



Issue Date 13-Feb-2014

Revision Date 22-Jan-2015

Version 1

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

Product identifier

Product Name Dry Charge Battery

Other means of identification

Product Code 853021
Synonyms Not available.

Recommended use of the chemical and restrictions on use

Recommended Use Power sport batteries.
Uses advised against Any other not listed above.

Details of the supplier of the safety data sheet

Supplier Address

Yuasa Battery, Inc.
2901 Montrose Avenue
Laureldale, PA 19605
United States
www.yuasabatteries.com

Emergency telephone number

Company Phone Number (610) 929-5781
24 Hour Emergency Phone Number CHEMTREC
Domestic (800) 424-9300
International 1(703) 527-3887

2. HAZARDS IDENTIFICATION

Classification

Health Hazards

Not classified

Physical hazards

Not classified

OSHA Regulatory Status

Material is an article. No health effects are expected related to normal use of this product as sold. Hazardous exposure can occur only when the product is heated, oxidized or otherwise processed or damaged to create lead dust, vapor or fume. Refer to the Safety Data Sheet for Valve Regulated Battery when battery is filled with electrolyte/battery acid.

Label elements**Emergency Overview**

Appearance Not available.	Physical state Solid	Odor Odorless
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3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms Not available.

Chemical Name	CAS No.	Weight-%
Arsenic	7440-38-2	0.003
Calcium	7440-70-2	0.002
Powdered Lead	7439-92-1	89-92
Tin	7440-31-5	0.006

4. FIRST AID MEASURES**First aid measures****Eye contact**

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

Skin Contact

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

Inhalation

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

Ingestion

First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If ingested consult physician immediately.

Self-protection of the first aider

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

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

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

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

Treat symptomatically.

5. FIRE-FIGHTING MEASURES**Suitable extinguishing media**

CO₂, dry chemical or foam.

Unsuitable extinguishing media Avoid using water.

Specific hazards arising from the chemical

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

Explosion data**Sensitivity to Mechanical Impact** None known.**Sensitivity to Static Discharge** None known.**Protective equipment and precautions for firefighters**

Keep sparks or other sources of ignition away from batteries. Do not allow metallic materials to simultaneously contact negative and positive terminals of cells and batteries.

Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures**Personal precautions**

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

Other Information

Non-emergency personnel should utilize chemical gloves.

For emergency responders

No emergency procedures are expected to be necessary if material is used under ordinary conditions as recommended. Use normal clean up procedures.

Personal protective equipment: Wear chemical gloves, goggles, acid resistant clothing and boots, and respirator if insufficient ventilation.

Environmental precautions**Environmental precautions**

Prevent entry into waterways, sewers, basements or confined areas. Runoff from fire control and dilution water may be toxic and corrosive and may cause adverse environmental impacts. See Section 12 for additional ecological information.

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

Lead dust should be vacuumed or wet swept into a D.O.T. approved container. Use controls that minimize fugitive emissions. Do not use compressed air.

Methods for cleaning up

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

7. HANDLING AND STORAGE

Precautions for safe handling**Advice on safe handling**

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

Conditions for safe storage, including any incompatibilities**Storage Conditions**

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

Technical measures and storage conditions: Store in a cool/low-temperature well-ventilated place away from heat and ignition sources. Batteries should be stored under roof for protection against adverse weather conditions. Place cardboard between layers of stacked batteries to avoid damage and short circuits. Store batteries on an impervious surface.

Storage class:

Class 13: Non-flammable solids in non-flammable package.

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Arsenic 7440-38-2	TWA: 0.01 mg/m ³ As	TWA: 10 µg/m ³ As	IDLH: 5 mg/m ³ As Ceiling: 0.002 mg/m ³ As 15 min
Tin 7440-31-5	TWA: 2 mg/m ³ Sn except Tin hydride	TWA: 2 mg/m ³ Sn except oxides	IDLH: 100 mg/m ³ Sn TWA: 2 mg/m ³ except Tin oxides Sn
Powdered Lead 7439-92-1	TWA: 0.05 mg/m ³ TWA: 0.05 mg/m ³ Pb	TWA: 50 µg/m ³ TWA: 50 µg/m ³ Pb	IDLH: 100 mg/m ³ IDLH: 100 mg/m ³ Pb TWA: 0.050 mg/m ³ TWA: 0.050 mg/m ³ Pb

Appropriate engineering controls

Engineering Controls

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

Individual protection measures, such as personal protective equipment

Eye/face protection

The use of goggles or full face protection may be required depending on the industrial exposure setting. Contact a health and safety professional for specific information.

Skin and body protection

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

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

General Hygiene Considerations

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Solid	Odor	Odorless
Appearance	Not Data	Odor threshold	No Data
Color	Bluish gray metal		

Property

<u>Property</u>	<u>Values</u>	<u>Remarks</u>	<u>Method</u>
pH	No Data		
Melting point/freezing point	252.2222 °C - 360 °C		
Boiling point / boiling range	1380 °C		
Flash point	No Data		
Evaporation rate	No Data		
Flammability (solid, gas)	No Data		
Flammability Limit in Air			
Upper flammability limit:	No Data		

Lower flammability limit:	No Data
Vapor pressure	No Data
Vapor density	No Data
Specific Gravity	9.6-11.3
Water solubility	No Data
Solubility in other solvents	No Data
Partition coefficient	No Data
Autoignition temperature	No Data
Decomposition temperature	No Data
Kinematic viscosity	No Data
Dynamic viscosity	No Data
Explosive properties	No Data
Oxidizing properties	No Data

Other Information

Softening point	No Data
Molecular weight	No Data
VOC Content (%)	No Data
Density	599.3267-705.4575 lbs/ft ³
Bulk density	No Data

10. STABILITY AND REACTIVITY

Reactivity

Not reactive.

Chemical stability

Stable under normal conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous polymerization Hazardous polymerization does not occur.

Conditions to avoid

Prolonged overcharge, sources of ignition.

Incompatible materials

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

Hazardous Decomposition Products

Lead compounds exposed to high temperatures will likely produce toxic metal fume, vapor or dust; contact with strong acid/base or presence of nascent hydrogen may generate highly toxic arsine gas.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure**Product Information**

Inhalation	(Acute): Under normal conditions of use, no health effects are expected. (Chronic): Repeated and prolonged exposure may cause irritation.
Eye contact	(Acute): Under normal conditions of use, no health effects are expected. Exposure to dust may cause irritation. (Chronic): No data available.
Skin Contact	(Acute): Under normal conditions of use, no health effects are expected. (Chronic): No data available.

Ingestion

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

Acute Effects

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Arsenic 7440-38-2	= 700 mg/kg (Rat)	-	-
Tin 7440-31-5	= 15 mg/kg (Rat)	-	-

Information on toxicological effects**Symptoms**

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

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

Not available.

Serious eye damage/eye irritation

Not available.

Irritation

Not available.

Corrosivity

Not available.

Sensitization

Not available.

Germ cell mutagenicity

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

Carcinogenicity

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

Chemical Name	ACGIH	IARC	NTP	OSHA
Arsenic 7440-38-2	A1	Group 1	Known	X
Powdered Lead 7439-92-1	A3	Group 2A	Reasonably Anticipated	X

Reproductive toxicity

Not available.

STOT - single exposure

Not classified.

STOT - repeated exposure

Not classified.

Chronic toxicity

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

Target Organ Effects

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

Aspiration hazard

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

Numerical measures of toxicity - Product Information

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Powdered Lead 7439-92-1	-	0.44: 96 h Cyprinus carpio mg/L LC50 semi-static 1.32: 96 h Oncorhynchus mykiss mg/L LC50 static 1.17: 96 h Oncorhynchus mykiss mg/L LC50 flow-through	-	600: 48 h water flea µg/L EC50

Persistence and degradability

Lead is persistent in soils and sediments.

Bioaccumulation

Not available.

Mobility

Not available.

Other adverse effects

Not available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes

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

Contaminated packaging

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

US EPA Waste Number

Not available.

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Arsenic 7440-38-2	-	Included in waste streams: F032, F034, F035, F039, K031, K060, K084, K101, K102, K161, K171, K172, K176	5.0 mg/L regulatory level	-
Powdered Lead 7439-92-1	-	Included in waste streams: F035, F037, F038, F039, K002, K003, K005, K046, K048, K049, K051, K052, K061, K062, K069, K086, K100, K176	5.0 mg/L regulatory level	-

California Hazardous Waste Codes Not available

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
Powdered Lead 7439-92-1	Toxic

14. TRANSPORT INFORMATION

Note:	This product is not regulated for domestic transport by land, air or rail. <ul style="list-style-type: none"> • Under 49 CFR 171.8, individual packages that contain lead metal (<100 micrometers) below the reportable quantity (RQ) are not regulated. • Under 49 CFR 171.4, except when transporting aboard a vessel, the requirements of this subchapter specific to marine pollutants do not apply to non-bulk packaging transported by motor vehicles, rail cars and aircrafts.
<u>DOT</u>	This product is not hazardous as defined by 49CFR 172.101 by the U.S. Department of Transportation.
<u>TDG</u>	This product is not classified as dangerous goods by the TDG standards UN-
<u>MEX</u>	Not regulated
<u>ICAO (air)</u>	This product is not classified as dangerous goods by the International Air Transport Association (IATA) or the ICAO.
<u>IATA</u>	This product is not classified as dangerous goods by the International Air Transport Association (IATA) or the ICAO.
<u>IMDG</u>	This product is not classified as dangerous goods by the IMO.
<u>RID</u>	This product is not classified by the United Nations Economic Commission for Europe to be dangerous goods.
<u>ADR</u>	This product is not classified by the United Nations Economic Commission for Europe to be dangerous goods.
<u>ADN</u>	Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA	Does not comply
DSL/NDSL	Does not comply
EINECS/ELINCS	Does not comply
ENCS	Does not comply
IECSC	Does not comply
KECL	Does not comply
PICCS	Does not comply
AICS	Does not comply

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No.	Weight-%	SARA 313 - Threshold Values %
Arsenic – 7440-38-2	7440-38-2	0.003	0.1
Powdered Lead - 7439-92-1	7439-92-1	90	0.1

SARA 311/312 Hazard Categories

Acute health hazard	No
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Arsenic 7440-38-2	-	X	X	-
Powdered Lead 7439-92-1	-	X	X	-

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Arsenic 7440-38-2	1 lb	-	RQ 1 lb final RQ RQ 0.454 kg final RQ
Powdered Lead 7439-92-1	10 lb	-	RQ 10 lb final RQ RQ 4.54 kg final RQ

US State Regulations**California Proposition 65**

This product contains the following Proposition 65 chemicals

Chemical Name	California Proposition 65
Powdered Lead - 7439-92-1	Carcinogen Developmental Female Reproductive Male Reproductive

U.S. State Right-to-Know Regulations

This product may contain substances regulated by state right-to-know regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Arsenic 7440-38-2	X	X	X
Calcium 7440-70-2	X	X	X
Powdered Lead 7439-92-1	X	X	X
Tin 7440-31-5	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not available.

16. OTHER INFORMATION

Prepared By IES Engineers
Issue Date 13-Feb-2014
Revision Date 22-Jan-2015
Revision Note
Not available.

Disclaimer

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof. Yuasa, Inc. assumes no responsibility for injury to the vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, Yuasa, Inc. assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in his use of the material.

End of Safety Data Sheet