

**HDI INSTRUMENTS, LLC - UN3091 SDS 2018  
SAFETY DATA SHEET UN3091 LITHIUM METAL BATTERIES  
HOUSTON, TEXAS USA**

**REVISION 5.1 7/17/2018**

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

**Trade name: LITHIUM THIONYL CHLORIDE BATTERY**

**Product No: HDIBATTE260DOTAA**

**Print Date:7/17/2018**

**MODEL NO'S 1000B / 2000B / 2000P / 2100 / 2200 / 2400 / M100**

**Version: 5.1/EN**

**Revision Date: 7/17/2018**

***UN3091***

***LITHIUM METAL BATTERIES CONTAINED IN OR WITH EQUIPMENT***

**THESE BATTERIES HAVE PASSED UN 38.3 TESTS – TEST RESULTS AVAILABLE  
UPON REQUEST.**

**DISTRIBUTED BY:**

**HDI – HOUSTON DIGITAL INSTRUMENTS**

**4130 DIRECTORS ROW HOUSTON TEXAS 77092 USA**

**PHONE 1-713-688-8555**

**US DOT HAZARDOUS MATERIALS REGISTRATION**

**REG # 092017-550-015ZB EXPIRES 6/30/20**

**HM COMPANY ID: 207584**

**24 HOUR EMERGENCY RESPONSE PHONE NUMBER**

**CHEMTREC – PHONE 1-703-741-5970 / 1-800-242-9300**

**CHEMTREC CONTRACT ID NUMBER 817438**

**SECTION 1: IDENTIFICATION OF THE SUBSTANCES**

**1.1 PRODUCT IDENTIFIER: LITHIUM CHLORIDE BATTERY**

**Substance – Lithium Thionyl Chloride**

**Resinlab-EP965LVLX BLACK A**

**Resinlab-EP965LVLX BLACK B**

**Product form – Encapsulated**

## 1.2 RECOMMENDED USE

**USED AS POWER SUPPLY FOR HDI PRODUCTS: 1000B / 2000B / 2000P / 2100 / 2200 / 2400 / M100**

## 1.3 SUPPLIER

**HDI HOUSTON DIGITAL INSTRUMENTS  
4130 DIRECTORS ROW HOUSTON TEXAS 77092 USA  
PHONE 1-713-688-8555**

## 1.4 EMERGENCY PHONE NUMBER

**LOCAL M/F 9AM-5PM 1-713-688-8555  
24 HOUR EMERGENCY RESPONSE PHONE NUMBER  
CHEMTREC – PHONE 1-703-741-5970 / 1-800-242-9300  
CHEMTREC CONTRACT ID NUMBER 817438**

**Special note: these batteries are exempt articles and are not subject to the OSHA Hazard Communication Regulations. This Safety Data Sheet is supplied for its users as a courtesy without any stated or implied warranty. All information provided is believed to be accurate at the time this document was prepared. This battery is manufactured in such a manner that all components are isolated from outside sources by encapsulation.**

## SECTION 2: CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

### 2.1 GHS – US CLASSIFICATION

**This is a HIGH energy density SEALED battery containing LITHIUM and THIONYL CHLORIDE. For this reason, improper handling or storage of the battery could lead to – distortion – leakage – over heating – explosion – fire – or generation of irritating and corrosive gases possibly resulting in human injury or damage to equipment and or property. It is the user’s responsibility to read and adhere to all safety protocols established by their respective HS departments.**

### 2.2 GHS LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS

**No applicable labeling required as per OSHA GHS.**

### 2.3 OTHER HAZARDS

**Distortion, leakage, overheating, explosion, fire, or generation of irritating and corrosive gases possibly resulting in human injury or damage to equipment and/or property.**

## 2.4 UNKNOWN ACUTE TOXICITY (GHS US)

Decomposition if damaged or in a fire may produce a corrosive gas. Fire Fighters and ER Personnel should wear appropriate PPE.

