

Safety Data Sheet

According to Regulation (EC) No 1907/2006 (REACH)

Trade name: Dry Charge Battery

MSDS No: 853021

Print date: 08DEC2011

Revision date: 08DEC2011

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

1.1 Product Identifier

1.1.1 Trade name/designation:
Dry Charge Battery

1.2 Relevant identified uses of the substance or mixture and uses advised against

1.2.1 Relevant identified uses:
Power sport batteries

1.2.2 Uses advised against:
Any other not listed above

1.3 Details of the supplier

1.3.1 Supplier:
Yuasa Battery, Inc.

1.3.2 Website:
www.yuasabatteries.com

1.3.3 Information contact:
2901 Montrose Ave.
Laureldale, PA 19605
United States

1.3.4 National contact:
Yuasa Battery Environmental Resources: (610)929-5781

1.4 Emergency Telephone Number

CHEMTREC: **Domestic (800)424-9300**
 International: 1(703)527-3887

Section 2: Hazards identification

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 Material Safety Data Sheet for Lead Acid Battery when battery is filled with electrolyte/battery acid.

2.1 Classification of the substance or mixture:

2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP/GHS]
Class 13: Non-flammable solids in non-flammable package

2.1.2 Classification according to 67/548/EEC or 1999/45/EC
Xi: Irritating

2.2 Label elements

2.2.1 Labeling according to Regulation (EC) No 1272/2008
Product identifier:
Valve Regulated Lead Battery
Hazard pictograms:



Xi: Irritating

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NFPA:



WHMIS:
Not Regulated

Signal word:
CAUTION

Hazard statements:
May be harmful in contact with skin
Causes skin irritation
May cause respiratory irritation
Warning! Contains lead

Precautionary statements:
Keep out of reach of children.
Keep containers tightly closed.
Keep away from heat, sparks, and open flame while charging batteries.

2.3 Other hazards

Adverse human health effects and symptoms:

Inhalation: (Acute): Under normal conditions of use, no health effects are expected.
(Chronic): Repeated and prolonged exposure may cause irritation.

Skin: (Acute): Under normal conditions of use, no health effects are expected.
(Chronic): No data available

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

Carcinogenic Effects: Material is an article. No health effects are expected related to normal use of this product as sold. Material does contain components that exhibit carcinogenic effects.

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.

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Section 3: Composition/information on ingredients

3.1 Description of the mixture:

| CAS No | EC No | % [weight] | Name | WHMIS Classifications | Classification according to CLP (1272/2008) |
|-----------|-----------|------------|----------|--|---|
| 7439-92-1 | 231-100-4 | 89-92% | Lead | D2A | Xn, N, T; R20/22, R33, R50, R50/53, R53, R61, R62; Repr. Cat. 1, Repr. Cat. 3; S53, S45, S60, S61 except those specified elsewhere in the annex |
| 7440-36-0 | 231-146-5 | 0.2% | Antimony | Uncontrolled product according to WHMIS classification criteria; D1B(powder) | Xn, N; R20/22, R51/53; S2, S61 except tetroxide, pentoxide, trisulphide, pentasulphide, and those specified elsewhere in the annex |
| 7440-31-5 | 231-141-8 | 0.006% | Tin | Uncontrolled product according to WHMIS classification criteria | Not Listed |
| 7440-38-2 | 231-148-6 | 0.003% | Arsenic | D1A, D2A | T, N; R23/25, R50/53; S1/2, S20/21, S28, S45, S60, S61 |
| 7440-70-2 | 231-179-5 | 0.002% | Calcium | B6, E | F; R15; S2, S8, S24/25, S43 |

Case material composes 5-6% of the article. Case material includes the following components: 1-Propene, homopolymer (9003-07-0); Polystyrene (9003-53-6); Acrylonitrile, polymer with styrene (9003-54-7); Acrylonitrile, polymer with 1,3-butadiene and styrene (9003-56-9); Styrene polymer with 1,3-butadiene and styrene (9003-56-9); Styrene polymer with 1,3-butadiene (Kraton) (9003-55-8); Ethylene, chloro-, polymer (9003-86-2); Hard Rubber; Polycarbonate; Polyethylene.

Section 4: First Aid Measures

4.1 Description of first aid measures

4.1.1 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.

4.1.2 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.

4.1.3 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.

4.1.4 Ingestion:

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

4.1.5 Self-protection of the first aider:

If artificial respiration is required use a pocket mask equipped with a one-way valve or other proper respiratory medical device.

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Section 5: Firefighting measures

- 5.1 Extinguishing media:
 - 5.1.1 Suitable extinguishing media:
CO₂, dry chemical or foam
 - 5.1.2 Unsuitable extinguishing media:
Avoid using water
- 5.2 Special hazards arising from the substance or mixture
 - 5.2.1 Hazardous combustion products:
Lead portion of battery will likely produce toxic metal fume, vapor or dust.
- 5.3 Advice for fire-fighters:
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.
- 5.4 Additional information:
Material itself is non-combustible although in fire situations will likely produce toxic metal fume, vapor or dust.

