

PRODUCT SAFETY DATA SHEET**PRODUCT NAME:** Energizer Battery**Type No.:****Volts:** 3.0**TRADE NAMES:** Coin/Button Lithium Manganese Dioxide Batteries**Approximate Weight:** 0.6 – 7.0 g**CHEMICAL SYSTEM:** Lithium Manganese Dioxide**Designed for Recharge:** No

Energizer has prepared copyrighted Product Safety Datasheets to provide information on the different Eveready/Energizer battery systems. Batteries are articles as defined under the GHS and exempt from GHS classification criteria (Section 1.3.2.1.1 of the GHS). The information and recommendations set forth herein are made in good faith, for information only, and are believed to be accurate as of the date of preparation. However, ENERGIZER BATTERY MANUFACTURING, INC. MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THIS INFORMATION AND DISCLAIMS ALL LIABILITY FROM REFERENCE ON IT.

SECTION 1- MANUFACTURER INFORMATION

Manufactured for
Energizer Battery Manufacturing, Inc.
25225 Detroit Rd.
Westlake, OH 44145

Telephone Number for Information:
800-383-7323 (USA / CANADA)

Date Prepared: March 2015

SECTION 2 – HAZARDS IDENTIFICATION**GHS classification:** N/A**Signal Word:** N/A**Hazard Classification:** N/A

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

Ingestion: Swallowing may lead to serious injury or death in as little as 2 hours due to chemical burns and potential perforation of the esophagus. **Immediately see doctor; have doctor phone (202) 625-3333.** Do not induce vomiting or give food or drink.

Inhalation: Contents of an open battery can cause respiratory irritation.

Skin Contact: Contents of an open battery can cause skin irritation.

Eye Contact: Contents of an open battery can cause severe irritation.

SECTION 3 - INGREDIENTS

IMPORTANT NOTE: The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful.

MATERIAL OR INGREDIENT	PEL (OSHA)	TLV (ACGIH)	%/wt.
Carbon Black (CAS# 1333-86-4)	3.5 mg/m ³ TWA	3.5 mg/m ³ TWA	0-1
1,2-Dimethoxyethane (CAS# 110-71-4)	None established	None established	0-6
1,3-Dioxolane (CAS# 646-06-0)	None established	None established	0-8
Graphite (CAS# 7782-42-5)	15 mg/m ³ TWA (total dust) 5 mg/m ³ TWA (respirable fraction)	2 mg/m ³ TWA (respirable fraction)	0-3
Lithium or Lithium Alloy (CAS# 7439-93-2)	None established	None established	1-6

Lithium Perchlorate (CAS# 7791-03-9)	None established	None established	0-3
Lithium Trifluoromethanesulfonate (CAS# 33454-82-9)	None established	None established	0-3
Lithium Trifluoromethanesulfonimide (CAS# 90076-65-6)	None established	None established	0-3
Manganese Dioxide (CAS# 1313-13-9)	5 mg/m ³ Ceiling (as Mn)	0.2 mg/m ³ TWA (as Mn)	12-42
Propylene Carbonate (CAS# 108-32-7)	None established	None established	0-8
Non-Hazardous Components:			
Steel (iron CAS# 65997-19-5)	None established	None established	20
Plastic and Other	None established	None established	Balance

SECTION 4 – FIRST AID MEASURES

Ingestion: Swallowing may lead to serious injury or death in as little as 2 hours due to chemical burns and potential perforation of the esophagus. **Immediately see doctor; have doctor phone (202) 625-3333.** Do not induce vomiting or give food or drink.

Inhalation: Provide fresh air and seek medical attention.

Skin Contact: Remove contaminated clothing and wash skin with soap and water.

Eye Contact: Immediately flush eyes thoroughly with water for at least 15 minutes, lifting upper and lower lids, until no evidence of the chemical remains. Seek medical attention.

Note: Carbon black is listed as a possible carcinogen by International Agency for Research on Cancer (IARC).

SECTION 5- FIRE FIGHTING MEASURES

In case of fire where lithium batteries are present, flood area with water or smother with a Class D fire extinguishant appropriate for lithium metal, such as Lith-X. Water may not extinguish burning batteries but will cool the adjacent batteries and control the spread of fire. Burning batteries will burn themselves out. Virtually all fires involving lithium batteries can be controlled by flooding with water. However, the contents of the battery will react with water and form hydrogen gas. In a confined space, hydrogen gas can form an explosive mixture. In this situation, smothering agents are recommended. A smothering agent will extinguish burning lithium batteries.

Emergency Responders should wear self-contained breathing apparatus. Burning lithium manganese dioxide batteries produce toxic and corrosive lithium hydroxide fumes.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

To cleanup leaking batteries:

Ventilation Requirements: Room ventilation may be required in areas where there are open or leaking batteries.

Respiratory Protection: Avoid exposure to electrolyte fumes from open or leaking batteries.

Eye Protection: Wear safety glasses with side shields if handling an open or leaking battery.

Gloves: Use neoprene or natural rubber gloves if handling an open or leaking battery.

Battery materials should be collected in a leak-proof container.

SECTION 7 - HANDLING AND STORAGE

Storage: Store in a cool, well ventilated area. Elevated temperatures can result in shortened battery life. In locations that handle large quantities of lithium batteries, such as warehouses, lithium batteries should be isolated from unnecessary combustibles.

Mechanical Containment: If potting or sealing the battery in an airtight or watertight container is required, consult your Energizer Battery Manufacturing, Inc. representative for precautionary suggestions. Do not obstruct safety release vents on batteries. Encapsulation of batteries will not allow cell venting and can cause high pressure rupture.

Handling: Accidental short circuit for a few seconds will not seriously affect the battery. Prolonged short circuit will cause the battery to lose energy, generate significant heat and can cause the safety release vent to open. Sources of short circuits include jumbled batteries in bulk containers, metal jewelry, metal covered tables or metal belts used for assembly of batteries into devices. Damaging a lithium battery may result in an internal short circuit.

The contents of an open battery, including a vented battery, when exposed to water, may result in a fire and/or explosion. Crushed or damaged batteries may result in a fire.

If soldering or welding to the battery is required, consult your Energizer representative for proper precautions to prevent seal damage or short circuit.

Charging: This battery is manufactured in a charged state. It is not designed for recharging. Recharging can cause battery leakage or, in some cases, high pressure rupture. Inadvertent charging can occur if a battery is installed backwards.

Labeling: If the Energizer label or package warnings are not visible, it is important to provide a package and/or device label stating:

WARNING: Battery can explode or leak and cause burns if installed backwards, disassembled, charged, or exposed to water, fire or high temperature.