## SECTION 3: SUBSTANCES

### 3.1 MIXTURES

| Name              | Product Identification % | GHS-US Classification                                                                            |
|-------------------|--------------------------|--------------------------------------------------------------------------------------------------|
| Lithium           | cas no. 7439-93-2 0<100  | Water Reactive 1, H260<br>Skin Corrosive 1B, H314                                                |
| Thionyl Chloride  | cas no. 7719-09-7 0<100  | Acute Tox 4 (oral) H302<br>Acute Tox 3(inhal) H331<br>Skin Corrosive 1A, H314<br>STOT 8E 3, H335 |
| Aluminum Chloride | cas no. 7448-70-0 0<100  | Skin Corrosive 1B , H314                                                                         |
| Lithium Chloride  | cas no. 7447-4108 0<100  | Acute Tox 4 (oral) H302<br>Skin irrit 2, H315                                                    |

## SECTION 4: FIRST AID MEASURES

### 4.1 DESCRIPTION OF FIRST AID MEASURES

#### General information:

Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (Show the label where possible).

#### Following inhalation:

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.

**Following skin contact:**

**Remove/take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor/physician.**

**Following eye contact:**

**Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.**

**Following ingestion:**

**Rinse mouth. DO NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.**

#### **4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED**

**Symptoms/effects after inhalation:**

**Not expected to present inhalation hazard under anticipated conditions of normal use. If a battery ruptures, may be harmful or fatal if inhaled in a confined area.**

**Symptoms/effects after skin contact:**

**Not expected to present a significant skin hazard under anticipated conditions of normal use. If a battery ruptures, causes sever skin burns.**

**Symptoms/effects after eye contact:**

**Not expected to present a significant skin hazard under anticipated conditions of normal use. If a battery ruptures, direct contact with the liquid or exposure to vapors or mists may cause tearing, redness, swelling, corneal damage and irreversible eye damage.**

**Symptoms/effects after ingestion:**

**Not expected to present a significant ingestion hazard under anticipated conditions of normal use. If battery ruptures, swallowing is harmful. Contents of an open battery can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract. Swallowing a small quantity of this material will result in serious health hazard.**

#### **4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED**

**Treat symptomatically, note for doctor and/or ER personnel.**

## **SECTION 5: FIREFIGHTING MEASURES**

### **5.1 EXTINGUISHING MEDIA**

In case of fire where lithium batteries are present, apply a smothering agent such as LITH-X, SAND, DRY GROUND, DOLOMITE, or SODA ASH.

**Unsuitable extinguishing media:** Do not use water. Do not short circuit, recharge, over discharge (discharge below 0.0 Volts), puncture, crush, or expose to temperatures above 150°C. Cell may leak, vent, or explode.

### **5.2 SPECIAL HAZARDS ARISING FROM THE CHEMICAL(S)**

**Fire hazard:** Battery may rupture due to pressure build-up when exposed to excessive heat and may result in the release of corrosive materials, hazardous combustion products, sulfur oxides, hydrogen chloride, and/or corrosive vapors.

**Explosion hazard:** battery may burst and release hazardous decomposition products when exposed to fire situation.

**Reactivity:** Stable under normal conditions of use.

### **5.3 ADVICE FOR FIRE-FIGHTERS**

Exercise caution when fighting any chemical fire. Prevent firefighting water from entering the environment.

**Protective equipment for firefighters:** Do not enter fire area without proper protective equipment, including respiratory protection.

## **SECTION 6: ACCIDENTAL RELEASE MEASURES**

### **6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT, AND EMERGENCY PROCEDURES FOR NON-EMERGENCY PERSONNEL**

Protective equipment is for emergency responders.

Supply the clean-up crew with proper protection and information, emergency procedures, and ventilate area.

### **6.2 ENVIRONMENTAL PRECAUTIONS**

Prevent entry to sewers and public waters.

### **6.3 METHODS AND MATERIAL FOR CONTAINMENT AND CLEANUP**

For cleaning up on land: sweep or shovel into suitable containers, minimize generation of dust. Store away from other materials.

### **6.4 REFERENCE TO OTHER SECTIONS**

See Section 8: Exposure Controls/Personal Protection. For disposal of residues refer to Section 13: Disposal Considerations.

## **SECTION 7: HANDLING AND STORAGE**

### **7.1 PRECAUTIONS FOR SAFE HANDLING**

Additional hazards when processed: keep away from any possible contact with water, because of violent reaction and possible flash fire.

Protective measures:

Advice on safe handling: do not open the battery system. Do not crush or pierce the cells. Do not submit to excessive mechanical stress. Do not mix batteries of different types or mix new and old ones together. Do not expose the unit to water or condensation. Do not directly heat, solder or throw into fire. Such unsuitable use can cause leakage or spout vaporized electrolyte fumes and may cause fire or explosion.

Advice on general occupational hygiene:

Do not eat, drink, or smoke when using this product. Wash hands thoroughly after handling. Wash contaminated clothing before reuse.

### **7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES**

Technical measures: comply with applicable regulations.

Storage conditions: Keep only in the original container in a cool, well ventilated place away from heat sources. Keep container closed when not in use. Store in a dry place. Protect from moisture. Cells should be stored at room temperature. Approximately 21°C (70°F).

Incompatible materials: None known.

## **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

### **8.1 OVERVIEW**

**LITHIUM 7439 / LITHIUM 7439-93-2 – NOT APPLICABLE**

**THIONYL CHLORIDE 7719-09-07**

|              |                                         |
|--------------|-----------------------------------------|
| <b>ACGIH</b> | <b>ACGIH CEILING (PPM) = 0.2 PPM</b>    |
| <b>NIOSH</b> | <b>NIOSH REL CEILING (MG/M) = 5MG/M</b> |
| <b>NIOSH</b> | <b>NIOSH REL CEILING (PPM) = 1 PPM</b>  |

**ALUMINUM CHLORIDE 7446-70-0 – NOT APPLICABLE**

**LITHIUM CHLORIDE 7446-41-8 – NOT APPLICABLE**

**Technical Measures:** Read and comply with all local, state, and federal regulations for handling, shipping, and storage.

**Storage Conditions:** Keep only in original container in a cool, well ventilated place away from heat sources.

Keep containers closed when not in use. Store in a dry place. Protect from moisture. Cells and batteries should be stored at ambient room temperature – approximately 21 Degrees C / 70 Degrees F.

**Incompatible Materials –** None known for encapsulated batteries.

## 8.2 APPROPRIATE ENGINEERING CONTROLS

Provide adequate ventilation. Keep container hermetically sealed.

## 8.3 INDIVIDUAL PROTECTION/PERSONAL PROTECTIVE EQUIPMENT

**Hand –** None required under normal conditions. For damaged batteries, use acid resistant gloves.

**Eye –** None required under normal conditions. For damaged batteries, use acid resistant goggles or face shield.

**Skin –** None required under normal conditions. For damaged batteries, use acid resistant apron.

**Respiratory –** None required under normal conditions. For damaged batteries, use appropriate niosh respirators and/or self-contained breathing apparatus.

**Other Basic Safety Information –** Do not eat, drink, or smoke in area when handling materials.

## SECTION 9: INFORMATION ON PHYSICAL STATE OF THE BATTERIES

### 9.1 OVERVIEW

**Physical State - Solid**

**Appearance – Hermetically Sealed**

|                |                             |                           |                   |
|----------------|-----------------------------|---------------------------|-------------------|
| Physical state | Solid                       | Solubility                | water             |
| Appearance     | Hermetically sealed battery | Log Pow                   | No data available |
| Color          | No data available           | Auto-ignition temperature | No data available |

|                |                   |                           |                   |
|----------------|-------------------|---------------------------|-------------------|
| Odor           | No data available | Decomposition temperature | No data available |
| Odor threshold | No data available | Viscosity, kinematic      | No data available |
| pH             | No data available | Viscosity dynamic         | No data available |
| Melting point  | No data available | Explosive limits          | No data available |
| Freeing point  | No data available | Explosive properties      | No data available |

## **SECTION 10: STABILITY AND REACTIVITY**

### **10.1 REACTIVITY**

Stable under normal conditions of use.

### **10.2 CHEMICAL STABILITY**

Stable under normal conditions of use.

### **10.3 POSSIBILITY OF HAZARDOUS REACTIONS**

Hazardous polymerization will not occur. In contact with water releases flammable gases which may ignite spontaneously.

### **10.4 CONDITIONS TO AVOID**

Heat sources, extremely high or low temperatures, and humidity.

### **10.5 INCOMPATIBLE MATERIALS**

None known under normal conditions of use.

### **10.6 HAZARDS DECOMPOSITION PRODUCTS**

If battery ruptures or leaks: Sulfur oxides, hydrogen chloride, and corrosive vapors.

## **SECTION 11: TOXICOLOGICAL INFORMATION**

### **11.1 INFORMATION ON TOXICOLOGICAL EFFECTS**

None under normal handling conditions.