Section 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures
No special precautions expected to be necessary if material is used under ordinary conditions and as recommended. Avoid contact of lead with skin.
 - 6.1.1 For non-emergency personnel
Protective equipment:
Wear chemical gloves
 - 6.1.2 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, respirator if insufficient ventilation.
- 6.2 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.
- 6.3 Methods and material for containment and cleaning up
 - 6.3.1 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.
 - 6.3.2 For cleaning up:
Contact local and/or state officials for proper disposal requirements.

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Section 7: Handling and storage

Precautions for safe handling

7.1.1 Protective measures:

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.

7.1.2 Advice on general occupational hygiene

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.

7.2 Conditions for safe storage, including any incompatibilities

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

Section 8: Exposure controls/personal protection

8.1 Control parameters

8.1.1 Occupational exposure limits:

| Limit value type (country of origin) | Substance name | EC-No. | CAS-No | Limit value | Monitoring and observation processes |
|---|----------------|-----------|-----------|---|---|
| TWA(ACGIH USA) STEL (CA-ON) TWA (CA-ON) TWA (CA-QU) STEL (CH) TWA (CH) TWA (FI) Biological Limit Value (FI) TWA (ME) Ceiling (NIOSH) | Arsenic | | 7440-38-2 | 0.01 mg/m ³ 50 µg/m ³ 10 µg/m ³ 0.1 mg/m ³ 0.02 mg/m ³ 0.01 mg/m ³ 0.01 mg/m ³ 70 nmol/L 0.01 mg/m ³ 0.002 mg/m ³ | Designated substance regulation Medium: Urine Time: end of shift at end of workweek |
| TWA(ACGIH USA) TWA (CA) TWA (FI) STEL(ME) TWA (ME) TWA (NIOSH USA) | Tin | 231-141-8 | 7440-31-5 | 2 mg/m ³ 2 mg/m ³ 2 mg/m ³ 4 mg/m ³ 2 mg/m ³ 2 mg/m ³ | |
| STEL (CH) TWA (CH) TWA (ACGIH USA) TWA (CA) | Antimony | 231-146-5 | 7440-36-0 | 1.5 mg/m ³ 0.5 mg/m ³ 0.5 mg/m ³ 0.5 mg/m ³ | |

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| | | | | | |
|--|------|-----------|-----------|--|---|
| TWA (FI) TWA (JP) TWA (ME) TWA (NIOSH USA) TWA (OSHA USA) | | | | 0.5 mg/m ³ 0.1 mg/m ³ 0.5 mg/m ³ 0.5 mg/m ³ 0.5 mg/m ³ | |
| TWA (ACGIH) TWA (CA ON) TWA (CA QU) STEL (CH) TWA (CH) TWA (FI) Biological Limit Value (FI) TWA (JP) TWA (ME) TWA (NIOSH) TWA (OSHA) | Lead | 231-100-4 | 7439-92-1 | 0.05 mg/m ³ 0.05 mg/m ³ 0.05 mg/m ³ 0.15 (0.09) mg/m ³ 0.05(0.03)mg/m ³ 0.1 mg/m ³ 1.4 umol/L 0.1 mg/m ³ 0.15 mg/m ³ 0.05 mg/m ³ 50 ug/m ³ | Designated substance regulation Dust (fume) Dust (fume) Dust As Pb, dust and fume |

8.2 Exposure controls

8.2.1 Appropriate engineering controls:

Store and charge in a well-ventilated area. General dilution ventilation is acceptable.

8.2.2 Personal protective equipment:

8.2.2.1 Pictograms:



8.2.2.2 Eye/Face protection:

Wear protective eyewear (goggles, face shield or safety glasses with side shields).

8.2.2.3 Skin 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.

8.2.2.4 Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment.

Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

9.1.1 Appearance

Physical state: Solid Color: Bluish gray metal Odor: Odorless Odor threshold: No Data

9.1.2 Safety relevant basic data

pH (20 °C): No Data

Melting point/range(°C): 252.2222-360

Initial boiling point/range (°C): 1380

Decomposition temperature (°C): No Data

Flash point (°C): No Data

Ignition temperature (°C): No Data

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Vapor pressure (hPa): No Data
Vapor density (air = 1): No Data
Density (g/cm³): 599.3267-705.4575 lbs/ft³
Bulk density (kg/m³): No Data
Specific Gravity/Relative Density (Water=1): 9.6-11.3
Water solubility (20°C in g/l): No Data
Solubility(ies): No Data
Partition coefficient: No Data
N-Octanol/Water (log Po/w): No Data
Viscosity, dynamic (mPa s): No Data

