | 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) | (5 =< C < 15) Eye Irrit. 2, H319 (5 =< C < 15) Skin Irrit. 2, H315 (C >= 15) Skin Corr. 1A, H314 | |

Full text of H statements: see section 16

Section 4 First aid measures

4.1 Description of first aid measures:

In all cases of doubt, or when symptoms persist, seek medical attention.

4.1.1 In case of inhalation:

Sulfuric Acid: Remove to fresh air immediately. If breathing is difficult, give oxygen. Lead Compounds: Remove from exposure, gargle, wash nose and lips, consult physician.

4.1.2 In case of skin contact:

Sulfuric Acid: Flush with large amounts of water for at least 15 minutes, remove any contaminated clothing. If irritation develops seek medical attention. Lead Compounds: Wash with soap and water.

4.1.3 In case of eyes contact:

Sulfuric Acid: Flush immediately with water for 15 minutes, consult a physician. Lead Compounds: Flush immediately with water for 15 minutes, consult a physician.

4.1.4 In case of ingestion:

Sulfuric Acid: Do not induce vomiting, consult a physician immediately. Lead Compounds: Consult a physician immediately.



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

Causes severe skin burns and eye damage. May damage fertility. May damage the unborn child. May cause harm to breast-fed children.

Acute Health Hazards: Sulfuric Acid: Severe skin irritation, burns, damage to cornea may cause blindness, upper respiratory irritation. Lead Compounds: May cause abdominal pain, nausea, headaches, vomiting, loss of appetite, severe cramping, muscular aches and weakness, and difficulty sleeping. The toxic effects of lead are cumulative and slow to appear. It affects the kidneys, reproductive and central nervous systems. The symptoms of lead overexposure are listed above. Exposure to lead from a battery most often occurs during lead reclamation operations through the breathing or ingestion of lead dust or fumes.

Chronic Health Hazards: Sulfuric acid: Possible scarring of the cornea, inflammation of the nose, throat and bronchial tubes, possible erosion of tooth enamel. Lead Compounds: May cause anemia, damage to kidneys and nervous system, and damage to reproductive system in both males and females.

Medical Conditions Generally Aggravated by Exposure: Inorganic lead and its compounds can aggravate chronic forms of kidney, liver, and neurological diseases. Contact of battery electrolyte (acid) with the skin may aggravate skin diseases such as eczema and contact dermatitis. Overexposure to sulfuric acid mist may cause lung damage and aggravate pulmonary conditions.

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

Aspiration of this material may cause chemical pneumonia.

Section 5 Fire-Fighting 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. |
| 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 : | Toxic gases and fumes may be released in a fire. |

5.3 Advice for firefighters:

Wear positive pressure self-contained breathing apparatus. Wear fully protective suit.

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:

Use proper personal protective equipment as indicated in Section 8. Ensure adequate ventilation. Avoid contact with eyes. Wear protective equipment. Keep unprotected persons away.

6.1.2 For emergency responders:

Wear positive pressure self-contained breathing apparatus if dust is generated. Evacuate unnecessary personnel

6.2 Environmental Precautions:

Do not allow product to reach sewage system or any water course. Inform respective authorities in case of seepage into water course or sewage system. Do not allow to enter sewers/ surface or ground water.

6.3 Methods for Containment and Cleaning up:

In case the release occurs, stop flow of material: contain/absorb small spills with dry sand, earth, and vermiculite. If possible, carefully neutralize spilled electrolyte with soda ash, sodium bicarbonate, lime, etc. Wear acid-resistant clothing, boots, gloves, and face shield. Do not allow discharge of unneutralized acid to sewer. Spent Batteries - send to secondary lead smelter for recycling. Follow applicable federal, state and local regulations Neutralize as in preceding step. Collect neutralized material in sealed container and handle as hazardous waste as applicable.

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:

7.1.1 Protective measures:

Ensure good ventilation/exhaustion at the workplace. Avoid contact with eyes. Keep ignition sources away - Do not smoke. Due to the battery's low internal resistance and high power density, high levels of short circuit current can be developed across the battery terminals. Do not rest tools or cables on the battery. Use insulated tools only. Follow all installation instructions and diagrams when installing or maintaining battery systems.

7.1.2 Advice on general occupational hygiene:

Do not eat, drink and smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas

7.2 Conditions for safe storage, including any incompatibilities:

Technical measures
Storage conditions
sunlight. Incompatible products
Special rules on packaging

Provide local exhaust or general room ventilation.
Store in a dry, cool and well-ventilated place. Keep away from heat and direct alkaline substances.
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:

8.1.1 Occupational exposure limits:

| 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 |
| 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 (granična vrijednost izloženosti) (mg/m ³) | 0,05 mg/m ³ |
| Cyprus | OEL TWA (mg/m ³) | 0,05 mg/m ³ (vapor) |
| Czech Republic | Expoziční 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 (possible limitations and the impact that may result from the presence of other Sulfur components should be taken into account when choosing an appropriate exposure monitoring method-fog, lwhich 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) |

| Sulfuric acid (7664-93-9) | | |
|----------------------------------|--|---|
| 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) |
| 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) | 1mg/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) | 1mg/m ³ |

8.2 Exposure controls:

8.2.1 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.

8.2.2 Individual protection measures, such as personal protective equipment:

Eye/face protection:

Chemical goggles or face shield with safety glasses. DIN EN 166

Hand protection:

Wear suitable gloves tested to EN374. Use neoprene gloves

Personal protective equipment:

Safety glasses. Gloves. Insufficient ventilation: wear respiratory protection. Protective clothing.

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.

Thermal hazards:

Wear suitable protective clothing to prevent heat.

8.2.3 Environmental exposure controls:

Do not allow product to reach sewage system or any water course. Inform respective authorities in case of seepage into water course or sewage system. Do not allow to enter sewers/ surface or ground water.





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 |
| Boiling point | 95 - 95,5 °C |
| Flash point | Non-flammable |
| Auto-ignition temperature | No data available |
| Freezing point | No data available |
| Decomposition temperature | No data available |
| Flammability (solid, gas) | No data available |
| Vapour pressure | 10 mm Hg |
| Relative density | Relative vapour density at 20 °C > 1 |
| Density | No data available |
| Solubility | 1,215 - 1,35 g/m ³ |
| | 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:

| | |
|--|---------------|
| Fat solubility(solvent– oil to be specified) etc: | Not available |
| Surface tension: | Not available |
| Dissociation constant in water(pKa): | Not available |
| Oxidation-reduction Potential: | Not available |
| Specific gravity: | Not 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: | 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:**

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- | |
|----------------------------|--|
| LD50 oral rat | 2140 mg/kg bodyweight |
| LC50 inhalation rat (mg/l) | 510 mg/m ³ (Exposure time 2h) |

Skin corrosion/Irritation:

Causes severe skin burns and eye damage.

Serious eye damage/irritation:

Serious eye damage, category 1, implicit

Respiratory or skin sensitization:

Not classified

Germ cell mutagenicity:

Not classified

Carcinogenicity:

Not classified

Reproductive toxicity:

Not classified

STOT- single exposure:

Not classified

STOT-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:

Not available.

12.5 Results of PBT&vPvB assessment:

Not applicable

12.6 Other adverse effects:

Not 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

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

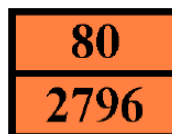
14.5. Environmental hazards

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

14.6. Special precautions for user

Overland transport

Classification code (ADR) C1
 Limited quantities (ADR) 1I
 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



Netherlands

SZW-lijst van kankerverwekkende stoffen : Sulfuric acid is listed

SZW-lijst van mutagene stoffen : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid :None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : None of the components are listed

15.2. Chemical safety assessment

CSA has not been established

Section 16 Other information

16.1 Indication of changes:

Version 3.0 Amended by (EU) 2015/830

16.2 Training instructions:

Not applicable.

16.3 Further information:

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

16.4 Notice to reader:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

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