



Safety Data Sheet

according to UK REACH Regulation

Boc-L-Dap(Fmoc)-OH

Revision date: 10.11.2022 Product code: BAA1088_solv Page 1 of 12

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

1.1. Product identifier

Boc-L-Dap(Fmoc)-OH

Further trade names

N-alpha-t-Butyloxycarbonyl-N-beta-(9-fluorenylmethyloxycarbonyl)-L-2,3-diaminopropionic acid

N-alpha-Boc-N-beta-Fmoc-L-2,3-diaminopropionic acid

Boc-Dap(Fmoc)
Boc-Dpr(Fmoc)-OH
Boc-Dapa(Fmoc)-OH

Substance name: dichloromethane; methylene chloride

CAS No: 75-09-2 Index No: 602-004-00-3 EC No: 200-838-9

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

Use of the substance/mixture

Manufacture of the substance. Laboratory chemical

Uses advised against

Do not use for private purposes (household). Restrictions on use: Pharmaceutical substance

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 +49 (0)89 19240 (POISON CENTER Munich: 24 h)

number:

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GB CLP Regulation

Carc. 2; H351 Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335 STOT SE 3; H336 STOT RE 2; H373

Full text of hazard statements: see SECTION 16.

2.2. Label elements

GB CLP Regulation

Signal word: Warning



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Pictograms:





Hazard statements

H315 Causes skin irritation.
H319 Causes serious eye irritation.
H351 Suspected of causing cancer.

H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

P202 Do not handle until all safety precautions have been read and understood.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P264 Wash hands thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing

protection.

P302+P352 IF ON SKIN: Wash with plenty of water.

P362+P364 Take off contaminated clothing and wash it before reuse.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if

present and easy to do. Continue rinsing.

P337+P313 If eye irritation persists: Get medical advice/attention.
P308+P313 IF exposed or concerned: Get medical advice/attention.

P405 Store locked up.

P501 Dispose of contents/container to an approved disposal site.

Additional advice on labelling

Warning - substance not yet tested completely.

Labelling of packages where the contents do not exceed 125 ml

Signal word: Warning

Pictograms:





Hazard statements

H351

Precautionary statements

P202-P280-P308+P313-P405-P501

2.3. Other hazards

Product is not dust explosive in its original delivery form. The addition of particulate matter, however, results in a dust explosion risk.

SECTION 3: Composition/information on ingredients

3.1. Substances

Chemical characterization

N-alpha-t-Butyloxycarbonyl-N-beta-(9-fluorenylmethyloxycarbonyl)-L-2,3-diaminopropionic acid

Sum formula: C23H26N2O6

Molecular weight: 426,47 g/mol



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Hazardous components

CAS No	Chemical name			Quantity	
	EC No	Index No	REACH No		
	Classification (GB CLP Re	gulation)			
75-09-2	dichloromethane; methylen	dichloromethane; methylene chloride			
	200-838-9	602-004-00-3			
	Carc. 2, Skin Irrit. 2, Eye Irrit. 2, STOT SE 3, STOT SE 3, STOT RE 2; H351 H315 H319 H335 H336 H373				

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

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity		
	Specific Conc. L	Limits, M-factors and ATE			
75-09-2	200-838-9	dichloromethane; methylene chloride	10 - < 15 %		
	inhalation: LC5 mg/kg	0 = 52000 mg/l (vapours); dermal: LD50 = > 2000 mg/kg; oral: LD50 = > 2000			

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).

In all cases of doubt, or when symptoms persist, seek medical advice.

After inhalation

Provide fresh air. Medical treatment necessary. 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

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

After ingestion

If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person or a person with cramps.

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

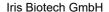
Treat symptomatically.

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. Sand.





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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 (CO2). Carbon monoxide (CO). Nitrogen oxides (NOx). Hydrogen chloride (HCI).

5.3. Advice for firefighters

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

Additional information

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately.

Do not allow entering drains or surface water. 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.

