Safety Data Sheet

VRLA (AGM)
Maintenance Free Wet Charged Lead Battery

According to Regulation (EC) No 2015/830

Version 3.0 **Issue date: 02/12/2019**

Section 1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier:

Product Form : Article

Product name : VRLA (AGM) – Maintenance Free Wet Charged Lead Battery

1.2 Relevant identified uses of the substance and uses advised against:

1.2.1 Identified uses: Motorcycle and power sport starter battery

1.2.2 Uses advised against: Not available.

1.3 Details of the supplier of the safety data sheet:

Supplier: **FULBAT 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 [X]

Section 2 Hazards Identification

2.1 Classification of the substance/mixture:

The mixture is classified as following regutation :

REGULATION (EC) No 2015/830	
skin corrosion/irritation Category 1A	H314
Reproductive toxicity, Category 1A	H360Fd
Specific target organ toxicity (repeated exposure) Category 1A	H372
Hazardous to the aquatic environment -Acute Hazard, Category 1	H400
Hazardous to the aquatic environment - Chronic Hazard, Category 1	H410

No hazards in case of an intact battery and using according the instructions. The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful.

For full text of H- phrases: see section 16

2.2 label elements:

Hazard Pictograms:

GHS05 GHS08 GHS09

Signal Word(S): Danger

Hazard Statement:
H314 - Causes severe skin burns and eye damage
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 statement:
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 wfien using this product
P273 - Avoid release to the environment

2.3 Other hazards:

Lead may be toxic to blood, kidneys, central nervous system

Section 3 Composition/information on ingredients

Substance/Mixture: Mixture

Ingredient(s):

Chemical Name	Registration No.	CAS No.	EC No.	Concentration	Classification
Lead	N/A	7439-92-1	231-100-4	< 100%	Repr. 1A, H360 STOT RE 1, H372 Aquatic Acute 1 H400 (M=10) Aquatic Chronic 1, H410 (M=10)
Antimony	N/A	7440-36-0	231-146-5	0.2 %	Not classified
SULFURIC ACID	N/A	7664-93-9	231-639-5	< 100%	H314(1A)

Chemical Name	Registration No.	CAS No.	EC No.	Specific concentration limits
SULFURIC ACID	N/A	7664-93-9	231-639-5	(5 =< C < 15) Eye Irrit. 2, H319 (5 =< C < 15) Skin Irrit. 2, H315 (C >= 15) Skin Corr. 1A, H314

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:

No further relevant information available.

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

Sealed batteries can emit hydrogen only if over charged (float voltage> 2.41 VPC). The gas enters the air through the vent caps. To ABS: Temperatures over 300℃ (572℉) may release combustible gases. To PP: Temperatures over 380℃ (716℉) may release combustible gases.

Lead compounds and sulfuric acid fume may be released during a fire involving the product. Battery may rupture due to pressure build up when exposed to excessive heat and may be result in the release of corrosive materials.

May react with combustible substances creating fire or explosion hazard. Reacts violently with water. Reacts violently with oxidizing substances. Reacts with most metals to produce hydrogen gas, lvhich can form an explosive mixture with air.

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.

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:

Store batteries in a cool, dry, well ventilated area that are separated from incompatible materials and any activities which may generate flames, sparks, or heat. Keep away from all metallic articles that could contact the negative and positive terminals on a battery and create a short circuit condition. Battery should be stored under roof for protection against adverse weather conditions. Store and handle only in areas with adequate water supply and spill control. Avoid damage to battery case.

7.3 Specific end use(s):

Not applicable.

