

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: n-BUTYLLITHIUM SOLUTION 2.5 M IN HEXANES CAS Number: 109-72-8**1. IDENTIFICATION:**

Product Code : 92502

Company Name : ADVENT CHEMBIO PRIVATE LIMITED

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2. HAZARDS IDENTIFICATION:**Hazard classification****Physical hazards**

Flammable liquids : Category 2

Pyrophoric liquids : Category 1

Substances and mixtures which in contact with water emit flammable gases : Category 1

Health hazards

Skin corrosion : Sub-category 1B

Serious eye damage : Category 1

Reproductive toxicity : Category 2

Specific target organ toxicity - single exposure : Category 3

Aspiration hazard : Category 1

Long-term (chronic) aquatic hazard : Category 2

Labels elements :

Hazard symbol :



Signal word : Danger

Hazard statement : Highly flammable liquid and vapor.
Catches fire spontaneously if exposed to air
In contact with water releases flammable gases which may ignite spontaneously.

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May be fatal if swallowed and enters airways.
Causes severe skin burns and eye damage.
May cause drowsiness or dizziness.
Suspected of damaging fertility.
Toxic to aquatic life with long lasting effects

Precautionary statement**Prevention**

- : Obtain special instructions before use.
- Do not breathe dust/ fume/ gas/ mist/ vapors/ spray. Do not handle until all safety precautions have been read and understood.
- Wear protective gloves/ protective clothing/ eye protection/ face protection.
- Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
- Keep container tightly closed. Ground/ bond container and receiving equipment.
- Use explosion-proof electrical/ ventilating/ lighting/ equipment.
- Use only non-sparking tools. Take precautionary measures against static discharge.

Response

- : IF exposed or concerned: Get medical advice/ attention.
- IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

Storage

- : Store in a dry & well-ventilated place. Keep container tightly closed. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Disposal

- : Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification

- : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

3. COMPOSITION/ INFORMATION ON INGREDIENTS:

Ingredient	CAS Number	Molarity	Hazardous
n-Butyllithium Solution 2.5 M in Hexanes	109-72-8	2.45 - 2.75 M	Yes

4. FIRST AID MEASURES:**General information**

- : Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

Ingestion

- : Call a physician or poison control center immediately. Rinse mouth. Do NOT induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Inhalation

- : Move to fresh air. Call a physician or poison control center immediately. If breathing stops, provide artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms persist.

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Skin contact	:	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.
Eye contact	:	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.
Most important symptoms/effects, acute and delayed	:	The most important known symptoms and effects are described in the labelling.
Indication of immediate medical attention and special treatment needed	:	No data available.

5. FIRE FIGHTING MEASURES:**General information** : Flammable liquid and vapor.**Suitable (and unsuitable) extinguishing media****Suitable extinguishing media** : Carbon dioxide (CO2) Dry powder.**Unsuitable extinguishing media** : Water Foam**Specific hazards arising from the chemical** : Carbon oxides, Lithium oxides, Mixture with combustible ingredients. Pay attention to flashback. Vapors are heavier than air and may spread along floors. May not get in touch with: Water Development of hazardous combustion gases or vapors possible in the event of fire. Forms explosive mixtures with air at ambient temperatures.**Special protective equipment and precautions for firefighters****Special firefighting procedures** : Fight fire from a protected location. Move containers from fire area if you can do so without risk.**Special protective equipment for fire-fighters** : Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.**6. ACCIDENTAL RELEASE MEASURES:****Personal precautions, protective equipment and emergency procedures** : ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Avoid breathing mists or vapors. Keep upwind. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep unauthorized personnel away.**Methods and material for containment and cleaning up** : Eliminate all ignition sources if safe to do so. Use only non-sparking tools. Take precautionary measures against static discharges. Stop leak if possible without any risk. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal.**Notification Procedures** : Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.**Environmental precautions** : Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

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Precautions for safe handling	Do not handle until all safety precautions have been read and understood. DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Wear protective gloves/protective clothing/eye protection/ face protection. Avoid contact with eyes, skin, and clothing. Do not breathe mist or vapor. Use only with adequate ventilation. Wash hands thoroughly after handling.
Conditions for safe storage, including any incompatibilities	Keep away from food, drink and animal feeding stuffs. Keep container tightly closed in a dry, well-ventilated place. Ground container and transfer equipment to eliminate static electric sparks. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of flammable liquids.

8. EXPOSURE CONTROLS PERSONAL PROTECTION:**Control parameters****Occupational exposure limits****Appropriate engineering controls**

: No data available

Individual protection measures, such as personal protective equipment**General information**

: An eye wash and safety shower must be available in the immediate work area. Use explosion-proof ventilation equipment.

Skin protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product.
: Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.**Eye/face protection**

: Wear safety glasses with side shields (or goggles).

Hand protection

: Chemical resistant gloves.

Other

: Wear suitable protective clothing.

Respiratory protection

: required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system. Recommended Filter type: Filter type ABEK

Hygiene measures

: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Provide eyewash station and safety shower. Avoid contact with eyes, skin, and clothing.

