

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Boc-L-Orn-OH**

Revision date: 12.03.2020

Product code: BAA1123

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Boc-L-Orn-OH

**Further trade names**Na-t-Butyloxycarbonyl-L-ornithine  
(S)-5-amino-2-((tert-butoxycarbonyl)amino)pentanoic acidSubstance name: Boc-L-Orn-OH  
CAS No: 21887-64-9  
EC No: 663-892-6**1.2. Relevant identified uses of the substance or mixture and uses advised against****Use of the substance/mixture**

Laboratory chemical. Manufacture of the substance.

**Uses advised against**

Do not use for private purposes (household).

**1.3. Details of the supplier of the safety data sheet**Company name: Iris Biotech GmbH  
Street: Adalbert-Zoellner-Straße 1  
Place: D-95615 Marktredwitz, Germany  
Post-office box: 568  
D-95605 Marktredwitz, Germany  
Telephone: +49 9231 97121 0  
Telefax: +49 9231 97121 99  
e-mail: info@iris-biotech.de  
Contact person: Compliance Department  
Telephone: +49 9231 97121 0  
e-mail: sds@iris-biotech.de  
Internet: www.iris-biotech.de  
Responsible Department: Only available during office hours.**1.4. Emergency telephone number:** +49 (0)89 19240 (POISON CENTER Munich: 24 h)**Further Information**

Emergency telephone: 24 h (POISON CENTER Munich)

**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****Regulation (EC) No. 1272/2008**Hazard categories:  
Respiratory or skin sensitisation: Skin Sens. 1  
Hazard Statements:  
May cause an allergic skin reaction.**2.2. Label elements****Regulation (EC) No. 1272/2008****Signal word:** Warning**Pictograms:****Hazard statements**

H317 May cause an allergic skin reaction.

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**Precautionary statements**

P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P302+P352	IF ON SKIN: Wash with plenty of water.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P501	Dispose of contents/container to an approved disposal site.

**Additional advice on labelling**

Warning - substance not yet tested completely.

**2.3. Other hazards**

No information available.

**SECTION 3: Composition/information on ingredients****3.1. Substances****Chemical characterization**

(S)-5-amino-2-((tert-butoxycarbonyl)amino)pentanoic acid

Sum formula: C<sub>10</sub>H<sub>20</sub>N<sub>2</sub>O<sub>4</sub>

Molecular weight: 232.28 g/mol

**Hazardous components**

CAS No	Chemical name	Quantity
	EC No	
	Index No	
	REACH No	
	GHS Classification	
21887-64-9	Boc-L-Orn-OH	<= 100 %
	663-892-6	
	Skin Sens. 1; H317	

Full text of H and EUH statements: see section 16.

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

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

**After inhalation**

Provide fresh air. When in doubt or if symptoms are observed, get medical advice. Remove casualty to fresh air and keep warm and at rest. In case of irregular breathing or respiratory arrest provide artificial respiration. In all cases of doubt, or when symptoms persist, seek medical advice.

**After contact with skin**

After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated clothing and wash it before reuse. Medical treatment necessary. In all cases of doubt, or when symptoms persist, seek medical advice.

**After contact with eyes**

Rinse immediately carefully and thoroughly with eye-bath or water. In case of eye irritation consult an ophthalmologist. If product gets into the eye, keep eyelid open and rinse immediately with large quantities of water, for at least 5 minutes. Subsequently consult an ophthalmologist.

**After ingestion**

Rinse mouth immediately and drink 1 glass of water. Rinse mouth thoroughly with water. Never give

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anything by mouth to an unconscious person or a person with cramps.  
In all cases of doubt, or when symptoms persist, seek medical advice.

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

No information available.

#### **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**

Co-ordinate fire-fighting measures to the fire surroundings. Water spray. alcohol resistant foam. Dry extinguishing powder. Carbon dioxide (CO<sub>2</sub>). Sand.

##### **Unsuitable extinguishing media**

High power water jet.

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

Non-flammable. Thermal decomposition can lead to the escape of irritating gases and vapours.  
In case of fire may be liberated: Carbon dioxide (CO<sub>2</sub>). Carbon monoxide (CO). Nitrogen oxides (NO<sub>x</sub>).

