Material Safety Data Sheet
Lithium Carbonate

Edition: 09/12/2013

In compliance with Regulation (EC) No. 453/2010

1) Identification of substance/preparation and of the company undertaking

Material	Lithium Carbonate
Synonyms	Lithium carbonate 60 mesh; Lithium carbonate 325 mesh
Product form	Substance
Formula	Li_2CO_3
EC no	209-062-5
CAS No	554-13-2
REACH registration No	01-211951634-53
Company	Inoxia Ltd 45.7 Dunsfold Park Stovolds Hill Cranleigh Surrey GU6 8TB Tel: 02032 909990 safety@inoxia.co.uk www.inoxia.co.uk

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Recommended Use:
National Poisons Information Service (London Centre)
+44 20 7771 5307
ES1: Formulation; Ceramic glass (PC9a, PC9b, PC15)
ES2: Formulation; Welding consumables (PC7, PC38)
ES3: Use at industrial site; Welding consumables (PC7, PC38, SU0)
ES4: Formulation; Formulation of construction chemicals, open systems (PC1, PC9b)
ES5: Formulation; Formulation of construction chemicals, closed systems (PC1, PC9b)
ES6/ES7: Use at industrial site; Industrial use of construction chemicals (includes without spraying) (PC1, PC9b, SU13)
ES8/ES10: Use by professional worker; Professional use of construction chemicals (includes without spraying) (PC1, PC9b, SU19)
ES9/ES11: Service life (professional worker) (SU19)
ES12/ES14: Consumer use; Consumer use of construction chemicals
ES13/ES15: Service life (consumers)
See annex for more detailed information.

1.2.2. Uses advised against

Uses advised against
No information available

2)) Hazard Identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute Toxicity: Category 4
Serious eye damage/eye irritation: Category 2

Classification according to Directive 67/548/EEC or 1999/45/EC

Xn; R22 – Xi;R36
Full text of R-phrases: see section 16

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 (CLP)

Hazard pictograms (CLP):

Signal word (CLP): Warning

Hazard statements (CLP):

H302 - Harmful if swallowed
H319 – Causes serious eye irritation

Precautionary statements (CLP):

P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician 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

2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH, annex XIII.
This substance/mixture does not meet the vPvB criteria of REACH, annex XIII.

3) Composition/information on ingredients.

3.1. Substances

Chemical name	Lithium carbonate	
EC-No	209-062-5	
CAS-No.	554-13-2	
Weight %	>99	
Classification (67/548/EEC)	Xn; R2	Xi; R36
Classification (1272/2008/EC)	Acute tox. 4 H302	Eye irr. 2 H319
Reach Registration Number	01-2119516034-53	

For the full text of the R-Phrases mentioned in this Section, see Section 16

For the full text of the H-Statements mentioned in this Section, see Section 16

4) First Aid Measures

4.1. Description of first aid measures

First-aid measures after inhalation: Remove victim to fresh air. If breathing is difficult, give oxygen. If breathing stops, perform cardio pulmonary resuscitation (CPR). Take to hospital.

First-aid measures after skin contact: Wash immediately with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing before reuse. Seek medical attention if ill effect or irritation develops.

First-aid measures after eye contact: In case of eye contact, immediately rinse with clean water for 10-15 minutes. Call a doctor.

First-aid measures after ingestion: If swallowed, do not induce vomiting: seek medical advice immediately and show the container or label.

4.2. Most important symptoms and effects, both acute and delayed

Ingestion may cause irritation to mucous membranes. Ingestion may cause stomach discomfort. Central nervous system, Kidney disorders, Drowsiness. Irritating to eyes: Redness, Pain.

4.3. Indication of any immediate medical attention and special treatment needed

It is strongly recommended to have the presence of emergency showers and eye baths close to the workstations.
Notes to physician: Treat symptomatically.

5) Fire Fighting

5.1. Extinguishing media

Suitable extinguishing media: No restriction in case of fire in the vicinity
Unsuitable extinguishing media: High volume water jet

5.2. Special hazards arising from the substance or mixture

Fire hazard: Not flammable.

Explosion hazard: In the presence of water, contact with metals may produce hydrogen which may form explosive mixtures with air.

Reactivity: Stable under normal conditions of handling and storage.

Special hazard: Hazardous decomposition products formed under fire conditions: Carbon oxides, Lithium oxide. Do not allow run-off from fore fighting to enter drains or water courses.

5.3. Advice for firefighters

Protection during firefighting: Use of approved supplied air or self-contained breathing apparatus operated in positive pressure mode are satisfactory. Totally impervious protective suits, gloves, and boots must be worn.

6) Accidental Release

6.1. Personal precautions, protective equipment and emergency procedures

General measures: Keep public away from danger area. See section 8.2. Keep away from heat source.

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent entry to sewers and soil. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up: Sweep or shovel spills into appropriate container for disposal. Avoid dust production.

6.4. Reference to other sections

See section 8 and 13 for more information.

7) Handling/Storage

7.1. Precautions for safe handling

Precautions for safe handling: Do not breathe dust. Wash hands plentifully and other exposed areas with water after handling. Remove contaminated clothing and shoes. Wash clothing before re-using.