Section 8 Exposure Controls/Personal Protection

8.1 Control parameters:

Lead (7439-92-1)		
EU	European BEI	(Medium: blood - Time: no restriction - Parameter: Lead (binding biological limit value) 0.075 mg/m3 (Medium: air - Time: 40 hours per week Parameter: Lead (TWA medical surveillance threshold in air measured as a time weighted average over 40 hours per week) (Medium: blood - Time: no restriction – Parameter : Lead (medical surveillance threshold measured in individual workers)
Austria	MAK (mg/m3)	0.1 mg/m3 (inhalable fraction)
Austria	MAK Short time value (mg/m3)	0.4 mg/m3 (inhalable fraction)
Bulgaria	OEL TWA (mg/m3)	0.05 mg/m3
Bulgaria	Bulgaria - BEI	300 µg/l (Medium: blood - Time: not lixed - Parameter: Lead (for women under 45 years old) 400 µg/l (Medium: blood - Time: not fixed - Parameter: Lead)
Lead (7439-92-1)		
Croatia	GVI (graniëna vrijednost izloZenosti) (mg/m3)	0.15 mg/m3

Lead (7439-92-1)		
Croatia	Croatia - BEI	(Medium: blood - Time: not critical - Parameter: Lead (Medical surveillance should be carried out lvhen the limit value of Lead in blood of workers >40 µg/100mL blood) (Medium: urine - Time: single sample or urine collected over 24 hours - Parameter: Lead (For all results that are expressed on Creatinine, Creatinine concentration <0.5 g/L and >3.0 g/L should not be considered) (Medium: blood - Time: not critical - Parameter: delta.Aminolevulinic acid dehydratase) (Medium: blood - Time: after exposure during 2-3 months (light protected sample) - Parameter: Protoporphyrin in erythrocytes (Interference of lrondefi ciency (anemia sideropenic))
Cyprus	OEL TWA (mg/m3)	0.15 mg/m3
Czech Republic	Expoziëni limity (PEL) (mg/m3)	0.05 mg/m3
Czech Republic	Czech Republic - BEI	(Medium: urine - Time: discretionary - Parameter: 5 Aminolevulinic acid (For short term continual exposures <=30 calendar days) (Medium: urine - Time: discretionary - Parameter: Coproporphyrin (For short term continual exposures <=30 calendar days) (Medium: urine - Time: discretionary - Parameter: 5 Aminolevulinic acid (For short term continual exposures <=30 calendar days) (Medium: urine - Time: discretionary - Parameter: Coproporphyrin (For short term continual exposures <=30 calendar days) 0.4 mg/l (Medium: blood - Time: discretionary -Parameter: Lead)
Denmark	Grænseværdie (langvarig) (mg/m3)	0.05 mg/m3 (dust, fume and powder)
Denmark	Denmark - BEI	(Medium: blood - Parameter: Lead)
Estonia	OEL TWA (mg/m3)	0.1 mg/m3 (total dust) 0.05 mg/m3 (respirable dust)
Finland	HTP-arvo (8h) (mg/m3)	0. 1 mg/m3 (all works)
Finland	Finland - BEI	(Medium: blood - Time: not critical - Parameter: Lead)
France	VME (mg/m3)	0.1 mg/m3 (restrictive limit)
France	France - BEI	400 µg/l (Medium: blood - Parameter: Lead (biological limit value, men) 300 µg/l (Medium: blood - Parameter: Lead (biological limit value, women) 200 µg/l (Medium: blood - Parameter: Lead (medical surveillance value, men) 100 µg/l (Medium: blood - Parameter: Lead (medical surveillance value, women)