#### **5.3. Advice for firefighters**

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

#### **Additional information**

Usual measures for fire prevention.

### **SECTION 6: Accidental release measures**

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

##### **General advice**

Provide adequate ventilation. Avoid breathing dust/fume/gas/mist/vapours/spray.  
Avoid contact with skin, eyes and clothes.  
Wear personal protection equipment.  
In case of fire: Evacuate area.

#### **6.2. Environmental precautions**

Do not allow to enter into soil/subsoil.  
Do not allow to enter into surface water or drains.

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

##### **Other information**

Take up mechanically. Take up mechanically, placing in appropriate containers for disposal. Avoid dust formation.  
Clear contaminated areas thoroughly.

#### **6.4. Reference to other sections**

Safe handling: see section 7  
Personal protection equipment: see section 8  
Disposal: see section 13

Treat the recovered material as prescribed in the section on waste disposal.

### **SECTION 7: Handling and storage**

#### **7.1. Precautions for safe handling**

##### **Advice on safe handling**

Provide adequate ventilation.  
Avoid dust formation. Avoid breathing dust/fume/gas/mist/vapours/spray.

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Avoid contact with skin, eyes and clothes.

**Advice on protection against fire and explosion**

Usual measures for fire prevention.

**Advice on general occupational hygiene**

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat, drink, smoke, sniff. Avoid contact with skin, eyes and clothes. Provide adequate ventilation.

**7.2. Conditions for safe storage, including any incompatibilities****Requirements for storage rooms and vessels**

Keep container tightly closed. Keep container tightly closed in a cool, well-ventilated place. Handle and store contents under inert gas. Protect from moisture. storage temperature: +2°C - +8°C

**Hints on joint storage**

No special measures are necessary.

**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****Additional advice on limit values**

To date, no national critical limit values exist.

**8.2. Exposure controls****Appropriate engineering controls**

The receiver of our product is singularly responsible for adhering to existing laws and regulations.

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

Wear eye/face protection.

**Hand protection**

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. Wear suitable gloves.

**Skin protection**

Use of protective clothing.

**Respiratory protection**

In case of inadequate ventilation wear respiratory protection. If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn.

**Environmental exposure controls**

Discharge into the environment must be avoided.

**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

Physical state: solid

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Colour: white/ whitish  
Odour: No data available

**Changes in the physical state**

Melting point/freezing point: 207 - 208 °C  
Boiling point or initial boiling point and boiling range: not determined  
Sublimation point: not determined  
Softening point: not determined  
Flash point: No data available

**Flammability**

Solid/liquid: not determined  
Gas: not applicable

**Explosive properties**

The product is not: Explosive.

Lower explosion limits: not determined  
Upper explosion limits: not determined  
Auto-ignition temperature: not determined

**Self-ignition temperature**

Solid: not determined  
Gas: not applicable

Decomposition temperature: not determined

pH-Value: not determined

Water solubility: No data available

**Solubility in other solvents**

not determined

Partition coefficient n-octanol/water: not determined

Vapour pressure: not determined

Density: not determined

Relative vapour density: not determined

**9.2. Other information****Information with regard to physical hazard classes**

Sustaining combustion: No data available

Oxidizing properties  
No data available

**Other safety characteristics**

Solvent content: No data available

Solid content: not determined

Evaporation rate: not determined

**Further Information****SECTION 10: Stability and reactivity****10.1. Reactivity**

No data available

**10.2. Chemical stability**

Stable under recommended storage conditions.

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**10.3. Possibility of hazardous reactions**

No data available

**10.4. Conditions to avoid**Protect from moisture.  
Keep away from heat.**10.5. Incompatible materials**

Oxidizing agents, strong.

**10.6. Hazardous decomposition products**Thermal decomposition can lead to the escape of irritating gases and vapours.  
In case of fire may be liberated: Carbon dioxide (CO<sub>2</sub>). Carbon monoxide (CO). Nitrogen oxides (NO<sub>x</sub>).**Further information**

In case of fire: See chapter 5.

**SECTION 11: Toxicological information****11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008****Toxicokinetics, metabolism and distribution**

No data available

**Acute toxicity**

Based on available data, the classification criteria are not met.

**Irritation and corrosivity**

Based on available data, the classification criteria are not met.

