

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 N-Boc-4,4-difluoro-L-proline  
 Synonyms N-(tert-Butoxycarbonyl)-4,4-difluoro-L-proline  
 Chemical Name (S)-1-(tert-Butoxycarbonyl)-4,4-difluoro-2-pyrrolidinecarboxylic acid  
 Chemical Formula C<sub>10</sub>H<sub>15</sub>F<sub>2</sub>NO<sub>4</sub>  
 CAS No. 203866-15-3  
 EC No. Not available.  
 Index No. Not available.  
 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: +441 142999180  
 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 Irrit. 2: Causes skin irritation  
 Eye Irrit. 2: Causes serious eye irritation  
 STOT SE 3: May cause respiratory irritation

**2.2 Label elements**

Product Name According to Regulation (EC) No. 1272/2008 (CLP)  
 N-Boc-4,4-difluoro-L-proline

Hazard Pictogram(s)



GHS07

Signal Word(s) Warning

Hazard Statement(s) H315: Causes skin irritation  
 H319: Causes serious eye irritation  
 H335: May cause respiratory irritation

Precautionary Statement(s) P302 + P352: IF ON SKIN: Wash with plenty of water.  
 P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes.  
 Remove contact lenses, if present and easy to do. Continue rinsing.  
 P312: Call a POISON CENTER or doctor if you feel unwell.  
 P337 + P313: If eye irritation persists: 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.

---

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


---

**3.1 Substances**

Hazardous ingredient(s)	CAS No.	EC No.	%W/W	Hazard Statement(s)
(S)-1-(tert-Butoxycarbonyl)-4,4-difluoro-2-pyrrolidinecarboxylic acid	203866-15-3	Not available.	≤ 100	Skin Irrit. 2 H315 Eye Irrit. 2 H319 STOT SE 3 H335

**3.2 Mixtures**

Not applicable.

---

**SECTION 4: FIRST AID MEASURES**


---

**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.

---

**SECTION 5: FIREFIGHTING MEASURES**


---

**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**

 Carbon oxides  
 Hydrogen fluoride  
 Nitrogen oxides (NO<sub>x</sub>)

**5.3 Advice for firefighters**

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

---

**SECTION 6: ACCIDENTAL RELEASE MEASURES**


---

**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.

---

**SECTION 7: HANDLING AND STORAGE**


---

**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.
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

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

**8.1 Control parameters**

8.1.1 Occupational Exposure Limits No Occupational Exposure Limit assigned.

**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.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

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

Physical State Solid: Powder.  
 Colour Off-white.  
 Odour Not known.  
 Odour threshold Not known.  
 Melting point/freezing point 120-140 °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.

**SECTION 10: STABILITY AND REACTIVITY**

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

**SECTION 11: TOXICOLOGICAL INFORMATION**

**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.

**SECTION 12: ECOLOGICAL INFORMATION**

**12.1 Toxicity**

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

**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.

**SECTION 13: DISPOSAL CONSIDERATIONS**

**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.

**SECTION 14: TRANSPORT INFORMATION**

IATA/IMO/RID/ADR	Not classified as hazardous for transport.
------------------	--------------------------------------------

**SECTION 15: REGULATORY INFORMATION**

**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
<b>National regulations</b>	
Other	Not known.
<b>15.2 Chemical Safety Assessment</b>	A REACH chemical safety assessment has not been carried out.

---

**SECTION 16: OTHER INFORMATION**

---

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
Disclaimers	Information contained in this publication or as otherwise supplied to Users is believed to be accurate and is given in good faith, but it is for the Users to satisfy themselves of the suitability of the product for their own particular purpose. Ossila Limited gives no warranty as to the fitness of the product for any particular purpose and any implied warranty or condition (statutory or otherwise) is excluded except to the extent that exclusion is prevented by law. Ossila Limited accepts no liability for loss or damage (other than that arising from death or personal injury caused by defective product, if proved), resulting from reliance on this information. Freedom under Patents, Copyright and Designs cannot be assumed.