For non-emergency personnel

Take up carefully when dry.

For emergency responders

Take up mechanically, placing in appropriate containers for disposal. Take up dust-free and set down dust-free.

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

For cleaning up

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

Other information

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

If handled uncovered, arrangements with local exhaust ventilation have to be used. Avoid dust formation. Do not breathe dust. Provide adequate ventilation.

Avoid dust formation. Avoid breathing dust/fume/gas/mist/vapours/spray.

Avoid contact with skin, eyes and clothes.

Advice on protection against fire and explosion

Usual measures for fire prevention.



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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. 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 or drink. Avoid contact with skin, eyes and clothes. Provide adequate ventilation. When using do not eat, drink or smoke. Wash hands before breaks and after work.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaustion at critical locations. 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 data available

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

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m³	fibres/ml	Category	Origin
75-09-2	Dichloromethane	100	353		TWA (8 h)	WEL
		200	706		STEL (15 min)	WEL

Biological Monitoring Guidance Values (EH40)

CAS No	Substance	Parameter	Value	Test material	Sampling time
75-09-2	Dichloromethane	carbon monoxide	30 ppm	end-tidal breath	Post shift

DNEL/DMEL values

CAS No	Substance			
DNEL type	DNEL type		Effect	Value
75-09-2	dichloromethane; methylene chloride			
Worker DNEL,	long-term	inhalation	systemic	176 mg/m³
Worker DNEL,	Worker DNEL, long-term		systemic	12 mg/kg bw/day
Consumer DNE	EL, long-term	inhalation	systemic	44 mg/m³
Consumer DNEL, long-term		dermal	systemic	5,82 mg/kg bw/day
Consumer DNE	EL, long-term	oral	systemic	0,06 mg/kg bw/day



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PNEC values

CAS No	Substance			
CAS NO	Cubatance			
Environmental compartment Value				
75-09-2 dichloromethane; methylene chloride				
Freshwater	Freshwater			
Freshwater (in	0,27 mg/l			
Marine water	0,031 mg/l			
Freshwater sediment		2,57 mg/kg		
Marine sediment		0,26 mg/kg		
Micro-organisr	26 mg/l			
Soil		0,33 mg/kg		

8.2. Exposure controls





Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe dust. 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.

Tightly fitting safety goggles. Face shield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

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.

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

Skin protection

Use of protective clothing. Wear suitable 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.

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Environmental exposure controls

Discharge into the environment must be avoided.



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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: solid

Colour: white/ whitish Odour: No data available not determined Odour threshold:

84-88 °C (decomposition) °C Melting point/freezing point: Boiling point or initial boiling point and

not determined

boiling range: Flammability

not determined Solid/liquid: Gas: not applicable Lower explosion limits: not determined not determined Upper explosion limits: No data available Flash point: not determined Auto-ignition temperature: Decomposition temperature: not determined pH-Value: No data available Viscosity / kinematic: not applicable Water solubility: No data available

Solubility in other solvents

No data available

Dissolution rate: not determined Partition coefficient n-octanol/water: No data available not determined Vapour pressure: Density: not determined Bulk density: not determined Relative vapour density: not determined

9.2. Other information

Information with regard to physical hazard classes

Explosive properties

Product is not dust explosive in its original delivery form. The addition of particulate matter, however, results

in a dust explosion risk.

No data available Sustaining combustion:

Self-ignition temperature

Solid: not determined not applicable Gas:

Oxidizing properties

The product is not: oxidising.

Other safety characteristics

not determined Evaporation rate: Solvent content: No data available Solid content: not determined Sublimation point: not determined Softening point: not determined Viscosity / dynamic: not applicable Flow time: not applicable

SECTION 10: Stability and reactivity



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10.1. Reactivity

No data available

10.2. Chemical stability

Stable under recommended storage conditions.

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

Non-flammable. Thermal decomposition can lead to the escape of irritating gases and vapours. In case of fire may be liberated: Carbon dioxide (CO2). Carbon monoxide (CO). Nitrogen oxides (NOx).

