

LITHIUM CELL

MATERIAL SAFETY DATA SHEET

SECTION 1: IDENTITY: LITHIUM / THIONYL CHLORIDE CELL

Manufacturer: Tracer Technologies, Inc.
20 Assembly Square Drive
Somerville, MA 02145

Telephone Number: (617) 776-6610
Emergency Telephone Number: (800) 424-9300
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Chemical Family: Lithium / Thionyl Chloride Cell

Date Prepared: 01/10/11

SECTION 2: HAZARDOUS INGREDIENTS / IDENTITY

CLASSIFICATION: LITHIUM METAL BATTERY (UN3090)

LITHIUM CONTENT: UP TO 12 GRAMS LITHIUM PER CELL (7439-93-2)

OTHER: THIONYL CHLORIDE (7719-09-7)

SECTION 3: HEALTH HAZARD IDENTIFICATION IF CELL LEAKS OR VENTS

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. INHALATION OF THIONYL CHLORIDE
AND ITS HYDROLYSIS PRODUCTS MAY RESULT IN PULMONARY EDEMA.

SECTION 4: FIRST AID MEASURES

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

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

SKIN CONTACT: RINSE WITH LARGE AMOUNTS OF COLD RUNNING WATER. SEEK IMMEDIATE
MEDICAL TREATMENT IF ACID-CAUSED BURNS DEVELOP.

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

INGESTION: DRINK FLUIDS, ESPECIALLY WATER OR MILK. DO NOT INDUCE VOMITING. SEEK IMMEDIATE MEDICAL TREATMENT.

SECTION 5: FIRE FIGHTING MEASURES

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.**

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, OR CRUSH CELL, OR EXPOSE CELL 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 OR LEAKING CELL TO WATER.

SECTION 6: ACCIDENTIAL RELEASE MEASURES

STEPS TO BE TAKEN IF CELL ELECTROLYTE SPILLED OR RELEASED: DO NOT BREATHE VAPORS OR TOUCH LIQUID WITH BARE HANDS. EVACUATE AREA OF PERSONNEL NOT TRAINED TO HANDLE CHEMICAL SPILLS OR RELEASES.

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

SECTION 7: HANDLING AND STORAGE

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

OTHER: DO NOT STORE CELL IN HIGH HUMIDITY ENVIRONMENT FOR EXTENDED PERIODS OF TIME. ALWAYS STORE CELL IN ORIGINAL SHIPPING CONTAINER.

SECTION 8: EXPOSURE CONTROL AND PERSONAL PROTECTIVE MEASURES

RESPIRATORY PROTECTION: ACID GAS FILTER MASK.

PROTECTIVE GLOVES: BUTYL OR PVC RUBBER GLOVES.

EYE PROTECTION: CHEMICAL WORKER SAFETY GLASSES.

VENTILATION TO BE USED: LOCAL EXHAUST.

OTHER PROTECTIVE CLOTHING / EQUIPMENT: CHEMICAL APRON.

HYGIENIC WORK PRACTICES: AVOID UNNECESSARY CONTACT.

SECTION 9: PHYSICAL AND CHEMICAL CHARACTERISTICS

ELECTRICAL CONFIGURATION: SINGLE CELL NOMINAL 3.6 VDC.

OTHER: CELL CONTAINS LITHIUM AND THIONYL CHLORIDE WHICH ARE BOTH WATER REACTIVE. THIONYL CHLORIDE HYDROLYSES WITH WATER TO FORM SO₂ AND HCl GASES AND ACIDIC LIQUID WASTE; THIS REACTION CAN OCCUR WITH THE MOISTURE IN AIR.

SECTION 10: STABILITY AND 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 TO WATER. BOTH LITHIUM AND THIONYL CHLORIDE ARE WATER REACTIVE. THIONYL CHLORIDE HYDROLYSES WITH WATER TO FORM SO₂ AND HCl GASES AND ACIDIC LIQUID WASTE; THIS REACTION CAN OCCUR WITH THE MOISTURE IN AIR. LITHIUM REACTS WITH WATER TO FORM HYDROGEN GAS.

SECTION 11: TOXICOLOGICAL INFORMATION

ACUTE TOXICITY: THIONYL CHLORIDE

EYE CONTACT: CORROSIVE

SKIN CONTACT: CORROSIVE (MAY BE ABSORBED THROUGH SKIN)

INHALATION: CORROSIVE. TOXIC WITH LC₅₀ (RAT) = 500 ppm (1 hr)

INGESTION: CORROSIVE

SECTION 12: ECOLOGICAL INFORMATION

AVOID RELEASE OF CELL CHEMICAL COMPONENTS OR LEAK/VENT WASTE PRODUCTS INTO MARINE OR FRESHWATER ENVIRONMENTS.

SECTION 13: DISPOSAL INFORMATION

PROPER SHIPPING NAME: LITHIUM METAL BATTERIES FOR DISPOSAL

UN NUMBER: UN3090

HAZARD CLASSIFICATION: ORM-C

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

WASTE DISPOSAL CODE: D003

OTHER: ALL LITHIUM THIONYL CHLORIDE CELLS SHOULD BE DISPOSED OF BY A PROPER DISPOSAL FACILITY IN ACCORDANCE WITH STATE AND FEDERAL REGULATIONS. SHIPMENT OF LITHIUM CELLS SUBJECT TO REQUIREMENTS OF 49 CFR 173.185.

SECTION 14: TRANSPORT INFORMATION

PROPER SHIPPING NAME: LITHIUM METAL BATTERY

UN NUMBER: UN3090 **PACKING GROUP:** II

HAZARD CLASSIFICATION: MISCELLANEOUS CLASS 9

LABELS REQUIRED: MISCELLANEOUS CLASS 9

OTHER: CARGO AIR OR TRUCK TRANSPORTATION ONLY; SHIPMENT OF LITHIUM CELLS SUBJECT TO REQUIREMENTS UNDER 49 CFR 173.185.

SECTION 15: REGULATORY INFORMATION

THIONYL CHLORIDE CONTAINED IN CELL IS CONSIDERED HAZARDOUS UNDER OSHA (29 CFR 1920.1200).

SHIPMENT OF LITHIUM CELLS IS SUBJECT TO REQUIREMENTS OF 49 CFR 173.185.

SHIPMENT OF LITHIUM CELLS IS SUBJECT TO REQUIREMENTS OF IATA.