Lead (7439-92-1)		
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/m3)	0.15 mg/m3
Gibraltar	Gibraltar - BEI	(Medium: blood - Time: no restriction - Parameter:Lead (binding biological limit value) 0.075 mg/m3 (Medium: air - Time: 40 hours per week Parameter: Lead (medical surveillance threshold measured in individual employees) (Medium: blood - Time: no restriction - Parameter:Lead (medical surveillance threshold measured in individual employees)
Greece	OEL TWA (mg/m3)	0.15 mg/m3
Hungary	AK-érték	0.15 mg/m3
Ireland	OEL (8 hours ref) (mg/m3)	0.15 mg/m3
Ireland	OEL (15 min ref) (mg/m3)	0.45 mg/m3 (calculated)
Italy	OEL TWA (mg/m3)	0.075 mg/m3
Italy	Italy - BEI	(Medium: blood - Time: end of workweek (Lead remediation must be performed when uorkers of fertile age have Lead in blood levels >40 µg/100mL)
Latvia	OEL TWA (mg/m3)	0.005 mg/m3
Latvia	Latvia - BEI	(Medium: blood - Parameter: Lead (reference value in blood for occupationally unexposed population <=10 µg/100 mL) (Medium: urine - Parameter: Coproporphyrin(reference value 22-57 µg/g Creatinine) (Medium: urine - Parameter: Aminolevulinic acid (reference value 0. 5-2.5mg/g Creatinine)
Lithuania	IPRV (mg/m3)	0.15 mg/m3 (inhalable fraction) 0.07 mg/m3 (respirable fraction)
Luxembourg	OEL TWA (mg/m3)	0.15 mg/m3
Luxembourg	Luxembourg - BEI	(Medium: blood - Parameter: Lead) 0.075 mg/m3 (Medium: blood - Parameter: Lead (medical surveillance threshold in air measured as a time weighted average over 40 hours per week) (Medium: blood - Parameter: Lead (medical surveillance threshold measured in individual workers)
Poland	NDS (mg/m3)	0.05 mg/m3

Lead (7439-92-1)		
Portugal	OEL TWA (mg/m3)	0.15 mg/m3 (mandatory indicative limit value)
Romania	OEL TWA (mg/m3)	0.05 mg/m3
Romania	OEL STEL (mg/m3)	0.10 mg/m3
Romania	Romania - BEI	150 µg/l (Medium: urine - Time: end of shift - Parameter: Lead) (Medium: blood - Time: end of shift - Parameter: Lead) (Medium: hair - Time: end of shift - Parameter: Lead) 10 mg/l (Medium: urine - Time: end of shift - Parameter: .delta.-Aminolevulinic acid) 300 µg/l (Medium: urine - Time: end of shift - Parameter: Coproporphyrin) (Medium: blood - Time: end of shift - Parameter::Erythrocytes protoporphyrin)
Slovakia	NPHV (priemerna) (mg/m3)	0.15 mg/m3
Slovakia	Slovakia - BEI	400 µg/l (Medium: blood - Time: not critical - Parameter: Lead) 100 µg/l (Medium: blood - Time: not critical - Parameter: Lead (women younger than 45 years of age) 15 mg/l (Medium: urine - Time: not critical - Parameter: .delta.-Aminolevulinic acid) 6 mg/l (Medium: urine - Time: not critical - Parameter: .delta.-Aminolevulinic acid (women younger than 45 years of age) 0.30 mg/l (Medium: urine - Time: nct critical Parameter: Coproporphyrins)
Slovenia	OEL TWA (mg/m3)	0.1 mg/m3 (inhalable fraction)
Slovenia	OEL STEL (mg/m3)	0.4 mg/m3 (inhalable fraction)
Spain	VLA-ED (mg/m3)	0.15 mg/m3
Spain		(Medium: blood - Time: not critical - Parameter: Lead (3,K)
Sweden	nivagränsvärde (NVG) (mg/m3)	0.1 mg/m3 (total inhalable dust) 0.05 mg/m3 (total respirable dust)
United Kingdom	WEL TWA (mg/m3)	0.15 mg/m3
United Kingdom	WEL STEL (mg/m3)	0.45 mg/m3 (calculated)
Norway	Grenseverdier (AN) (mg/m3)	0.05 mg/m3 (dust and fume)
Norway	Grenseverdier (Korttidsverdi) (mg/m3)	0.05 mg/m3 (dust and fume)
Switzerland	VME (mg/m3)	0.1 mg/m3 (inhalable dust)
Switzerland	VLE (mg/m3)	0.8 mg/m3 (inhalable dust)

