

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**Trade name **L-Noradrenaline**

Stock number: L08087

CAS Number:

51-41-2

EC number:

200-096-6

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

Identified use: SU24 Scientific research and development

**1.3 Details of the supplier of the safety data sheet****Manufacturer/Supplier:**Alfa Aesar  
Avocado Research Chemicals, Ltd.  
Shore Road  
Port of Heysham Industrial Park  
Heysham Lancashire LA3 2XY  
United Kingdom  
Office Tel: +44 (0) 1524 850506  
Office Fax: +44 (0) 1524 850608  
Email: uktech@alfa.com  
www.alfa.com

Informing department: Product safety department.

**1.4 Emergency telephone number:** Call Carechem 24 at +44 (0) 1865 407333 (English only); +44 (0) 1235 239670 (Multi-language)**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture**

Classification according to Regulation (EC) No 1272/2008



GHS06 skull and crossbones

Acute Tox. 2 H300 Fatal if swallowed.

Other hazards that do not result in classification No information known.

**2.2 Label elements**

Labelling according to Regulation (EC) No 1272/2008 The substance is classified and labelled according to the CLP regulation.

**Hazard pictograms**

GHS06

Signal word Danger

**Hazard statements**

H300 Fatal if swallowed.

**Precautionary statements**

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor/...

P321 Specific treatment (see on this label).

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**2.3 Other hazards****Results of PBT and vPvB assessment**

PBT: Not applicable.

vPvB: Not applicable.

**SECTION 3: Composition/information on ingredients****3.1 Substances**

CAS# Designation:

51-41-2 L-Noradrenaline

Identification number(s):

EC number: 200-096-6

**SECTION 4: First aid measures****4.1 Description of first aid measures****General information**

Instantly remove any clothing soiled by the product.

In case of irregular breathing or respiratory arrest provide artificial respiration.

**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

Seek immediate medical advice.

**After skin contact**

Instantly wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

**After eye contact** Rinse opened eye for several minutes under running water. Then consult doctor.**After swallowing** Do not induce vomiting; instantly call for medical help.**4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.**4.3 Indication of any immediate medical attention and special treatment needed** No further relevant information available.**SECTION 5: Firefighting measures****5.1 Extinguishing media**Suitable extinguishing agents CO<sub>2</sub>, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.**5.2 Special hazards arising from the substance or mixture**

If this product is involved in a fire, the following can be released:

Carbon monoxide and carbon dioxide

Nitrogen oxides (NO<sub>x</sub>)**5.3 Advice for firefighters****Protective equipment:**

Wear self-contained breathing apparatus.

Wear full protective suit.

Trade name **L-Noradrenaline**

(Contd. of page 1)

### SECTION 6: Accidental release measures

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

Wear protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation

**6.2 Environmental precautions:** Do not allow material to be released to the environment without proper governmental permits.

**6.3 Methods and material for containment and cleaning up:** Dispose of contaminated material as waste according to section 13.

**Prevention of secondary hazards:** No special measures required.

#### 6.4 Reference to other sections

See Section 7 for information on safe handling

See section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

### SECTION 7: Handling and storage

#### 7.1 Precautions for safe handling

Handle under dry protective gas.  
Keep containers tightly sealed.  
Ensure good ventilation/exhaustion at the workplace.

**Information about protection against explosions and fires:** No information known.

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

##### Storage

**Requirements to be met by storerooms and containers:** Refrigerate

**Information about storage in one common storage facility:**

Store away from oxidising agents.

Store away from strong bases.

Store away from air.

Store in the dark.

Protect from heat.

**Further information about storage conditions:**

Store under dry inert gas.

This product is air sensitive.

Keep container tightly sealed.

Protect from the effects of light.

Store in a locked cabinet or with access restricted to technical experts or their assistants.

Refrigerate

**7.3 Specific end use(s)** No further relevant information available.

### SECTION 8: Exposure controls/personal protection

#### Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

#### 8.1 Control parameters

**Components with critical values that require monitoring at the workplace:**

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

**Additional information:** No data

#### 8.2 Exposure controls

##### Personal protective equipment

##### General protective and hygienic measures

The usual precautionary measures should be adhered to in handling the chemicals.

Keep away from foodstuffs, beverages and food.

Instantly remove any soiled and impregnated garments.

Wash hands during breaks and at the end of the work.

Maintain an ergonomically appropriate working environment.

**Breathing equipment:** Use breathing protection with high concentrations.

##### Protection of hands:

Check protective gloves prior to each use for their proper condition.

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

**Material of gloves** Impervious gloves

**Penetration time of glove material (in minutes)** Not determined

**Eye protection:** Safety glasses

**Body protection:** Protective work clothing.

### SECTION 9: Physical and chemical properties

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

##### General Information

##### Appearance:

Form:	Powder
Colour:	White to pale brown
Smell:	Not determined
Odour threshold:	Not determined.

**pH-value:** Not applicable.

##### Change in condition

Melting point/Melting range:	ca 220 °C (dec)
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined

Flash point:	Not applicable
Inflammability (solid, gaseous):	Not determined.
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Self-inflammability:	Not determined.

**Danger of explosion:** Product is not explosive.

##### Critical values for explosion:

Lower:	Not determined
Upper:	Not determined
Steam pressure:	Not applicable.
Density	Not determined
Relative density	Not determined.
Vapour density	Not applicable.
Evaporation rate	Not applicable.

##### Solubility in / Miscibility with

Water:	Slightly soluble
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
dynamic:	Not applicable.

