SAFETY DATA SHEET

1. Identification

Product identifier **Valve Regulated Lead Acid Battery**

Other means of identification

SDS number SDS-00068

Product code EX10W-P/2M-RT, SR12W-P5/2M-RT, 860.0004-RT, 860.0018-RT, 06JMLC27/2LA, CPRO-2NL/ZP-RT, CPRO-2-L-RT, 06PML36/2M-RT, ESC28W2LA, 12ESL216/2LJ, EX10W-P/2LA-RT, SR12W-P5/2LA-RT, 06JMLC44/2LA, CPRO-2NL/LA,

Recommended use Rechargeable Storage Batteries.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company name ABB Installation Products Inc.

Address 860 Ridge Lake Blvd.
Memphis, TN 38120
US

Telephone 901-252-5000 ext.8324

E-mail Not available.

Emergency phone number CHEMTREC - 24 HOURS: +1 800-424-9300

2. Hazard identification

Physical hazards	Explosives	Division 1.3
Health hazards	Acute toxicity, oral	Category 4
	Acute toxicity, inhalation	Category 4
	Skin corrosion/irritation	Category 1A
	Serious eye damage/eye irritation	Category 1
	Carcinogenicity	Category 1B
	Reproductive toxicity	Category 1A
	Reproductive toxicity	Effects on or via lactation
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
Environmental hazards	Specific target organ toxicity, repeated exposure	Category 1 (blood, central nervous system, kidneys)
	Hazardous to the aquatic environment, acute hazard	Category 1
	Hazardous to the aquatic environment, long-term hazard	Category 1

Label elements

Signal word Danger

Hazard statement Explosive; fire, blast or projection hazard. Harmful if swallowed. Harmful if inhaled. Causes severe skin burns and eye damage. May cause cancer. May damage fertility or the unborn child. May cause harm to breast-fed children. May cause respiratory irritation. Causes damage to organs (blood, central nervous system, kidneys) through prolonged or repeated exposure. Very toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep only in original packaging. Ground and bond container and receiving equipment. Do not subject to grinding/shock/friction. Do not breathe dust. Avoid contact during pregnancy and while nursing. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Avoid release to the environment.

Response IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF exposed or concerned: Get medical advice/attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. In case of fire: Explosion risk. Evacuate area. DO NOT fight fire when fire reaches explosives. Collect spillage.

Storage Store in accordance with local/regional/national/international regulation. Store in a well-ventilated place. Keep container tightly closed. Store locked up.

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

Other hazards Under normal conditions of processing and use, exposure to the chemical constituents in this product is unlikely. The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful.

Supplemental information In use, may form flammable/explosive vapor-air mixture.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Lead		7439-92-1	45 - 70
Lead Dioxide		1309-60-0	10 - 30
Sulfuric acid		7664-93-9	10 - 30

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation Exposure to contents of an open or damaged battery: Move injured person into fresh air and keep person calm under observation. Get medical attention if any discomfort continues.

Skin contact Exposure to contents of an open or damaged battery: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Eye contact Exposure to contents of an open or damaged battery: Flush thoroughly with water for at least 15 minutes. Hold eyelids open during flushing. If irritation persists, repeat flushing.

Ingestion Exposure to contents of an open or damaged battery: Rinse mouth thoroughly with water. DO NOT induce vomiting because of danger of aspirating liquid into lungs. Get medical attention immediately.

Most important symptoms/effects, acute and delayed Under normal conditions of processing and use, exposure to the chemical constituents in this product is unlikely. The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful.

General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media Carbon dioxide (CO_2). Dry powder.

Unsuitable extinguishing media Water, if the battery voltage is above 120 V

Specific hazards arising from the chemical Hydrogen and Oxygen gases are produced in cells during normal battery operation and expel into air through vent caps.

Special protective equipment and precautions for firefighters Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.

Fire fighting equipment/instructions Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards	Like any sealed container, battery cells may rupture when exposed to excessive heat; this could result in the release of corrosive and flammable materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Wear appropriate personal protective equipment (See Section 8).
Methods and materials for containment and cleaning up	Leak from a damaged or opened battery: Neutralize the spilled material before disposal. Sweep up or vacuum up spillage and collect in suitable container for disposal. Dispose of waste and residues in accordance with local authority requirements.
Environmental precautions	Prevent entry into waterways, sewer, basements or confined areas. Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution.

