LITHIUM NITRATE ANHYDROUS

Section 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name:	Lithium Nitrate Anhydrous
CAS Number:	7790-69-4
EC Number:	232-218-9
REACH Registration No.	01-2119968667-16-0003 (EU) 01-5156175734-8-0001 (UK)

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

Relevant identified uses	ES 1: Manufacture of lithium nitrate. ES 2: Formulation or re-packing; various products Adsorbents, Heat Transfer Fluids. ES 3: Use at industrial sites; Polymer Preparations and Compounds; Manufacture of rubber products ES 4: Use at industrial sites; Heat Transfer Fluids; Electricity, steam, gas water supply and sewage treatment ES 5: Use at industrial sites; Other
Uses advised against	Do not use for private purposes (household)

1.3 Details of the supplier of the safety data sheet

Company name:	East Harbour Group Ltd 20 Clough Road, Severalls Industrial Park Colchester, Essex, CO4 9QS United Kingdom
Telephone:	+44 (0) 333 242 0100
Email:	info@eastharbourgroup.com

1.4 Emergency telephone number

Emergency telephone:	0800 246 1274

Section 2: Hazardous identification

2.1 Classification of the substance or mixture

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

H272	Ox. Sol. 3	May intensify fire; Oxidiser
H302	Acute Tox. 4	Harmful if swallowed
H319	Eye Irrit. 2	Causes serious eye irritation

Additional information

For full text of Hazard- and EU Hazard-statements: see SECTION 16

LITHIUM NITRATE ANHYDROUS

2.2 Label elements
Pictogram

Signal word	Warning

Hazard statement(s)

H272	May intensify fire; Oxidiser
H302	Harmful if swallowed
H319	Causes serious eye irritation

Precautionary statement(s)

P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P221	Take any precaution to avoid mixing with combustibles.
P280	Wear protective gloves/protective clothing/eye protection/face protection
P370+P378	In case of fire: Use water for extinction
P301+P312	IF SWALLOWED: Call a POISON CENTRE 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.

Supplemental information on the label
None

Supplementary Hazard Information (EU)
None

Hazard Determining Component(s)
Lithium nitrate

2.3. Other hazards
The PBT/vPvB evaluation does not apply to inorganic substances. Lithium nitrate is not considered to have endocrine disrupting properties.

Section 3: Composition/information on ingredients

3.1. Substances

Chemical Name	Lithium nitrate
Identification Numbers	
EC No.	232-218-9
CAS No.	7790-69-4
Index No	Not applicable
REACH Registration No.	01-2119968667-16-0003 (EU) 01-5156175734-8-0001 (UK)
Other means of identification	Not applicable
%	98 - 100

For full text of H-statements, see SECTION 16.

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LITHIUM NITRATE ANHYDROUS

Section 4: First aid measures

4.1. Description of first aid measures
General notes
Call a doctor if you feel unwell.

Following inhalation
Remove casualty to fresh air. Allow casualty to regain normal breathing pattern. Wash out mouth with water if necessary. If discomfort persists then obtain medical advice. Apply artificial respiration if the casualty is not breathing and seek immediate medical attention.

Following skin contact
Wash thoroughly with soap and water for at least 15 minutes. Wash contaminated clothing before re-use. Any rashes should be washed with soap and warm water. Rashes normally clear up within a couple of hours of being washed. If rashes persist then obtain medical advice.

Following eye contact
Irrigate thoroughly with water or saline solution for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain immediate medical attention if discomfort persists.

Following ingestion
Wash out mouth thoroughly with water, only if the casualty is conscious. Give plenty of water to drink. Obtain immediate medical attention.

Self-protection of the first aider
If it is suspected that the substance is still present, wear appropriate personal protective equipment.

4.2. Most important symptoms and effects, both acute and delayed
Headache, nausea, lowered blood pressure, gastrointestinal disturbance. Irritation of the eyes, the skin and the mucous membranes. This manifests itself on the skin as red itchy patches which have been in contact with the substance. The presence of this substance in the eyes will cause redness and stinging to the person(s) affected.
Irritant effects and components of the product cause formation of methaemoglobin.