Where accidental ingestion of small batteries is possible, the label should include:



(1) KEEP OUT OF REACH OF CHILDREN. Swallowing may lead to serious injury or death in as little as 2 hours due to chemical burns and potential perforation of the esophagus. **Immediately see doctor; have doctor phone (202) 625-3333.** Keep in original package until ready to use. Dispose of used batteries immediately.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation Requirements: Not necessary under normal conditions.

Respiratory Protection: Not necessary under normal conditions.

Eye Protection: Not necessary under normal conditions.

Gloves: Not necessary under normal conditions.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.):	Solid object
Upper Explosive Limits:	Not applicable for an Article
Lower Explosive Limits	Not applicable for an Article
Odor	No odor
Vapor Pressure (mm Hg @ 25°C)	Not applicable for an Article
Odor Threshold	No odor
Vapor Density (Air = 1)	Not applicable for an Article
pH	Not applicable for an Article

Density (g/cm ³)	2.0-3.0
Melting point/Freezing Point	Not applicable for an Article
Solubility in Water (% by weight)	Not applicable for an Article
Boiling Point @ 760 mm Hg (°C)	Not applicable for an Article
Flash Point	Not applicable for an Article
Evaporation Rate (Butyl Acetate = 1)	Not applicable for an Article
Flammability	Not applicable for an Article
Partition Coefficient	Not applicable for an Article
Auto-ignition Temperature	Not applicable for an Article
Decomposition Temperature	Not applicable for an Article
Viscosity	Not applicable for an Article

SECTION 10 – STABILITY AND REACTIVITY

Lithium manganese dioxide batteries contain no sulfides or cyanides and they do not meet any other reactivity criteria including “reacts violently with water” and therefore do not meet any of the criteria established in 40 CFR 261.2 for reactivity.

SECTION 11 – TOXICOLOGICAL INFORMATION

Under normal conditions of use, lithium manganese dioxide batteries are non-toxic.

SECTION 12 – ECOLOGICAL INFORMATION

Issues such as ecotoxicity, persistence and bioaccumulation are not applicable for articles.

SECTION 13 – DISPOSAL CONSIDERATIONS

Lithium iron disulfide batteries are not hazardous waste per the United States Resource Conservation and Recovery Act (RCRA) - 40 CFR Part 261 Subpart C. Dispose of in accordance with all applicable federal, state and local regulations.

SECTION 14 – TRANSPORT INFORMATION

In general, all batteries in all forms of transportation (ground, air, or ocean) must be packaged in a safe and responsible manner. Regulatory concerns from all agencies for safe packaging require that batteries be packaged in a manner that prevents short circuits and be contained in “strong outer packaging” that prevents spillage of contents. All original packaging for Energizer lithium batteries are compliant with these regulatory concerns.




Energizer lithium coin batteries are exempt from the classification as dangerous goods as they meet the requirements of the special provisions listed below. (Essentially, they are properly packaged and labeled, contain less than 1 gram of lithium and pass the tests defined in UN model regulation section 38.3).

Regulatory Body	Special Provisions
ADR	188, 230, 310, 636, 656
IMDG	188, 230, 310, 957
UN	UN 3090, UN 3091
US DOT	29, A54, A100, A101
IATA, ICAO	Packaging Instructions 968 - 970

Energizer is registered with CHEMTREC. In the event of an incident during transport call 1-800-424-9300 (North America) or 1-703-527-3887 (International).

A global lithium label chart is provided below to summarize the current global labeling requirements.

Label Summary Chart

Shipping Mode	Li content	Net quantity wt. of batteries per package	Battery Type			
AIR	0.3g to ≤ 1 g/cell 0.3g to ≤ 2 g/ battery	≤ 2.5 kg	L91, L92, L522	YES	YES	YES
	≤ 0.3 g/cell	≤ 2.5 kg	All Li Coin and 2L76	NO	YES	YES
	≤ 0.3 g/cell	> 2.5 kg	All Li Coin and 2L76	YES	YES	YES
Land/ Sea only	All	All	All	NO	YES	YES

SECTION 15 - REGULATORY INFORMATION

Outside of the transportation requirements noted in Section 14, lithium manganese dioxide batteries marketed by Energizer Battery Manufacturing, Inc. are not regulated.

SARA/TITLE III - As an article, this battery and its contents are not subject to the requirements of the Emergency Planning and Community Right-To-Know Act.

SECTION 16 - OTHER INFORMATION

None.



SDS Report

No.: CANEC1216097701

Date: 30 Nov 2012

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GUANG ZHOU NPP POWER CO., LTD.
NO.3 LONGHUI INDUSTRIAL ROAD, HUASHAN TOWN, HUADU DISTRICT, GUANGZHOU, CHINA

SGS Job No. : CP12-056341-GZ
Sample Name : Valve Regulated Lead Acid Battery
End Uses : Telecom system, UPS, Solar system, Standby power, etc
Composition/Ingredient of sample (as per client submission) : See *Section 3 Composition/information on ingredients* on the SDS report
Job Receiving Date : 26 Nov 2012
SDS Preparation Period : 26 Nov 2012 - 30 Nov 2012

Service Requested : Safety Data Sheet (SDS) for the sample with submitted composition.

Summary : As per request, the contents and formats of the SDS are prepared in accordance with European Commission Directives 67/548/EEC, 1999/45/EC, Regulation (EC) No 1907/2006, Regulation (EC) No 1272/2008 and Regulation (EU) No 453/2010, and is provided per attached.

Signed for and on behalf of
SGS-CSTC Ltd.

Allen Xie
Approved Signatory

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Member of the SGS Group (SGS SA)

Safety Data Sheet

1907/2006/EC, 1272/2008/EC

Printing date 30.11.2012

Revision: 30.11.2012

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

- **Product identifier**
- **Trade name:** Valve Regulated Lead Acid Battery
- **Article number:** Not available
- **Registration number:** Not available
- **Relevant identified uses of the substance or mixture and uses advised against**
- **Application of the substance / the preparation:** Telecom system, UPS, Solar system, Standby power, etc
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:** GUANG ZHOU NPP POWER CO., LTD.
- **Name:** JULIE CAI
- **Full address:**
NO.3 LONGHUI INDUSTRIAL ROAD, HUASHAN TOWN, HUADU DISTRICT, GUANGZHOU, CHINA
- **Phone number:** +86-20-87561800
- **FAX:** +86-20-38900436
- **Further information obtainable from:** GUANG ZHOU NPP POWER CO., LTD.
- **Emergency telephone number:** +86-13450463300
- **Email:** sales@nppower.com.cn
- **Reference Number:** CP12-056341-GZ; CANEC1216097701

2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS08 health hazard

Repr. 1A H360Df May damage the unborn child. Suspected of damaging fertility.
 STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.



GHS05 corrosion

Skin Corr. 1A H314 Causes severe skin burns and eye damage.



GHS09 environment

Aquatic Acute 1 H400 Very toxic to aquatic life.
 Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.
 Acute Tox. 4 H332 Harmful if inhaled.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



T; Toxic

R61: May cause harm to the unborn child.