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Appearance	:	Clear to slight hazy pale yellow liquid.
Odor	:	No data available.
Solubility	:	Soluble in hexane, benzene and toluene
Formula	:	CH ₃ (CH ₂) ₃ Li
Molecular Weight	:	64.06 g/mol
Density	:	0.693 g/cm ³ at 25°C
pH	:	No data available
% Volatiles by volume @ 21C (70F)	:	No data available
Boiling Point	:	No data available
Melting Point	:	No data available
Flash Point	:	-22 °C
Vapor Density (Air=1)	:	No data available
Vapor Pressure (mm Hg)	:	No data available
Evaporation Rate (BuAc=1)	:	No data available

10. STABILITY AND REACTIVITY:

Reactivity	:	Vapors may form explosive mixture with air.
Chemical stability	:	Sensitive to air. sensitive to moisture
Possibility of hazardous reactions	:	No data available
Conditions to avoid	:	Exposure to air, Warming, Moisture.
Incompatible materials	:	Acids, Water, Alcohols, Oxidizing agents, Chlorine, Fluorine, Perchlorates.
Hazardous decomposition products	:	In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION:**Information on toxicological effects****Acute toxicity (list all possible routes of exposure)**

Symptoms	:	If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach. Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract
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Dermal Product	:	No data available
Inhalation Product	:	No data available.
Repeated dose toxicity Product	:	No data available.
Skin corrosion/irritation Product	:	Mixture causes burns.
Serious eye damage/eye irritation Product	:	Mixture causes serious eye damage. Risk of blindness
Respiratory or skin sensitization Product	:	No data available.
Carcinogenicity Product	:	No data available
IARC Monographs on the Evaluation of Carcinogenic Risks to Humans	:	No data available
US. National Toxicology Program (NTP) Report on Carcinogens	:	No data available
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	:	No data available
Germ cell mutagenicity	:	
In vitro Product	:	No data available.
Reproductive toxicity Product	:	Suspected of damaging fertility. Suspected human reproductive toxicant Evidence to impair fertility.
Specific target organ toxicity - single exposure Product	:	Mixture may cause drowsiness or dizziness.
Specific target organ toxicity - repeated exposure Product	:	No data available.
Aspiration hazard Product	:	Aspiration hazard, Aspiration may cause pulmonary edema and pneumonitis.
Other effects	:	None known.
Additional Information		
Components		<u>Hexanes, isomers.</u>
		Acute toxicity
	:	Oral : No data available Inhalation : No data available Dermal : No data available Skin corrosion/irritation : Causes skin irritation Serious eye damage/eye irritation : No data available

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Respiratory or skin sensitization : No data available
Germ cell mutagenicity : No data available
Carcinogenicity : No data available
Reproductive toxicity : Suspected of damaging fertility
Specific target organ toxicity : single exposure May cause drowsiness or dizziness
Specific target organ toxicity : repeated exposure No data available
Aspiration hazard: May be fatal if swallowed and enters airways.

Butyllithium

Acute toxicity Oral: No data available
Inhalation: No data available
Dermal: No data available
Skin corrosion/irritation: Causes skin irritation.
Serious eye damage/eye irritation: Causes serious eye damage.
Respiratory or skin sensitization : No data available
Germ cell mutagenicity : No data available
Carcinogenicity : No data available
Reproductive toxicity : No data available
Specific target organ toxicity (single exposure) : No data available
Specific target organ toxicity (repeated exposure) : No data available
Aspiration hazard : No data available

12. ECOLOGICAL INFORMATION:**Ecotoxicity****Acute hazards to the aquatic environment**

Fish Product : No data available.

Aquatic invertebrates Product : No data available.

Chronic hazards to the aquatic environment

Fish Product : No data available.

Aquatic invertebrates Product : No data available.

Toxicity to Aquatic Plants Product: : No data available.

Persistence and degradability

Biodegradation Product : No data available.

BOD/COD ratio Product : No data available.

Bioaccumulative potential

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PRODUCT NAME: n-BUTYLLITHIUM SOLUTION 2.5 M IN HEXANES CAS Number: 109-72-8**Bioconcentration factor (BCF) Product** : No data available on bioaccumulation.**Partition coefficient n-octanol / water (log Kow) Product** : No data available.**Mobility in soil** : No data available.**Other adverse effects** : No data available.**13. DISPOSAL CONSIDERATION:****Disposal instructions** : Discharge, treatment, or disposal may be subject to national, state, or local laws. Disposal recommendations are based on uncontaminated material.**Contaminated packaging** : Since emptied containers retain product residue, follow label warnings even after container is emptied.**14. TRANSPORT INFORMATION:**

	UN No.	UN proper shipping name	Hazard Class(es)	Packaging group	Marine Pollutant
ADR/RID	UN 3394	n-Butyllithium Solution 2.5 M in Hexanes	4.2 (4.3)	I	Yes
IMDG	UN 3394	n-Butyllithium Solution 2.5 M in Hexanes	4.2 (4.3)	I	Yes
IATA	UN 3394	n-Butyllithium Solution 2.5 M in Hexanes	4.2 (4.3)	NA	No

15. REGULATORY INFORMATION:

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

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

No Data Available.

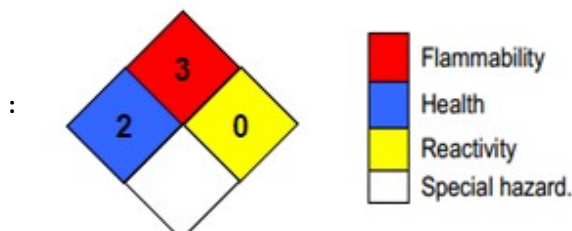
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16. OTHER INFORMATION:

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

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