

MATERIAL SAFETY DATA SHEET

Version Number:- 02

PRODUCT NAME: Boc-D-Aph(Cbm-tBu)-OH

CAS Number: 324017-19-8

1. IDENTIFICATION:

Product Code : 16018

Synonym : N α -(tert-Butyloxycarbonyl)-p-tert-butylureido-D-phenylalanine

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2. HAZARDS IDENTIFICATION:**Hazard classification****Physical hazards**

Corrosive to Metals : No data available.

Health hazards

Acute toxicity, Oral : No data available.

Acute toxicity, Dermal : No data available.

Acute toxicity, Inhalation : No data available.

Skin irritation : Category 2

Eye irritation : Category 2 A

Skin sensitization : No data available.

Carcinogenicity : No data available.

**Specific target organ
toxicity - repeated
exposure, Oral** : No data available.

**Short-term (acute) aquatic
hazard** : No data available.

Labels elements :

Hazard symbol : 

Signal word : Warning

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Hazard statement	: Causes skin irritation. Causes serious eye irritation.
Precautionary statement	
Prevention	: Obtain special instructions before use. Do not breathe dust/ fume/ gas/ mist/ vapors/ spray. Do not handle until all safety precautions have been read and understood. Wear protective gloves/ protective clothing/ eye protection/ face protection. Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking. Keep container tightly closed. Ground/ bond container and receiving equipment. Use explosion-proof electrical/ ventilating/ lighting/ equipment. Use only non-sparking tools. Take precautionary measures against static discharge.
Response	: IF exposed or concerned: Get medical advice/ attention. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF SWALLOWED: Immediately call a poison center or doctor/physician.
Storage	: Preserve in air-tight container under inert atmosphere and store at room temperature below 30°C. Keep away from moisture & light.
Disposal	: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.
Other hazards which do not result in GHS classification	: Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

3. COMPOSITION/ INFORMATION ON INGRADIENTS:

Ingredient	CAS Number	Percent	Hazardous
Boc-D-Aph(Cbm-tBu)-OH	324017-19-8	NLT 98.0%	No

4. FIRST AID MEASURES:

General information	: Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.
Ingestion	: Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Move to fresh air. Call a physician or poison control center immediately. If breathing stops,
Inhalation	: provide artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms persist.
Skin contact	: Immediately flush with plenty of water for at least 15 minutes. Get medical attention.
Eye contact	: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.
Most important symptoms/effects, acute	: The most important known symptoms and effects are described in the labelling.

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and delayed

Indication of immediate medical attention and special treatment needed : No data available.

5. FIRE FIGHTING MEASURES:

General information : No data available.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water Foam Carbon dioxide (CO₂) Dry powder.

Unsuitable extinguishing media : For this substance/mixture no limitations of extinguishing agents are given.

Specific hazards arising from the chemical : Vapors may cause a flash fire or ignite explosively. Vapors may travel considerable distance to a source of ignition and flash back. Prevent buildup of vapors or gases to explosive concentrations. Vapor from the solvent may accumulate in container headspace resulting in flammability hazard. Heat may cause the containers to explode.

Special protective equipment and precautions for firefighters

Special firefighting procedures : Carbon oxides Sulphur oxides Hydrogen chloride gas Combustible. Development of hazardous combustion gases or vapours possible in the event of fire.

Special protective equipment for fire-fighters : Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. ACCIDENTAL RELEASE MEASURES:

Personal precautions, protective equipment and emergency procedures : Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Methods and material for containment and cleaning up : Eliminate all ignition sources if safe to do so. Use only non-sparking tools. Take precautionary measures against static discharges. Stop leak if possible without any risk. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal.

Notification Procedures : Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.

7. HANDLING AND STORAGE:

Precautions for safe handling : Do not handle until all safety precautions have been read and understood. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. Ground/bond

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container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools.

Wear protective gloves/protective clothing/eye protection/ face protection. Avoid contact with eyes, skin, and clothing. Do not breathe mist or vapor. Use only with adequate ventilation. Wash hands thoroughly after handling.

Conditions for safe storage, including any incompatibilities

: Preserve in air-tight container under inert atmosphere and store at room temperature below 30°C. Keep away from moisture & light.

8. EXPOSURE CONTROLS PERSONAL PROTECTION:**Appropriate engineering****controls**

: No data available

Individual protection measures, such as personal protective equipment**General information**

: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area. Use explosion-proof ventilation equipment.