C; Corrosive

R35: Causes severe burns.

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**Xn; Harmful**

R62-20/22-40-48/20/22: Possible risk of impaired fertility. Harmful by inhalation and if swallowed. Limited evidence of a carcinogenic effect. Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.

**N; Dangerous for the environment**

R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R33: Danger of cumulative effects.

· **Information concerning particular hazards for human and environment:**

The product has to be labelled due to the calculation procedure of Directive 67/548/EEC, 1999/45/EC and Regulation (EC) No. 1272/2008.

· **Classification system:**

The classification is according to the latest edition of the Directive 67/548/EEC, 1999/45/EC and Regulation (EC) No. 1272/2008, and extended by company and literature data.

· **Label elements**

· **Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the CLP regulation.

· **Hazard pictograms**



GHS05

GHS07

GHS08

GHS09

· **Signal word** Danger

· **Hazard-determining components of labelling:**

lead dioxide

sulphuric acid

lead

poly (acrylonitrile-co-butadiene-co-styrene)

· **Hazard statements**

H302 Harmful if swallowed.

H332 Harmful if inhaled.

H314 Causes severe skin burns and eye damage.

H360Df May damage the unborn child. Suspected of damaging fertility.

H373 May cause damage to organs through prolonged or repeated exposure.

H410 Very toxic to aquatic life with long lasting effects.

Contains lead. Should not be used on surfaces liable to be chewed or sucked by children.

· **Precautionary statements**

P101 If medical advice is needed, have product container or label at hand.

P102 Keep out of reach of children.

P103 Read label before use.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER or doctor/physician.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

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Trade name: Valve Regulated Lead Acid Battery

· vPvB: Not applicable.

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3 Composition/information on ingredients

· **Chemical characterization: Mixtures**· **Description:**

Mixture of the substances listed below with nonhazardous additions.

For the wording of listed risk phrases refer to section 16.

· **Dangerous components:**

CAS: 1309-60-0 EINECS: 215-174-5 EU number: 082-001-00-6	lead dioxide T Repr. Cat. 1, 3 R61; Xn R62-20/22; N R50/53 R33 Repr. 1A, H360Df; STOT RE 2, H373; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Tox. 4, H302; Acute Tox. 4, H332	31,29%
CAS: 7439-92-1 EINECS: 231-100-4	lead T R61; Xn R62-40-48/20/22; N R50/53 R33 Repr. 1A, H360Df; STOT RE 2, H373; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Tox. 4, H302; Acute Tox. 4, H332	30,0%
CAS: 7664-93-9 EINECS: 231-639-5 EU number: 016-020-00-8	sulphuric acid C R35 Skin Corr. 1A, H314	24,6%
CAS: 9003-56-9	poly (acrylonitrile-co-butadiene-co-styrene) Xn R22; Xi R36/37/38 Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	10,2%
CAS: 7440-50-8 EINECS: 231-159-6	copper R53 Aquatic Chronic 1, H410	0,2%

· **Non-dangerous components:**

	AGM clapboard	2,6%
	Expoxide-resin glue	0,6%
	Red & black marking glue	0,4%
25038-36-2	Poly(ethylene-co-propylene-co-5-methylene-2-norbornene)	0,11%

· **Remark:**

Classification of AGM clapboard, Expoxide-resin glue, Red & black marking glue is not covered by company database and is declared by client as nonhazardous.

4 First aid measures

· **Description of first aid measures**· **After inhalation:**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

In case of unconsciousness place patient stably in side position for transportation.

· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.· **After swallowing:**

Call for a doctor immediately.

Drink plenty of water and provide fresh air. Call for a doctor immediately.

· **Information for doctor**· **Most important symptoms and effects, both acute and delayed:** No further relevant information available.

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- **Indication of any immediate medical attention and special treatment needed:**
No further relevant information available.

5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂ powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture:** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures:**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
Do not allow product to reach sewage system or any water source.
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Use neutralizing agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **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 disposal information.

7 Handling and storage

- **Handling**
- **Precautions for safe handling:**
Thorough dedusting.
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
- **Information about fire - and explosion protection:** Keep respiratory protective device available.
- **Storage:**
- **Conditions for safe storage, including any incompatibilities**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.
- **Specific end use(s):** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **Control parameters**

- **Ingredients with limit values that require monitoring at the workplace:**

1309-60-0 lead dioxide

PEL (USA)	0,05 mg/m ³ as Pb; See 29 CFR 1910,1025
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REL (USA)	0,05* mg/m ³ as Pb; *8-hr TWA, Blood Pb<0,06mg/100g whole blood
TLV (USA)	0,05 mg/m ³ as Pb; BEI
MAK (Germany)	vgl.Abschn.XIV
7439-92-1 lead	
PEL (USA)	0,05* mg/m ³ *see 29 CFR 1910,1025
REL (USA)	0,05 mg/m ³ excluding lead arsenate; See Pocket Guide App. C
TLV (USA)	0,05* mg/m ³ *and inorganic compounds, as Pb; BEI
MAK (Germany)	vgl.Abschn.XII
7664-93-9 sulphuric acid	
IOELV (EU)	0,05 mg/m ³
PEL (USA)	1 mg/m ³
REL (USA)	1 mg/m ³
TLV (USA)	0,2* mg/m ³ *as thoracic fraction
AGW (Germany)	0,1 E mg/m ³ I(I);DFG, EU, Y
9003-56-9 poly (acrylonitrile-co-butadiene-co-styrene)	
TLV (USA)	10* mg/m ³ *nuisance particulates(total)
7440-50-8 copper	
PEL (USA)	1* 0,1** mg/m ³ as Cu *dusts and mists **fume
REL (USA)	1* 0,1** mg/m ³ as Cu *dusts and mists **fume
TLV (USA)	1* 0,2** mg/m ³ *dusts and mists; **fume; as Cu
MAK (Germany)	0,1E mg/m ³

· DNELs: Not available

· PNECs: Not available

· **Additional information:** The lists valid during the making were used as basis.· **Exposure controls**· **Based on the composition shown in Section 3, the following measures are suggested for occupational safety measure**· **Personal protective equipment**· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

· **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

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· Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· Material of gloves:

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· Penetration time of glove material:

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye protection:



Tightly sealed goggles

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General information

· Appearance

Form: Cuboid battery

Colour: Black

· Odour: Odourless

· Odour threshold: Not available

· pH-value: Not available

· Change in condition

Melting point/Melting range: Not available

Boiling point/Boiling range: 110 °C

· Freezing point: Not available

· Flash point: 259 °C

· Flammability (solid, gaseous): Not available

· Auto-Ignition temperature: 580 °C

· Decomposition temperature: Not available

· Self-igniting: Product is not selfigniting.