- 9.2 Other safety information:
- Properties of explosive atmospheres (mixtures):
 - Gases and vapors: No Data
 - Dusts: No Data
 - Physical chemical properties of nanoparticles: No Data
 - Limiting oxygen concentration: No Data
 - Bulk density: No Data
 - Solubility in different media: No Data
 - Stability in organic solvents and identity of relevant degradation products: No Data
 - Evaporation rate: No Data
 - Conductivity: No Data
 - Surface tension: No Data
 - Dissociation constant in water (pKa): No Data
 - Oxidation-reduction Potential: No Data
 - Fat solubility (solvent – oil to be specified): No Data
 - Critical temperature: No Data

Section 10: Stability and reactivity

- 10.1 Reactivity:
Not reactive
- 10.2 Chemical stability:
Stable under normal temperatures and pressures
- 10.3 Possibility of hazardous reactions
Hazardous polymerization will not occur.
- 10.4 Conditions to avoid:
Prolonged overcharge, sources of ignition.
- 10.5 Incompatible materials:
Avoid contact with strong bases, acids, combustible organic materials, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, reducing agents and water.
- 10.6 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.

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Section 11: Toxicological Information

11.1 Information on toxicological effects:

| Lead (7439-92-1) | Effect dose / Concentration | Species | Method | Time |
|---------------------------------------|-----------------------------|---------|-------------------|-------------------------|
| Acute oral toxicity | 155 mg/kg | Human | LDLo | |
| Acute oral toxicity | 1050 ug/kg | Rat | TDLo | 30 Weeks(int.) |
| Acute inhalative toxicity (dust/mist) | 0.011 mg/m ³ | Human | LCLo | 26 Weeks (int.) |
| Mutagen | 23 ug/m ³ | Rat | Inhalation | 16 Weeks |
| Reproductive | 790 mg/kg | Rat | TDLo (Oral) | |
| Reproductive | 3 mg/m ³ | Rat | TCLo (Inhalation) | 1-21 Days preg. |
| Antimony (7440-36-0) | Effect dose / Concentration | Species | Method | Time |
| Acute oral toxicity | 100 mg/kg | Rat | LD50 | |
| Acute inhalative toxicity (dust/mist) | 13.5 mg/m ³ | Human | LCLo | 4 Hours |
| Tumorigen/Carcinogen | 50 mg/m ³ | Rat | TCLo | 7 hours 52 weeks (int.) |
| Arsenic (7440-38-2) | Effect dose / Concentration | Species | Method | Time |
| Acute oral toxicity | 763 mg/kg | Rat | LD50 | |
| Acute oral toxicity | 5 mg/kg | Rat | LDLo | |
| Mutagen | 0.211 mg/L | Human | Oral | 15 Years |
| Reproductive | 605 ug/kg | Rat | TDLo | 35 weeks preg. |

11.2 Other information:

11.2.1 Carcinogenic Effects:

Material is an article. No health effects are expected related to normal use of this product as sold. Material does contain components that exhibit carcinogenic effects.

| Carcinogenic Effects | | | |
|----------------------|-----------|------------------------------|---|
| | CAS | IARC | NTP |
| Lead | 7439-92-1 | Group 2A-Probable Carcinogen | Reasonably anticipated to be human carcinogen |

11.2.2 Routes of exposure:

11.2.2.1 In case of ingestion:

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

Chronic (Delayed): No data available

11.2.2.2 In case of skin contact:

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

Chronic (Delayed): No data available

11.2.2.3 In case of inhalation:

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

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

11.2.2.4 In case of eye contact:

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

Chronic (Delayed): No data available

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Section 12: Ecological information

12.1 Toxicity:

Aquatic toxicity

12.1.1 Substances

Acute (short-term) toxicity: No Data

| Effect dose | Exposure time | Species | Method | Evaluation | Remark |
|-------------|---------------|---------|--------|------------|--------|
| | | | | | |
| | | | | | |

Persistence/Degradability: Lead is persistent in soils and sediments.

Section 13: Disposal considerations

13.1 Waste treatment methods

13.1.1 Product/packaging disposal:

Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

13.1.2 Waste codes/waste designations according to EWC/AVV:

16 06 05

13.2 Additional information:

Any waste marked with an asterisk (*) is considered as a hazardous waste pursuant to Directive 91/689/EEC on hazardous waste, and subject to the provisions of that Directive unless Article 1(5) of that Directive applies.

Section 14: Transport Information

14.1 The transportation of dry batteries is Not Regulated

Land transport (CFR 49: DOT)

This product is not hazardous as defined by 49CFR 172.101 by the U.S. Department of Transportation

UN-No:

Proper shipping name:

Class(es):

Packing group:

Hazard label(s):

Special provision(s)/Exceptions:

14.2 Land transport (ADR/RID/GGVSEB):

This product is not classified by the United Nations Economic Commission for Europe to be dangerous goods.

