

Current Version: 2.0
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Material Safety Data Sheet

Identity: Lithium cobalt oxide

Formula: LiCoO₂

SECTION I - GENERAL INFORMATION

Manufacturer: [Stanford Advanced Materials](#) (SAM)

The information below is believed to be accurate and represents the best information available to SAM. However, SAM makes no warranty, expressed or implied with respect to such information and assumes no liability resulting from its use.

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Molecular weight: 97.88

CAS #	OSHA PEL	ACGIH TLV	%
ND	NE	NE	100.0

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: NA

Vapor Pressure (vs. air or mmHg): NA

Melting Point: NA

Density: NA

Evaporation Rate: NA

Flash Point: N/A

Solubility in water: Insoluble

Appearance and odor: Dark blue, no odor

SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

Method Used:

Explosive Limits: LEL: N/A

UEL: N/A

Extinguishing Media: Use suitable extinguishing agent for surrounding material and type of fire

Special Fire Fighting Procedures:

Firefighters must wear full face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.

Unusual Fire and Explosion Hazards: If involved in a fire, Lithium cobalt may emit toxic fumes.

SECTION V - REACTIVITY DATA

Stability: Stable

Conditions to Avoid (stability): None

Incompatibility: None recorded

Hazardous Decomposition or Byproducts: None recorded

Hazardous Polymerization: None

Conditions to avoid (hazardous polymerization): None

SECTION VI - HEALTH HAZARD DATA

Routes of entry: Inhalation? Yes Skin? Yes Eyes? Yes Ingestion? Yes Other? N

The toxicity of lithium compounds is a function of their solubility in water. Lithium ion has central nervous system toxicity. The initial effects of lithium exposure are tremors of the hands, nausea, micturition, slurred speech, sluggishness, sleepiness, vertigo, thirst, and increased urine volume. Effects from continued exposure are apathy, anorexia, fatigue, lethargy, muscular weakness and changes in EKG.

Cobalt is a low toxicity by ingestion. Ingestion of soluble salts, produces nausea and vomiting by local irritation. In animals, administration of cobalt salts produces an increase in the total red cell mass of the blood. In humans, a single case of poisoning with liver and kidney damage has been able to demonstrate a hypersensitivity to the skin to cobalt. There have been reports of hematologic, digestive and pulmonary changes in humans.

Signs and Symptoms of Overexposure:

Inhalation: May cause a red, dry, shortness of breath, coughing, wheezing, chest tightness, and loss of weight. Remove victim to fresh air; keep warm and quiet; give oxygen if breathing is difficult; seek medical attention immediately.

Ingestion: May cause vomiting, headaches, dizziness, diarrhea, low blood pressure and body temperature, nausea, muscular twitches, and mental confusion.

Skin: May cause redness, itching, inflammation, and burning sensation. Remove contaminated clothing, brush material off skin, wash affected area with mild soap and water, seek medical attention immediately.

Eye: May cause redness, itching, and watering, inflammation, and chemical burns. Flush eyes with lukewarm water, lifting upper and lower eyelids for at least 15 minutes. Seek medical attention.

Health Hazards (Acute and Chronic):

Inhalation:

Acute: SEVERE IRRITANT and CORROSIVE. Causes irritation to the respiratory tract and mucous membranes.

Chronic: May cause pulmonary edema, lung damage, respiratory disease, occupational asthma, and interstitial fibrosis.

Ingestion:

Acute: May cause acute cobalt poisoning, central nervous system effects, circulatory failure, and cardiovascular collapse.

Chronic: May cause gastrointestinal irritation, renal dysfunction, and derangement of neuromuscular activity, diabetes and kidney damage.

Skin:

Acute: SEVERE IRRITANT and CORROSIVE
Chronic: May cause dermatitis and sensitization.

Eye:

Acute: SEVERE IRRITANT and CORROSIVE
Chronic: May cause blurred vision.

Target Organs: May effect the skin, eyes, and respiratory system. *Carcinogenicity:*
NTP? No IARC Monographs? No OSHA Regulated? No
Medical Conditions Aggravated by Exposure:

Emergency and First Aid Procedures:

Inhalation: Remove victim to fresh air, keep warm and quiet, and give oxygen if breathing is difficult; seek medical attention
Ingestion: Give 1-2 glasses of milk or water and induce vomiting, seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person
Skin: Remove contaminated clothing, brush material off skin, wash affected area with mild soap and water, and seek medical attention if symptoms persist
Eye: Flush eyes with lukewarm water, lifting upper and lower eyelids for at least 15 minutes and seek medical attention

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be taken in case material is released or spilled:

Wear appropriate respiratory and protective equipment specified in section VIII. Isolate spill area, provide ventilation and extinguish sources of ignition. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust.

Waste disposal method:

Dispose of in accordance with state, local, and federal regulations.

Hazard Label Information:

Store in cool, dry area and in tightly sealed container. Wash thoroughly after handling.

SECTION VIII - CONTROL MEASURES

Protective Equipment Summary (Hazard Label Information):

NIOSH approved respirator, impervious gloves, safety glasses, clothes to prevent contact.

Ventilation:

Local Exhaust: To maintain concentration at low exposure levels.
Mechanical (General): Recommended.

Work/Hygienic/Maintenance Practices:

Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating or smoking. Do not blow dust off clothing or skin with compressed air.