· Explosive properties: Risk of explosion by shock, friction, fire or other sources of ignition.

· Explosion limits

Lower: Not available

Upper: Not available

· Oxidizing properties: Not available

· Vapour pressure: Not available

· Density: Not available

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Trade name: Valve Regulated Lead Acid Battery

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· Relative density:	Not available
· Vapour density:	Not available
· Evaporation rate:	Not available
· Solubility in / Miscibility with water:	Not available
· Partition coefficient (n-octanol/water):	Not available.
· Viscosity	
· Dynamic:	Not available.
· Kinematic:	Not available
· Other information:	Melting point / range: Lead 327.4 °C Solubility in water: 100% (Electrolyte)

10 Stability and reactivity

- **Reactivity:** Data not available
- **Chemical stability:** Data not available
- **Possibility of hazardous reactions:** No dangerous reactions known.
- **Conditions to avoid:** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity**
- **LD/LC50 values relevant for classification:** Not applicable
- **Primary irritant effect**
- **on the skin:** Strong caustic effect on skin and mucous membranes.
- **on the eye:** Strong caustic effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Harmful
Corrosive
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
- **Toxicokinetics, metabolism and distribution:** No further relevant information available
- **Acute effects (acute toxicity, irritation and corrosivity):** No further relevant information available
- **Repeated dose toxicity:** No further relevant information available.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):**
No further relevant information available.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability:** No further relevant information available.
- **Behaviour in environmental systems:** No further relevant information available
- **Bioaccumulative potential:** No further relevant information available.
- **Mobility in soil:** No further relevant information available.
- **Remark:** Very toxic for fish

(Contd. on page 8)

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- **Additional ecological information**
- **General notes:**
 - Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water
 - Do not allow product to reach ground water, water course or sewage system, even in small quantities.
 - Must not reach sewage water or drainage ditch undiluted or unneutralized.
 - Danger to drinking water if even extremely small quantities leak into the ground.
 - Also poisonous for fish and plankton in water bodies.
 - Very toxic for aquatic organisms
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects:** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
 - Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

<ul style="list-style-type: none"> · UN-Number · ADR, IMDG, IATA 	UN2800
<ul style="list-style-type: none"> · UN proper shipping name · ADR · IMDG · IATA 	2800 BATTERIES, WET, NON-SPILLABLE, ENVIRONMENTALLY HAZARDOUS BATTERIES, WET, NON-SPILLABLE, MARINE POLLUTANT BATTERIES, WET, NON-SPILLABLE
<ul style="list-style-type: none"> · Transport hazard class(es) · ADR, IMDG, IATA 	<div style="text-align: center;">  </div>
<ul style="list-style-type: none"> · Class · Label 	8 Corrosive substances. 8
<ul style="list-style-type: none"> · Packing group · ADR, IMDG, IATA 	Not applicable
<ul style="list-style-type: none"> · Environmental hazards · Marine pollutant: 	Product contains environmentally hazardous substances: lead dioxide, lead Yes
<ul style="list-style-type: none"> · Special precautions for user: · Danger code (Kemler): 	Warning: Corrosive substances. -
<ul style="list-style-type: none"> · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: 	Not applicable.

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Trade name: Valve Regulated Lead Acid Battery

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· UN "Model Regulation":	UN2800, BATTERIES, WET, NON-SPILLABLE, ENVIRONMENTALLY HAZARDOUS, 8
--------------------------	---

15 Regulatory information

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

· MAK(German Maximum Workplace Concentration)

1309-60-0	lead dioxide	2
7439-92-1	lead	2
7664-93-9	sulphuric acid	4

· National regulations

· Waterhazard class: Water hazard class 3 (Self-assessment): extremely hazardous for water.

· Other regulations, limitations and prohibitive regulations

· SVHC Candidate List of REACH Regulation Annex XIV Authorisation (18/6/2012)

None of the ingredients is listed

· REACH Regulation Annex XVII Restriction (19/9/2012) None of the ingredients is listed

· REACH Regulation Annex XIV Authorisation List (14/2/2012) None of the ingredients is listed

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

· Relevant phrases

- H302 Harmful if swallowed.
 H314 Causes severe skin burns and eye damage.
 H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H332 Harmful if inhaled.
 H335 May cause respiratory irritation.
 H360Df May damage the unborn child. Suspected of damaging fertility.
 H373 May cause damage to organs through prolonged or repeated exposure.
 H400 Very toxic to aquatic life.
 H410 Very toxic to aquatic life with long lasting effects.
- R20/22 Harmful by inhalation and if swallowed.
 R22 Harmful if swallowed.
 R33 Danger of cumulative effects.
 R35 Causes severe burns.
 R36/37/38 Irritating to eyes, respiratory system and skin.
 R40 Limited evidence of a carcinogenic effect.
 R48/20/22 Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
- R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
 R53 May cause long-term adverse effects in the aquatic environment.
 R61 May cause harm to the unborn child.
 R62 Possible risk of impaired fertility.

 The contents and format of this MSDS/SDS are in accordance with REGULATION (EC) No. 1272/2008, (EC) No. 1907/2006, REGULATION (EU) No. 453/2010 and EU Commission Directive 1999/45/EC, 67/548/EEC.

DISCLAIMER OF LIABILITY

The information in this MSDS/SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in anyway connected with the handling, storage, use or disposal

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of the product. This MSDS/SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS/SDS information may not be applicable.

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

End of document

EU



SDS Report

No.: CANEC1216097701

Date: 30 Nov 2012

Page 1 of 1

GUANG ZHOU NPP POWER CO., LTD.
NO.3 LONGHUI INDUSTRIAL ROAD, HUASHAN TOWN, HUADU DISTRICT, GUANGZHOU, CHINA

SGS Job No. : CP12-056341-GZ
Sample Name : Valve Regulated Lead Acid Battery
End Uses : Telecom system, UPS, Solar system, Standby power, etc
Composition/Ingredient of sample (as per client submission) : See *Section 3 Composition/information on ingredients* on the SDS report
Job Receiving Date : 26 Nov 2012
SDS Preparation Period : 26 Nov 2012 - 30 Nov 2012

Service Requested : Safety Data Sheet (SDS) for the sample with submitted composition.

Summary : As per request, the contents and formats of the SDS are prepared in accordance with European Commission Directives 67/548/EEC, 1999/45/EC, Regulation (EC) No 1907/2006, Regulation (EC) No 1272/2008 and Regulation (EU) No 453/2010, and is provided per attached.

Signed for and on behalf of
SGS-CSTC Ltd.

