

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH), 1272/2008 (CLP) &amp; 2015/830

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**
**1.1 Product identifier**

Product Name Lithium Nickel Manganese Oxide (LiNi<sub>0.5</sub>Mn<sub>1.5</sub>O<sub>4</sub>)  
 Synonyms Lithium Manganese Nickel Oxide  
 Chemical Name Lithium Nickel Manganese Oxide  
 Chemical Formula LiNi<sub>0.5</sub>Mn<sub>1.5</sub>O<sub>4</sub>  
 CAS No. 12031-75-3  
 EC No. Not Applicable  
 Index No. Not Applicable  
 REACH Registration No. Not applicable.

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

Identified Use(s) PC21 Laboratory chemicals, Research and development use *only*

**1.3 Details of the supplier of the safety data sheet**

Company Identification Ossila Limited  
 Address of Supplier Solpro Business Park  
 Windsor Street  
 Sheffield  
 Postal code S4 7WB, UK  
 Telephone: +441142999180  
 E-mail info@ossila.com  
 Office hours 08:00 - 17:00

**1.4 Emergency telephone number**

Emergency Phone # +44 (0) 20 3885 0382 (CHEMTREC)

Other Regions	Emergency Phone Number (CHEMTREC)
Europe, Middle East, Africa	+44 20 3885 0382
North America	+1 703 527 3887
Central America	+52 55 8526 4930
South America	+55 11 4349 1359
Asia, India, and Oceania	+65 3163 8374

**SECTION 2: HAZARDS IDENTIFICATION**
**2.1 Classification of the substance or mixture**

Regulation (EC) No. 1272/2008 (CLP) Skin Sens. 1: May cause an allergic skin reaction  
 Acute Tox. 4: Harmful if inhaled  
 Carc. 1B: May cause cancer  
 STOT RE 1: Causes damage to organs through prolonged or repeated exposure  
 Aquatic Chronic 1: Very toxic to aquatic life with long lasting effects

**2.2 Label elements**

According to Regulation (EC) No. 1272/2008 (CLP)  
 Product Name Lithium Nickel Manganese Oxide (LiNi<sub>0.5</sub>Mn<sub>1.5</sub>O<sub>4</sub>)

Hazard Pictogram(s)



GHS07

GHS08

GHS09

Signal Word(s)

Danger

Hazard Statement(s)

H317: May cause an allergic skin reaction  
 H332: Harmful if inhaled  
 H350: May cause cancer  
 H372: Causes damage to organs through prolonged or repeated exposure  
 H410: Very toxic to aquatic life with long lasting effects

Precautionary Statement(s)

P273: Avoid release to the environment.  
 P280: Wear protective gloves/protective clothing/eye protection/face protection.  
 P302 + P352 IF ON SKIN: Wash with plenty of water.  
 P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
 P319: Get medical help if you feel unwell.

P333 + P313: If skin irritation or rash occurs: Get medical advice/attention.

**2.3 Other hazards**

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.

**2.4 Additional Information**

Not applicable.

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**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**


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**3.1 Substances**

Hazardous ingredient(s)	CAS No.	EC No.	%W/W	Hazard Statement(s)
Lithium Nickel Manganese Oxide	12031-75-3	Not Applicable	≤100	Skin Sens. 1 H317 Acute Tox. 4 H332 Carc. 1B H350 STOT RE 1 H372 Aquatic Chronic 1 H410

**3.2 Mixtures**

Not applicable.

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**SECTION 4: FIRST AID MEASURES**


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**4.1 Description of first aid measures**

General Advice	First aiders should ensure they have taken adequate steps to protect themselves from exposure (see Section 8 for recommended personal protection equipment) Show this safety data sheet to the doctor in attendance.
Inhalation	Remove person to fresh air and keep comfortable for breathing. Get medical advice/attention if you feel unwell.
Skin Contact	Rinse skin with water. If skin irritation occurs, get medical advice/attention.
Eye Contact	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Ingestion	Rinse out mouth with water. Get medical advice/attention if you feel unwell.

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

Most important symptoms and effects, both acute and delayed, are included on labelling (Section 2.2) and in Section 11.

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

Treat symptomatically.

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**SECTION 5: FIREFIGHTING MEASURES**


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**5.1 Extinguishing media**

Suitable Extinguishing media	As appropriate for surrounding fire.
Unsuitable extinguishing media	As appropriate for surrounding fire.