7. Handling and storage

Precautions for safe handling	In the event of damage resulting in a leak of exposed materials, avoid contact with contents of an open or damaged cell or battery. Avoid spark promoters. Wash hands thoroughly after handling. Do not allow conductive material to touch the battery terminals. A dangerous short-circuit may occur and cause battery failure and fire.
Conditions for safe storage, including any incompatibilities	Protect containers from damage. Place cardboard between layers of stacked batteries to avoid damage and short circuits. Store in a cool, dry, well-ventilated place away from moisture and the outdoor elements of weather. Don't store or charge batteries in temperatures under -4°F (-20°C).

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Lead (CAS 7439-92-1)	TWA	0.05 mg/m3	
Lead Dioxide (CAS 1309-60-0)	TWA	0.05 mg/m3	
Sulfuric acid (CAS 7664-93-9)	TWA	0.2 mg/m3	Thoracic fraction.

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Lead (CAS 7439-92-1)	TWA	0.05 mg/m3
Lead Dioxide (CAS 1309-60-0)	TWA	0.05 mg/m3
Sulfuric acid (CAS 7664-93-9)	STEL	3 mg/m3
	TWA	1 mg/m3

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value	Form
Lead (CAS 7439-92-1)	TWA	0.05 mg/m3	
Lead Dioxide (CAS 1309-60-0)	TWA	0.05 mg/m3	
Sulfuric acid (CAS 7664-93-9)	TWA	0.2 mg/m3	Mist.

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Components	Type	Value	Form
Lead (CAS 7439-92-1)	TWA	0.05 mg/m3	
Lead Dioxide (CAS 1309-60-0)	TWA	0.05 mg/m3	
Sulfuric acid (CAS 7664-93-9)	TWA	0.2 mg/m3	Thoracic fraction.

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value	Form
Lead (CAS 7439-92-1)	TWA	0.05 mg/m3	

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value	Form
Lead Dioxide (CAS 1309-60-0)	TWA	0.05 mg/m3	
Sulfuric acid (CAS 7664-93-9)	TWA	0.2 mg/m3	Thoracic fraction.

Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety)

Components	Type	Value
Lead (CAS 7439-92-1)	TWA	0.05 mg/m3
Lead Dioxide (CAS 1309-60-0)	TWA	0.05 mg/m3
Sulfuric acid (CAS 7664-93-9)	STEL	3 mg/m3
	TWA	1 mg/m3

Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21)

Components	Type	Value	Form
Lead Dioxide (CAS 1309-60-0)	15 minute	0.15 mg/m3	
	8 hour	0.05 mg/m3	
Sulfuric acid (CAS 7664-93-9)	15 minute	0.6 mg/m3	Thoracic fraction.
	8 hour	0.2 mg/m3	Thoracic fraction.

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Lead (CAS 7439-92-1)	200 µg/l	Lead	Blood	*
Lead Dioxide (CAS 1309-60-0)	200 µg/l	Lead	Blood	*

* - For sampling details, please see the source document.

Exposure guidelines

Canada - Ontario OELs: Skin designation

Lead Dioxide (CAS 1309-60-0) Can be absorbed through the skin.

Appropriate engineering controls Provide easy access to water supply and eye wash facilities.

Individual protection measures, such as personal protective equipment

Eye/face protection None under normal conditions. Leak from a damaged or opened battery:

Skin protection

Hand protection None under normal conditions. Leak from a damaged or opened battery: Wear appropriate chemical resistant gloves. Rubber, neoprene or PVC.

Other None under normal conditions. Leak from a damaged or opened battery: Use of an impervious apron is recommended.

Respiratory protection None under normal conditions. If permissible levels are exceeded use NIOSH mechanical filter / organic vapor cartridge or an air-supplied respirator.

Thermal hazards When material is heated, wear gloves to protect against thermal burns.

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

9. Physical and chemical properties

Appearance Solid.

Physical state Solid.

Form Lead and lead compound: Solid. Electrolyte: Liquid.

Color Lead and lead compound: Grey. Electrolyte: Colorless.

Odor Odorless.

Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	-31 - -76 °F (-35 - -60 °C) Electrolyte 621.32 °F (327.4 °C) Lead and lead compounds
Initial boiling point and boiling range	226.4 - 237.2 °F (108 - 114 °C) (Approximate) Electrolyte 3164 °F (1740 °C) (lit.) Lead and lead compounds
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	< 0.3 mm Hg Electrolyte (68 °F (20 °C))
Vapor density	3.4 (Air=1) Electrolyte 7.1 (Air=1) Lead and lead compounds
Relative density	1.2 - 1.3 g/cm³ Electrolyte (68 °F (20 °C)) 11.35 g/cm³ Lead and lead compounds (68 °F (20 °C))
Solubility(ies)	
Solubility (water)	Electrolyte - Fully soluble 0.15 mg/l Lead and lead compounds - Very low
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Explosive properties	Explosive. Fire hazard. Blast or projection hazard.
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	Broken batteries may result in small amounts of spilled electrolyte. Electrolyte is a corrosive, nonflammable liquid. Electrolyte can destroy organic materials such as cardboard, wood, textiles. Electrolyte may produce hydrogen as a reaction with some metals.
Chemical stability	Stable at normal conditions.
Possibility of hazardous reactions	Will not occur.
Conditions to avoid	Overcharging. Overheating.
Incompatible materials	Strong alkaline. Conductive materials. Organic solvents. Temperatures exceeding the flash point. Open flame.
Hazardous decomposition products	Hydrogen. Carbon oxides. Sulfur oxides (SOx.).

11. Toxicological information

Information on likely routes of exposure

Inhalation	Under normal conditions of intended use, this material is not expected to be an inhalation hazard. Exposure to contents of an open or damaged battery: Harmful if inhaled. Mist or vapors may cause respiratory irritation.
Skin contact	Under normal conditions of intended use, this material does not pose a skin hazard. Exposure to contents of an open or damaged battery: Causes severe skin burns.
Eye contact	Under normal conditions of intended use, this material does not pose a eye hazard. Exposure to contents of an open or damaged battery: Causes serious eye damage.
Ingestion	Under normal conditions of intended use, this material does not pose a risk to health. Exposure to contents of an open or damaged battery: Harmful if swallowed. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Symptoms related to the physical, chemical and toxicological characteristics Exposure to contents of an open or damaged battery: Dust may irritate the eyes and the respiratory system.

Information on toxicological effects

Acute toxicity Exposure to contents of an open or damaged battery: Harmful if inhaled or swallowed.

Components	Species	Test Results
Sulfuric acid (CAS 7664-93-9)		
Acute		
Inhalation		
LC50	Rat	510 mg/m3
Oral		
LD50	Rat	2140 mg/kg

Skin corrosion/irritation Exposure to contents of an open or damaged battery: Causes severe skin burns.

Serious eye damage/eye irritation Exposure to contents of an open or damaged battery: Causes serious eye damage.

Respiratory or skin sensitization

Respiratory sensitization No data available.

Skin sensitization No data available.

Germ cell mutagenicity No data available.

Carcinogenicity The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mists containing sulfuric acid" as a known human carcinogen, (IARC category 1). This classification applies only to mists containing sulfuric acid and not to sulfuric acid or sulfuric acid solutions.

ACGIH Carcinogens

Lead (CAS 7439-92-1)	A3 Confirmed animal carcinogen with unknown relevance to humans.
Lead Dioxide (CAS 1309-60-0)	A3 Confirmed animal carcinogen with unknown relevance to humans.
Sulfuric acid (CAS 7664-93-9)	A2 Suspected human carcinogen.

Canada - Alberta OELs: Carcinogen category

Sulfuric acid (CAS 7664-93-9)	Suspected human carcinogen.

Canada - Manitoba OELs: carcinogenicity

Lead (CAS 7439-92-1)	Confirmed animal carcinogen with unknown relevance to humans.
Lead Dioxide (CAS 1309-60-0)	Confirmed animal carcinogen with unknown relevance to humans.
Sulfuric acid (CAS 7664-93-9)	Suspected human carcinogen.

Canada - Quebec OELs: Carcinogen category

Lead (CAS 7439-92-1)	Detected carcinogenic effect in animals.
Lead Dioxide (CAS 1309-60-0)	Detected carcinogenic effect in animals.

IARC Monographs. Overall Evaluation of Carcinogenicity

Lead (CAS 7439-92-1)	2B Possibly carcinogenic to humans.
Lead Dioxide (CAS 1309-60-0)	2A Probably carcinogenic to humans.
Sulfuric acid (CAS 7664-93-9)	1 Carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens

Lead (CAS 7439-92-1)	Reasonably Anticipated to be a Human Carcinogen.
Lead Dioxide (CAS 1309-60-0)	Reasonably Anticipated to be a Human Carcinogen.
Sulfuric acid (CAS 7664-93-9)	Known To Be Human Carcinogen.

Reproductive toxicity None under normal conditions. Exposure to contents of an open or damaged battery: May damage fertility or the unborn child. May cause harm to breast-fed children.

Specific target organ toxicity - single exposure None under normal conditions. Exposure to contents of an open or damaged battery: May cause respiratory irritation.

Specific target organ toxicity - repeated exposure None under normal conditions. Exposure to contents of an open or damaged battery: Causes damage to organs (blood, central nervous system, kidneys) through prolonged or repeated exposure.

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

Chronic effects Exposure to contents of an open or damaged battery: Heavy lead exposure may result in central nervous system damage, encephalopathy and damage to the blood-forming (hematopoietic) tissues. Chronic inhalation of sulfuric acid mist may increase the risk of lung cancer.

12. Ecological information

Ecotoxicity Exposure to contents of an open or damaged battery: Very toxic to aquatic life with long lasting effects.

Components		Species	Test Results
Lead (CAS 7439-92-1)			
Aquatic			
Acute			
Crustacea	EC50	Ceriodaphnia dubia	0.248 mg/l, 48 hours pH8
Fish	LC50	Pimephales promelas	0.283 mg/l, 96 hours pH8
Lead Dioxide (CAS 1309-60-0)			
Aquatic			
Acute			
Algae	IC50	Algae	> 10 mg/l, 72 hours
Crustacea	EC50	Daphnia	> 100 mg/l, 48 hours
Fish	LC50	Fish	> 100 mg/l, 96 hours

Persistence and degradability The degradation half-life of the product is not known. Lead and its compounds are highly persistent in water.

Bioaccumulative potential Bioaccumulation of lead occurs in aquatic and terrestrial animals and plants, but very little bioaccumulation occurs through the food chain.

Mobility in soil If the product enters soil, one or more constituents will or may be mobile and may contaminate groundwater.

Mobility in general The product is insoluble in water and will spread on water surfaces.

Other adverse effects None known.

13. Disposal considerations

Disposal instructions Recycle the batteries, as the primary disposal method. Neutralize electrolyte/sulfuric acid. Avoid discharge into water courses or onto the ground. Dispose of in accordance with local regulations.

Local disposal regulations Empty containers should be taken to an approved waste handling site for recycling or disposal.

Hazardous waste code RCRA: Spent lead-acid batteries are not regulated as hazardous waste when recycled. Depending upon circumstances, the following waste codes may apply:
Spilled electrolyte/Sulfuric acid. D002: Corrosive waste

Waste from residues / unused products Avoid discharge into water courses or onto the ground.

Contaminated packaging Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

TDG

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

General information TDG: Not regulated per Special provision 39

IATA/ICAO: Not regulated per Special Provision A67.
IMDG: Not regulated per Special Provision #238.

Label: NONSPILLABLE

15. Regulatory information

Canadian regulations This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.

Controlled Drugs and Substances Act

Not regulated.

Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

Ontario. Toxic Substances. Toxic Reduction Act, 2009. Regulation 455/09 (July 1, 2011)

Lead Dioxide (CAS 1309-60-0)
Sulfuric acid (CAS 7664-93-9)

Precursor Control Regulations

Sulfuric acid (CAS 7664-93-9)	Class B

International regulations

Stockholm Convention

Not applicable.

Rotterdam Convention

Not applicable.

Kyoto protocol

Not applicable.

Montreal Protocol

Not applicable.

Basel Convention

Lead (CAS 7439-92-1)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

Issue date	11-January-2019.
Revision date	-
Version #	01
List of abbreviations	LC50: Lethal Concentration 50%. LD50: Lethal Dose 50%. EC50: Effective Concentration, 50%. NOEC: No observed effect concentration. IC50: Inhibitory concentration, 50%.
References	IARC Monographs. Overall Evaluation of Carcinogenicity Registry of Toxic Effects of Chemical Substances (RTECS)

Disclaimer

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