### **11.2 ORAL**

Not determined – not likely to be ingested under normal use.

### **11.3 DERMAL**

Not determined – not likely to be in contact under normal use.



#### 11.4 INHALATION

Not determined – not likely to be inhaled under normal use.

### SECTION 12: ECOLOGICAL INFORMATION

#### 12.1 TOXICITY

The product components are not classified as environmentally hazardous.

#### 12.2 PERSISTENCE AND DEGRADABILITY

Not established for Lithium Thionyl Chloride Battery.

#### 12.3 BIOACCUMULATIVE

Not established for Lithium Thionyl Chloride Battery.

#### 12.4 MOBILITY IN SOIL

No additional information available. Typically would not contaminate under normal use conditions.

#### 12.5 OTHER ADVERSE EFFECTS

|                          |                                   |
|--------------------------|-----------------------------------|
| Effect on global warming | No known effect from this product |
| GWPmix comment           | No known effect from this product |
| Other information        | Avoid release to the environment  |

### SECTION 13: DISPOSAL CONSIDERATIONS

#### 13.1 WASTE TREATMENT METHODS

Product / Packaging disposal: Dispose of contents/container to comply with applicable Local, State, National and International regulations.

Ecology – waste materials: Avoid release to the environment. Always properly handle and dispose of all waste materials.

### SECTION 14: DEPARTMENT OF TRANSPORTATION (DOT)

**SPECIAL NOTE: THESE BATTERIES HAVE PASSED UN 38.3 TESTS – TEST RESULTS AVAILABLE UPON REQUEST.**

| Haz Mat Information          | Land transport (ADR/RID) | Inland waterway transport (ADN) | Sea transport (IMDG) | Air transport (ICAO-TI / IATA-DGR) |
|------------------------------|--------------------------|---------------------------------|----------------------|------------------------------------|
| 14.1 UN No.                  | UN3091                   |                                 | UN 3091 Lithium      | UN 3091                            |
|                              | Lithium Metal Batteries  |                                 | Metal Batteries      | Lithium Metal Batteries            |
| 14.2 UN Proper shipping name | UN3091                   |                                 | UN 3091 Lithium      | Lithium Metal                      |
|                              | Lithium Metal Batteries  |                                 | Metal Batteries      | Batteries                          |
| hazard class(es)             | Class 9 -                |                                 | 9 – Miscellaneous    | 9 – Miscellaneous                  |

|                                               |               |                                                                |  |                                 |                                                                    |
|-----------------------------------------------|---------------|----------------------------------------------------------------|--|---------------------------------|--------------------------------------------------------------------|
| 14.3 Transport                                |               | miscellaneous hazardous material 49 CFR 173, 140               |  | Lithium Battery Label           | Lithium Battery and Cargo Only Aircraft Acceptable                 |
| Hazard label(s)                               |               | 9 – class 9 (miscellaneous dangerous materials) and Cargo Only |  | Class 9 – Lithium Battery Label | 9 – Miscellaneous Lithium Battery Label and Cargo Only Aircraft    |
| 14.4                                          | Packing group | Medium                                                         |  | See current IMO regulations     | See current IATA regulations and USG exceptions found in Section 2 |
|                                               |               | Danger                                                         |  |                                 |                                                                    |
| 14.5 DOT Packaging Non Bulk (49 CFR 173xxx)   |               | 185                                                            |  |                                 |                                                                    |
| 14.6 DOT Packaging Bulk (49 CFR 173xxx)       |               | none                                                           |  |                                 |                                                                    |
| 14.7 DOT Packaging Exceptions (49 CFR 173xxx) |               | 185                                                            |  |                                 |                                                                    |

## **SECTION 15: REGULATORY INFORMATION**

### **15.1 SAFETY, HEALTH, AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE**

#### **15.1.1 US Federal Regulations**

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

This product or mixture is not known to contain a toxic chemical or chemicals more than the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of the section 313 of title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

#### **15.1.2 International Regulations/Legislation**

##### **Canada**

**Lithium (7439-93-2)**

**Listed on the Canadian DSL (Domestic Substances List)**

**Thionyl Chloride (7719-09-7)**

**Listed on the Canadian DSL (Domestic Substances List)**

**Aluminum Chloride (7447-41-8)**

**Listed on the Canadian DSL (Domestic Substances List)**

**Lithium Chloride**  
**Listed on the Canadian DSL (Domestic Substances List)**

**EU Regulations**

**Lithium (7439-93-2)**  
**Listed on the EEC inventory EINCS (European Inventory of Existing Commercial Chemical Substances)**