Eye/face protection

: Wear safety glasses with side shields (or goggles).

Hand protection

: Chemical resistant gloves.

Other

: Wear suitable protective clothing.

Respiratory protection

: In case of inadequate ventilation use suitable respirator. Chemical respirator with organic vapor cartridge.

Hygiene measures

: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Provide eyewash station and safety shower. Avoid contact with eyes, skin, and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES:**Appearance**

: No information found.

Odor

: No information found.

Solubility

: No information found.

Formula: C₁₉H₂₉N₃O₅

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Molecular Weight	: 379.45 g/mol
Density	: 1.185±0.06 g/cm ³ (Predicted)
pH	: No information found.
% Volatiles by volume @ 21C (70F)	: No information found.
Boiling Point	: 533.2±50.0 °C(Predicted)
Melting Point	: 200 °C (decomp)
Flash Point	: No information found.
Vapor Density (Air=1)	: No information found.
Vapor Pressure (mm Hg)	: No information found.
Evaporation Rate (BuAc=1)	: No information found.

10. STABILITY AND REACTIVITY:

The following applies in general to flammable organic substances and mixtures: in	
Reactivity	: correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.
Chemical stability	: Stable under recommended storage conditions.
Possibility of hazardous reactions	: No data available
Conditions to avoid	: No information available
Incompatible materials	: Strong oxidizing agents
Hazardous decomposition products	: Carbon monoxide , carbon dioxide , nitrogen oxides .

11. TOXICOLOGICAL INFORMATION:**Information on toxicological effects****Acute toxicity (list all possible routes of exposure)**

Oral Product	: No data available.
Dermal Product	: No data available.
Inhalation Product	: No data available.
Repeated dose toxicity Product	: No data available.
Skin corrosion/irritation Product	: No data available.
Serious eye damage/eye irritation Product	: No data available.

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Respiratory or skin sensitization Product	: Not a skin sensitizer.
Carcinogenicity Product	: This substance has no evidence of carcinogenic properties
Germ cell mutagenicity	: No data available.
Reproductive toxicity Product	: No components toxic to reproduction.
Specific target organ toxicity - single exposure Product	: Inhalation - May cause respiratory irritation.
Specific target organ toxicity - repeated exposure Product	: None known.
Aspiration hazard Product	: May be harmful if swallowed and enters airways.
Other effects	: None known.

12. ECOLOGICAL INFORMATION:**Ecotoxicity****Acute hazards to the aquatic environment**

Fish Product	: No data available.
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Aquatic invertebrates Product	: No data available.
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Chronic hazards to the aquatic environment

Fish Product	: No data available.
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Aquatic invertebrates Product	: No data available.
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Toxicity to Aquatic Plants Product:	: No data available.
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Persistence and degradability

Biodegradation Product	: Expected to be readily biodegradable.
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BOD/COD ratio Product	: No data available.
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Bioaccumulative potential

Bioconcentration factor (BCF) Product	: No data available on bioaccumulation.
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Partition coefficient n-octanol / water (log Kow) Product	: No data available.
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Mobility in soil	: No data available.
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Other adverse effects : The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

13. DISPOSAL CONSIDERATION:

Disposal instructions : Discharge, treatment, or disposal may be subject to national, state, or local laws. Disposal recommendations are based on uncontaminated material.

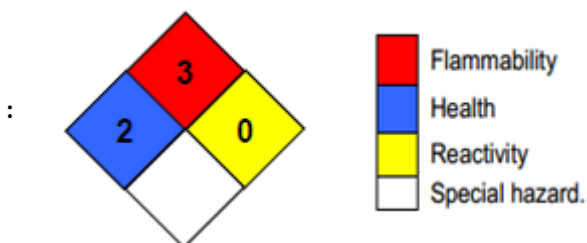
Contaminated packaging : Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. TRANSPORT INFORMATION:

	UN No.	UN proper shipping name	Hazard Class(es)	Packaging group	Environmental hazards
ADR/RID	NA	Not dangerous goods	-	-	No
IMDG	NA	Not dangerous goods	-	-	No
IATA	NA	Not dangerous goods	-	-	No

15. REGULATORY INFORMATION:

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.
Safety, health and environmental regulations/legislation specific for the substance or mixture
No Data Available.

16. OTHER INFORMATION:
NFPA Hazard ID

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe
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Disclaimer: This Material Safety Data Sheet (MSDS) is for guidance and is based upon information and tests believed to be

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