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

Section 5: Fire-fighting measures

5.1. Extinguishing media

Suitable extinguishing media	Water
Unsuitable extinguishing media	Dry chemical, CO2 or Halon

5.2. Special hazards arising from the substance or mixture
The substance is an oxidiser. Contact with easily oxidisable or combustible material may cause fire or explosion upon ignition from any source.

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Hazardous combustion products Nitrogen Oxides and Lithium Oxide

5.3. Advice for firefighters
Wear self-contained breathing apparatus and protective suit. Use water spray to cool unopened containers. Contact with combustible material may cause fire. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Section 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
For non-emergency personnel
Ventilate the spill area. Wear personal protective equipment (see Section 8).
Avoid contact with the skin, the eyes and clothing. Avoid formation of dust. Wear an approved dust mask if dust is likely.
Persons not wearing personal protective clothing should be restricted from the spillage area.

For emergency responders
Evacuate unnecessary personnel. Ventilate the spill area. Wear personal protective equipment (see Section 8).
Avoid contact with the skin, the eyes and clothing. Avoid formation of dust. Wear an approved dust mask if dust is likely.
Persons not wearing personal protective clothing should be restricted from the spillage area.

6.2. Environmental precautions
Seal inlets to sewers or water courses and seek to contain spillage.
Water used for final wash down of the spillage site should be contained and collected for disposal (see section 13).

6.3. Methods and material for containment and cleaning up
Collect spillage using clean, dry, metal tools (e.g., small scoop), taking precautions to avoid generation of dust and place in a clean, dry, suitable labelled drum for disposal or re-use (see section 13).
The area affected area should then be washed down and the washings collected for disposal by an accredited waste disposal company.
Contact Leverton-Clarke for advice regarding recycling.

6.4. Reference to other sections
For personal protective equipment see Section8. For disposal see Section 13.

Section 7: Handling and storage

7.1. Precautions for safe handling
When handling, wear personal protective equipment (section 8) and take measures to prevent generation of dusts. Avoid contact with the skin, the eyes and clothing. Do not breathe dust.
Wash thoroughly after handling. Eating, drinking, and smoking should not be permitted in areas where this substance is handled. Wash immediately all contaminated clothing.

7.2. Conditions for safe storage, including any incompatibilities
Store in the original container. Keep containers tightly closed in a cool dry, covered, bunded and secure area. Protect from moisture. Containers should be protected from physical damage.
Store away from strong acids, reducing agents and flammable materials.

7.3. Specific end use(s)
Refer to Section 1.2

Section 8: Exposure controls/personal protection

8.1. Control parameters
There is no specific Workplace Exposure Limit (WEL) for this substance.

Derived No Effect Level (DNEL) – Workers

Exposure Route	Acute, Local effects	Acute, systemic effects	Chronic, local effects	Chronic, systemic effects
Inhalation	No hazard identified			10 mg/m^3
Dermal	No hazard identified			41.1 mg/kg bw/day

Predicted No Effect Concentration (PNEC)

PNEC fresh water	16.9 mg/l
PNEC marine water	1.69 mg/l
PNEC intermittent release, fresh water	25.7 mg/l
PNEC freshwater, sediments	439 mg/kg dry weight
PNEC marine water, sediments	43.9 mg/kg dry weight
PNEC soil	81.23 mg/kg dry soil
PNEC STP	228 mg/l

8.2. Exposure controls
Appropriate engineering controls
Use engineering controls (e.g., local exhaust ventilation) and supply personal protective equipment. Take measures to avoid the production of dust. Take precautionary measures against static discharge. Wear personal protective equipment as described below.

Individual protection measures, such as personal protective equipment
Eye/face protection

When using small quantities (grams), approved safety goggles should be adequate (EN 166:2001). If larger quantities are used in a manufacturing/ repacking process, then a full-face visor should be worn.

Skin protection / Hand protection

Disposable vinyl gloves should be the minimum protection used when handling small quantities. When handling larger quantities, vinyl gloves should be worn underneath nitrile rubber gloves that provide protection to both the hands and lower arms. (EN374)

Other

Laboratory coat or other cotton/polyester overalls fully covering the body and limbs should be used when handling small quantities in a laboratory or manufacturing/repacking process to prevent contact with the skin, DIN EN 13034 (Type 6).