Allen Xie
Approved Signatory

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Member of the SGS Group (SGS SA)

Safety Data Sheet

1907/2006/EC, 1272/2008/EC

Printing date 30.11.2012

Revision: 30.11.2012

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

- **Product identifier**
- **Trade name:** Valve Regulated Lead Acid Battery
- **Article number:** Not available
- **Registration number:** Not available
- **Relevant identified uses of the substance or mixture and uses advised against**
- **Application of the substance / the preparation:** Telecom system, UPS, Solar system, Standby power, etc
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:** GUANG ZHOU NPP POWER CO., LTD.
- **Name:** JULIE CAI
- **Full address:**
NO.3 LONGHUI INDUSTRIAL ROAD, HUASHAN TOWN, HUADU DISTRICT, GUANGZHOU, CHINA
- **Phone number:** +86-20-87561800
- **FAX:** +86-20-38900436
- **Further information obtainable from:** GUANG ZHOU NPP POWER CO., LTD.
- **Emergency telephone number:** +86-13450463300
- **Email:** sales@nppower.com.cn
- **Reference Number:** CP12-056341-GZ; CANEC1216097701

2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS08 health hazard

Repr. 1A H360Df May damage the unborn child. Suspected of damaging fertility.
 STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.



GHS05 corrosion

Skin Corr. 1A H314 Causes severe skin burns and eye damage.



GHS09 environment

Aquatic Acute 1 H400 Very toxic to aquatic life.
 Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.
 Acute Tox. 4 H332 Harmful if inhaled.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



T; Toxic

R61: May cause harm to the unborn child.



C; Corrosive

R35: Causes severe burns.

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Trade name: Valve Regulated Lead Acid Battery

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**Xn; Harmful**

R62-20/22-40-48/20/22: Possible risk of impaired fertility. Harmful by inhalation and if swallowed. Limited evidence of a carcinogenic effect. Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.

**N; Dangerous for the environment**

R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R33: Danger of cumulative effects.

· **Information concerning particular hazards for human and environment:**

The product has to be labelled due to the calculation procedure of Directive 67/548/EEC, 1999/45/EC and Regulation (EC) No. 1272/2008.

· **Classification system:**

The classification is according to the latest edition of the Directive 67/548/EEC, 1999/45/EC and Regulation (EC) No. 1272/2008, and extended by company and literature data.

· **Label elements**

· **Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the CLP regulation.

· **Hazard pictograms**



GHS05

GHS07

GHS08

GHS09

· **Signal word** *Danger*

· **Hazard-determining components of labelling:**

lead dioxide

sulphuric acid

lead

poly (acrylonitrile-co-butadiene-co-styrene)

· **Hazard statements**

H302 Harmful if swallowed.

H332 Harmful if inhaled.

H314 Causes severe skin burns and eye damage.

H360Df May damage the unborn child. Suspected of damaging fertility.

H373 May cause damage to organs through prolonged or repeated exposure.

H410 Very toxic to aquatic life with long lasting effects.

Contains lead. Should not be used on surfaces liable to be chewed or sucked by children.

· **Precautionary statements**

P101 If medical advice is needed, have product container or label at hand.

P102 Keep out of reach of children.

P103 Read label before use.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER or doctor/physician.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

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Trade name: Valve Regulated Lead Acid Battery

· vPvB: Not applicable.

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3 Composition/information on ingredients

· **Chemical characterization: Mixtures**· **Description:**

Mixture of the substances listed below with nonhazardous additions.

For the wording of listed risk phrases refer to section 16.

· **Dangerous components:**

CAS: 1309-60-0 EINECS: 215-174-5 EU number: 082-001-00-6	lead dioxide T Repr. Cat. 1, 3 R61; Xn R62-20/22; N R50/53 R33 Repr. 1A, H360Df; STOT RE 2, H373; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Tox. 4, H302; Acute Tox. 4, H332	31,29%
CAS: 7439-92-1 EINECS: 231-100-4	lead T R61; Xn R62-40-48/20/22; N R50/53 R33 Repr. 1A, H360Df; STOT RE 2, H373; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Tox. 4, H302; Acute Tox. 4, H332	30,0%
CAS: 7664-93-9 EINECS: 231-639-5 EU number: 016-020-00-8	sulphuric acid C R35 Skin Corr. 1A, H314	24,6%
CAS: 9003-56-9	poly (acrylonitrile-co-butadiene-co-styrene) Xn R22; Xi R36/37/38 Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	10,2%
CAS: 7440-50-8 EINECS: 231-159-6	copper R53 Aquatic Chronic 1, H410	0,2%

· **Non-dangerous components:**

	AGM clapboard	2,6%
	Expoxide-resin glue	0,6%
	Red & black marking glue	0,4%
25038-36-2	Poly(ethylene-co-propylene-co-5-methylene-2-norbornene)	0,11%

· **Remark:**

Classification of AGM clapboard, Expoxide-resin glue, Red & black marking glue is not covered by company database and is declared by client as nonhazardous.

4 First aid measures

· **Description of first aid measures**· **After inhalation:**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

In case of unconsciousness place patient stably in side position for transportation.

· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.· **After swallowing:**

Call for a doctor immediately.

Drink plenty of water and provide fresh air. Call for a doctor immediately.

· **Information for doctor**· **Most important symptoms and effects, both acute and delayed:** No further relevant information available.

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- **Indication of any immediate medical attention and special treatment needed:**
No further relevant information available.

5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂ powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture:** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures:**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
Do not allow product to reach sewage system or any water source.
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Use neutralizing agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **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 disposal information.

7 Handling and storage

- **Handling**
- **Precautions for safe handling:**
Thorough dedusting.
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
- **Information about fire - and explosion protection:** Keep respiratory protective device available.
- **Storage:**
- **Conditions for safe storage, including any incompatibilities**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.
- **Specific end use(s):** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **Control parameters**

- **Ingredients with limit values that require monitoring at the workplace:**

1309-60-0 lead dioxide

PEL (USA)	0,05 mg/m ³ as Pb; See 29 CFR 1910,1025
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REL (USA)	0,05* mg/m ³ as Pb; *8-hr TWA, Blood Pb<0,06mg/100g whole blood
TLV (USA)	0,05 mg/m ³ as Pb; BEI
MAK (Germany)	vgl.Abschn.XIV
7439-92-1 lead	
PEL (USA)	0,05* mg/m ³ *see 29 CFR 1910,1025
REL (USA)	0,05 mg/m ³ excluding lead arsenate; See Pocket Guide App. C
TLV (USA)	0,05* mg/m ³ *and inorganic compounds, as Pb; BEI
MAK (Germany)	vgl.Abschn.XII
7664-93-9 sulphuric acid	
IOELV (EU)	0,05 mg/m ³
PEL (USA)	1 mg/m ³
REL (USA)	1 mg/m ³
TLV (USA)	0,2* mg/m ³ *as thoracic fraction
AGW (Germany)	0,1 E mg/m ³ I(I);DFG, EU, Y
9003-56-9 poly (acrylonitrile-co-butadiene-co-styrene)	
TLV (USA)	10* mg/m ³ *nuisance particulates(total)
7440-50-8 copper	
PEL (USA)	1* 0,1** mg/m ³ as Cu *dusts and mists **fume
REL (USA)	1* 0,1** mg/m ³ as Cu *dusts and mists **fume
TLV (USA)	1* 0,2** mg/m ³ *dusts and mists; **fume; as Cu
MAK (Germany)	0,1E mg/m ³