Lead (7439-92-1)		
Switzerland	Switzerland - BEI	400 µg/l (Medium: whole blood - Time: no restrictions Parameter: Lead (men and women over 45 years old) 100 µg/l (Medium: whole blood - Time: no restrictions Parameter: Lead (women less than 45 years old,)
Australia	TWA (mg/m3)	0.15 mg/m3 (dust and fume)
Canada (Quebec)	VEMP (mg/m3)	0.05 mg/m3
USA - ACGIH	ACGIH TWA(mg/m3)	0.05 mg/m3
Lead (7439-92-1)		
USA - IDLH	US IDLH (mg/m3	100 mg/m3
USA - NIOSH	NIOSH REL (TWA) (mg/m3)	0.050 mg/m3
USA - OSHA	OSHA PEL (TWA) (mg/m3)	50 µg/m3

Antimony (7440-36-0)		
Austria	MAK (mg/m3)	0.5 mg/m3 (inhalable fraction)
Austria	MAK Short time value (mg/m3)	5 mg/m3 (inhalable fraclion)
Belgium	Limit value (mg/m3)	0.5 mg/m3
Bulgaria	OEL TWA (mg/m3)	0.5 mg/m3
Croatia	GVI (granièna vrijednost izloZenosti) (mg/m3)	0.5 mg/m3
Czech Republic	Expoziëni limity (PEL) (mg/m3)	0.5 mg/m3
Denmark	Grænseværdie (langvari g) (mg/m3)	0.5 mg/m3 (powder)
Estonia	OEL TWA (mg/m3)	0.5 mg/m3
Finland	HTP-arvo (8h) (mg/m3)	0.5 mg/m3
France	VME (mg/m3)	0.5 mg/m3
Greece	OEL TWA (mg/m3)	0.5 mg/m3
Hungary	AK-érték	0.5 mg/m3
Hungary	CK-érték	2 mg/m3
Ireland	OEL (8 hours ref) (mg/m3)	0.5 mg/m3
Ireland	OEL (15 min ref) (mg/m3)	1.5 mg/m3 (calculated)
Latvia	OEL TWA (mg/m3)	0.2 mg/m3 (metallic dust)
Lithuania	IPRV (mg/ms)	0.5 mg/m3

Antimony (7440-36-0)		
Netherlands	Grenswaarde TGG 8H (mg/m3)	0.5 mg/m3
Poland	NDS (mg/m3)	0.5 mg/m3
Portugal	OEL TWA (mg/m3)	0.5 mg/m3
Romania	OEL TWA (mg/m3)	0.20 mg/m3
Romania	OEL STEL (mg/m3)	0.50 mg/m3
Romania	Romania - BEI	1 mg/l (Medium: urine - Time: end of shift - Parameter: Antimony)
Slovakia	NPHV (priemernâ) (mg/m3)	0.5 mg/m3 (total dust)
Slovenia	OEL TWA (mg/m3)	0.5 mg/m3 (inhalable fraction)
Slovenia	OEL STEL (mg/m3)	2 mglms (inhalable fraction)
Spain	VLA-ED (mg/m3)	0.5 mg/m3
Sweden	nivàgränsvärde (NVG) (mg/m3)	0.25 mg/ms (total inhalable dust)
United Kingdom	WEL TWA (mg/m3)	0.5 mg/m3
United Kingdom	WEL STEL (mg/m3)	1.5 mg/m3 (calculated)
Norway	Grenseverdier (AN) (mg/m3)	0.5 mg/m3
Norway	Grenseverdier (Korttidsverdi) (mg/m3)	0.5 mg/m3
Switzerland	VME (mg/m3)	0.5 mg/m3 (inhalable dust)
Australia	TWA (mg/m3)	0.5 mg/m3
Canada (Quebec)	VEMP (mg/m3)	0.5 mg/m3
USA - ACGIH	ACGIH TWA (mg/m3)	0.5 mg/m3
USA - IDLH	US IDLH (mg/m3)	50 mg/m3
USA - NIOSH	NIOSH REL (TWA) (mg/m3)	0.5 mg/m3
USA - OSHA	OSHA PEL (TWA) (mg/m3)	0.5 mg/m3
Sulfuric acid (7664-93-9)		
EU	IOELV TWA (mg/m3)	0.05 mg/m3 (taking into account potential limitations and interferences which take place in the presence of other Sulphur compounds-mist)
Austria	MAK (mg/m3)	0.1 mg/m3 (corresponds to 0.05 mg/m3 Thoracicinhalable fraction)
Austria	MAK Short time value (mg/m3)	0.2 mg/m3 (inhalable fraction)
Belgium	Limit value (mg/ms)	0.2 mg/m3