(Contd. on page 3)  
GB

Trade name **L-Noradrenaline**

(Contd. of page 2)

**kinematic:** Not applicable.  
**9.2 Other information** No further relevant information available.

**SECTION 10: Stability and reactivity**

**10.1 Reactivity** No information known.  
**10.2 Chemical stability** Stable under recommended storage conditions.  
**Thermal decomposition / conditions to be avoided:** No decomposition if used and stored according to specifications.  
**10.3 Possibility of hazardous reactions** No dangerous reactions known  
**10.4 Conditions to avoid** No further relevant information available.  
**10.5 Incompatible materials:**  
Oxidising agents  
Bases  
Air  
Heat  
Light  
**10.6 Hazardous decomposition products:**  
Carbon monoxide and carbon dioxide  
Nitrogen oxides (NOx)

**SECTION 11: Toxicological information**

**11.1 Information on toxicological effects**  
**Acute toxicity:**  
Fatal if swallowed.  
The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.  
**LD/LC50 values that are relevant for classification:**  
Oral LD50 20 mg/kg (rat)  
**Skin irritation or corrosion:** Irritant for skin and mucous membranes.  
**Eye irritation or corrosion:** Irritant effect.  
**Sensitization:** No sensitizing effect known.  
**Germ cell mutagenicity:** The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.  
**Carcinogenicity:** No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.  
**Reproductive toxicity:** The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive data for this substance.  
**Specific target organ system toxicity - repeated exposure:** No effects known.  
**Specific target organ system toxicity - single exposure:** No effects known.  
**Aspiration hazard:** No effects known.  
**Subacute to chronic toxicity:** The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.  
**Additional toxicological information:** To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

**SECTION 12: Ecological information**

**12.1 Toxicity**  
**Aquatic toxicity:** No further relevant information available.  
**12.2 Persistence and degradability** No further relevant information available.  
**12.3 Bioaccumulative potential** No further relevant information available.  
**12.4 Mobility in soil** No further relevant information available.  
**Additional ecological information:**  
**General notes:**  
Do not allow product to reach ground water, water bodies or sewage system.  
Do not allow material to be released to the environment without proper governmental permits.  
Water hazard class 2 (Self-assessment): hazardous for water.  
Danger to drinking water if even small quantities leak into soil.  
Avoid transfer into the environment.  
**12.5 Results of PBT and vPvB assessment**  
**PBT:** Not applicable.  
**vPvB:** Not applicable.  
**12.6 Other adverse effects** No further relevant information available.

**SECTION 13: Disposal considerations**

**13.1 Waste treatment methods**  
**Recommendation**  
Hand over to disposers of hazardous waste.  
Must be specially treated under adherence to official regulations.  
Consult state, local or national regulations for proper disposal.  
**Uncleaned packagings:**  
**Recommendation:** Disposal must be made according to official regulations.

**SECTION 14: Transport information**

<b>UN-Number</b> <b>ADR, IMDG, IATA</b>	UN2811
<b>14.2 UN proper shipping name</b> <b>ADR</b> <b>IMDG, IATA</b>	2811 TOXIC SOLID, ORGANIC, N.O.S. (L-Noradrenaline) TOXIC SOLID, ORGANIC, N.O.S. (L-Noradrenaline)
<b>14.3 Transport hazard class(es)</b> <b>ADR</b> 	
<b>Class</b> <b>Label</b> <b>IMDG, IATA</b> 	6.1 (T2) Toxic substances. 6.1
<b>Class</b> <b>Label</b>	6.1 Toxic substances. 6.1
<b>Packing group</b> <b>ADR, IMDG, IATA</b>	II
<b>14.5 Environmental hazards:</b>	Not applicable.
<b>14.6 Special precautions for user</b>	Warning: Toxic substances.

(Contd. on page 4)  
GB

Trade name **L-Noradrenaline**

(Contd. of page 3)

<b>Kemler Number:</b>	60
<b>EMS Number:</b>	F-A,S-A
<b>14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
<b>Transport/Additional information:</b>	
<b>ADR</b>	
<b>Excepted quantities (EQ):</b>	E4
<b>Tunnel restriction code</b>	D/E
<b>UN "Model Regulation":</b>	UN2811, TOXIC SOLID, ORGANIC, N.O.S. (L-Noradrenaline), 6.1, II

**SECTION 15: Regulatory information**

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

**Australian Inventory of Chemical Substances** Substance is listed.

**Standard for the Uniform Scheduling of Drugs and Poisons** Substance is not listed.

**National regulations**

**Information about limitation of use:**

For use only by technically qualified individuals.

Employment restrictions concerning young persons must be observed.

**Water hazard class:** Water hazard class 2 (Self-assessment): hazardous for water.

**Other regulations, limitations and prohibitive regulations**

Although this chemical may sometimes be used as a food or drug or cosmetic, our products are not approved or suitable for such use or for human consumption.

**ELINCS (European List of Notified Chemical Substances)** Substance is not listed.

**Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.** Substance is not listed.

**The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.**

Substance is not listed.

**Annex XIV of the REACH Regulations (requiring Authorisation for use)** Substance is not listed.

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

**SECTION 16: Other information**

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing SDS:** Global Marketing Department

**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

vPvB: very Persistent and very Bioaccumulative

ACGIH: American Conference of Governmental Industrial Hygienists (USA)

OSHA: Occupational Safety and Health Administration (USA)

NTP: National Toxicology Program (USA)

IARC: International Agency for Research on Cancer

EPA: Environmental Protection Agency (USA)