

# PRODUCT INFORMATION SHEET

## Lead Battery for general use Series BP-BPG-BPL-BPS-BPV

Safe management information is provided as a service to our customers.

This product information sheet contains valuable information that is essential for the safe handling and correct use of the product. The details presented are in accordance with our current knowledge and experience, they cannot advise on all possible situations.

Identification of the product and the manufacturing company  
Product name: Lead battery (maintenance-free sealed batteries)  
Chemical identification: Lead  
Proposed use: General purpose batteries (excluding use in toys)  
Designed to be recharged? Yes  No   
Series BP, BPG, BPL, BPS, BPV

Code number:

### 1. Hazards identification

#### **EMERGENCY SITUATIONS**

#### **NON-dangerous batteries during normal use.**

The chemicals described in point 3 of this Information Sheet are contained in a sealed envelope, therefore a risk of exposure occurs only if the battery has been mechanically tampered with. The most probable risk is due to exposure by inhalation or ingestion when the release occurs through the envelope

in ABS resin tampered with or damaged.

Lead (Pb), Lead Oxide (PbO<sub>2</sub>) and Sulfuric Acid (H<sub>2</sub>SO<sub>4</sub>)  
they have high toxicity if you come into direct contact with them.

For the effects of short and long-term exposure, see Section 11 Toxicological data.

ABS resin classification according to Directive 67/548 / EEC or 1999/45 / EC: Not classified as dangerous (polymeric state)

ABS resin classification according to Regulation 1272/2008 (CLP): Not classified as dangerous (polymeric state)

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Therefore there are no specific hazard symbols.

Other hazards: vPvB / PBT rating null for ABS resin

Effects on the eyes:	None under normal conditions of use. Contact with eyes can give evidence of cases of irritation.
Effects on the epidermis:	None under normal conditions of use. Contact with the skin can give evidence of cases of irritation.
Effects of oral ingestion:	None under normal conditions of use. The ingestion of the electrolyte can cause burns to the mouth and gastrointestinal tract. Do not induce vomiting.
Inhalation effects:	None under normal conditions of use. The inhalation of lead oxide vapors (PbO <sub>2</sub> ) can damage the lungs and cause poisoning of the nervous system (poisoning is called saturnism).
Other information:	<p>Exposure to lead oxide, lead and sulfuric acid can only occur if the battery case has been damaged or if it has been tampered with.</p> <p>Abnormal use can cause degradation of the casing, flame ignition, overheating, loss of internal chemical agents. Possible causes of abnormal use can be traced to prolonged recharging, short circuit, throwing the batteries into the fire, throwing against very hard objects, pricking the casing with sharp-pointed objects, collision and voluntary or involuntary breakages.</p>

DISEASES AGGRAVATED BY EXPOSURE: No note for the battery intact.





NFPA Hazard Codes		HMIS Hazard Codes		Classification system
Health	1	Health	1	
Flammability	0	Flammability	0	1 = Light hazard
Instability	0	Instability	0	2 = Moderate hazard
				3 = Serious hazard
				4 = Serious danger

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#### 3. Composition and information on ingredients

Ingredient	% by weight	N.CAS	Molecular formula	Risk category	H phrases
Lead	60-70	7439-92-1	Pb	Acute-Chronic	H300 H301 H302 H310 H311 H312
Calcium	< 0,15	7440-70-2	Ca	Reactive	
Tin	< 1	7440-31-5	Sn	Chronic	
Sulfuric acid	10-15	7664-93-9	H <sub>2</sub> SO <sub>4</sub>	Oxidizing reagent Acute-Chronic	H300 H301 H302 H310 H311 H312
ABS resin	5-10	9003-56-9	(C8-H8.C4-H6.C3-H3-N) <sub>x</sub> -	Zero risk	

Classification	Category 1	Category 2	Category 3	Category 4
GHS pictograms				
Warning	Danger	Danger	Danger	Caution
Hazard statement: Orally	H300: Lethal if swallowed.	H300: Lethal if swallowed.	H301: Toxic if swallowed.	H302: Harmful if swallowed.
dermally	H310: Fatal in contact with skin.	H310: Fatal in contact with skin.	H311: Toxic in contact with skin.	H312: Harmful in contact with skin

- Sulfuric acid is corrosive. It can cause burns and irritation to skin, eyes and respiratory tract.
- An explosive mixture of hydrogen and oxygen may be released during charging or normal operations.
- Conductive objects in contact with the battery's live terminals can become hot enough to cause skin burns. Sparks and molten metal could be ejected and could cause fires or explosions.

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#### 4. First aid measures

##### Eyes:

Sulfuric Acid and Lead: Wash immediately with plenty of water for at least 15 minutes by lifting the lids; see your doctor immediately if your eyes have been directly exposed to acid.

##### Epidermis:

Sulfuric acid: wash with plenty of water for at least 15 minutes; remove clothes completely contaminated, including shoes. If symptoms persist, seek medical attention. Wash contaminated clothing before using it again. Discard contaminated shoes.  
Lead: wash immediately with soap and water.

##### Inhalation:

Sulfuric acid: take immediately to fresh air. If you are not breathing, give artificial respiration. If breathing is difficult, provide oxygen. Consult a doctor.  
Lead: Remove from exposure, gargle, wash nose and lips; consult a doctor.

##### Ingestion:

Sulfuric acid: wash with plenty of water; DO NOT induce vomiting otherwise it will cause aspiration into the lungs and permanent injury or death may result; consult a doctor.  
Lead: seek medical advice immediately.

#### 5. Fire precautions

##### Flash point:

Not applicable  
Percentage of flammability limits: LEL = 4.1% (Hydrogen gas in the air);  
UEL = 74.2%

##### Firefighting procedures:

Extinguishing media: CO<sub>2</sub>; foam; dry chemical agent. Do not use carbon dioxide directly on the cells.  
Avoid breathing vapors. Use appropriate means to limit the fire. use self-containing, pressure positive respiratory systems.  
Beware of spilling acid when applying water and wear acid resistant clothing, gloves, face and eye protection. If the batteries are charging, turn off the power of the charging equipment but note that the strings of the batteries connected in series can still expose you to the risk of electric shock even when the charging equipment is turned off.

#### 6. Intervention in case of accidental spillage

When a battery leak occurs, liquids may be absorbed by sand, earth or potting soil or any other inert substance. Subsequently, the contaminated area must be immediately ventilated to change the air and disperse the electrolyte vapors.

Avoid contact with eyes and skin or inhalation of electrolyte vapors.

Damaged batteries - which are not hot or not burning - must be quickly placed in a sealed plastic container or other safe container.

##### Hazardous Combustion Products:

highly flammable hydrogen gas is generated during battery charging and operation. If ignited by cigarettes, open flames or sparks can cause the battery to explode with dispersion of fragments and corrosive liquid electrolytes. Follow the manufacturer's instructions carefully for installation and operation. Keep all sources of ignition of gas away and do not allow metal articles to simultaneously contact the positive and negative poles of the battery.  
Follow the manufacturer's instructions for installation and operation.

##### Decontamination procedures:

If possible, stop the release. Avoid contact with any material poured out. Contain the leak, isolate the area at risk and prohibit entry into that area. Restrict access to emergency responders. Neutralize with baking soda, soda, lime or

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other neutralizing agents. Place the battery in suitable containers for disposal. Dispose of contaminated material in accordance with local, state or federal regulations. Baking soda, soda, sand, lime or other neutralizing agents must be kept on site for corrective interventions on the leak.

**Personal precautions:** acid-resistant aprons, boots and protective clothing. The use of ANSI approved safety glasses with side / front protections is recommended. Ventilate closed areas.

**Environmental protection precautions:** lead, its compounds and sulfuric acid can be serious threat to the environment. Contamination of water, soil and air must be avoided.

### 7. Handling and storage

**Handling:** Do not break the housing or empty the contents of the battery unless necessary for recycling operations. Handle carefully and avoid dispersion which may cause electrolyte leakage. There may be an increased risk of electric shock from connected battery strings. Keep containers closed when not in use. If the battery compartment is broken, avoid contact with internal components. Keep the vent plugs and cover the terminals to avoid short circuit. Place cardboard between the layers of stacked car batteries to avoid damage and short circuit. Stay away from combustible material, organic chemicals, reducing substances, metals, strong oxidants and water. Use bandages or packing tape to secure items for transportation.

**Storage:** Store batteries under roof in cool, dry, well-ventilated areas separated from incompatible materials and from activities that can create flames, sparks or heat. Store on flat, resistant surfaces provided with measures for liquid containment in the event of electrolyte leakage. Stay away from objects that can bridge the terminals on the battery and create a dangerous short circuit.

