

ONS - OSHA SAFETY DATA SHEET



Issue Date 05-2017

Revision Date 04-2019

Version 1

In accordance with REACH Regulation EC no. 1907/2006

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Valve Regulated Lead Battery
Model series WING BTX, WING ESL, WING ES, WING UPS

Other ways of identification

Product Code 850720
UN/ID-No. UN2800, class 8b

Recommended use of the chemical and restrictions on use

Recommended Use Industrial batteries
Uses advised against Any other not listed above

Details of the supplier of the safety data sheet

Supplier Address Wetac Battery Company
Galvanistraat 117
6716 AE EDE
The Netherlands
www.wetac.com

Emergency telephone number

Company Phone Number +31-318-696190
24 hour Emergency Phone number CHEMTREC 800-424-9300
International +1-703-527-3887

2. HAZARDS IDENTIFICATION

Classification

Health hazards Not classified, can cause irritation and dermatitis.
Physical hazard Not classified, good lifting technique is required.
OSHA regulatory status Material is an article. No health effects are expected related to normal use of this product as sold.

Hazardous exposure can occur only when the product is heated, oxidized or otherwise processed or damaged to create lead dust, vapor or fume.

Follow manufacturer's instructions for installation, service and use.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	Risk Phrases	Chemical Name	CAS-No.	EC Number	Chemical Symbol	Approximate % (w/w)
Plate Grid	R23, R25	Powdered Lead	7439-92-1	231-100-4	Pb	30 to 40
		Tin	7440-31-5	231-141-8	Sn	< 2
Battery Electrolyte	R21, R22, R35, R36, R37, R38, R49	Sulfuric Acid	7664-93-9	231-639-5	H2SO4	10 to 20
Case material		<i>Standard Grade UL94:HB</i> • ABS	9003-56-9	618-371-8		5 to 10
		<i>Flame Retardant Grade UL 94:VO</i> • ABS • Tetrabromo bisphenol-A • Antimony trioxide	9003-56-9	618-371-8		5 to 10
			79-94-7	201-236-9		< 0.1
1309-64-4	215-474-6		< 0.01			
Separator Material		AGM Separator	65997-17-3	266-046-0		2 to 5

4. FIRST AID MEASURES

First aid measures

Eye contact

First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If contact with material occurs flush eyes with water. If signs/symptoms develop, get medical attention.

Skin contact

First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. Wash skin with soap and water. If signs/symptoms develop, get medical attention.

If exposure to electrolyte (sulfuric acid) occurs, flush with large quantities of water for 15 minutes. Immediately remove contaminated clothing and shoes. If exposure to lead component occurs, wash contaminated skin with plenty of soap and water.

Inhalation

First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If signs/symptoms develop, move person to fresh air.

Ingestion

First aid is not expected to be necessary if material is used under ordinary conditions and as recommended.

If electrolyte (sulfuric acid) portion of battery is ingested, DO NOT induce vomiting. Get medical attention immediately. If lead portion of battery is ingested get medical attention immediately.

Self-protection of the first aider

Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Most important symptoms and effects, both acute and delayed**Symptoms**

Symptoms of lead toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability. Lead absorption may cause nausea, weight loss, abdominal spasms, and pain in arms, legs and joints. Effects of chronic lead exposure may include central nervous system (CNS) damage, kidney dysfunction, anemia, neuropathy particularly of the motor nerves with wrist drop, and potential reproductive effects.

Acute exposure to sulfuric acid causes severe irritation, burns and permanent tissue damage to all routes of exposure. Chronic exposure to sulfuric acid may cause erosion of tooth enamel, inflammation of nose, throat and respiratory system.

Indication of any immediate medical attention and special treatment needed**Note to physicians**

Treat symptomatically.

5. FIREFIGHTING MEASURES**Fire-Fighting****Suitable extinguishing media**

CO₂, dry chemical or foam.

Unsuitable extinguishing media

Avoid using water

Specific hazards arising from the chemical**Hazardous combustion products**

Lead portion of battery will likely produce toxic metal fume, vapor or dust.

Explosion data

Hydrogen and oxygen gases are produced in the cells during normal battery operation. Hydrogen is flammable and oxygen supports combustion. To avoid the change of a fire or explosion, keep sparks and other sources of ignition away from the battery.

Protective equipment and precautions for firefighters

If batteries are on charge, shut off power. Do not allow metallic materials to simultaneously contact negative and positive terminals of cells and batteries. Wear a positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures****Personal precautions**

No special precautions expected to be necessary if material is used under ordinary conditions and as recommended. Avoid contact of lead with skin.

Other information

Non-emergency personal should utilize chemical gloves.

For emergency responders

Shut off all ignition sources. Wear chemical gloves, goggles, acid resistant clothing and boots, respirator if insufficient ventilation.