Packaging: Even those that have been emptied, will retain product residue. Always obey safety warnings and handle empty packaging as if they were full. Avoid all contact with this substance.

Hygiene measures: When using do not eat, drink or smoke. Wash hands and other exposed areas with mild soap and water before eat, drink or smoke and when leaving work. Remove contaminated clothing and shoes.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store in dry, cool, well-ventilated area. Keep away from food, drink and animal feeding stuffs.

7.3. Specific end use(s)

Exposure Scenario: See annex

8) Exposure Controls

8.1. Control parameters

Exposure limits: The product does not contain any hazardous materials with occupational exposure limits established.

Derived No Effect Level (DNEL):
Worker, long term exposure - systemic effects, Inhalation: 10 mg/m3
Worker, acute / short-term exposure - systemic effects, Inhation: 30 mg/m3
Worker, long-term exposure - systemic effects, Dermal: 64.3 mg/kg bw/d
Worker, acute / short-term exposure - systemic effects, Dermal: 100 mg/kg bw/d
General population, long-term exposure - systemic effects, Inhalation: 9.64 mg/m3
General population, acute / short-term exposure - systemic effects, Inhalation: 28.92 mg/m3
General population, long-term exposure - systemic effects, Dermal: 64.3 mg/kg bw/d
General population, acute / short-term exposure - systemic effects, Dermal: 50 mg/kg bw/d
General population, long-term exposure - systemic effects, Oral: 6.43 mg/kg bw/d
General population, acute / short-term exposure - systemic effects, Oral: 19.23 mg/kg bw/d

Predicted No Effect Concentration (PNEC)
Freshwater: 9 mg/L
Marine water: 0.9 mg/L
Intermittent release: 0.3 mg/L
Sewage treatment plant: 122.2 mg/L
Freshwater sediment: 35.2 mg/kg dw
Marine sediment: 3.52 mg/kg dw
Soil: 1.76 mg/kg dw

8.2. Exposure controls
Local vacuuming is recommended to maintain the emissions of dust or fumes at the lowest admissible level for exposure. Periodical controls should be done to working environment.

Appropriate engineering controls: If handling conditions produce dust, it should be necessary to use personal protective equipments. Do not eat, drink or smoke while handling the product. At the end of work, wash or shower. Before breaks, wash hands. After work shower or wash. Change work clothes after handling the product. Remove soiled or splashed clothing and wash it before re-using it. Shower and washroom facilities should be separate from changing rooms. The substance must be kept away from food, drink and condiments.

Individual protection measures, such as personal protective equipment:
Eye/face protection: Well-fitted chemical protective goggles with plastic lenses (e.g. Clear PVC). Or facial safety screen. It is generally known that contact lenses must not be worn when working with chemicals because they may contribute to the severity of possible damage to the eyes.
Hand protection: Protective gloves: Nitrile rubber (EN374). Glove thickness: 0.11 mm. Break through time:
Skin and body protection: Long sleeved clothing.
Respiratory protection: In the case of dust or aerosol formation use respirator with an approved filter (EN143).
Recommended filter type: P2
Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product. Provide regular cleaning of equipment, work area and clothing.
Environmental Exposure Controls: Do not allow material to contaminate ground water system.

9) Physical/Chemical Properties

Physical state	Crystalline solid
Colour	white.
Odour	odourless.
Odour threshold	Not applicable
pH	11.2 (as 1% solution)
Relative evaporation rate (butylacetate=1)	No data available
Melting point	723^0 C
Freezing point	No data available
Boiling point	No data available
Flash point	Not explosive.
Self ignition temperature	No data available
Decomposition temperature	$1,200^0$ C
Flammability (solid, gas)	Not flammable
Vapour pressure	Not applicable
Relative vapour density at 20 °C	No data available
Relative density	No data available
Density	8.4 -13g/l @20^0C
Solubility in water	Log Pow = -6,19(@25^0 C)
Partition coefficient (n-octanol/water)	No data available
Viscosity, kinematic	Water: 1.27 g/l (20 °C)
Viscosity, dynamic	Not explosive
Explosive properties	Non oxidising
Oxidising properties	Not applicable
Explosive limits	

9.2. Other information

Density: 2.1 (@20°C)
Vapour pressure: Study technically not feasible
Bulk density: ~250 kg/m³

10) Stability/Reactivity

10.1. Reactivity

No information available.

10.2. Chemical stability

Stable under normal conditions of handling and storage.

10.3. Possibility of hazardous reactions

Reacts violently with Fluorine, Oxidising agents, Acids

10.4. Conditions to avoid

Heat, flames and sparks. Protect from moisture.

10.5. Incompatible materials

Alkaline earth metals, Fluorine, Oxidising agents, Acids.

10.6. Hazardous decomposition products
Carbon dioxide (CO2), Carbon monoxide (CO), Lithium oxide.

11) Toxicological Info

11.1. Information on toxicological effects

Acute toxicity

Ingestion: Harmful if swallowed.
Skin contact: Based on available data, the classification criteria are not met.
Inhalation: Based on available data, the classification criteria are not met.