Sulfuric acid (7664-93-9)		
Bulgaria	OEL TWA (mg/m3)	0.05 mg/m3 (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-respirableaerosol)
Croatia	GVI (granična vrijednost izlozenosti) (mg/m3)	0.05 mg/m3
Cyprus	OEL TWA (mg/m3)	0.05 mg/m3 (vapor)
Czech Republic	Expozični limity (PEL) (mg/m3)	1mg/m3 0.05 mg/m3 (concentrated-mist)
Denmark	Grænseværdie (langvarig) (mg/m3)	0.05 mg/m3 (thoracic fraction-mist)
Estonia	OEL TWA (mg/m3)	1 mg/m3 (fume)
Finland	HTP-arvo (8h) (mg/m3)	0.05 mg/m3
Finland	HTP-arvo (15 min)	0.1 mg/m3
France	VME (mg/m3)	0.05 mg/m3 (thoracic fraction)
France	VLE (mg/m3)	3 mg/m3
Germany	TRGS 900 Occupational exposure limit value (mg/m3)	0.1 mg/m3 (The risk of damage to the embryo or fetus can be excluded wien AGW and BGW values are observed-inhalable fraction)
Gibraltar	OEL TWA (mg/m3)	0.05 mg/m3 (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/m3)	0.05 mg/m3 (mist)
Hungary	AK-érték	0.05 mg/m3
Ireland	OEL (8 hours ref) (ppm)	0.05ppm
Ireland	OEL (15 min ref) (ppm)	0.15 ppm (calculated)
Italy	OEL TWA (mg/m3)	0.05 mg/m3 (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/m3)	0.05 mg/m3 (possible limitations and the impact that may result from the presence of other Sulfurcomponents should be taken into account when choosing an appropriate exposure monitoring method-fog, which is defined as the thoracic fraction)
Lithuania	IPRV (mg/m3)	0.05 mg/m3 (vapor)
Lithuanra	TPRV (mg/m3)	3 mg/m3 (fog-vapor)
Luxembourg	OEL TWA (mg/m3)	0.05 mg/m3
Malta	OEL TWA (mg/m3)	0.05 mg/m3 (mist)
Netherlands	Grenswaarde TGG 8H (mg/m3)	0.05 mg/m3 (defined as thoracic fraction-mist)

Sulfuric acid (7664-93-9)		
Poland	NDS (mg/m3)	0.05 mg/m3 (thoracic fraction)
Portugal	OEL TWA (mg/m3)	0.05 mg/m3 (thoracic fraction-mist)
Romania	OEL TWA (mg/m3)	0.05 mg/m3
Slovakia	NPHV (priemerná) (mg/m3)	0.1 mg/m3
Slovenia	OEL TWA (mg/m3)	0.05 mg/m3 (inhalable fraction, fog)
Spain	VLA-ED (mg/m3)	0.05 mg/m3 (indicative limit value-mist)
Sweden	nivågränsvärde (NVG) (mg/m3)	0.1 mg/m3
Sweden	kortidsvärde (KTV) (mg/m3)	0.2 mg/m3
United Kingdom	WEL TWA (mg/m3)	0.05 mg/m3 (mist)
Norway	Grenseverdier (AN) (mg/m3)	0. 1 mg/m3 (inhalable fraction)
Norway	Grenseverdier (Korttidsverdi) (mg/m3)	0.1 mg/m5 (inhalable fraction)
Switzerland	VME (mg/m3)	0.1 mg/m3 (inhalable dust)
Switzerland	VLE (mg/m3)	0.1 mg/m3 (inhalable dust)
Australia	TWA (mg/m3)	1 mg/m3
Australia	STEL (mg/m3)	3 mg/m3
Canada (Quebec;	VECD (mg/m3)	3 mg/m3
Canada (Quebec)	VEMP (mg/m3)	1 mg/m3
USA. ACGIH	ACGIH TWA (mg/m3)	0.2 mg/m3 (thoracic fraction)
USA – IDLH	US IDLH (mg/m3)	15 mg/m3
USA – NIOSH	NIOSH REL (TWA) (mg/m3)	1 mg/m3
USA. OSHA	OSHA PEL (TWA) (mg/m3)	1 mg/m3

