

Material Safety Data Sheet (MSDS / SDS)

Lithium Carbonate (Li₂CO₃) - Battery & Technical Grade

SECTION 1: Identification

Product Name	Lithium Carbonate (Li ₂ CO ₃)
Synonyms	Lithium Carbonate, Dilithium Carbonate, Carbonic Acid Dilithium Salt
CAS No.	554-13-2
Recommended Use	Precursor for lithium-ion battery cathode manufacturing; ceramics, glass, aluminium smelting and lubricant-grease applications
Manufacturer / Supplier	Ochnology Solution Pvt. Ltd., B-153, Sector-4 Defence Colony, Dehradun, Uttarakhand, India – 248001
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SECTION 2: Hazard(s) Identification

GHS Classification: Acute Toxicity Category 4, Oral (H302); Reproductive Toxicity Category 2 (H361); Specific Target Organ Toxicity - Repeated Exposure Category 2 (H373, thyroid/kidney/cardiovascular system); Skin Irritation Category 2 (H315); Eye Irritation Category 2 (H319); Specific Target Organ Toxicity - Single Exposure Category 3, Respiratory Irritation (H335)

Signal Word: Warning

Hazard Statements:

- H302 – Harmful if swallowed
- H315 – Causes skin irritation
- H319 – Causes serious eye irritation
- H335 – May cause respiratory irritation
- H361 – Suspected of damaging fertility or the unborn child
- H373 – May cause damage to organs (thyroid, kidney, cardiovascular system) through prolonged or repeated exposure

Precautionary Statements:

- P201 – Obtain special instructions before use
- P260 – Do not breathe dust
- P264 – Wash hands thoroughly after handling
- P270 – Do not eat, drink or smoke when using this product
- P271 – Use only outdoors or in a well-ventilated area
- P280 – Wear protective gloves/eye protection
- P301+P312 – IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell
- P305+P351+P338 – IF IN EYES: Rinse cautiously with water for several minutes; remove contact lenses if present and easy to do; continue rinsing
- P308+P313 – IF exposed or concerned: Get medical advice/attention

SECTION 3: Composition / Information on Ingredients

Component	CAS No.	Concentration (w/w)
Lithium Carbonate (Li ₂ CO ₃)	554-13-2	Min. 99.0% (technical) / Min. 99.5% (battery grade)
Sodium, Calcium, Magnesium, Iron (residual trace impurities)	–	< 0.2% (combined, grade dependent, see TDS)

SECTION 4: First-Aid Measures

Eye Contact	Rinse immediately with plenty of water for at least 15 minutes, holding eyelids open. Remove contact lenses if present and easy to do. Seek medical attention if irritation persists.
Skin Contact	Wash affected area with plenty of water and soap. Remove contaminated clothing. Seek medical attention if irritation persists.
Inhalation	Move to fresh air immediately. If coughing or respiratory discomfort persists, seek medical attention.
Ingestion	Do NOT induce vomiting. Rinse mouth with water. Seek medical attention immediately – lithium salts have systemic effects and ingestion should always be medically assessed, even if the amount seems small.

SECTION 5: Fire-Fighting Measures

- Non-flammable inorganic solid; does not itself burn
- Suitable extinguishing media: use media appropriate to the surrounding fire
- No specific fire or explosion hazard associated with this product itself (unlike metallic lithium or lithium-ion cells, which are separate materials with distinct, more severe fire hazards)

SECTION 6: Accidental Release Measures

- Avoid generating dust during clean-up; use wet suppression or vacuum with HEPA filtration where practical
- Sweep or vacuum into suitable containers for reuse or disposal
- Prevent entry into drains, sewers or waterways
- Wear appropriate PPE (dust mask, goggles, gloves) during clean-up of large spills

SECTION 7: Handling and Storage

- Avoid generating and inhaling dust; use local exhaust ventilation at dust-generating points
- Avoid prolonged or repeated skin/eye contact; wash hands after handling and before eating, drinking or smoking
- Store in a cool, dry, well-ventilated area away from moisture (product will slowly absorb CO₂/moisture and can cake if poorly sealed)
- Keep containers tightly sealed; segregate battery-grade material from technical-grade to prevent mix-up