Hydrogen chloride (HCI).

Further information

In case of fire: See chapter 5.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in GB CLP Regulation

Toxicocinetics, metabolism and distribution

No data available

Acute toxicity

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

CAS No	Chemical name	Chemical name						
	Exposure route	Dose		Species	Source	Method		
75-09-2	dichloromethane; meth	dichloromethane; methylene chloride						
	oral	LD50 mg/kg	> 2000	Rat	Other company data (1988)	ta OECD Guideline 401		
	dermal	LD50 mg/kg	> 2000	Rat	Other company data (1988)	ta OECD Guideline 402		
	inhalation vapour	LC50 mg/l	52000	Rat				

Irritation and corrosivity

Causes skin irritation.

Causes serious eye irritation.

Sensitising effects

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

Carcinogenic/mutagenic/toxic effects for reproduction

Suspected of causing cancer. (dichloromethane; methylene chloride)

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

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

This product is or contains a component that according to classifications by IARC, ACGIH, NTP or EPA is classified as potentially carcinogenic. Limited evidence from animal studies regarding the carcinogenicity

IARC: 2B - Group 2B: Possibly carcinogenic to humans. (Dichloromethane)

STOT-single exposure

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



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STOT-repeated exposure

May cause damage to organs through prolonged or repeated exposure. (dichloromethane; methylene chloride)

Aspiration hazard

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

Specific effects in experiment on an animal

No data available

Practical experience

No data available

11.2. Information on other hazards

Endocrine disrupting properties

No data available

Further information

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

Special hazards arising from the substance or mixture!

RTECS (Dichloromethane): PA8050000

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

investigated. Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12: Ecological information

12.1. Toxicity

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

CAS No	Chemical name	Chemical name						
	Aquatic toxicity	Dose		[h] [d]	Species	Source	Method	
75-09-2	dichloromethane; methyl	romethane; methylene chloride						
	Acute fish toxicity	LC50	193 mg/l	96 h	Pimephales promelas	Bull Environ Contam Toxicol 20, 344-352	According to test methods described by t	
	Acute crustacea toxicity	EC50	27 mg/l	48 h	Daphnia magna	Study report (1979)	According EPA publication	
	Fish toxicity	NOEC	357 mg/l	8 d	Pimephales promelas	Publication (1987)	other: ASTM E729-80	

12.2. Persistence and degradability

CAS No	Chemical name					
	Method	Value	d	Source		
	Evaluation					
75-09-2	dichloromethane; methylene chloride					
	OECD 301C/ ISO 9408/ EEC 92/69/V, C.4-F	< 26 %				
	Not readily biodegradable (according to OECD criteria)					

12.3. Bioaccumulative potential

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
75-09-2	dichloromethane; methylene chloride	1,25



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BCF

CAS No	Chemical name	BCF	Species	Source
75-09-2	dichloromethane; methylene chloride	39	Cyprinus carpio	Study report (1986)

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of UK REACH.

No data available

12.6. Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to non-target organisms.

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. 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

Hazardous waste according to Directive 2008/98/EC (waste framework directive). 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 these transport regulations.

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)

<u>14.2. UN proper shipping name:</u> 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

not applicable

SECTION 15: Regulatory information

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

EU regulatory information



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Restrictions on use (REACH, annex XVII):

Entry 75

2010/75/EU (VOC): 10 % 2004/42/EC (VOC): 10 %

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

(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. 3 - highly hazardous to water

15.2. Chemical safety assessment

Water hazard class (D):

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

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 1,2,4,5,6,7,8,9,10,11,12,13,15,16.

Abbreviations and acronyms

ADR: Accord relatif au transport international des marchandises dangereuses par route

(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

intérieures)



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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)

H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H335 May cause respiratory irritation.
 H336 May cause drowsiness or dizziness.
 H351 Suspected of causing cancer.

H373 May cause damage to organs through prolonged or repeated exposure.

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.