· DNELs: Not available

· PNECs: Not available

· **Additional information:** The lists valid during the making were used as basis.· **Exposure controls**· **Based on the composition shown in Section 3, the following measures are suggested for occupational safety measure**· **Personal protective equipment**· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

· **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

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Trade name: Valve Regulated Lead Acid Battery

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· Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· Material of gloves:

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· Penetration time of glove material:

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye protection:



Tightly sealed goggles

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General information

· Appearance

Form: Cuboid battery

Colour: Black

· Odour: Odourless

· Odour threshold: Not available

· pH-value: Not available

· Change in condition

Melting point/Melting range: Not available

Boiling point/Boiling range: 110 °C

· Freezing point: Not available

· Flash point: 259 °C

· Flammability (solid, gaseous): Not available

· Auto-ignition temperature: 580 °C

· Decomposition temperature: Not available

· Self-igniting: Product is not selfigniting.

· Explosive properties: Risk of explosion by shock, friction, fire or other sources of ignition.

· Explosion limits

Lower: Not available

Upper: Not available

· Oxidizing properties: Not available

· Vapour pressure: Not available

· Density: Not available

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· Relative density:	Not available
· Vapour density:	Not available
· Evaporation rate:	Not available
· Solubility in / Miscibility with water:	Not available
· Partition coefficient (n-octanol/water):	Not available.
· Viscosity	
· Dynamic:	Not available.
· Kinematic:	Not available
· Other information:	Melting point / range: Lead 327.4 °C Solubility in water: 100% (Electrolyte)

10 Stability and reactivity

- **Reactivity:** Data not available
- **Chemical stability:** Data not available
- **Possibility of hazardous reactions:** No dangerous reactions known.
- **Conditions to avoid:** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity**
- **LD/LC50 values relevant for classification:** Not applicable
- **Primary irritant effect**
- **on the skin:** Strong caustic effect on skin and mucous membranes.
- **on the eye:** Strong caustic effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Harmful
Corrosive
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
- **Toxicokinetics, metabolism and distribution:** No further relevant information available
- **Acute effects (acute toxicity, irritation and corrosivity):** No further relevant information available
- **Repeated dose toxicity:** No further relevant information available.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):**
No further relevant information available.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability:** No further relevant information available.
- **Behaviour in environmental systems:** No further relevant information available
- **Bioaccumulative potential:** No further relevant information available.
- **Mobility in soil:** No further relevant information available.
- **Remark:** Very toxic for fish

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Printing date 30.11.2012

Revision: 30.11.2012

Trade name: Valve Regulated Lead Acid Battery


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- **Additional ecological information**
- **General notes:**
 - Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water
 - Do not allow product to reach ground water, water course or sewage system, even in small quantities.
 - Must not reach sewage water or drainage ditch undiluted or unneutralized.
 - Danger to drinking water if even extremely small quantities leak into the ground.
 - Also poisonous for fish and plankton in water bodies.
 - Very toxic for aquatic organisms
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects:** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
 - Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

<ul style="list-style-type: none"> · UN-Number · ADR, IMDG, IATA 	UN2800
<ul style="list-style-type: none"> · UN proper shipping name · ADR · IMDG · IATA 	2800 BATTERIES, WET, NON-SPILLABLE, ENVIRONMENTALLY HAZARDOUS BATTERIES, WET, NON-SPILLABLE, MARINE POLLUTANT BATTERIES, WET, NON-SPILLABLE
<ul style="list-style-type: none"> · Transport hazard class(es) · ADR, IMDG, IATA 	<div style="text-align: center;">  </div>
<ul style="list-style-type: none"> · Class · Label 	8 Corrosive substances. 8
<ul style="list-style-type: none"> · Packing group · ADR, IMDG, IATA 	Not applicable
<ul style="list-style-type: none"> · Environmental hazards · Marine pollutant: 	Product contains environmentally hazardous substances: lead dioxide, lead Yes
<ul style="list-style-type: none"> · Special precautions for user: · Danger code (Kemler): 	Warning: Corrosive substances. -
<ul style="list-style-type: none"> · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: 	Not applicable.

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Trade name: Valve Regulated Lead Acid Battery

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· UN "Model Regulation": UN2800, BATTERIES, WET, NON-SPILLABLE, ENVIRONMENTALLY HAZARDOUS, 8

15 Regulatory information

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

· MAK(German Maximum Workplace Concentration)

1309-60-0	lead dioxide	2
7439-92-1	lead	2
7664-93-9	sulphuric acid	4

· National regulations

· Waterhazard class: Water hazard class 3 (Self-assessment): extremely hazardous for water.

· Other regulations, limitations and prohibitive regulations

· SVHC Candidate List of REACH Regulation Annex XIV Authorisation (18/6/2012)

None of the ingredients is listed

· REACH Regulation Annex XVII Restriction (19/9/2012) None of the ingredients is listed

· REACH Regulation Annex XIV Authorisation List (14/2/2012) None of the ingredients is listed

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

· Relevant phrases

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

H360Df May damage the unborn child. Suspected of damaging fertility.

H373 May cause damage to organs through prolonged or repeated exposure.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

R20/22 Harmful by inhalation and if swallowed.

R22 Harmful if swallowed.

R33 Danger of cumulative effects.

R35 Causes severe burns.

R36/37/38 Irritating to eyes, respiratory system and skin.

R40 Limited evidence of a carcinogenic effect.

R48/20/22 Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R53 May cause long-term adverse effects in the aquatic environment.

R61 May cause harm to the unborn child.

R62 Possible risk of impaired fertility.

The contents and format of this MSDS/SDS are in accordance with REGULATION (EC) No. 1272/2008, (EC) No. 1907/2006, REGULATION (EU) No. 453/2010 and EU Commission Directive 1999/45/EC, 67/548/EEC.

DISCLAIMER OF LIABILITY

The information in this MSDS/SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in anyway connected with the handling, storage, use or disposal

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of the product. This MSDS/SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS/SDS information may not be applicable.

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

End of document

EU



SDS Report

No.: CANEC1216097701

Date: 30 Nov 2012

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GUANG ZHOU NPP POWER CO., LTD.
NO.3 LONGHUI INDUSTRIAL ROAD, HUASHAN TOWN, HUADU DISTRICT, GUANGZHOU, CHINA

SGS Job No. : CP12-056341-GZ
Sample Name : Valve Regulated Lead Acid Battery
End Uses : Telecom system, UPS, Solar system, Standby power, etc
Composition/Ingredient of sample (as per client submission) : See *Section 3 Composition/information on ingredients* on the SDS report
Job Receiving Date : 26 Nov 2012
SDS Preparation Period : 26 Nov 2012 - 30 Nov 2012

Service Requested : Safety Data Sheet (SDS) for the sample with submitted composition.