SECTION 8: Exposure Controls / Personal Protection

Occupational Exposure Limits

OSHA/ACGIH: no universally harmonised specific OEL for lithium carbonate dust; treat per general Particulate Not Otherwise Regulated guidance ($\approx 10 \text{ mg/m}^3$ total dust, 8-hr TWA) pending confirmation of the current jurisdiction-specific limit, given the systemic toxicity profile of lithium warrants a conservative

	approach to exposure control
Engineering Controls	Local exhaust ventilation at dust-generating process steps
Eye/Face Protection	Chemical splash goggles recommended – this product is an eye irritant
Hand Protection	Chemical-resistant gloves recommended for prolonged or repeated contact
Respiratory Protection	Dust mask (N95 or equivalent) recommended in dusty conditions; higher-grade respiratory protection recommended for prolonged or high-concentration exposure

SECTION 9: Physical and Chemical Properties

Property	Unit	Value
Appearance	–	White crystalline powder
Odour	–	Odourless
Solubility in Water	–	Slightly soluble (decreases with increasing temperature – an unusual property for an inorganic salt)
Decomposition Temperature	°C	≈ 1,300 (decomposes to Li ₂ O and CO ₂ at high temperature)
Density	g/cm ³	≈ 2.11
Flash Point	–	Not applicable (non-flammable inorganic solid)

SECTION 10: Stability and Reactivity

- Stable under normal conditions of storage, handling and use
- Decomposes at high temperature (≈1,300°C) to lithium oxide and CO₂
- Incompatible materials: strong acids (reacts, releasing CO₂)
- Hazardous decomposition products: none under normal ambient conditions

SECTION 11: Toxicological Information

- Harmful if swallowed; causes skin and eye irritation on direct contact
- Lithium's systemic toxicology is unusually well characterised because lithium carbonate has been used for decades as a pharmaceutical (mood stabiliser), which requires routine blood-level monitoring due to its narrow therapeutic index – this real-world clinical data is the basis for its organ toxicity classification
- Chronic/repeated exposure is associated with thyroid, kidney and cardiovascular effects (H373), consistent with well-documented effects seen in long-term pharmaceutical lithium therapy at systemic exposure levels
- Suspected of damaging fertility or the unborn child (H361) based on available reproductive/developmental toxicity data
- Occupational exposure via inhalation/ingestion of industrial lithium carbonate is a different, generally much lower exposure route than pharmaceutical dosing, but the same target organs are relevant and warrant conservative exposure control

SECTION 12: Ecological Information

- Limited acute aquatic toxicity data; not classified as hazardous to aquatic organisms under standard GHS acute criteria based on available information
- Lithium is not readily biodegradable (inorganic ion) and can persist in aquatic systems – avoid unnecessary release to waterways
- Buyers should confirm current ecotoxicological data given growing environmental scrutiny of lithium supply chains

SECTION 13: Disposal Considerations

- Dispose of product and packaging in accordance with local, state and national regulations
- Do not discharge to drains or waterways
- Confirm local hazardous waste classification requirements before disposal, given lithium's reproductive/organ toxicity classification

SECTION 14: Transport Information

UN Number	Not applicable for lithium carbonate itself – not classified as Dangerous Goods (distinct from metallic lithium or lithium-ion batteries/cells, which ARE regulated Dangerous Goods under separate UN entries)
Proper Shipping Name	Not regulated for transport (IMDG / ADR / IATA / RID) for the carbonate salt
Transport Hazard Class	Not classified
Packing Group	Not applicable
Environmental Hazards	None specifically identified under standard transport classification criteria

SECTION 15: Regulatory Information

- Lithium carbonate is widely listed on major chemical inventories (TSCA, REACH, ECL, etc.) as an existing/registered substance
- Subject to reproductive toxicity (Repr. 2) and STOT RE 2 hazard classification in several jurisdictions – buyers should confirm current labelling requirements for their specific market
- Lithium supply chains are subject to increasing environmental and sourcing due-diligence scrutiny globally given EV battery demand – buyers should confirm current requirements for their specific end-use and jurisdiction

SECTION 16: Other Information

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This SDS has been compiled based on general industry data and knowledge for Lithium Carbonate products of this type as commercially supplied, covering both battery grade and technical grade. It is intended as a general handling and safety guide and does not replace a batch-specific SDS from the manufacturing source, which should be obtained and reviewed for each shipment where regulatory submission is required.

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