Environmental precautions**Environmental precautions**

Prevent entry into waterways, sewers, basements or confined areas. Run off from fire control and dilution water may be toxic and corrosive and may cause adverse environmental impacts.

Methods and material for containment and cleaning up**Methods for containment**

In event of a battery rupturing; stop the leak if you can do it without risk. Absorb with earth, sand, or other non-combustible material. Cautiously neutralize spilled liquid.

Methods for cleaning up

Dispose of in accordance with local, state and national regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling

Handle batteries cautiously. Do not tip to avoid spills (if filled with electrolyte). Avoid contact with internal components. Wear protective clothing when filling or handling batteries. Follow manufacturer's instructions for installation and service. Do not allow conductive material (jewelry and watches) to touch the battery terminals. Short circuit may occur and cause battery failure and fire. Wash thoroughly with soap and water after handling and before eating, drinking or using tobacco. Eye wash stations and safety showers should be provided with unlimited water supply. Handle in accordance with good industrial hygiene and safety practice. Mechanical lifting will be required to handle individual batteries over 25 kg in weight.

Conditions for safe storage, including any incompatibilities

Storage conditions

Store in a cool/low-temperature, well-ventilated place away from heat and ignition sources. Batteries should be stored under roof for protection against adverse weather conditions. Place cardboard between layers of stacked batteries to avoid damage and short circuits. Store batteries on an impervious surface. Storage Class 8B, Non-flammable corrosive materials.

Incompatible materials

Sulfuric acid: Contact with combustible and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide, strong oxidizers and water. Contact with metals may product toxic sulfur dioxide fumes and may release flammable hydrogen gas.

Lead compounds

Avoid contact with strong bases, acids, combustible organic materials, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, reducing agents and water.

Charging

There is a possible risk of electric shock from charging equipment and from strings of series connected batteries, whether or not being charged. Shut-off power to chargers whenever not in use and before detachment of any circuit connections. Batteries being charged will generate and release flammable hydrogen gas. Charging space should be ventilated. Keep battery vent caps in position. Prohibit smoking and avoid creation of flames and sparks nearby. Wear face and eye protection when near batteries being charged.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Control parameters

Exposure guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH-IDLH
Powdered Lead 7439-92-1	TWA: 0,05 mg/m ³ Pb	TWA: 50 µg/m ³ Pb	IDLH: 100 mg/m ³ TWA: 0,050 mg/m ³
Sulfuric Acid 7664-93-9	TWA: 0,2 mg/m ³ thoracic fraction	TWA: 1 mg/m ³	IDLH: 15 mg/m ³ TWA: 1 mg/m ³
Tin 7440-31-5	TWA: 2 mg/m ³ Sn except tin hydride	TWA: 2 mg/m ³ Sn except oxides	IDLH: 100 mg/m ³ Sn TWA: 2 mg/m ³ except tin oxides Sn

Appropriate engineering controls

Engineering controls

The health hazard risks of handling this material are dependent on factors, such as physical form and quantity. Site-specific risk assessments should be conducted to determine the appropriate exposure control measures. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels as low as reasonably achievable.

Individual protection measures, such as personal protective equipment

Eye/face protection

In laboratory, medical or industrial settings safety glasses with side shields are recommended. The use of goggles or full face protection may be required depending on the industrial exposure setting. Contact a health and safety professional for specific information.

Skin and body protection

Wear appropriate gloves. No skin protection is ordinarily required under normal conditions of use. In accordance with industrial hygiene practices, if contact with leaking battery is expected precautions should be taken to avoid skin contact. Under severe exposure or emergency conditions, wear acid-resistant clothing, safety glasses and boots with toe protection.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Solid
Appearance	Sealed Valve Regulated lead Acid Battery
Odor	Odorless
Odor threshold	Not applicable
Color	Clear (electrolyte)
<u>Property</u>	<u>Values</u>
pH	1.250—1.320 pH <2
Melting point/freezing point	Lead; >327 °C Tin; 231 °C Battery electrolyte; -35 to -60 °C
Boiling point/boiling range	Battery Electrolyte; 110 °C, Lead; 1755 °C, Tin; 2602 °C,
Flash point	Case material > 259 °C
Evaporation rate	Less than 1
Upper flammability limit	74,2% (Hydrogen)
Lower flammability limit:	4.1% (Hydrogen)
Vapor pressure	1.7 MmHg
Exposure limits	Lead OES / LTEL—ppm 0.15 mg/m ³ Lead Dioxide OES / LTEL—ppm 0.15 mg/m ³
Vapor density	Battery Electrolyte 3.4, (air = 1)
Specific Gravity	Battery Electrolyte 1.3 g/cm ³ (water = 1)
Water solubility	Acid: 100% , ABS: 0; Pb:0
Auto-ignition temperature	466 °C at 760 mm/Hg
Decomposition temperature	ABS> 250 °C
Kinematic viscosity	Sulphuric Acid (100%) 76 SSU
Dynamic viscosity	Sulphuric Acid 23.8 mPa.s at 25°C
Explosive properties	Under abnormal abuse, mixture of hydrogen and oxygen can explode
Oxidizing properties	ABS: Not Oxidizing ; Terimal: possible metal corrosion
Solubility in other solvents	Acetone; acid: miscible, ABS:Swellable, Pb:0 Alcohol; acid: hydrolysis, ABS: 0, Pb:0 Chloroform; acid: miscible, ABS:Swellable, Pb:0
<u>Other information</u>	<u>Values</u>
Softening point	101 °C
Molecular weight	Lead; 207.2 g/mol Tin; 118.71 g/mol
VOC Content (%)	Case ABS< 15 mg/dm ² @90 °C , 24h
Density	Lead; 11.35 g/cm ³ (20°C) Battery electrolyte; up to 1.350 g/cm ³ 20°C)

10. STABILITY AND REACTIVITY

Reactivity	Not reactive
Chemical stability	Stable at normal temperatures (-20 to +40) and pressures.
Possibility of hazardous reactions	None under normal processing.
Hazardous polymerization	Hazardous polymerization does not occur.
Conditions to avoid	Prolonged overcharge, sources of ignition.
Incompatible materials	Sulfuric acid: Contact with combustible and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide, strong oxidizers and water. Contact with metals may product toxic sulfur dioxide fumes and may release flammable hydrogen gas. Lead compounds: Avoid contact with strong bases, acids, combustible organic materials, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, reducing agents and water. Case material: to avoid thermal decomposition, do not overheat.
Hazardous decomposition products	Lead compounds exposed to high temperatures will likely produce toxic metal fume, vapor or dust. Contact with strong acid/base or presence of nascent hydrogen may generate highly toxic arsine gas. Sulfuric acid: Sulfur trioxide, carbon monoxide, sulfuric acid mist, sulfur dioxide and hydrogen.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information Inhalation

(*Acute*): Under normal conditions of use, no health effects are expected. Contents of an open battery can cause respiratory irritation.

(*Chronic*): Repeated and prolonged exposure may cause irritation.

Eye contact

(*Acute*): Under normal conditions of use, no health effects are expected. Exposure to dust may cause irritation.

(*Chronic*): Severe eye damage.

Skin contact

(*Acute*): Under normal conditions of use, no health effects are expected.

(*Chronic*): Severe skin burns

Ingestion

(*Acute*): Under normal conditions of use, no health effects are expected. Lead ingestion may cause abdominal pain, nausea, vomiting, diarrhea and severe cramping.

(*Chronic*): Cause damage to organs.

Acute effects

Chemical Name	Oral LD50	Inhalation LC50
Powdered Lead 7439-92-1	= 500 mg/kg body weight	= 1.500 mg/l/4h
Sulfuric Acid 7664-93-9	= 2140 Mg/kg (Rat)	= 85 / 103 Mg/m3 (rat. 1h)
Tin 7440-31-5	= 700 Mg/kg (Rat)	= > 0,005 mg/m3

Information on toxicological effects**Symptoms**

Symptoms of lead toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability. Lead absorption may cause nausea, weight loss, abdominal spasms, and pain in arms, legs and joints. Effects of chronic lead exposure may include central nervous system (CNS) damage, kidney dysfunction, anemia, neuropathy particularly of the motor nerves with wrist drop and potential reproductive effects.

Acute exposure to sulfuric acid causes severe irritation, burns and permanent tissue damage to all routes of exposure. Chronic exposure to sulfuric acid may cause erosion of tooth enamel, inflammation of nose, throat and respiratory system.

Delayed and immediate effects as well as chronic effects from short and long-term exposure**Skin corrosion/irritation**

Can cause damage to the mucous membranes. Other heavy metals (arsenic, cadmium, mercury) may cause additive toxic effects.

Irritation

Battery electrolyte can cause severe burns, ulceration and irritation.

Germ cell mutagenicity

The evidence for genotoxic effects of highly soluble inorganic lead compounds is contradictory with numerous studies reporting both positive and negative effects. Responses appear to be induced by indirect mechanisms, mostly at very high concentrations, that lack physiological relevance.

Acute effects, as well as chronic effects from short-term and long-term exposure**Carcinogenicity**

The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mist containing sulfuric acid" as a Category 1 carcinogen, a substance that is carcinogenic to humans.

This classification does not apply to liquid forms of sulfuric acid or sulfuric acid solutions contained within a battery.

Batteries subjected to abusive charging at excessively high currents for prolonged periods without vent caps in place may create a surrounding atmosphere of the offensive strong inorganic acid mist containing sulfuric acid.

There is evidence that soluble lead compounds may have a carcinogenic effect, particularly on the kidneys of rats. However, the mechanisms by which this effect occurs are still unclear. Epidemiology studies of workers exposed to inorganic lead compounds have found a limited association with stomach cancer. This has led to the classification by IARC that inorganic lead compounds are probably carcinogenic to humans (Group 2B).

Acute effects

Chemical Name	ACGIH	IARC	NTP
Powdered Lead 7439-92-1	A3	Group 2B	Reasonably Anticipated
Sulfuric Acid 7664-93-9	A2	Group 1	Potentially carcinogenic
Tin 7440-31-5	A4	Not classifiable	Not classifiable

Reproductive toxicity

Not available.

STOT - single exposure

Category 1, category 3

STOT - repeated exposure

Category 1

Chronic toxicity

Lead is a cumulative poison. Increasing amounts of lead can build up in the body and may reach a point where symptoms and disabilities occur. Continuous exposure may result in decreased fertility. Lead is a teratogen. Overexposure of lead by either parent before pregnancy may increase the chances of miscarriage or birth defects.

Target organ effects

Inorganic lead compounds have been documented in observational human studies to produce toxicity in multiple organ systems and body function including the hematopoietic (blood) system, kidney function, reproductive function and the central nervous system. Postnatal exposure to lead compounds is associated with impacts on neurobehavioral development in children.

Aspiration hazard

Due to the physical form of the product it is not an aspiration hazard.

12. ECOLOGICAL INFORMATION

Chemical Name	Fish	Crustacea
Sulfuric Acid 7664-93-9	500: 96 h Brachydanio rerio mg/L LC50 static	29: 24 h Daphnia magna mg/L EC50
Powdered Lead 7439-92-1	0,44: 96 h Cyprinus carpio mg/L LC50 semi-static 1,32: 96 h Oncorhynchus mykiss mg/L LC50 static 1,17: 96 h Oncorhynchus mykiss mg/L LC50 flow-through	600: 48 h water flea µg/L EC50
Tin 7440-31-5	2.1 mg/litre 7-day LC50 (embryo-larval test)	Not available

Persistence and degradability

Lead is persistent in soils and sediments.

Ecotoxicity

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful effect to the environment.

13. DISPOSAL CONSIDERATIONS

Methods for inclusion and cleaning**Methods for inclusion**

In case a battery is torn, stop the leak if you can do this without risk. Absorb the product with earth, sand or other non-combustible materials. Cautiously neutralize spilled liquid.

Methods for cleaning

Dispose of in accordance with local, state and national regulations.

Waste treatment methods**Contaminated packaging**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Classification

This material and/or its container must be disposed of as hazardous waste.

Disposal considerations

Do not discharge into drains or the environment, dispose to an authorized waste collection point. Batteries need to be collected for recycling by an approved contractor.

14. TRANSPORT INFORMATION

We hereby certify that the WING Battery range of Maintenance Free Rechargeable Sealed Lead Acid batteries conform to the UN2800, class 8b classification as "Batteries, Non-Spillable, and electric storage" as a result of passing the Vibration and Pressure Differential Test described in DOT [49 CFR 173.159(d) and IATA/ICAO [Special Provision A67].

WING Battery has met the related conditions are EXEMPT from hazardous goods regulations for the purpose of transportation by DOT, and IATA/ICAO, and therefore are unrestricted for transportation by any means. Tested as per IMDG Amdt. 36-12, special provision 238 "1" and "2", Comply. This Safety Data Sheet and the information therein does not constitute the user's own assessment of work place risk as required by other Health & Safety legislation.

15. REGULATORY INFORMATION

Classification and labelling

Not classified as hazardous for supply

16. OTHER INFORMATION

The information in this SDS was obtained from sources which we believe are reliable, but no warranty or representation as to its accuracy or completeness is hereby given. Under normal conditions of battery use, internal components will not present a health hazard. The information contained in this Safety Data Sheet is provided for battery electrolyte (acid) and lead, for exposure that may occur during battery production or container breakage or under extreme heat conditions such as fire.

Disclaimer

This Safety Data Sheet is based upon information available at the time of preparation. Information was obtained from sources that we believe are reliable, but are beyond our purview; we make no warranty with respect to such information. It is the obligation of each user of this product to determine the suitability of this product and comply with the requirements of all applicable laws regarding handling, storage, use and disposal of this product; *Wing Battery* assumes no responsibility (and disclaims liability) in any way connected with improper use.