Chemical name: Lithium Carbonate
LD50 Oral: 525mg/lg (Rat)
LD50 Dermal: >2,000mg/kg (Rat, OECD 402)
LC Inhalation: 2.17mg/L (Rat, OECD 403) 4h

Skin corrosion/irritation: Non-irritating (In vivo, rabbit, OECD 404).
Respiratory or skin sensitisation: Did not cause sensitisation on laboratory animals (In vivo, guinea pig, OECD 406).

Germ cell mutagenicity: Not known to cause heritable genetic damage. Read Across Data OECD 471 (Ames test) OECD 473, OECD 476: Negative.

Carcinogenicity: Contains no ingredient listed as a carcinogen.

Reproductive toxicity: Based on available data, the classification criteria are not met (Read Across Data). NOAEL oral, rat, (P): 15 mg/kg bw/d (OECD 416), NOAEL oral, rat, (F1/F2): 45 mg/kg bw/d (OECD 416). NOAEL oral, rat: 30 mg/kg bw/d (OECD 414), NOAEL oral, rat: 90 mg/kg bw/d (OECD 414).

STOT-single exposure: No known effect.

STOT-repeated exposure: Based on available data, the classification criteria are not met. NOAEL oral, rat: 6.43 mg/kg bw/d , NOAEL inhalation: 22.5 mg/m3, NOAEL dermal: 64.3 mg/kg bw/d.

Aspiration hazard: No known effect

12) Ecological Information

12.1. Toxicity

Contains no substances known to be hazardous for the environment.

Chemical Name	Lithium Carbonate
Toxicity to algae	LC50: 400mg/L 72h Desmodesmus subspicatus

	(OECD 201) NOEC: 50mg/L 72h Desmodesmus subspicatus (OECD 201)
Toxicity to fish	LC50: 30.3mg/L 96h Oncorhynchus mykiss (OECD 403) NOEC: 17.35mg/L 34d Brachydanio rerio (OECD 210)
Toxicity to microorganisms	
Toxicity to daphnia and other aquatic invertebrates	LC50: 33.2mg/L 48h Daphnia magna (OECD 202) NOEC: 9.0mg/L 21d Daphnia magna (OECD 211)

12.2. Persistence and degradability
Readily biodegradable

12.3. Bioaccumulative potential
Bio-accumulation is unlikely. Lithium carbonate: log Pow -6.19

12.4. Mobility in soil
No information available.

12.5. Results of PBT and vPvB assessment
This substance/mixture does not meet the PBT criteria of REACH, annex XIII.
This substance/mixture does not meet the vPvB criteria of REACH, annex XIII.

12.6. Other adverse effects
No experimental data available.

13) Disposal Consideration

13.1. Waste treatment methods
Waste from residues / unused products: Dispose of in accordance with local regulations.

Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.

Other information: According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

14) Transport Information

In accordance with ADR / RID / ADNR / IMDG / ICAO / IATA

14.1. UN number

Not considered DG

14.2. UN proper shipping name

Not considered DG.

14.3. Transport hazard class(es)

Not applicable

14.4. Packing group

Not applicable

14.5. Environmental hazards

It is not considered hazardous to the environment.

14.6. Special precautions for user

Protect from moisture.
Keep away from foodstuffs and pharmaceuticals.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

15) Regulatory Information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture.

Restrictions on use: No information available.
Other regulations: No information available.

15.2. Chemical safety assessment

A Chemical safety assessment has been carried out for this substance.

16) Other Information

Full text of R-phrases referred to under sections 2 and 3
R36 - Irritating to eyes
R22 - Harmful if swallowed

Full text of H-Statements referred to under sections 2 and 3
H302 - Harmful if swallowed
H319 - Causes serious eye irritation

Abbreviations/acronyms

ES: Exposure Scenario
PC: Product Category
SU: Sector of Use
(E)EC: European Commission
REACH: Registration, Evaluation, Authorisation and Restriction of Chemical substances
STOT: Specific Target Organ Toxicity
PBT: Persistent, Bioaccumulating, Toxic
vPvB: very Persistent and very Bioaccumulating
ADR: Accord européen relatif au transport international des marchandises Dangereuses par Route
RID: Regulations for the International Transport of Dangerous Goods by Rail
ADN: Accord européen relatif au transport international des marchandises Dangereuses par voies de Navigation intérieures
IMDG: International Maritime Dangerous Goods Code
ICAO: International Civil Aviation Organization

Revision Note:
Recommended Use, First Aid Measures, Extinguishing Media Which Must not be Used for Safety Reasons, Personal precautions, protective equipment and emergency procedures, Handling and storage, Derived No Effect Level (DNEL), Predicted No Effect Concentration (PNEC), Personal protective equipment, Physical and chemical properties, Reactivity, Toxicological information, Ecotoxicity.

Training advice:
Workers must be trained in the proper use and handling of this product as required under applicable regulations.

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006. Label element according to Regulation (EC) No 1272/2008.

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.
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