**Sensitising effects**

May cause an allergic skin reaction. (Boc-L-Orn-OH)

**Carcinogenic/mutagenic/toxic effects for reproduction**Based on available data, the classification criteria are not met.  
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.**STOT-single exposure**

Based on available data, the classification criteria are not met.

**STOT-repeated exposure**

Based on available data, the classification criteria are not met.

**Aspiration hazard**

Based on available data, the classification criteria are not met.

**Specific effects in experiment on an animal**

No data available

**Additional information on tests**

Classification according to Regulation (EC) No 1272/2008 [CLP]: health hazard properties

**Practical experience**

No data available

**11.2. Information on other hazards****Other information**

Allergic reactions. In case of allergic symptoms, especially in the breathing area, seek medical advice immediately.

**Further information**

RTECS: No data available

Caution! To the best of our knowledge the toxicological properties of this material have not been thoroughly investigated.

Handle in accordance with good industrial hygiene and safety practice.

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**SECTION 12: Ecological information****12.1. Toxicity**

No data available

**12.2. Persistence and degradability**

No data available

**12.3. Bioaccumulative potential**

No data available

**Partition coefficient n-octanol/water**

CAS No	Chemical name	Log Pow
21887-64-9	Boc-L-Orn-OH	0,713

**12.4. Mobility in soil**

No data available

**12.5. Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

**12.7. Other adverse effects**

Warning - substance not yet tested completely.

**Further information**

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.  
Avoid release to the environment.

**SECTION 13: Disposal considerations****13.1. Waste treatment methods****Disposal recommendations**

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation.

Consult the appropriate local waste disposal expert about waste disposal.

Handle contaminated packages in the same way as the substance itself.

**Contaminated packaging**

Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself.

**SECTION 14: Transport information****Land transport (ADR/RID)****14.2. UN proper shipping name:**

No dangerous good in sense of this transport regulation.

**Inland waterways transport (ADN)****14.2. UN proper shipping name:**

No dangerous good in sense of these transport regulations.

**Marine transport (IMDG)****14.2. UN proper shipping name:**

No dangerous good in sense of these transport regulations.

**Air transport (ICAO-TI/IATA-DGR)****14.2. UN proper shipping name:**

No dangerous good in sense of these transport regulations.

**14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: No

**14.6. Special precautions for user**

No information available.

**14.7. Maritime transport in bulk according to IMO instruments**

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not applicable

**SECTION 15: Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulatory information**

Information according to 2012/18/EU (SEVESO III): Not subject to 2012/18/EU (SEVESO III)

**Additional information**

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

**National regulatory information**

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water hazard class (D): 3 - highly hazardous to water

Skin resorption/Sensitization: Causes allergic hypersensitivity reactions.

**15.2. Chemical safety assessment**

For this substance a chemical safety assessment has not been carried out.

**SECTION 16: Other information****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

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service

LC50: Lethal concentration, 50%

LD50: Lethal dose, 50%

CLP: Classification, labelling and Packaging

REACH: Registration, Evaluation and Authorization of Chemicals

GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals

UN: United Nations

CAS: Chemical Abstracts Service

DNEL: Derived No Effect Level

DMEL: Derived Minimal Effect Level

PNEC: Predicted No Effect Concentration

ATE: Acute toxicity estimate

LL50: Lethal loading, 50%

EL50: Effect loading, 50%

EC50: Effective Concentration 50%

ErC50: Effective Concentration 50%, growth rate

NOEC: No Observed Effect Concentration

BCF: Bio-concentration factor

PBT: persistent, bioaccumulative, toxic

vPvB: very persistent, very bioaccumulative

RID: Regulations concerning the international carriage of dangerous goods by rail

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (Accord européen relatif au transport international des marchandises dangereuses par voies de navigation)



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intérieures)

EmS: Emergency Schedules

MFAG: Medical First Aid Guide

IATA: International Air Transport Association

ICAO: International Civil Aviation Organization

MARPOL: International Convention for the Prevention of Marine Pollution from Ships

IBC: Intermediate Bulk Container

SVHC: Substance of Very High Concern

For abbreviations and acronyms, see table at <http://abbrev.esdscom.eu>**Relevant H and EUH statements (number and full text)**

H317 May cause an allergic skin reaction.

**Further Information**

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations.