



ENGINEERED POWER

# MATERIAL SAFETY DATA SHEET

ENGINEERED POWER INC.  
#8, 701 - 30th STREET N.E.  
CALGARY, ALBERTA, CANADA

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: LISOCL2 BATTERY HT (HIGH TEMPERATURE)

## SECTION 2: HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

HAZARDOUS COMPONENTS (SPECIFIC CHEMICAL IDENTITY; COMMON NAME(S))	OSHA PEL	ACGIH TLV
THIONYL CHLORIDE (ELECTROLYTE, SOCL2)		1 PPM(C)
LITHIUM (L)	NA	NA
CARBON BLACK		3.5 MG/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

THE BATTERY MAY RUPTURE VIOLENTLY WHEN EXPOSED TO FIRE OR TEMPERATURES ABOVE 355 DEG. F (180 DEG. C)

**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**

<b>ROUTE(S) OF ENTRY</b>	<b>INHALATION</b>	<b>SKIN</b>	<b>INGESTION</b>
<b>UNDER NORMAL CONDITIONS</b>	NA	NA	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

<b>CARCINOGENICITY:</b>	<b>NTP?</b>	<b>IARC Monographs ?</b>	<b>OSHA Regulated ?</b>
	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

**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 POSSIBL  
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