UN-No:

Proper shipping name:

Class(es):

Classification Code:

Packing group:

Hazard label(s):

Special provision(s):

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Land transport (TDG):

This product is not classified as dangerous goods by the TDG standards

UN-No:

Proper shipping name:

Class(es):

Packing group:

Hazard label(s):

Special provision(s):

14.3 Sea transport (IMDG-Code/GGVSee):

This product is not classified as dangerous goods by the IMO

UN No:

Proper shipping name:

Class(es):

Packing group:

Marine Pollutant:

Special provision(s):

14.4 Air transport (ICAO-IATA/DGR):

This product is not classified as dangerous goods by the International Air Transport Association (IATA) or the ICAO.

UN No:

Proper shipping name:

Class(es):

Packing group:

Special provision(s):

Section 15: Regulatory Information

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

15.1.1 National regulations(Canada):

WHMIS Classification:

This product does not meet the classification criteria of the Controlled Products Regulations.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the Controlled Products Regulations.

Canada DSL:

The following substances are listed on the Canadian DSL:

Lead (7439-92-1); Antimony (7440-36-0); Tin (7440-31-5); Arsenic (7440-38-2);

Calcium (7440-70-2)

Canada NDSL:

None of the components on this SDS are listed on the Canadian NDSL:

WHMIS:

Ingredient Disclosure List

| Substance | CAS No. | Wt % | Disclosure Limit % |
|-----------------------------------|-----------|--------|--------------------|
| Calcium | 7440-70-2 | 0.002% | Not Listed |
| Lead | 7439-92-1 | 89-92% | 0.1% |
| Lead as Lead compounds | | 89-92% | Not Listed |
| Lead as Lead, inorganic compounds | | 89-92% | 1% |
| Tin | 7440-31-5 | 0.006% | 1% |
| Antimony | 7440-36-0 | 0.2 % | 1% |

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|--------------------------------|-----------|--------|------|
| Antimony as Antimony compounds | | 0.2% | 1% |
| Arsenic | 7440-38-2 | 0.003% | 0.1% |

CEPA:

Priority Substances List

| Substance | CAS No. | Wt % | Status |
|-----------------------------------|-----------|--------|------------|
| Calcium | 7440-70-2 | 0.002% | Not Listed |
| Lead | 7439-92-1 | 89-92% | Not Listed |
| Lead as Lead compounds | | 89-92% | Not Listed |
| Lead as Lead, inorganic compounds | | 89-92% | Not Listed |
| Tin | 7440-31-5 | 0.006% | Not Listed |
| Antimony | 7440-36-0 | 0.2 % | Not Listed |
| Antimony as Antimony compounds | | 0.2% | Not Listed |
| Arsenic | 7440-38-2 | 0.003% | Not Listed |

15.1.2 National regulations(China):

The following components are listed on the Inventory list for China:

Lead (7439-92-1); Antimony (7440-36-0); Tin (7440-31-5); Arsenic (7440-38-2); Calcium (7440-70-2)

15.1.3 National regulations(European Union):

Classification:

Xi

Risk Phrases:

R36, R38

Safety Phrases:

S1/2, S26, S30, S45

The following components are listed on the EU EINECS:

Lead (7439-92-1); Antimony (7440-36-0); Tin (7440-31-5); Arsenic (7440-38-2); Calcium (7440-70-2)

None of the above mentioned components are listed on the EU ELNICS.

CLP (1272/2008) Concentration Limits

| Substance | CAS | WT % | Concentration Limit |
|-----------------------------------|-----------|-------|---|
| Calcium | 7440-70-2 | 0.002 | Not Listed |
| Lead | 7439-92-1 | 89-92 | Not Listed |
| Lead as Lead compounds | | 89-92 | 2.5%≤C: Repr. Cat. 3; R62 1%≤C: Xn; R20/22 0.5%≤C: R33 |
| Lead as Lead, inorganic compounds | | 89-92 | Not Listed |
| Tin | 7440-31-5 | 0.006 | Not Listed |
| Antimony | 7440-36-0 | 0.2 | Not Listed |
| Antimony as Antimony compounds | | 0.2 | 0.25%≤C: Xn; R20/22 |
| Arsenic | 7440-38-2 | 0.003 | Not Listed |

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| Substance | CAS | WT % | Substances and Preparations |
|-----------------------------------|-----------|-------|---|
| Calcium | 7440-70-2 | 0.002 | Not Listed |
| Lead | 7439-92-1 | 89-92 | Not Listed |
| Lead as Lead compounds | | 89-92 | A, E, 1(except those specified elsewhere in the annex) |
| Lead as Lead, inorganic compounds | | 89-92 | Not Listed |
| Tin | 7440-31-5 | 0.006 | Not Listed |
| Antimony | 7440-36-0 | 0.2 | Not Listed |
| Antimony as Antimony compounds | | 0.2 | A, 1 (except tetroxide, pentoxide, trisulphide, pentasulphide and those specified elsewhere in the annex) |
| Arsenic | 7440-38-2 | 0.003 | Not Listed |

Germany

Lead Restrictions:

Lead concentration in the blood above 300 µg/L in male employees and 100 µg/L in female employees requires additional training for personal hygiene and vigilance. Lead concentration in the blood above 350 µg/L in male employees and 200 µg/L in female employees requires additional training for personal hygiene and vigilance; Lead concentration in the blood above 400 µg/L in male employees and 300 µg/L in female employees requires additional training for personal hygiene and vigilance; See TRGS 505 for detailed regulations regarding lead and lead compounds.

