



ENGINEERED POWER Inc.

MATERIAL SAFETY DATA SHEET

ENGINEERED POWER INC.
#6, 701 - 30th STREET N.E.
CALGARY, ALBERTA, CANADA
403-235-2584 Phone
403-235-2590 Fax

IN THE EVENT OF A CHEMICAL EMERGENCY
INVOLVING A SPILL, LEAK, FIRE, EXPOSURE
OR ACCIDENT, NOTIFY:
CHEMTEL (800) 255-3924

SECTION 1: IDENTIFICATION

PRODUCT NAME: LMRDD-HT Lithium Thionyl Chloride Cell. Lithium content: 8 grams

Hazardous Components:

Lithium 4%
Thionyl Chloride 39.50%
Aluminum Chloride 6.50%
Lithium Chloride 2%

Non hazardous components

Stainless steel 42.50%
Nickel 0.40%
Paper 0.40%
Carbon 4.70%

No Mercury (Hg) contained

SECTION 2: HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

HAZARDOUS COMPONENTS (SPECIFIC CHEMICAL IDENTITY; COMMON NAME(S))

OSHA PEL

ACGIH TLV

THIONYL CHLORIDE (ELECTROLYTE, SOCL2)
LITHIUM (Li)
CARBON BLACK
ALUMINUM CHLORIDE (ALCl3)

1PPM (5mg/m³)
NA

NA
3.5 MG/M3
2mg/m³

UNDER NORMAL CONDITIONS OF USE OF SERVICE THIS PRODUCT DOES NOT EXPOSE THE USER TO TOXIC OR CORROSIVE FUMES

LITHIUM BATTERIES, 9, UN3090, PG II

SECTION 3: PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT	NA	SPECIFIC GRAVITY (H2O=1)	NA
VAPOR PRESSURE	NA	MELTING POINT	NA
VAPOR DENSITY	NA	EVAPORATION RATE	NA
SOLUBILITY IN WATER	NA	APPEARANCE AND ODOR	NA

SECTION 4: FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED)	NA	LEL	NA
FLAMMABLE LIMITS	NA	UEL	NA

EXTINGUISHING MEDIA

LITH-X OR OTHER METAL FIRE EXTINGUISHER POWDER (CLASS D)

SPECIAL FIRE FIGHTING PROCEDURES

SELF CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING MUST BE USED. DO NOT USE WATER.

UNUSUAL FIRE AND EXPLOSION HAZARDS

SECTION 5: REACTIVITY DATA

STABILITY STABLE

CONDITIONS TO AVOID

DO NOT EXPOSE TO TEMPERATURES OVER 302 DEG. F/150 DEG C, PUNCTURE, SHORT CIRCUIT OR CHARGE

INCOMPATIBILITY (MATERIALS TO AVOID)

DO NOT IMMERSE BATTERY IN WATER

HAZARDOUS DECOMPOSITION OR BYPRODUCTS

THIONYL CHLORIDE WILL HYDROLYZE INTO HYDROCHLORIC ACID AND SULFUR DIOXIDE
LITHIUM METAL BURNS IN AIR YIELDING CAUSTIC LITHIUM OXIDE SMOKE

HAZARDOUS POLYMERIZATION

WILL NOT OCCUR

SECTION 6: HEALTH HAZARD DATA

ROUTE(S) OF ENTRY

UNDER NORMAL CONDITIONS

INHALATION

NA

SKIN

NA

INGESTION

NA

HEALTH HAZARDS (ACUTE AND CHRONIC)

UNDER NORMAL CONDITIONS: NONE. IN THE EVENT OF AN ACCIDENT: CORROSIVE FUMES WILL INJURE ANY EXPOSED TISSUE
PULMONARY EDEMA MAY OCCUR SEVERAL HOURS AFTER SEVERE EXPOSURE TO FUMES

CARCINOGENICITY:

NTP?

IARC Monographs ?

OSHA Regulated ?

NA

NA

NA

(ACGIH NOTES THAT CARBON BLACK MAY BE A CARCINOGEN, REF 1990-91 TLV HANDBOOK)

SIGNS AND SYMPTOMS OF EXPOSURE

IN THE EVENT OF ACCIDENT: THIONYL CHLORIDE FUMES ARE CORROSIVE AND WILL INJURE EYES, MUCOUS MEMBRANES, AND LUNGS.

MEDICAL CONDITIONS

GENERALLY AGGRAVATED BY EXPOSURE RESPIRATORY ILLNESS AND SKIN CONDITIONS

EMERGENCY AND FIRST AID PROCEDURES

FOR CONTACT WITH LITHIUM , THIONYL CHLORIDE, OR CARBON BLACK: FLUSH WITH COPIOUS AMOUNTS OF WATER

SECTION 7: PRECAUTIONS FOR SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED.

THIONYL CHLORIDE SPILLS SHOULD BE NEUTRALIZED WITH A SOLUTION OF SODA ASH.
DISPOSE OF REMAINING LIQUID IN ACCORDANCE WITH ENVIRONMENTAL REGULATIONS

WASTE DISPOSAL METHOD

SPENT BATTERIES CONTAIN RESIDUAL ELECTROLYTE AND MAY CONTAIN RESIDUAL LITHIUM METAL AND MUST BE
DISPOSED OF IN ACCORDANCE WITH ENVIRONMENTAL REGULATIONS

SECTION 7: PRECAUTIONS FOR SAFE HANDLING AND USE**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE**

STORE IN TEMPERATURES BELOW 302 DEG. F/150 DEG. C. STORE SO THAT TERMINALS DO NOT SHORT CIRCUIT.

OTHER PRECAUTIONS

DO NOT PUNCTURE, DISASSEMBLE, OR INCINERATE THE BATTERY, DO NOT CHARGE THE BATTERY.

SECTION 8: CONTROL MEASURES**RESPIRATORY PROTECTION (SPECIFIC TYPE)**

A 1/2 OR FULL RESPIRATOR WITH ACID GAS CARTRIDGES SHOULD BE AVAILABLE

VENTILATION**LOCAL EXHAUST**

UNDER NORMAL CONDITIONS: NONE

MECHANICAL (GENERAL)

UNDER NORMAL CONDITIONS: NONE

SPECIAL

IN ACCIDENT: VENT WORK AREA TO CLEAR FUMES, IF POSSIBLE
A SCRUBBER TO MINIMIZE AIR POLLUTION

EYE PROTECTION

UNDER NORMAL CONDITIONS: NONE

PROTECTIVE GLOVES

UNDER NORMAL CONDITIONS: NONE

OTHER PROTECTIVE CLOTHING OR EQUIPMENT

IN THE EVENT OF ACCIDENT: RUBBER GLOVES, GOGGLES, ACID RESISTANT CLOTHING AND RESPIRATOR.

WORK HYGIENIC PRACTICES

WASH THOROUGHLY AFTER WORKING WITH THIS OR ANY OTHER BATTERY.