Summary : As per request, the contents and formats of the SDS are prepared in accordance with European Commission Directives 67/548/EEC, 1999/45/EC, Regulation (EC) No 1907/2006, Regulation (EC) No 1272/2008 and Regulation (EU) No 453/2010, and is provided per attached.

Signed for and on behalf of
SGS-CSTC Ltd.

Allen Xie
Approved Signatory

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中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

Member of the SGS Group (SGS SA)

Safety Data Sheet

1907/2006/EC, 1272/2008/EC

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

- **Product identifier**
- **Trade name:** Valve Regulated Lead Acid Battery
- **Article number:** Not available
- **Registration number:** Not available
- **Relevant identified uses of the substance or mixture and uses advised against**
- **Application of the substance / the preparation:** Telecom system, UPS, Solar system, Standby power, etc
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:** GUANG ZHOU NPP POWER CO., LTD.
- **Name:** JULIE CAI
- **Full address:**
NO.3 LONGHUI INDUSTRIAL ROAD, HUASHAN TOWN, HUADU DISTRICT, GUANGZHOU, CHINA
- **Phone number:** +86-20-87561800
- **FAX:** +86-20-38900436
- **Further information obtainable from:** GUANG ZHOU NPP POWER CO., LTD.
- **Emergency telephone number:** +86-13450463300
- **Email:** sales@nppower.com.cn
- **Reference Number:** CP12-056341-GZ; CANEC1216097701

2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS08 health hazard

Repr. 1A H360Df May damage the unborn child. Suspected of damaging fertility.
 STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.



GHS05 corrosion

Skin Corr. 1A H314 Causes severe skin burns and eye damage.



GHS09 environment

Aquatic Acute 1 H400 Very toxic to aquatic life.
 Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.
 Acute Tox. 4 H332 Harmful if inhaled.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



T; Toxic

R61: May cause harm to the unborn child.



C; Corrosive

R35: Causes severe burns.

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**Xn; Harmful**

R62-20/22-40-48/20/22: Possible risk of impaired fertility. Harmful by inhalation and if swallowed. Limited evidence of a carcinogenic effect. Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.

**N; Dangerous for the environment**

R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R33: Danger of cumulative effects.

· **Information concerning particular hazards for human and environment:**

The product has to be labelled due to the calculation procedure of Directive 67/548/EEC, 1999/45/EC and Regulation (EC) No. 1272/2008.

· **Classification system:**

The classification is according to the latest edition of the Directive 67/548/EEC, 1999/45/EC and Regulation (EC) No. 1272/2008, and extended by company and literature data.

· **Label elements**

· **Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the CLP regulation.

· **Hazard pictograms**



GHS05

GHS07

GHS08

GHS09

· **Signal word** Danger

· **Hazard-determining components of labelling:**

lead dioxide

sulphuric acid

lead

poly (acrylonitrile-co-butadiene-co-styrene)

· **Hazard statements**

H302 Harmful if swallowed.

H332 Harmful if inhaled.

H314 Causes severe skin burns and eye damage.

H360Df May damage the unborn child. Suspected of damaging fertility.

H373 May cause damage to organs through prolonged or repeated exposure.

H410 Very toxic to aquatic life with long lasting effects.

Contains lead. Should not be used on surfaces liable to be chewed or sucked by children.

· **Precautionary statements**

P101 If medical advice is needed, have product container or label at hand.

P102 Keep out of reach of children.

P103 Read label before use.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER or doctor/physician.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

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· vPvB: Not applicable.

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3 Composition/information on ingredients

· **Chemical characterization: Mixtures**· **Description:**

Mixture of the substances listed below with nonhazardous additions.

For the wording of listed risk phrases refer to section 16.

· **Dangerous components:**

CAS: 1309-60-0 EINECS: 215-174-5 EU number: 082-001-00-6	lead dioxide T Repr. Cat. 1, 3 R61; Xn R62-20/22; N R50/53 R33 Repr. 1A, H360Df; STOT RE 2, H373; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Tox. 4, H302; Acute Tox. 4, H332	31,29%
CAS: 7439-92-1 EINECS: 231-100-4	lead T R61; Xn R62-40-48/20/22; N R50/53 R33 Repr. 1A, H360Df; STOT RE 2, H373; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Tox. 4, H302; Acute Tox. 4, H332	30,0%
CAS: 7664-93-9 EINECS: 231-639-5 EU number: 016-020-00-8	sulphuric acid C R35 Skin Corr. 1A, H314	24,6%
CAS: 9003-56-9	poly (acrylonitrile-co-butadiene-co-styrene) Xn R22; Xi R36/37/38 Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	10,2%
CAS: 7440-50-8 EINECS: 231-159-6	copper R53 Aquatic Chronic 1, H410	0,2%

· **Non-dangerous components:**

	AGM clapboard	2,6%
	Expoxide-resin glue	0,6%
	Red & black marking glue	0,4%
25038-36-2	Poly(ethylene-co-propylene-co-5-methylene-2-norbornene)	0,11%

· **Remark:**

Classification of AGM clapboard, Expoxide-resin glue, Red & black marking glue is not covered by company database and is declared by client as nonhazardous.

4 First aid measures

· **Description of first aid measures**· **After inhalation:**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

In case of unconsciousness place patient stably in side position for transportation.

· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.· **After swallowing:**

Call for a doctor immediately.

Drink plenty of water and provide fresh air. Call for a doctor immediately.

· **Information for doctor**· **Most important symptoms and effects, both acute and delayed:** No further relevant information available.

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- **Indication of any immediate medical attention and special treatment needed:**
No further relevant information available.

5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂ powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture:** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures:**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
Do not allow product to reach sewage system or any water source.
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Use neutralizing agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **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 disposal information.