Employment restrictions for employees below the age of 18 years; Employment restrictions for pregnant or breastfeeding women; Prohibited for use at home based workplaces; Restrictions apply for use of lead compounds in packaging material, drinking water systems, cars, electrical and electronical devices; See TRGS 505 for detailed regulations regarding lead and lead compounds.

Emission Limits for Inorganic Dusts

| Substance | CAS | WT % | Emission Limit |
|-----------------------------------|-----------|-------|---|
| Calcium | 7440-70-2 | 0.002 | Not Listed |
| Lead | 7439-92-1 | 89-92 | 2.5 g/h Mass flow (class II); 0.5 mg/m ³ mass concentration (Class II) |
| Lead as Lead compounds | | 89-92 | 2.5 m/h Mass flow (Class II, as Pb); 0.5 mg/m ³ Mass concentration (Class II, as Pb) |
| Lead as Lead, inorganic compounds | | 89-92 | Not Listed |
| Tin | 7440-31-5 | 0.006 | 5 g/h Mass flow (Class III); 1 mg/m ³ Mass concentration (Class III) |
| Antimony | 7440-36-0 | 0.2 | 5 g/h Mass flow (Class III); 1 mg/m ³ Mass concentration (Class III) |
| Antimony as Antimony compounds | | 0.2 | 5 g/h Mass flow (Class III, as Sb); 1 mg/m ³ Mass concentration (Class III, as Sb) |
| Arsenic | 7440-38-2 | 0.003 | Not Listed |

15.1.4 National regulations(Japan):

The following chemicals are on the Japanese ENCS:

Lead (7439-92-1); Antimony (7440-36-0); Tin (7440-31-5); Arsenic (7440-38-2); Calcium (7440-70-2)

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ISHL Harmful substances whose names are to be indicated on the label

| Substance | CAS | WT % | Limit |
|-----------------------------------|-----------|-------|-------------|
| Calcium | 7440-70-2 | 0.002 | Not Listed |
| Lead | 7439-92-1 | 89-92 | 0.1% weight |
| Lead as Lead compounds | | 89-92 | 0.1% weight |
| Lead as Lead, inorganic compounds | | 89-92 | Not Listed |
| Tin | 7440-31-5 | 0.006 | Not Listed |
| Antimony | 7440-36-0 | 0.2 | Not Listed |
| Antimony as Antimony compounds | | 0.2 | Not Listed |
| Arsenic | 7440-38-2 | 0.003 | 0.1% weight |

ISHL Prevention of Lead Poisoning

| Substance | CAS | WT % | Status |
|-----------------------------------|-----------|-------|------------|
| Calcium | 7440-70-2 | 0.002 | Not Listed |
| Lead | 7439-92-1 | 89-92 | Not Listed |
| Lead as Lead compounds | | 89-92 | Not Listed |
| Lead as Lead, inorganic compounds | | 89-92 | Not Listed |
| Tin | 7440-31-5 | 0.006 | Not Listed |
| Antimony | 7440-36-0 | 0.2 | Not Listed |
| Antimony as Antimony compounds | | 0.2 | Not Listed |
| Arsenic | 7440-38-2 | 0.003 | Not Listed |

ISHL Notifiable Substances

| Substance | CAS | WT % | Limit |
|-----------------------------------|-----------|-------|-------------|
| Calcium | 7440-70-2 | 0.002 | Not Listed |
| Lead | 7439-92-1 | 89-92 | 0.1% weight |
| Lead as Lead compounds | | 89-92 | Not Listed |
| Lead as Lead, inorganic compounds | | 89-92 | 0.1% weight |
| Tin | 7440-31-5 | 0.006 | 0.1% weight |
| Antimony | 7440-36-0 | 0.2 | 0.1% weight |
| Antimony as Antimony compounds | | 0.2 | 0.1% weight |
| Arsenic | 7440-38-2 | 0.003 | 0.1%weight |

Air Pollution Control Law: Emission Standards for Air Pollutants

| Substance | CAS | WT % | Emission Limit |
|-----------------------------------|-----------|-------|----------------|
| Calcium | 7440-70-2 | 0.002 | Not Listed |
| Lead | 7439-92-1 | 89-92 | 16-20 mg/Nm3 |
| Lead as Lead compounds | | 89-92 | 16-20 mg/Nm3 |
| Lead as Lead, inorganic compounds | | 89-92 | Not Listed |
| Tin | 7440-31-5 | 0.006 | Not Listed |
| Antimony | 7440-36-0 | 0.2 | Not Listed |
| Antimony as Antimony compounds | | 0.2 | Not Listed |
| Arsenic | 7440-38-2 | 0.003 | Not Listed |

