

**SHIELD**<sup>®</sup>



**BATTERIES**

# Material Safety Data Sheet

## Batteries, Dry Charged

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### COMPANY DETAILS

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### IDENTIFICATION

Product Name/Scientific Name: **DRYCHARGED LEAD ACID BATTERY**  
Other Name/common Name: Battery, Accumulator, Electric Storage  
Manufacturers Product Code: As identified on the battery  
Use: Starting, lighting, ignition for car, truck and allied automotive applications.

#### Physical Description/Properties

Appearance: The battery is a manufactured article.  
(Lead Compounds)  
Boiling Point/Melting Point: (Lead Compounds) >1380°C / 252 to 360°C  
Vapour Pressure: (Lead Compounds) Not Applicable  
Specific Gravity: (Lead Compounds) 9.6 – 11.3 @ 25°C  
Evaporation rate / %Volatile: (Lead Compounds) Not Applicable  
Flammability Limits: (Lead Compounds) Not Applicable  
Solubility in Water: (Lead Compounds) Negligible

#### Other Properties

Lead Compounds: Avoid contact with strong acids, bases, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen and reducing agents.

Ingredients:

| <u>Chemical Name</u> | <u>CAS Number</u> | <u>Proportion by Weight</u> |
|----------------------|-------------------|-----------------------------|
| Lead / Lead Dioxide  | 7439-92-1         | 55 – 70%                    |
| Antimony             | 7440-36-0         | 1 – 1.7%                    |
| Arsenic              | 7440-38-2         | < 0.5%                      |

Hard Rubber Compounds: Afpol 1502, Reclaim, Power lime, Sulphur, TTBS/MBTS, TMTD, Isiplast, Process Oil (New), Milled Anthracite

### HEALTH HAZARD INFORMATION

#### Health Effects

##### Acute:

Swallowed: Lead compounds - Acute ingestion may cause abdominal pain, nausea, vomiting, diarrhoea and severe cramping.

Eye: Lead compounds - May cause eye irritation.

Skin: Lead compounds - Not readily absorbed through the skin.

Inhaled: Lead compounds - Inhalation of lead dust or fumes may cause irritation of upper respiratory tract and lungs.

##### Chronic:

Lead compounds: May cause constipation, weight loss, anaemia, fatigue, kidney damage, pain in joints, neuropathy (particularly of the motor nerves) and reproductive changes in male and female.

##### First Aid:

(Lead Compounds)  
Swallowed: Seek immediate medical assistance.  
Eye Contact: Irrigate with water for 15 minutes. Seek immediate medical assistance.  
Skin Contact: Wash skin thoroughly with soap and water.  
Inhaled: Gargle, wash nose and lips, seek immediate medical assistance.  
First Aid Facilities: Access to a sufficient supply of potable water may be necessary.  
Advice to Doctor: Treat symptomatically.

### PRECAUTIONS FOR USE

- Dry charge Retention:** To achieve good dry charge retention, remove the plugs just before filling the battery for fitment purpose. Store batteries in cool & dry place.
- Application:** To be used only for Automotive applications.
- Engineering Controls:** Store and handle in well ventilated area.
- Work Practices:** Batteries are heavy, appropriate material handling equipment and techniques should be used. Handle batteries cautiously to avoid spills. Ensure vent caps are on securely. Avoid contact with internal components. Wear protective clothing when filling batteries as detailed below in "Personal Protection". Follow manufactures instructions for installation and service.
- Personal Protection:**
- |                   |   |
|-------------------|---|
| Respirator Type - | Not applicable under normal use.  |
| Glove Type-       | When handling lead, wear leather or similar type work gloves. Rubber or plastic acid – resistant gloves with elbow-length gauntlet for use when filling batteries |
| Eye Protection -  | When filling Sulphuric acid, wear chemical goggles/face shield.   |
| Clothing -        | When handling batteries, wear safety boots.   |
- Flammability:** Inorganic Lead compound is not a combustible material, nor will it explode under conditions of normal use. However if it is activated by sulphuric acid then during charging flammable hydrogen gas is liberated, it is recommended that hydrogen concentration is not to exceed beyond 2%. Hence charging to be done in well-ventilated area. Do not charge close to ignition sources.
- Exposure Standard:** Workplace Exposure Standard for Metallic Lead is 0.15 mg/m<sup>3</sup> in air.

### SAFE HANDLING INFORMATION

- Storage and Transport:** Store batteries in cool, dry, well-ventilated areas with impervious surfaces and adequate containment in the event of spills. Batteries should also be stored under roof for protection against adverse weather conditions. Separate from incompatible materials. Store and handle only in areas with adequate water supply and spill control. Avoid damage to containers. Keep away from fire, sparks and heat.
- Spills:** Lead dust should be vacuumed or wet swept.
- Disposal:** Refer to the local waste disposal authority for disposal of lead compounds. Do not dump the Spent batteries in regular/ local garbage bins, it should be sent to a secondary lead smelter for recycling.
- Fire/Explosion Hazard:**
- Conductive/ metallic objects in contact with live battery terminals can get hot enough to burn the skin. Spark and molten metal may be ejected and could result in fire or explosion.
- Fire Fighting Recommendations:**
- Use Carbon Dioxide or Dry Chemical extinguishers. Wear full body protective clothing and self-contained breathing apparatus with positive pressure and full-face piece.
- List of Dangerous Decomposition or Combustion Products:**
- Exposure of lead compounds to high temperatures are likely to produce toxic metal fume, contact with strong acid or base or presence of nascent hydrogen may generate highly toxic arsine gas. Exposure of plastic container and components to high temperatures may produce carbon dioxide, carbon monoxide, noxious aldehydes (eg. formaldehyde and acrolein), ketones, methane and ethane.

### TRANSPORTATION

Non hazardous product which can travel by road, sea and air.

**Disclaimer:**

*This Material Safety Data sheet is offered solely for information, consideration and investigation to determine the suitability of adopting safety and health precautions as may be necessary under the user's specific conditions and processes. All such conditions and processes are beyond the control of Shield Batteries LTD.*

*Shield Batteries LTD reserves the right to revise this Material Safety Data Sheet as information becomes available. The user has the responsibility, by making contact with this company or otherwise, to make certain the Material Safety Data Sheet being consulted is the latest issued.*