

LITHIUM CELL

MATERIAL SAFETY DATA SHEET

SECTION 1: IDENTITY: LITHIUM/THIONYL CHLORIDE CELL

Manufacturer: ECO Energy Conversion
20 Assembly Square Drive
Somerville, MA 02145

Emergency Telephone No.: (617) 776-6610

Chemical Family: Lithium/Thionyl Chloride Cell

Date Prepared: 06/22/94

NOTE: This Material Safety Data Sheet must be used in conjunction with the thionyl chloride data sheet attached which identifies hazards associated with the cell or battery electrolyte.

SECTION 2: HAZARDOUS INGREDIENTS/IDENTITY

Classification: Lithium Battery* (UN 3090)

Lithium Content: Up to 12 grams lithium per cell

Other: See Material Safety Data Sheet for lithium tetrachloroaluminate in thionyl chloride that is attached.

SECTION 3: PHYSICAL & CHEMICAL CHARACTERISTICS

Electrical Configuration: Single cell. Nominal 3.6 VDC.

Other: See Material Safety Data Sheet for lithium tetrachloroaluminate in thionyl chloride that is attached.

SECTION 4: FIRE AND EXPLOSION HAZARD DATA

FLASHPOINT: N/A AUTO-IGNITION TEMP: N/A FLAMMABLE LIMITS: N/A

EXTINGUISHER MEDIA: DRY LITHIUM CHLORIDE, GRAPHITE POWDER, PYRENE G-1, LITH-X. FIRE CLASS D.

* UPDATED AUG 2002

LITHIUM CELL

MATERIAL SAFETY DATA SHEET

SECTION 4: FIRE AND EXPLOSION HAZARD DATA CONT'D

SPECIAL FIRE FIGHTING PROCEDURES: COVER WITH DRY LITHIUM CHLORIDE OR LITH-X POWDER. DO NOT USE WATER, MOIST SAND, CARBON DIOXIDE, OR SODA ASH EXTINGUISHER - WEAR PROTECTIVE BREATHING APPARATUS.

UNUSUAL FIRE AND EXPLOSION HAZARDS: DO NOT SHORT CIRCUIT, RECHARGE, OVERDISCHARGE, PUNCTURE, CRUSH, OR EXPOSE TO TEMPERATURES ABOVE MODERATE TEMPERATURES. HEATING ABOVE 354°F WILL LEAD TO MELTING OF LITHIUM AND REPRESENTS A SEVERE FIRE/EXPLOSION HAZARD. DO NOT EXPOSE VENTED CELL/BATTERY TO WATER.

SECTION 5: REACTIVITY HAZARD DATA

STABILITY: STABLE

CONDITIONS TO AVOID: TEMPERATURES ABOVE MODERATE TEMPERATURES. HIGH HUMIDITY FOR EXTENDED PERIODS.

INCOMPATIBILITY:- N/A

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

OTHER: DO NOT EXPOSE VENTED CELL/BATTERY TO WATER. SEE MATERIAL SAFETY DATA SHEET FOR LITHIUM TETRACHLOROALUMINATE IN THIONYL CHLORIDE THAT IS ATTACHED.

SECTION 6: HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY: INHALATION.

CARCINOGEN LISTED IN: NOT LISTED.

HEALTH HAZARDS:
ACUTE: VAPORS VERY IRRITATING TO SKIN, EYES, AND MUCOUS MEMBRANES.
CHRONIC: OVEREXPOSURE CAN CAUSE SYMPTOMS OF NON-FIBROTIC LUNG INJURY.

SIGNS/SYMPTOMS OF OVEREXPOSURE: EYE AND MUCOUS MEMBRANE IRRITATION.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: ASTHMA, OTHER RESPIRATORY DISORDERS, SKIN ALLERGIES, ECZEMA.

LITHIUM CELL

MATERIAL SAFETY DATA SHEET

SECTION 6: HEALTH HAZARD DATA CONT'D

EMERGENCY FIRST AID PROCEDURES: SEEK MEDICAL ASSISTANCE FOR FURTHER TREATMENT.

EYE CONTACT: FLUSH WITH RUNNING WATER FOR AT LEAST 15 MINUTES. HOLD EYELIDS APART. SEEK MEDICAL TREATMENT.

SKIN CONTACT: RINSE WITH LARGE AMOUNTS OF WATER. SEEK MEDICAL TREATMENT IF BURNS DEVELOP.

INHALATION: REMOVE TO FRESH AIR. IF BREATHING IS DIFFICULT, ADMINISTER OXYGEN AND SEEK MEDICAL ATTENTION.

INVESTIGATION: N/A

OTHER: SEE MATERIAL SAFETY DATA SHEET FOR LITHIUM TETRACHLOROALUMINATE IN THIONYL CHLORIDE THAT IS ATTACHED.

SECTION 7: CONTROL AND PROTECTIVE MEASURES

RESPIRATORY PROTECTION: ACID GAS FILTER MASK.

PROTECTIVE GLOVES: BUTYL RUBBER GLOVES.

EYE PROTECTION: CHEMICAL WORKER SAFETY GLASSES.

VENTILATION TO BE USED: LOCAL EXHAUST.

OTHER PROTECTIVE CLOTHING/EQUIPMENT: CHEMICAL APRON.

HYGIENIC WORK PRACTICES: N/A

SECTION 8: SPILL OR LEAK PROCEDURES/PRECAUTIONS

STEPS TO BE TAKEN IF SPILLED OR RELEASED: DO NOT BREATHE VAPORS OR TOUCH LIQUID WITH BARE HANDS.

WASTE DISPOSAL METHODS: NEUTRALIZE SPILL WITH SODA LIME, SEAL LEAKING BATTERY AND SODA LIME IN PLASTIC BAG AND DISPOSE OF AS HAZARDOUS WASTE IN ACCORDANCE WITH STATE/FEDERAL REGULATIONS.

LITHIUM CELL

MATERIAL SAFETY DATA SHEET

SECTION 8: SPILL OR LEAK PROCEDURES/PRECAUTIONS CONT'D

PRECAUTIONS TO BE TAKEN FOR SAFE HANDLING/STORAGE: DO NOT SHORT CIRCUIT, DO NOT EXPOSE TO TEMPERATURES ABOVE MODERATE, DO NOT CHARGE, SHORT CIRCUIT, OVER DISCHARGE, PUNCTURE, OR CRUSH.

OTHER: DO NOT STORE IN HIGH HUMIDITY ENVIRONMENT FOR EXTENDED PERIODS OF TIME. ALWAYS STORE IN ORIGINAL CONTAINER AND NOT IN LOOSE AND/OR IN BINS.

SECTION 9: TRANSPORTATION INFORMATION

PROPER SHIPPING NAME: LITHIUM BATTERY*

UN #: UN 3090

HAZARD CLASSIFICATION: MISCELLANEOUS CLASS 9

LABELS REQUIRED: MISCELLANEOUS CLASS 9

OTHER: , CARGO AIRCRAFT ONLY* *FOR PACKAGES OVER 5 Kg. GROSS WEIGHT*

SECTION 10: DISPOSAL INFORMATION

PROPER SHIPPING NAME: LITHIUM BATTERIES FOR DISPOSAL.

UN #: UN 3090

HAZARD CLASSIFICATION: ORM-C

LABELS REQUIRED: 1) MISCELLANEOUS CLASS 9
2) "LITHIUM BATTERIES FOR DISPOSAL"

WASTE DISPOSAL CODE: D003

OTHER: ALL LITHIUM THIONYL CHLORIDE BATTERIES SHOULD BE DISPOSED OF BY A PROPER DISPOSAL FACILITY IN ACCORDANCE WITH STATE AND FEDERAL REGULATIONS.