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Pollutant Release Transfer Register (PRTR): Class 1 Substances

| Substance | CAS | WT % | Status |
|-----------------------------------|-----------|-------|------------------------------------|
| Calcium | 7440-70-2 | 0.002 | Not Listed |
| Lead | 7439-92-1 | 89-92 | 304 |
| Lead as Lead compounds | | 89-92 | 305 (Designated class 1 substance) |
| Lead as Lead, inorganic compounds | | 89-92 | Not Listed |
| Tin | 7440-31-5 | 0.006 | Not Listed |
| Antimony | 7440-36-0 | 0.2 | 31 |
| Antimony as Antimony compounds | | 0.2 | 31 |
| Arsenic | 7440-38-2 | 0.003 | 332 (Designated class 1 substance) |

ISHL Working Environment Evaluation Standards: Administrative Control Levels

| Substance | CAS | WT % | Limit |
|-----------------------------------|-----------|-------|------------------------------------|
| Calcium | 7440-70-2 | 0.002 | Not Listed |
| Lead | 7439-92-1 | 89-92 | 0.05 mg/m ³ ACL |
| Lead as Lead compounds | | 89-92 | 0.05 mg/m ³ ACL (as Pb) |
| Lead as Lead, inorganic compounds | | 89-92 | Not Listed |
| Tin | 7440-31-5 | 0.006 | Not Listed |
| Antimony | 7440-36-0 | 0.2 | Not Listed |
| Antimony as Antimony compounds | | 0.2 | Not Listed |
| Arsenic | 7440-38-2 | 0.003 | 0.003 mg/m ³ ACL |

15.1.5 National regulations(Korea):

The following substances are listed on the Korean KECL:

Lead (7439-92-1); Antimony (7440-36-0); Tin (7440-31-5); Arsenic (7440-38-2); Calcium (7440-70-2)

15.1.6 National regulations(Mexico):

Pollutant Release and Transfer Register: Reporting Emissions

| Substance | CAS | WT % | Threshold Quantities |
|-----------------------------------|-----------|-------|----------------------|
| Calcium | 7440-70-2 | 0.002 | Not Listed |
| Lead | 7439-92-1 | 89-92 | Not Listed |
| Lead as Lead compounds | | 89-92 | 1 kg/yr TQ |
| Lead as Lead, inorganic compounds | | 89-92 | Not Listed |
| Tin | 7440-31-5 | 0.006 | Not Listed |
| Antimony | 7440-36-0 | 0.2 | Not Listed |
| Antimony as Antimony compounds | | 0.2 | Not Listed |
| Arsenic | 7440-38-2 | 0.003 | 1 kg/yr TQ |

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15.1.7 National regulations(United States):

The following substances are on the MA, NJ, and PA Right To Know Lists:

Lead (7439-92-1); Antimony (7440-36-0); Tin (7440-31-5); Arsenic (7440-38-2); Calcium (7440-70-2)

The following substances are on the TSCA inventory:

Lead (7439-92-1); Antimony (7440-36-0); Tin (7440-31-5); Arsenic (7440-38-2); Calcium (7440-70-2)

OSHA: Specifically Regulated Chemicals

| Substance | CAS | WT % | Limit |
|-----------------------------------|-----------|-------|---|
| Calcium | 7440-70-2 | 0.002 | Not Listed |
| Lead | 7439-92-1 | 89-92 | 30 µg/m ³ Action Level (Poison, See 29 CFR 1910.1025); 50 µg/m ³ TWA |
| Lead as Lead compounds | | 89-92 | Not Listed |
| Lead as Lead, inorganic compounds | | 89-92 | 30 µg/m ³ Action Level (Poison, See 29 CFR 1910.1025, as Pb); 50 µg/m ³ TWA (as Pb) |
| Tin | 7440-31-5 | 0.006 | Not Listed |
| Antimony | 7440-36-0 | 0.2 | Not Listed |
| Antimony as Antimony compounds | | 0.2 | Not Listed |
| Arsenic | 7440-38-2 | 0.003 | Not Listed |

CAA: 1990 Hazardous Air Pollutants

| Substance | CAS | WT % | Limit |
|-----------------------------------|-----------|-------|---|
| Calcium | 7440-70-2 | 0.002 | Not Listed |
| Lead | 7439-92-1 | 89-92 | Not Listed |
| Lead as Lead compounds | | 89-92 | (includes any unique chemical substance that contains Lead as part of its infrastructure) |
| Lead as Lead, inorganic compounds | | 89-92 | Not Listed |
| Tin | 7440-31-5 | 0.006 | Not Listed |
| Antimony | 7440-36-0 | 0.2 | Not Listed |
| Antimony as Antimony compounds | | 0.2 | (includes any unique chemical substance that contains Antimony as part of its infrastructure) |
| Arsenic | 7440-38-2 | 0.003 | Not Listed |

CERCLA/SARA

Hazardous Substances and Their Reportable Quantities

| Substance | CAS | WT % | Reportable Quantity |
|-----------------------------------|-----------|-------|--|
| Calcium | 7440-70-2 | 0.002 | Not Listed |
| Lead | 7439-92-1 | 89-92 | 10 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is larger than 100 micrometers); 4.54 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is larger than 100 micrometers) |
| Lead as Lead compounds | | 89-92 | Not Listed |
| Lead as Lead, inorganic compounds | | 89-92 | Not Listed |
| Tin | 7440-31-5 | 0.006 | Not Listed |

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| | | | |
|--------------------------------|-----------|-------|--|
| Antimony | 7440-36-0 | 0.2 | 5000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is larger than 100 micrometers); 2270 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is larger than 100 micrometers) |
| Antimony as Antimony compounds | | 0.2 | Not Listed |
| Arsenic | 7440-38-2 | 0.003 | 1 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is larger than 100 micrometers); 0.454 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is larger than 100 micrometers) |

Section 302 Extremely Hazardous Substances EPCRA RQs

| Substance | CAS | WT % | Reportable Quantity |
|-----------------------------------|-----------|-------|---------------------|
| Calcium | 7440-70-2 | 0.002 | Not Listed |
| Lead | 7439-92-1 | 89-92 | Not Listed |
| Lead as Lead compounds | | 89-92 | Not Listed |
| Lead as Lead, inorganic compounds | | 89-92 | Not Listed |
| Tin | 7440-31-5 | 0.006 | Not Listed |
| Antimony | 7440-36-0 | 0.2 | Not Listed |
| Antimony as Antimony compounds | | 0.2 | Not Listed |
| Arsenic | 7440-38-2 | 0.003 | Not Listed |

Section 302 Extremely Hazardous Substances TPQs

| Substance | CAS | WT % | Threshold Planning Quantity |
|-----------------------------------|-----------|-------|-----------------------------|
| Calcium | 7440-70-2 | 0.002 | Not Listed |
| Lead | 7439-92-1 | 89-92 | Not Listed |
| Lead as Lead compounds | | 89-92 | Not Listed |
| Lead as Lead, inorganic compounds | | 89-92 | Not Listed |
| Tin | 7440-31-5 | 0.006 | Not Listed |
| Antimony | 7440-36-0 | 0.2 | Not Listed |
| Antimony as Antimony compounds | | 0.2 | Not Listed |
| Arsenic | 7440-38-2 | 0.003 | Not Listed |

RCRA

Basis for Listing: Appendix VII

| Substance | CAS | WT % | Basis |
|-----------------------------------|-----------|-------|---|
| Calcium | 7440-70-2 | 0.002 | Not Listed |
| Lead | 7439-92-1 | 89-92 | Included in waste streams: F035, F037, F038, F039, K002, K003, K005, K046, K048, K049, K051, K052, K061, K062, K064, K065, K066, K069, K086, K100, K176 |
| Lead as Lead compounds | | 89-92 | Not Listed |
| Lead as Lead, inorganic compounds | | 89-92 | Not Listed |
| Tin | 7440-31-5 | 0.006 | Not Listed |
| Antimony | 7440-36-0 | 0.2 | Included in waste streams: F039, K021, K161, K177 |
| Antimony as Antimony compounds | | 0.2 | Not Listed |
| Arsenic | 7440-38-2 | 0.003 | Included in waste streams: F032, F034, F035, F039, K031, K060, K084, K101, K102, K161, K171, K172, K176 |

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D Series Wastes: Max Concentration of Contaminants for the Toxic Characteristic

| Substance | CAS | WT % | Regulatory Level |
|-----------------------------------|-----------|-------|------------------|
| Calcium | 7440-70-2 | 0.002 | Not Listed |
| Lead | 7439-92-1 | 89-92 | 5.0 mg/L |
| Lead as Lead compounds | | 89-92 | Not Listed |
| Lead as Lead, inorganic compounds | | 89-92 | Not Listed |
| Tin | 7440-31-5 | 0.006 | Not Listed |
| Antimony | 7440-36-0 | 0.2 | Not Listed |
| Antimony as Antimony compounds | | 0.2 | Not Listed |
| Arsenic | 7440-38-2 | 0.003 | 5.0 mg/L |

Hazardous Constituents: Appendix VIII to 40 CFR 261

| Substance | CAS | WT % | Status |
|-----------------------------------|-----------|-------|---|
| Calcium | 7440-70-2 | 0.002 | Not Listed |
| Lead | 7439-92-1 | 89-92 | Hazardous constituent – no waste number |
| Lead as Lead compounds | | 89-92 | Hazardous constituent – no waste number |
| Lead as Lead, inorganic compounds | | 89-92 | Not Listed |
| Tin | 7440-31-5 | 0.006 | Not Listed |
| Antimony | 7440-36-0 | 0.2 | Hazardous constituent – no waste number |
| Antimony as Antimony compounds | | 0.2 | Hazardous constituent – no waste number |
| Arsenic | 7440-38-2 | 0.003 | Hazardous constituent – no waste number |