**5.2 Special hazards arising from the substance or mixture**

Lithium oxides  
Manganese/manganese oxides  
Nickel/nickel oxides

**5.3 Advice for firefighters**

Fire fighters should wear complete protective clothing including self-contained breathing apparatus.

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**SECTION 6: ACCIDENTAL RELEASE MEASURES**


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**6.1 Personal precautions, protective equipment and emergency procedures**

Follow safe handling advice and personal protective equipment recommendations (as per section 8). Provide adequate ventilation.

**6.2 Environmental precautions**

Avoid release to the environment.

**6.3 Methods and material for containment and cleaning up**

Sweep up spilled substance - avoid making dust. Use vacuum equipment for collecting spilt materials, where practicable. Dispose of contents in accordance with local, state or national legislation.

**6.4 Reference to other sections**

See Also Section 8, 13.

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**SECTION 7: HANDLING AND STORAGE**


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**7.1 Precautions for safe handling**

Advice on safe handling	Avoid inhalation, ingestion, and contact with skin and eyes. Use only in a well-ventilated area. Wear protective clothing as per section 8.
Hygiene measures	Keep away from food and drink. Wash hands after handling, before breaks, and at the end of workday.

**7.2 Conditions for safe storage, including any incompatibilities**

Storage temperature	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Storage life	Ambient.
Incompatible materials	Stable under normal conditions.
	None known.

**7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**


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**8.1 Control parameters**

## 8.1.1 Occupational Exposure Limits

UK – EH40 Workplace Exposure Limits (WEL).

Occupational Exposure Limits						
SUBSTANCE.	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m <sup>3</sup> )	STEL (ppm)	STEL (mg/m <sup>3</sup> )	Note
Manganese and its inorganic compounds (as Mn)	12031-75-3		0.2 (Inhalable Fraction), 0.05 (Respirable Fraction)			
Nickel and its inorganic compounds: nickel and water-insoluble nickel compounds (as Ni)	12031-75-3		0.5			

Region	Source
EU	EU Occupational Exposure Limits
United Kingdom	UK Workplace Exposure Limits EH40/2005 (Third edition, published 2018)

**8.2 Exposure controls**

8.2.1. Appropriate engineering controls	Ensure adequate ventilation and/or exhaust. A washing facility/water for eye and skin cleaning purposes should be present.
8.2.2. Personal protection equipment	
Eye Protection	Wear eye protection with side protection tested and approved under appropriate government standards such as EN166 (EU).
Hand protection	Handle with gloves. Gloves must be inspected prior to use and proper glove removal techniques should be used. The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.
Body protection	Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Respiratory protection	Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N99 (US) or type P2 (EN 143) respirator cartridges as a backup to engineering controls.
Thermal hazards	None known.
8.2.3. Environmental Exposure Controls	Avoid release to the environment.

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**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**


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**9.1 Information on basic physical and chemical properties**

Physical State	Solid: Powder.
Colour	Black/Grey.
Odour	Not known.
Odour threshold	Not known.
Melting point/freezing point	> 290 °C
Initial boiling point and boiling range	Not known.
Flammability	Not known.
Lower and upper explosion limit	Not known.
Flash Point	Not known.
Auto-ignition temperature (°C)	Not known.
Decomposition temperature (°C)	Not known.
pH	Not known.
Kinematic viscosity	Not known.
Solubility(ies)	Solubility (Water): Not known. Solubility (Other): Not known.
Partition coefficient: n-octanol/water (log value)	Not known.
Vapour pressure	Not known.
Density	Not known.
Relative density	Not known.
Relative vapour density	Not known.
Particle characteristics	Not known.

**9.2 Other information**

None.

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**SECTION 10: STABILITY AND REACTIVITY**

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<b>10.1 Reactivity</b>	None anticipated.
<b>10.2 Chemical Stability</b>	Stable under recommended storage conditions.
<b>10.3 Possibility of hazardous reactions</b>	Not known.
<b>10.4 Conditions to avoid</b>	Not known.
<b>10.5 Incompatible materials</b>	Not known.
<b>10.6 Hazardous decomposition products</b>	In the event of fire: see Section 5

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**SECTION 11: TOXICOLOGICAL INFORMATION**

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**11.1 Information on toxicological effects**

Acute toxicity - Ingestion	No data available.
Acute toxicity - Skin Contact	No data available.
Acute toxicity - Inhalation	No data available.
Skin corrosion/irritation	No data available.
Serious eye damage/irritation	No data available.
Skin sensitization data	No data available.
Respiratory sensitization data	No data available.
Germ cell mutagenicity	No data available.
Carcinogenicity	No data available.
Reproductive toxicity	No data available.
Lactation	No data available.
STOT - single exposure	No data available.
STOT - repeated exposure	No data available.
Aspiration hazard	No data available.