**Charge:** There is a risk of electric shock from charging equipment and from battery strings connected in series whether charging or not. Disconnect power to chargers when not in use and before disconnecting any circuit connections. Charged batteries generate and release flammable hydrogen gas. The charging space should be ventilated. Keep the vent caps in place. Prohibit smoking and avoid creating near flames and sparks. Wear face and eye protection near charging batteries.

### 8. Exposure control / personal protection

#### Exposure limits:

Ingredient	ACGIH	OSHA - PEL	EU OEL occupational exposure limits
Lead	0,05 mg/m <sup>3</sup>	0,05 mg/m <sup>3</sup>	0,15 mg/m <sup>3</sup> (Note a)
Tin	2,0 mg/m <sup>3</sup>	0,05 mg/m <sup>3</sup>	Not established by Organizations
Sulfuric acid	0,2 mg/m <sup>3</sup>	1,0 mg/m <sup>3</sup>	0,05 mg/ m <sup>3</sup> (Note b)
ABS resin	Not established by Organizations		

#### NOTE:

(a) as an inhalable aerosol

(b) thoracic fraction

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PEL for individual states may differ from OSHA PEL. Check with local authorities for applicable state PELs.  
 OSHA - Occupational Safety and Health Administration  
 ACGIH - American Conference of Governmental Industrial Hygienists

### Individual protection:

#### Engineering controls (Ventilation)

Store and handle in a well-ventilated area. If mechanical ventilation is used, the components can be acid resistant. Handle batteries with care, do not bend to avoid leakage. Make sure the vent caps are well closed. If the battery compartment is broken, avoid body contact with internal components. To wear protective clothing, face and eye protection when batteries are filled, charged or handled. Not allow the metallic material to simultaneously touch the positive and negative poles of the batteries. Charge the batteries in areas with adequate ventilation. General ventilation is acceptable.

Respiratory protection: Not required under normal conditions.

#### Skin protection:

if the battery compartment is damaged, use acid-resistant rubber or plastic gloves with gloves up to elbow, acid-resistant apron, clothing and boots.

#### Eye protection:

if the battery compartment is damaged, use chemical goggles or face protection.

#### Other protections:

in areas where solutions of water and sulfuric acid are handled in concentrations greater than 1%. Provide emergency eye wash stations and showers with unlimited water supply. They are recommended face protection and apron resistant to chemicals when adding water or electrolytes to batteries. Wash your hands after handling the product.

## 9. Physical and chemical properties

### Sulfuric acid (electrolyte)

<i>Properties listed below:</i>			
Boiling point	<b>210-245°F</b>	Specific density (H <sub>2</sub> O = 1)	<b>1,215 – 1,320</b>
Fusion point	<b>404°C</b>	Vapor pressure (mmHg)	<b>10</b>
Solubility in water	<b>100%</b>	Density of the vapor (Aria = 1)	<b>Maggiore di 1</b>
Evaporation rate (Butyl acetate = 1)	<b>Less than 1</b>	% Volatile by weight	<b>N/A</b>
pH	<b>From about 1 to 2</b>	Flash point	<b>Below room temperature (like hydrogen gas)</b>
LEL (Lower explosive limit)	<b>4,1% (hydrogen)</b>	UEL (Upper explosive limit)	<b>74,2% (hydrogen)</b>
Appearance and smell	<b>Product item; no apparent smell. Electrolyte is a clear liquid with a defined, penetrating, pungent odor.</b>		

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#### ABS resin (compound used for the battery case)

Overall carcinogenic evaluation: group 3

<b>Properties listed below:</b>			
Boiling point	<b>N/A</b>	Specific density (H <sub>2</sub> O = 1)	<b>N/A</b>
Fusion point	<b>N/A</b>	Vapor pressure (mmHg)	<b>N/A</b>
Solubility in water	<b>Insoluble</b>	Vapor density (Air = 1)	<b>N/A</b>
Evaporation rate (Butyl acetate = 1)	<b>N/A</b>	Volatile% by Weight	<b>N/A</b>
pH	<b>From about 1 to 2</b>	Flash point	<b>466°C</b>
LEL (Lower explosive limit)	<b>N/A</b>	UEL (Upper explosive limit)	<b>N/A</b>
Appearance and smell	<b>Product item; no apparent smell. The color can be black or gray.</b>		

#### 10. Stability and reactivity

Note: the following data apply to the electrolyte (= Sulfuric acid).

The lead battery is a normally stable and non-reactive product.

Negligible quantities of hydrogen and oxygen in the gaseous state are released into the surrounding environment during the recharging phases. Avoid open flames or sparks near the battery.

Stability:	Stable in environments with normal temperature and pressure.
Materials to avoid:	<u>Electrolyte</u> : Contact with fuels and organic materials can cause fire and explosion. It also reacts violently with strong reducing agents, metals, sulfur trioxide gas, strong oxidants and water. Contact with metals can produce toxic sulfur dioxide fumes and can release flammable hydrogen gas. <u>Lead compounds</u> : avoid contact with strong acids, bases, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen and reducing agents.
Conditions to avoid:	Attempts to disassemble, open the product, short circuit, contact with water, proximity to heat sources and open flames.
Dangerous decomposition:	<u>Electrolyte</u> : sulfur trioxide, carbon monoxide, sulfuric acid powder, sulfur dioxide and hydrogen sulfide <u>Lead compounds</u> : temperatures above the melting point can produce toxic metallic smoke, vapor or dust; contact with strong or base acid or the presence of nascent hydrogen can generate highly toxic arsine gas.
Hazardous polymerization:	does not occur

#### 11. Toxicological information

For a complete description of the various toxicological effects (harmful to health) that can take place if the user comes into contact with the substance or preparation, consult Section 3- Hazards identification.

Under normal conditions of use, the battery is hermetically sealed.

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Ingestion	<u>Sulfuric acid</u> : can cause severe irritation of the mouth, throat, esophagus and stomach. <u>Lead compounds</u> : acute ingestion can cause abdominal pain, nausea, vomiting, diarrhea and severe cramps. This can quickly lead to systemic toxicity and needs to be treated by a doctor.
Inhalation	<u>Sulfuric acid</u> : breathing in sulfuric acid vapors and dust can cause severe respiratory irritation. <u>Lead compounds</u> : inhalation of lead dust or fumes can cause irritation to the upper respiratory tract and lungs.
Contact with skin	<u>Sulfuric acid</u> : severe irritation, sunburn and ulcer. <u>Lead compounds</u> : not absorbed through the skin.
Eye contact	<u>Sulfuric acid</u> : severe irritation, burns, corneal damage and blindness. <u>Lead compounds</u> : May cause eye irritation

#### Sulfuric acid:

Routes of penetration: inhalation, ingestion, contact with skin and eyes

Experimental toxicity

- LD50 (oral, rat) 2140 mg / Kg
- LC50 (inhalation, rat) 510 mg / mc / 2h

#### Health effects

- Acute toxicity: risk of intoxication by inhalation of vapors with throat irritation, lung damage, unconsciousness.
- Chronic exposure: repeated and prolonged exposures can cause bronchitis chronic.
- Sensitization: allergic reactions such as dermatitis can occur.
- Inhalation: repeated and prolonged inhalations of sulfuric acid mists can cause upper respiratory tract inflammation up to chronic bronchitis. inhalation
- of concentrated vapors or mists from hot acid can cause loss of consciousness with Serious lung tissue damage.
- Ingestion: moderately toxic if swallowed.
- Eye contact: it is a severe eye irritant.
- Skin contact: extremely irritating, corrosive and toxic to human tissues given which causes deep burns. If a lot of skin is affected there is shock, collapse and symptoms such as those caused by deep burns. Repeated contacts with diluted solutions they can cause dermatitis.

#### Lead compounds:

Chronic and long-term toxicity (toxic for reproduction, category 1): the effects due lead manifested clinically in various more or less marked acute forms:

- blood manifestations: anemia
- renal manifestations: chronic renal failure digestive manifestations: abdominal pain, constipation, sometimes accompanied by push of hypertension
- nervous system problems (central and / or peripheral)
- reproduction: women of childbearing age can be exposed to very high concentrations low; pregnant or breastfeeding women must be removed from the places of exposure.



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### 12. Ecological information

Eco toxicity	<p>The electrolytic solution reacts with water and organic substances causing damage to flora and fauna. The batteries also contain soluble lead compounds which can be toxic to the aquatic environment.</p> <p><u>Sulfuric acid</u></p> <ul style="list-style-type: none"> <li>• 24 hour toxicity - LC50 for freshwater fish (Brachydanio rerio): 82 mg / l</li> <li>• 96 hours toxicity - LOEC for freshwater fish (Cyprinus carpio): 82 mg / l</li> </ul> <p><u>Lead</u></p> <ul style="list-style-type: none"> <li>• 48 hour toxicity - LC50 (model for aquatic invertebrates): &lt;1 mg / l, based on lead mass</li> </ul>
Persistence and degradability	Lead is very resistant in soil and sediments. There is no data on environmental degradation. The mobility of metallic lead between ecological compartments is low.
Bioaccumulation	Lead bioaccumulation occurs in aquatic and terrestrial animals and plants but little bioaccumulation occurs in the food chain. Most studies includes elemental lead and non-lead compounds.
Other adverse effects	<p>No known effect on the reduction of the ozone layer</p> <p>Volatile organic compounds: 0% (by volume)</p> <p>Water contaminating class (WGK): not applicable</p>

### 13. Disposal considerations

Batteries sold and used are subject to the requirements of the Battery Directive 2013/56 / EU.

End-of-life batteries must be removed from electrical and electronic equipment and disposed of in accordance with the WEEE directive 2012/19 / EU, since exhausted lead-acid batteries are classified as "hazardous waste" and are mandatory for

reads their transfer to a special Consortium for disposal through recycling.

It is forbidden to leave this waste in the environment.

### 14. Transport information

This product is not classified as dangerous for the purposes of air transport and land transport regulations (rubberized and rolling stock).

In general, all batteries in all forms of transport (by land, air or sea) must be packed in one safe and responsible way. The regulations regarding the transport of batteries prescribe that batteries they must be packed in a container that prevents short circuits and that is capable of containing any leaking liquids in the event of damage to the battery case.

#### Land transport (ADR)

Number UN	UN 2800 – (Batteries, wet, non spillable electric storage)
ADR/RID classification:	Class 8 (Corrosive)
Shipping group	Batteries, full of acid, Electric storage
ADR packing group	Do not assign
Name	Maintenance-free electric accumulators
Packing group	Do not assign
Packaging instructions	P 801
Label	Corrosive class 8 symbol (rif. ADR 2019)
ADR/RID	New batteries are exempted if they comply with special provision 238

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#### Maritime transport (IMDG code)

Number UN	UN 2800 – (Batteries, wet, non spillable electric storage)
Classification	Class 8 (Corrosive)
Name	Batteries, full of acid, Electric storage
Packing group	Do not assign
EmS-Fire & SPILL	F-A, S-B (Non-spillable batteries meet the requirements of special provision 238; they are therefore exempt from all IMDG codes and are not regulated for sea transport.)
Label	Corrosive class 8 symbol (rif. ADR 2019)
Marine pollutant	No

#### Air transport (IATA-DGR)

Number UN	UN 2800 – (Batteries, wet, non spillable electric storage)
Classification	Class 8 (Corrosive)
Name	Maintenance-free electric accumulators
Packing group	III
Packaging instructions	P 801
Label	Corrosive class 8 symbol
IATA Note	<p>Special requirement (A48): Tests on the packaging are not considered necessary.</p> <p>Special requirement (A67): The batteries meet the packing requirements of instruction 872.</p> <p>The battery has been prepared for transport in order to avoid:</p> <p>a) a short circuit of the terminals of the packaging battery in a cardboard box.</p> <p>b) The battery contacts are isolated by insulating covers in ABS, which prevent contact of the terminals</p> <p>C) With the above measures it is not possible to trigger the battery (Short circuits)</p> <p>Special requirement (A164): Batteries are prepared for transport with the following precautions:</p> <p>a) a short circuit of the terminals of the packaging battery in a cardboard box.</p> <p>b) The battery contacts are isolated by insulating covers in ABS, which prevent contact of the terminals</p> <p>C) With the above measures it is not possible to trigger the battery (Short circuits)</p>

### 15. Regulatory information (Europe)

This product has been classified according to the Dangerous Substances Directive and the Preparations Directive Regulation (EC) 1272/2008, CLP (Classification, Labeling and Packaging).