7 Handling and storage

- **Handling**
- **Precautions for safe handling:**
Thorough dedusting.
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
- **Information about fire - and explosion protection:** Keep respiratory protective device available.
- **Storage:**
- **Conditions for safe storage, including any incompatibilities**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.
- **Specific end use(s):** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **Control parameters**

- **Ingredients with limit values that require monitoring at the workplace:**

1309-60-0 lead dioxide

PEL (USA)	0,05 mg/m ³ as Pb; See 29 CFR 1910,1025
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REL (USA)	0,05* mg/m ³ as Pb; *8-hr TWA, Blood Pb<0,06mg/100g whole blood
TLV (USA)	0,05 mg/m ³ as Pb; BEI
MAK (Germany)	vgl.Abschn.XIV
7439-92-1 lead	
PEL (USA)	0,05* mg/m ³ *see 29 CFR 1910,1025
REL (USA)	0,05 mg/m ³ excluding lead arsenate; See Pocket Guide App. C
TLV (USA)	0,05* mg/m ³ *and inorganic compounds, as Pb; BEI
MAK (Germany)	vgl.Abschn.XII
7664-93-9 sulphuric acid	
IOELV (EU)	0,05 mg/m ³
PEL (USA)	1 mg/m ³
REL (USA)	1 mg/m ³
TLV (USA)	0,2* mg/m ³ *as thoracic fraction
AGW (Germany)	0,1 E mg/m ³ I(I);DFG, EU, Y
9003-56-9 poly (acrylonitrile-co-butadiene-co-styrene)	
TLV (USA)	10* mg/m ³ *nuisance particulates(total)
7440-50-8 copper	
PEL (USA)	1* 0,1** mg/m ³ as Cu *dusts and mists **fume
REL (USA)	1* 0,1** mg/m ³ as Cu *dusts and mists **fume
TLV (USA)	1* 0,2** mg/m ³ *dusts and mists; **fume; as Cu
MAK (Germany)	0,1E mg/m ³

· DNELs: Not available

· PNECs: Not available

· **Additional information:** The lists valid during the making were used as basis.· **Exposure controls**· **Based on the composition shown in Section 3, the following measures are suggested for occupational safety measure**· **Personal protective equipment**· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

· **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

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· Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· Material of gloves:

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· Penetration time of glove material:

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye protection:



Tightly sealed goggles

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General information

· Appearance

Form: Cuboid battery

Colour: Black

· Odour: Odourless

· Odour threshold: Not available

· pH-value: Not available

· Change in condition

Melting point/Melting range: Not available

Boiling point/Boiling range: 110 °C

· Freezing point: Not available

· Flash point: 259 °C

· Flammability (solid, gaseous): Not available

· Auto-ignition temperature: 580 °C

· Decomposition temperature: Not available

· Self-igniting: Product is not selfigniting.

· Explosive properties: Risk of explosion by shock, friction, fire or other sources of ignition.

· Explosion limits

Lower: Not available

Upper: Not available

· Oxidizing properties: Not available

· Vapour pressure: Not available

· Density: Not available

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· Relative density:	Not available
· Vapour density:	Not available
· Evaporation rate:	Not available
· Solubility in / Miscibility with water:	Not available
· Partition coefficient (n-octanol/water):	Not available.
· Viscosity	
· Dynamic:	Not available.
· Kinematic:	Not available
· Other information:	Melting point / range: Lead 327.4 °C Solubility in water: 100% (Electrolyte)

10 Stability and reactivity

- **Reactivity:** Data not available
- **Chemical stability:** Data not available
- **Possibility of hazardous reactions:** No dangerous reactions known.
- **Conditions to avoid:** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity**
- **LD/LC50 values relevant for classification:** Not applicable
- **Primary irritant effect**
- **on the skin:** Strong caustic effect on skin and mucous membranes.
- **on the eye:** Strong caustic effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Harmful
Corrosive
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
- **Toxicokinetics, metabolism and distribution:** No further relevant information available
- **Acute effects (acute toxicity, irritation and corrosivity):** No further relevant information available
- **Repeated dose toxicity:** No further relevant information available.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):**
No further relevant information available.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability:** No further relevant information available.
- **Behaviour in environmental systems:** No further relevant information available
- **Bioaccumulative potential:** No further relevant information available.
- **Mobility in soil:** No further relevant information available.
- **Remark:** Very toxic for fish

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- **Additional ecological information**
- **General notes:**
 - Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water
 - Do not allow product to reach ground water, water course or sewage system, even in small quantities.
 - Must not reach sewage water or drainage ditch undiluted or unneutralized.
 - Danger to drinking water if even extremely small quantities leak into the ground.
 - Also poisonous for fish and plankton in water bodies.
 - Very toxic for aquatic organisms
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects:** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
 - Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

<ul style="list-style-type: none"> · UN-Number · ADR, IMDG, IATA 	UN2800
<ul style="list-style-type: none"> · UN proper shipping name · ADR · IMDG · IATA 	2800 BATTERIES, WET, NON-SPILLABLE, ENVIRONMENTALLY HAZARDOUS BATTERIES, WET, NON-SPILLABLE, MARINE POLLUTANT BATTERIES, WET, NON-SPILLABLE
<ul style="list-style-type: none"> · Transport hazard class(es) · ADR, IMDG, IATA 	<div style="text-align: center;">  </div>
<ul style="list-style-type: none"> · Class · Label 	8 Corrosive substances. 8
<ul style="list-style-type: none"> · Packing group · ADR, IMDG, IATA 	Not applicable
<ul style="list-style-type: none"> · Environmental hazards · Marine pollutant: 	Product contains environmentally hazardous substances: lead dioxide, lead Yes
<ul style="list-style-type: none"> · Special precautions for user: · Danger code (Kemler): 	Warning: Corrosive substances. -
<ul style="list-style-type: none"> · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: 	Not applicable.

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· UN "Model Regulation": UN2800, BATTERIES, WET, NON-SPILLABLE, ENVIRONMENTALLY HAZARDOUS, 8

15 Regulatory information

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

· MAK(German Maximum Workplace Concentration)

1309-60-0	lead dioxide	2
7439-92-1	lead	2
7664-93-9	sulphuric acid	4

· National regulations

· Waterhazard class: Water hazard class 3 (Self-assessment): extremely hazardous for water.

· Other regulations, limitations and prohibitive regulations

· SVHC Candidate List of REACH Regulation Annex XIV Authorisation (18/6/2012)

None of the ingredients is listed

· REACH Regulation Annex XVII Restriction (19/9/2012) None of the ingredients is listed

· REACH Regulation Annex XIV Authorisation List (14/2/2012) None of the ingredients is listed

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

· Relevant phrases

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- R20/22 Harmful by inhalation and if swallowed.
 R22 Harmful if swallowed.
 R33 Danger of cumulative effects.
 R35 Causes severe burns.
 R36/37/38 Irritating to eyes, respiratory system and skin.
 R40 Limited evidence of a carcinogenic effect.
 R48/20/22 Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
- R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
 R53 May cause long-term adverse effects in the aquatic environment.
 R61 May cause harm to the unborn child.
 R62 Possible risk of impaired fertility.

 The contents and format of this MSDS/SDS are in accordance with REGULATION (EC) No. 1272/2008, (EC) No. 1907/2006, REGULATION (EU) No. 453/2010 and EU Commission Directive 1999/45/EC, 67/548/EEC.

DISCLAIMER OF LIABILITY

The information in this MSDS/SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in anyway connected with the handling, storage, use or disposal

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End of document

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