**11.2 Information on other hazards**

11.2.1 Endocrine disrupting properties	None known.
11.2.2. Information on other hazards	None known.

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**SECTION 12: ECOLOGICAL INFORMATION**

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**12.1 Toxicity**

Toxicity - Aquatic invertebrates	No data available.
Toxicity - Fish	Not known.
Toxicity - Algae	Not known.
Toxicity - Sediment Compartment	Not known.
Toxicity - Terrestrial Compartment	Not known.

**12.2 Persistence and Degradation**

Not known.

**12.3 Bioaccumulative potential**

Not known.

**12.4 Mobility in soil**

Not known.

**12.5 Results of PBT and vPvB assessment**

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.

**12.6 Endocrine disrupting properties**

Not known.

**12.7 Other adverse effects**

Not known.

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**SECTION 13: DISPOSAL CONSIDERATIONS**

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**13.1 Waste treatment methods**

Dispose of contents in accordance with local, state or national legislation. Recycle only completely emptied packaging. Normal disposal is via incineration operated by an accredited disposal contractor. Send to a licensed recycler, reclaimer or incinerator.

**13.2 Additional Information**

Disposal should be in accordance with local, state or national legislation.

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**SECTION 14: TRANSPORT INFORMATION**


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<b>14.1 UN number</b>	
UN No.	3077
<b>14.2 UN proper shipping name</b>	
UN proper shipping name	Environmentally hazardous substance, solid, n.o.s. (Lithium Nickel Manganese Oxide)
<b>14.3 Transport hazard class(es)</b>	
ADR/RID	9
IMDG	9
IATA	9
<b>14.4 Packing group</b>	
Packing group	III
<b>14.5 Environmental hazards</b>	
Environmental hazards	Not classified as a Marine Pollutant.
<b>14.6 Special precautions for user</b>	
Special precautions for user	Not known.
<b>14.7 Maritime transport in bulk according to IMO instruments</b>	
	Not known.

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**SECTION 15: REGULATORY INFORMATION**


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

European Regulations - Authorisations and/or Restrictions On Use

Candidate List of Substances of Very High Concern for Authorisation Not listed

REACH: ANNEX XIV list of substances subject to authorisation Not listed

REACH: Annex XVII Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles Not listed

Community Rolling Action Plan (CoRAP) Not listed

Regulation (EC) N° 850/2004 of the European Parliament and of the Council on persistent organic pollutants Not listed

Regulation (EC) N° 1005/2009 on substances that deplete the ozone layer Not listed

Regulation (EU) N° 649/2012 of the European Parliament and of the Council concerning the export and import of hazardous chemicals Not listed

**National regulations**

Other Not known.

**15.2 Chemical Safety Assessment**  
 A REACH chemical safety assessment has not been carried out.

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**SECTION 16: OTHER INFORMATION**


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The following sections contain revisions or new statements:

**LEGEND**

Acronyms	ADN : European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
	ADR : European Agreement concerning the International Carriage of Dangerous Goods by Road
	CAS : Chemical Abstracts Service
	CLP : Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
	DNEL : Derived No Effect Level
	EC : European Community
	EINECS : European Inventory of Existing Commercial Chemical Substances
	IATA : International Air Transport Association
	IBC : Intermediate Bulk Container
	ICAO : International Civil Aviation Organization
	IMDG : International Maritime Dangerous Goods
	LTEL : Long term exposure limit
	PBT : Persistent, Bioaccumulative and Toxic
	PNEC : Predicted No Effect Concentration
	REACH : Registration, Evaluation, Authorisation and Restriction of Chemicals
	RID : Regulations concerning the International Carriage of Dangerous Goods by Rail
	STEL : Short term exposure limit

STOT : Specific Target Organ Toxicity  
UN : United Nations  
vPvB : very Persistent and very Bioaccumulative

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