Respiratory protection

Any work with this substance in a laboratory should be carried out in a fume cupboard.
When handling larger quantities in a manufacturing/repacking process a half-face respirator or an air helmet should be used, along with local exhaust ventilation if there is a chance that dust will be generated. Type P2 (EN143).

Thermal hazards
None

Environmental exposure controls
Avoid release to the environment. The substance should only be used in a bunded area to prevent escape to the external environment.
Local exhaust ventilation should be used where there is a chance of dust being generated.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Granular powder
Colour	White
Odour	None
Odour threshold	Not applicable
Melting point/freezing point	253 - 264°C
Boiling point or initial boiling point and boiling range	Decomposes above 600°C
Flammability	Not flammable. Oxidiser. Contact with flammable materials may cause fire
Lower and upper explosion limit	Not applicable
Flash point	Not applicable
Auto-ignition temperature	Not applicable
Decomposition temperature	600 °C
pH	c.6 at 10% w/w aqueous solution
Kinematic viscosity	Not applicable
Solubility	1020 g/L (20°C, water)
Partition coefficient n-octanol/water (log value)	No data available
Vapour pressure	Not applicable
Density and/or relative density	2.38
Relative vapour density	Not applicable
Particle characteristics	d10: 292.01 µm, d50: 508.82 µm, d90: 582.55 µm. (FMC, 2010)

% < 10 µm: 0.1 %.

9.2. Other information
Information with regard to physical hazard classes

Explosive properties	Not explosive
Oxidising properties	Oxidiser, category 3

Other safety characteristics
Hygroscopic

Section 10: Stability and Reactivity

10.1. Reactivity
Oxidiser. Contact with combustible materials may cause fire.

10.2. Chemical stability
Stable under normal storage and temperature conditions.

10.3. Possibility of hazardous reactions
Contact with combustible materials may cause fire.

10.4. Conditions to avoid
Keep dry. Take precautionary measures against static discharge.

10.5. Incompatible materials
Alkyl esters, phosphorous, tin(II) chloride, reducing agents, combustibles (such as paper, wood and cotton), strong acids. Some organics (fuels) form explosive mixtures.

10.6. Hazardous decomposition products
May decompose to nitrogen oxides (NOx) and Lithium.

Section 11: Toxicological Information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008
acute toxicity

acute toxicity - oral	LD50 (Oral, rat): 1426mg/kg Acute Tox. 4 Harmful if swallowed.
acute toxicity - dermal	LD50 (Dermal, rat): >2000mg/kg Not classified. Based on the available information, the classification criteria are not met.
acute toxicity - inhalation	LC50 (Inhalation, rat): > 5.93 mg/L air Not classified. Based on the available information, the classification criteria are not met.
skin corrosion/irritation	Not classified. Based on the available information, the classification criteria are not met. However, can cause an irritant effect on skin, leading to temporary rashes.
serious eye damage/irritation	Eye Irrit. 2 Causes serious eye irritation.

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	Irritant to eye. If not flushed may lead to permanent damage.
respiratory or skin sensitisation	
respiratory sensitisation	Not classified. No sensitizing effect known
skin sensitisation	Not classified. Based on the available information, the classification criteria are not met.
germ cell mutagenicity	Not classified. Based on the available information, the classification criteria are not met.
carcinogenicity	Not classified. Based on the available information, the classification criteria are not met.
reproductive toxicity	Not classified. Based on the available information, the classification criteria are not met.
STOT-single exposure	Not classified. Based on the available information, the classification criteria are not met.
STOT-repeated exposure	Not classified. Based on the available information, the classification criteria are not met.
aspiration hazard	Not classified. Based on the available information, the classification criteria are not met.

11.2 Information on other hazards
Endocrine disrupting properties
None known

Other information
No further information

Section 12: Ecological Information

12.1. Toxicity
Not classified. Based on the available information, the classification criteria are not met.

Data on aquatic toxicity
Acute (short-term) toxicity

		Read-across approach
Fish	LC50 96 h (Oncorhynchus mykiss)	257 mg/L
	NOEC 96 h (Oncorhynchus mykiss)	97 mg/L
Crustaceans / Invertebrates	EC50 48 h (Daphnia magna)	405 mg/L
Algae and other aquatic plants	EC50 72h (Desmodesmus subspicatus)	652 mg/L
	NOEC 72h (Desmodesmus subspicatus)	41 mg/L
Other organisms	EC 50 3 h (Activated sludge)	521 mg/L

Chronic (long-term) toxicity

Fish	LOEC 34d (Danio rerio)	40 mg/L
	NOEC 34d (Danio rerio)	28 mg/L
Crustaceans / Invertebrates	NOEC 21d (Daphnia magna)	16.9 mg/L

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12.2. Persistence and degradability
Lithium Nitrate is not biodegraded or photodegraded.