**Thionyl Chloride (7719-09-7)**  
**Listed on the EEC inventory EINCS (European Inventory of Existing Commercial Chemical Substances)**

**Aluminum Chloride (7446-70-0)**  
**Listed on the EEC inventory EINCS (European Inventory of Existing Commercial Chemical Substances)**

**Lithium Chloride (7447-41-8)**  
**Listed on the EEC inventory EINCS (European Inventory of Existing Commercial Chemical Substances)**

**National Regulations - Lithium (7439-93-2)**

**Listed on the AICS (Australian Inventory of Chemical Substances)**

**Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported by China) Listed on the Korean ECL (Existing Chemicals List)**

**Listed on the NZIoC (New Zealand Inventory of Chemicals)**

**Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)**

**Listed on INSQ (Mexican National Inventory of Chemical Substances)**

**Listed on Taiwan Chemical Substance Inventory**

**National Regulations - Thionyl Chloride (7719-09-7)**

**Listed on the AICS (Australian Inventory of Chemical Substances)**

**Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported by China)**

**Listed on the Japanese ENCS (Existing & New Chemical Substance) Inventory**

**Listed on the Japanese ISHL (Industrial Safety and Health Law)**

**Listed on the Korean ECL (Existing Chemicals List)**

**Listed on the NZIoC (New Zealand Inventory of Chemicals)**

**Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Japanese Poisonous and Deleterious Substances Control Law**

**Listed on the Canadian IDL (Ingredient Disclosure List)**

**Listed on INSQ (Mexican National Inventory of Chemical Substances)**

**Listed on Taiwan Chemical Substance Inventory**

**National Regulations - Aluminum Chloride (7446-70-0)**

**Listed on the AICS (Australian Inventory of Chemical Substances)**

**Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported by China)**

**Listed on the Japanese ENCS (Existing & New Chemical Substance) Inventory**

**Listed on the Japanese ISHL (Industrial Safety and Health Law)**

**Listed on the Korean ECL (Existing Chemicals List)**

**Listed on the NZIoC (New Zealand Inventory of Chemicals)**

**Listed on the Canadian IDL (Ingredient Disclosure List)**

**Listed on INSQ (Mexican National Inventory of Chemical Substances)**

**Listed on Taiwan Chemical Substance Inventory**

**National Regulations - Lithium Chloride (7447-41-8)**

**Listed on the AICS (Australian Inventory of Chemical Substances)**

**Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported by China)**

**Listed on the Japanese ENCS (Existing & New Chemical Substance) inventory**

**Listed on the Japanese ISHL (Industrial Safety and Health Law)**

**Listed on the Korean ECL (Existing Chemicals List)**

Listed on the NZIoC (New Zealand Inventory of Chemicals)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

Listed on Turkish Chemical Substance Inventory

Listed on Taiwan Chemical Substance Inventory

### **US State Regulations**

California proposition 65 – this product does not contain any substance known to the state of California to cause cancer, developmental and/or reproductive harm.

## **SECTION 16: OTHER INFORMATION**

### **16.1 INDICATION OF CHANGES**

This document was originally prepared September 27, 2017.

### **16.2 ABBREVIATIONS AND ACRONYMS**

All information can be referenced online. For any technical assistance, please contact HDI at the contact information provided.

### **16.3 KEY LITERATURE REFERENCES AND SOURCES FOR DATA**

**2017 Regulations for the Safe Transport of Dangerous Goods**

### **16.4 USED THE CLASSIFICATION FOR MIXTURES AND EVALUATION METHODS ACCORDING TO CURRENT REGULATIONS**

### **16.5 SDS PREPARED BY LARRY SNELLINGS – SENIOR CONSULTANT**

**Dangerous Goods, Inc. Houston, Texas USA**

**[www.dangerousgoods.com](http://www.dangerousgoods.com)**

### **16.6 TRAINING ADVICE**

All employees must be trained in the current regulations for the use of SDS and the safe handling of materials.

### **16.7 FURTHER INFORMATION**

For any technical assistance, please contact HDI in Houston, Texas USA. Contact details listed at the beginning of this document.