California: California Proposition 65

| Substance | CAS | WT % | Status |
|-----------------------------------|-----------|-------|---|
| Calcium | 7440-70-2 | 0.002 | Not Listed |
| Lead | 7439-92-1 | 89-92 | Carcinogen(initial date 10/1/92); developmental toxicity(initial date 2/27/87); 0.5 µg/day(Maximum Allowable Dose Level); 15 µg/day oral(No Significant Risk Level); female reproductive toxicity(initial date 2/27/87); male reproductive toxicity(initial date 2/27/87) |
| Lead as Lead compounds | | 89-92 | Carcinogen(initial date 10/1/92) |
| Lead as Lead, inorganic compounds | | 89-92 | Developmental toxicity(initial date 2/27/87) |
| Tin | 7440-31-5 | 0.006 | Not Listed |
| Antimony | 7440-36-0 | 0.2 | Not Listed |
| Antimony as Antimony compounds | | 0.2 | Not Listed |
| Arsenic | 7440-38-2 | 0.003 | 0.06µg/day inhalation(No Significant Risk Level); 10µg/day except inhalation(No Significant Risk Level) |

Pennsylvania Environmental Hazard list

| Substance | CAS | WT % | Regulatory Level |
|-----------------------------------|-----------|-------|------------------|
| Calcium | 7440-70-2 | 0.002 | Not Listed |
| Lead | 7439-92-1 | 89-92 | |
| Lead as Lead compounds | | 89-92 | |
| Lead as Lead, inorganic compounds | | 89-92 | Not Listed |
| Tin | 7440-31-5 | 0.006 | Not Listed |
| Antimony | 7440-36-0 | 0.2 | |
| Antimony as Antimony compounds | | 0.2 | |
| Arsenic | 7440-38-2 | 0.003 | |

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Special hazardous Substances

| Substance | CAS | WT % | Regulatory Level |
|-----------------------------------|-----------|-------|------------------|
| Calcium | 7440-70-2 | 0.002 | Not Listed |
| Lead | 7439-92-1 | 89-92 | Not Listed |
| Lead as Lead compounds | | 89-92 | Not Listed |
| Lead as Lead, inorganic compounds | | 89-92 | Not Listed |
| Tin | 7440-31-5 | 0.006 | Not Listed |
| Antimony | 7440-36-0 | 0.2 | Not Listed |
| Antimony as Antimony compounds | | 0.2 | Not Listed |
| Arsenic | 7440-38-2 | 0.003 | |

Rhode Island: Hazardous Substances List

| Substance | CAS | WT % | Regulatory Level |
|-----------------------------------|-----------|-------|-----------------------|
| Calcium | 7440-70-2 | 0.002 | Flammable |
| Lead | 7439-92-1 | 89-92 | Toxic (dust and fume) |
| Lead as Lead compounds | | 89-92 | Not Listed |
| Lead as Lead, inorganic compounds | | 89-92 | Not Listed |
| Tin | 7440-31-5 | 0.006 | Toxic |
| Antimony | 7440-36-0 | 0.2 | Toxic |
| Antimony as Antimony compounds | | 0.2 | Toxic |
| Arsenic | 7440-38-2 | 0.003 | Toxic; Carcinogen |

Section 16: Other Information

16.1 Relevant R-, H- and EUH-phrases (number and full text):

Hazard Abbreviations:

Xi: Irritant

Xn: Harmful

N: Dangerous for the environment

T: Toxic

F: Highly Flammable

Risk Phrases:

R15: Contact with water liberates extremely flammable gases

R20/22: Harmful by inhalation and if swallowed

R23/25: Toxic by inhalation and if swallowed

R33: Danger of cumulative effects

R36: Irritating to eyes

R38: Irritating to skin

R50: Very toxic to aquatic organisms

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

R51/53: 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

Safety Phrases:

S1/2: Keep locked up and out of the reach of children

S2: Keep out of the reach of children

S8: Keep container dry

S20/21: When using do not eat, drink, or smoke

S24/25: Avoid contact with skin and eyes

S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

S28: After contact with skin, wash immediately with plenty of water

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S30: Never add water to this product

S43: In case of fire use CO₂, dry chemical, or foam. Never use water

S45: In case of accident or if you feel unwell seek medical advice immediately (show the label where possible)

S53: Avoid exposure – obtain special instructions before use

S60: This material and its container must be disposed of as hazardous waste

S61: Avoid release to the environment. Refer to special instructions/safety data sheet

Hazard statements:

H313: May be harmful in contact with skin

H315: Causes skin irritation

H335: May cause respiratory irritation

EUH201A: Warning! Contains lead

Precautionary statements:

P102: Keep out of reach of children.

P233: Keep containers tightly closed.

P210: Keep away from heat, sparks, and open flame while charging batteries.

16.2 Further information:

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.

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