12.3. Bioaccumulative potential
Not applicable

12.4. Mobility in soil
Lithium Nitrate is water soluble and will readily disperse. Lithium Nitrate dissociates rapidly in water, forming lithium and nitrate ions.

Known or predicted distribution to environmental compartments
Highly soluble in water.

Surface tension
No data available

12.5. Results of PBT and vPvB assessment
Not applicable for inorganic substances.

12.6. Endocrine disrupting properties
None known

12.7. Other adverse effects
No further relevant information available at present

Section 13: Disposal considerations

13.1 Waste treatment methods
Suitable methods
Any waste must not be discharged to sewer or river unless a written discharge consent has been issued by the appropriate authority (in the UK this is the local water authority or the Environment Agency). This procedure should be carried out by suitable trained personnel, using appropriate equipment.
Packaging must be thoroughly rinsed with water before disposal or recycling. Wash water should be disposed of as above. Containers, even when cleaned, are considered to be a controlled waste and the duty of care still applies.

Section 14: Transport Information

14.1. UN number or ID number
UN2722

14.2. UN proper shipping name
Lithium Nitrate

14.3. Transport hazard class(es)
5.1

14.4. Packing group
III

14.5. Environmental hazards
No

14.6. Special precautions for user
Transport Category 3
Tunnel Restriction Code E

14.7. Maritime transport in bulk according to IMO instruments
Not applicable

Section 15: Regulatory Information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
UK Regulations
This Safety Data Sheet complies with REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations UK SI 2019/758 and UK SI 2020/1577. Classification according to Regulation (EU) No. 1272/2008 as amended by GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567.

EU Regulations
The substance is classified and labelled according to Regulation (EC) 1272/2008 (CLP). Safety data sheet according to Regulation (EU) 2020/878.

Authorisations and/or restrictions on use
Authorisations
Annex XIV: Not on the list
Restrictions on use
Annex XVII: Not on the list

15.2. Chemical safety assessment
A chemical safety assessment has been carried out. Relevant data is included in this SDS and the attached ES.

Section 16: Other Information

Indication of changes

Version number	3
Revision: (date)	14/09/2021
SDS Reference	21SDS03
Previous Revision	21SDS02 – 16/03/2018
Reason for revision	Update to Regulation (EU) 2020/878 Inclusion of UK REACH Registration number.

Abbreviations and acronyms

ADR	Accord européen relatif au transport international des marchandises dangereuses par route. European Agreement concerning the International Carriage of Dangerous Goods by Road.
CAS No.	Chemical Abstracts Service Number
CLP	Classification, labelling and packaging.
LC50	Median Lethal concentration

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LD50	Median Lethal Dose
EC50	Effective concentration, 50%
PBT	persistent, bioaccumulative and toxic
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail (Reglement International concernant le transport des marchandises Dangereuses par chemin de fer)
SDS	Safety Data Sheet
STP	Sewage Treatment Plant
vPvB	very persistent and very bioaccumulative

Key literature references and sources for data
Regulation (EC) No. 1272/2008
Regulation (EU) No. 2020/878
Regulation (EC) No. 1907/2006
Dossier ECHA REACH
Suppliers Safety Data Sheet

Relevant H-statements (number and full text)

Acute Tox. 4 (Oral)	Acute Toxicity (oral), category 4.
Eye Irrit. 2	Serious eye damage/eye irritation, category 2
Ox. Sol. 3	Oxidising solid, category 3
H272	May intensify fire, Oxidiser
H302	Harmful if swallowed
H319	Causes serious eye irritation

Training advice
Read the SDS and any additional instructions for handling this substance from the supplier or your employer. Workers should be trained to handle hazardous chemicals. It is recommended that they are familiar with the contents of this safety data sheet

Further information
No further information

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