DIRECTIVE 2006/66 / EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 6 September 2006 on batteries and accumulators and waste batteries and accumulators and repealing Directive 91/157 / EEC

REGULATION (CE) n. 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45 / EC and repealing Regulation (EEC) no. 793/93 of the Council and the regulation (CE) n. 1488/94 of the Commission, as well as Council Directive 76/769 / EEC and Commission Directives 91/155 / EEC, 93/67 / EEC, 93/105 / EC and 2000/21 / EC

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COMMISSION REGULATION (EU) 2015/830 of 28 May 2015, amending regulation (EC) no. 1907/2006 of the European Parliament and of the Council concerning the registration, evaluation, authorization and restriction of chemicals (REACH)

Directive 2012/18 / EU (so-called "Seveso III") issued on 4 July 2012 by the European Parliament and the Council of the European Union on the control of the danger of major accidents connected with dangerous substances and related Legislative Decree of transposition, n. 105 of June 26, 2015

Classified as dangerous for supply: No, if provided with suitable packaging in relation to special provisions 238, 295, 598 of the ADR 2019 Regulation

Yes, in the case of inadequate or absent packaging

Risk phrases: H 314

It causes serious skin burns and serious eye injuries

Security Phrases: H302

Harmful if swallowed

H290  
P280  
P301+330+331

It can be corrosive to metals  
Wear gloves, protective clothing. Protect the eyes, face.  
In case of ingestion rinse mouth. DO NOT induce vomiting  
In case of contact with eyes, rinse thoroughly for several minutes. If necessary, remove contact lenses if it is easy to do so. Continue to rinse

P305+351+338

In case of exposure or if you feel unwell, contact a poison center or doctor.

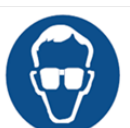
P309+310

Symbol	Symbol description
	Trash crossed as an indication of the need for separate disposal from normal waste. According to the battery directive, these lead batteries must be disposed of in collection areas with special requirements for lead batteries.
	The international symbol for recycling required by law in many countries of the world serves to facilitate the indication of recycling of batteries and accumulators. Symbol with normative reference IEC 61429: 1995, Marking of secondary cells and batteries with the International Recycling Symbol ISO 7000-1135.

Labeling may vary according to battery size (minimum symbol sizes are respected).  
Information for the consumer / end user, on the meaning of the meaning of the symbols



Electric accumulator



Use of protective glasses



Warning risk of electric shock



Not smoking  
Do not open the container



Observe the operating instructions

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### 16. Other information

Information sources for this data sheet:

Product safety data sheet "Valve-regulated lead-acid battery" from our supplier

The chemical information on the substances indicated has been verified by searching the database "echa.europa.eu".

### Glossary

**ACGIH**-American Conference of Governmental Industrial Hygienists;  
**ANSI**-American National Standards Institute;  
**Canadian TDG**-Canadian Transportation of Dangerous Goods;  
**CAS**-Chemical Abstracts Service;  
**Chemtrec**-Chemical Transportation Emergency Center (US);  
**CHIP**-Chemical (Hazard Information and Packing);  
**DSL**-Domestic Substances List;  
**EH40 (UK)**-HSE Guidance Note EH40 Occupational exposure limits;  
**HMIS**-Hazardous Material Information Service;  
**LC**-Lethal Concentration;  
**LD**-Lethal Dose;  
**NFPA**-National Fire Protection Association;  
**OSHA**-Occupational Safety and Health Administration, US Department of Labour;  
**PEL**-Permissible exposure limit;  
**SARA (TitleIII)**-Superfund Amendments and Reauthorization Act;  
**SARA313**-Superfund Amendments and Reauthorization Act, Section 313;  
**SCBA**-Self-Contained Breathing Apparatus;  
**STEL**-Short Term Exposure Limit;  
**TLV**-threshold limit value;  
**TSCA**-Toxic Substances Control Act Public Law 94-469;  
**TWA**-Time-Weighted Average;  
**USDOT**-US Department of Transportation;  
**WHMIS**-Workplace Hazardous Materials Information System.

### Revisions

Rev. 0	October 2015
Rev. 1	February 2016
Rev. 2	May 2017
Rev. 3	February 2020

Although the information and recommendations contained in this safety data sheet are believed to be correct, it is recommended that the user determine, before use, the suitability or otherwise of the material for its intended purposes. The information contained in this safety data sheet was drawn from the data provided by the manufacturer and responsibility for their accuracy lies with the manufacturer.

Alpha Elettronica does not accept any responsibility for damages of any kind resulting from the use of this safety data sheet and its observance

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