8.2 Exposure controls:

8.2.1 Appropriate engineering controls: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

8.2.2 Individual protection measures, such as personal protective equipment:

Eye/face protection: None needed under normal conditions. If battery case is damaged, use chemical goggles or face shield.

Hand protection: None needed under normal conditions. If battery case is damaged, use rubber or plastic acid-resistant gloves with elbow-length gauntlet.

Body protection: None needed under normal conditions. If battery case is damaged wear acid-resistant apron. Under severe exposure or emergency conditions, wear acid

–resistant clothing and boots.

Respiratory protection: None required under normal conditions. When concentrations of sulfuric acid mist are known to exceed PEL, use NIOSH or MSHA-approved respiratory protection.

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:

Appearance:	Solid
Colour:	Electrolyte.Clear
Odour:	Not available
Odour threshold:	Not available
pH:	Not available
Melting point/range (℃):	Not available
Boiling point/range (℃):	**95 – 95.555°C**
Flash point (℃):	Not available
Evaporation rate:	Not available
Flammability limit - lower (%):	Not available
Flammability (solid, gas):	Not available
Ignition temperature (℃):	Not available
Upper/lower flammability/explosive limits:	Not available
Vapour pressure (20℃):	10 mm Hg
Vapour density at (20°C):	1
Relative Density:	Not available
Bulk density (kg/m^3):	Not available
Water solubility :	100%
n-Octanol/Water (log Po/w):	Not available
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
Viscosity, dynamic (mPa.s):	Not available
Explosive properties:	Not available
Oxidising properties:	Not available
Molecular Formula:	Not applicable
Molecular Weight:	Not applicable

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: The substance is stable under normal storage and handling conditions.

10.2 Chemical stability: Stable at room temperature in closed containers under normal storage and handling conditions.

10.3 Possibility of hazardous reactions: No dangerous reactions known.

10.4 Conditions to avoid: Incompatible materials. High temperature, Sparks and other sources of ignition. Avoid mixing acid with other chemicals.

10.5 Incompatible materials: Potassium, carbides, sulfides, peroxides, phosphorus, sulfurs, ketone, ester, petrolatum. Reactive metals, strong bases, most organic compounds.

10.6 Hazardous decomposition products: Sealed batteries can emit hydrogen only if over charged (float voltage> 2.41 VPC). The gas enters the air through the vent caps. To ABS: Temperatures over 300℃ (572℉) may release combustible gases. To PP: Temperatures over 380℃ (716℉) may release combustible gases.

Section 11 Toxicological information

11.1 Information on toxicological effects:

Acute toxicity: Not classified

Antimony (7440-36-0)	
LD50 oral rat	7 g/kg

Sulfuric acid (7664-93-9)	
LD50 oral rat	2140 mglkg
LC50 inhalation rat (mg/l)	510 mg/m3 (Exposure time: 2 h)

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

Serious eye damage/irritation: Causes severe eye damage, category1, implicit

Respiratory or skin sensitization: Not classified

Germ cell mutagenicity: Not classified

Carcinogenicity: Not classified

Reproductive toxicity: May damage fertility. May damage the unborn child. May cause harm to breast-fed children.

STOT- single exposure: Not classified

STOT-repeated exposure: Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard: Not classified

Section 12 Ecological information

12.1 Toxicity:

Lead (CAS: 7439-92-1):

Acute toxicity		Time	Species	Evaluation	Remarks
LC50	440 µg/L	96h	Fish	N/A	Species: Cyprinus carpio [semi-static])
LC50	1170 µg/L	96h	Fish	N/A	Species: Oncorhynchus mykiss [flow{hroughl)
EC50	600 µg/L	48h	Daphnia	N/A	Species: water flea

Sulfiric Acid (CAS: 7664-93-9):

Acute toxicity		Time	Species	Evaluation	Remarks
LC50	82 mg/L	24h	Fish	N/A	Exposure time:24 h - Species: Brachydanio rerio [static]

12.2 Persistence and degradability: Not available.

12.3 Bioaccumulative potential: BCF fish; no bioaccumalion

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:

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Dispose of contents/container to comply with applicable local, national and international regulations.

Recycling the product is recommended. Waste must be disposed of in accordance with federal, stale, and local environmental control regulations.

Consult the appropriate local waste disposal expert about waste disposal. Since emptied containers retain product residue, follow label warnings even after container is emptied.

Europeen waste code :16 06 01- - lead batteries

Section 14 Transport information

	Land transport (ADR/RID)	Sea transport (IMDG)	Air transport (ICAO/IATA)
UN-Number	2800	2800	2800
UN Proper shipping name	BATTERIES, WET, NON-SPILLABLE ELECTRIC STORAGE	BATTERIES, WET, NON-SPILLABLE ELECTRIC STORAGE	BATTERIES, WET, NON-SPILLABLE ELECTRIC STORAGE
Transport hazard Class	8	8	8
Packaging group	-	-	-
Environmental hazards	No	No	No
Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable	Not applicable	Not applicable

Special precautions for user

Land transport (ADR)

Classification code (ADR)	: C11
Special provisions (ADR)	: 238,295,598
Limited quantities (ADR)	: 1L
Excepted quantities (ADR)	: E0
Packing instructions (ADR)	: P003,P801a
Special packing provisions (ADR)	: PP16
Transport category (ADR)	: 3
Special provisions for carriage - Bulk (ADR)	: VV14
Hazard identification number (Kemler No.)	: 80
Orange plates	:

Tunnel restriction code (ADR)	E
EAC code	2R

Sea transport (IMDG)

Special provisions (IMDG)	: 238, 295
Limited quantities (IMDG)	: 1 L
Excepted quantities (IMDG)	: E0
Packing instructions (IMDG)	: P003
Special packing provisions (IMDG)	: PP16
EmS-No. (Fire	: F-A
EmS-No. (Spillage)	: S-B
Stowage category (IMDG)	: A
Properties and observations (IMDG)	: Metal plates immersed in gelled alkaline or acid electrolyte in a glass, hard rubber or plastics receptacle of a non-spillable type. When electrically charged, may cause fire through short-circuiting of terminals. Cause burns to skin, eyes and mucous membranes.
MFAG-No	: 154

Air transport

PCA Excepted quantities (IATA)	: E0
PCA Limited quantities (IATA)	: Forbidden
PCA limited quantity max net quantity (IATA)	: Forbidden
PCA packing instructions (IATA)	: 872
PCA max net quantity (IATA)	: No limit
CAO packing instructions (IATA)	: 872
CAO max net quantity (IATA)	: No limit
Special provisions (IATA)	: A48, A67, A164, A183
ERG code (IATA)	: 8L

Section 15 Regulation information

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

Relevant information regarding authorization: Not applicable.

Relevant information regarding restriction: Not applicable.

Other EU regulations: Employment restrictions concerning young person must be observed. For use only by technically qualified individuals.

Other National regulations:

Germany

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV	: Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

SZW-lijst van kankerverwekkende stoffen	: Sulfuric acid is listed
SZW-lijst van mutagene stiffen	: None of the components are listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding	: Lead is listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid	: Lead is listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling	: Lead is listed
Denmark	
Recommendations Danish Regulation	: Young people below the age of 18 years are not allowed to use the product Pregnant/breastfeeding women working with the product must not be in direct contact with the product.

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

16.1 Indication of changes:

Version 2.0 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.

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
Skin Corr. 1A	Skin corrosion/irritation Category 1A
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
H314	Causes severe skin burns and eye damage
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