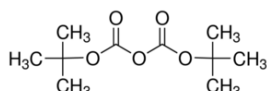


CAS-No.: 24424-99-5 MSDS

MATERIAL SAFETY DATA SHEET (MSDS)

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

1.1. Product identifier

Product form	: Substance
CAS-No.	: 24424-99-5
Product code	: 3271D
Formula	: C ₁₀ H ₁₈ O ₅
Chemical structure	: 
Synonyms	: DIBOC,BOC Anhydride

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

1.2.1. Relevant identified uses

Industrial/Professional use spec	: Industrial For professional use only
Use of the substance/mixture	: Laboratory chemicals

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

LOBA CHEMIE PVT.LTD.
107 Wode House Road, Jehangir Villa, Colaba
400005 Mumbai - INDIA
T +91 22 6663 6663 - F +91 22 6663 6699
info@lobachemie.com - www.lobachemie.com

1.4. Emergency telephone number

Emergency number : + 91 22 6663 6663 (9:00am - 6:00 pm)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flammable liquids, Category 3	H226
Acute toxicity (inhal.), Category 2	H330
Skin corrosion/irritation, Category 2	H315
Serious eye damage/eye irritation, Category 2	H319
Skin sensitisation, Category 1	H317
Specific target organ	H335

DI-TERT BUTYL PYROCARBONATE FOR SYNTHESIS

Safety Data Sheet

toxicity — Single exposure, Category 3, Respiratory tract irritation

Full text of H statements : see section 16

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

T+; R26
Xi; R36/37/38
R10

Full text of R-phrases: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS02

GHS06

Signal word (CLP) : Danger

Hazard statements (CLP) : H226 - Flammable liquid and vapour.
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H319 - Causes serious eye irritation.
H330 - Fatal if inhaled.
H335 - May cause respiratory irritation.

Precautionary statements (CLP) : P260 - Do not breathe vapours, spray, dust, fume, gas.
P280 - Wear protective gloves, protective clothing, cold insulating gloves, eye protection.
P284 - Wear respiratory protection.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 - Immediately call a POISON CENTER or doctor.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Name : DI-TERT BUTYL PYROCARBONATE FOR SYNTHESIS
CAS-No. : 24424-99-5

DI-TERT BUTYL PYROCARBONATE FOR SYNTHESIS

Safety Data Sheet

Full text of R- and H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
First-aid measures after skin contact	: Take off immediately all contaminated clothing. Wash with plenty of water/.... Get medical advice/attention.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.
First-aid measures after ingestion	: Rinse mouth. Do not induce vomiting.

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

Symptoms/effects after inhalation	: May cause respiratory irritation.
Symptoms/effects after skin contact	: Causes skin irritation.
Symptoms/effects after eye contact	: Causes serious eye irritation.

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	: Carbon dioxide. Dry powder. Foam. Water spray.
Unsuitable extinguishing media	: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: Flammable liquid and vapour.
Explosion hazard	: May form flammable/explosive vapour-air mixture.

5.3. Advice for firefighters

Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.
--------------------------------	---

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking.
------------------	---

6.1.1. For non-emergency personnel

Emergency procedures	: Evacuate unnecessary personnel.
----------------------	-----------------------------------

6.1.2. For emergency responders

Protective equipment	: Use personal protective equipment as required.
Emergency procedures	: Ventilate area.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up	: Collect spillage. On land, sweep or shovel into suitable containers.
-------------------------	--

DI-TERT BUTYL PYROCARBONATE FOR SYNTHESIS

Safety Data Sheet

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Handle empty containers with care because residual vapours are flammable.

Precautions for safe handling : Do not breathe vapours. Take precautionary measures against static discharge. Use only non-sparking tools. Keep away from sources of ignition - No smoking. Use only outdoors or in a well-ventilated area. Avoid contact with skin and eyes.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment.

Storage conditions : Keep container tightly closed. Keep in fireproof place.

Incompatible materials : Heat sources.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Hand protection : Protective gloves

Eye protection : Chemical goggles or safety glasses

Skin and body protection : Wear suitable protective clothing

Respiratory protection : [In case of inadequate ventilation] wear respiratory protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Molecular mass : 218.25 g/mol

Colour : Clear Colorless.

Odour : No data available

Odour threshold : No data available

pH : No data available

Relative evaporation rate (butylacetate=1) : No data available

Melting point : 23 °C

DI-TERT BUTYL PYROCARBONATE FOR SYNTHESIS

Safety Data Sheet

Freezing point	: No data available
Boiling point	: 56 - 57 °C
Flash point	: 37 °C
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Flammable liquid and vapour.
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Density	: 0.95 g/cm ³
Solubility	: No data available
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Open flame. Heat. Sparks.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

May release flammable gases.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Inhalation: Fatal if inhaled.

DI-TERT BUTYL PYROCARBONATE FOR SYNTHESIS

Safety Data Sheet

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitisation	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: May cause respiratory irritation.
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations	: Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
Additional information	: Handle empty containers with care because residual vapours are flammable.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

DI-TERT BUTYL PYROCARBONATE FOR SYNTHESIS

Safety Data Sheet

14.1. UN number

UN-No. (ADR)	: 2929
UN-No. (IMDG)	: 2929
UN-No. (IATA)	: 2929
UN-No. (ADN)	: 2929
UN-No. (RID)	: 2929

14.2. UN proper shipping name

Proper Shipping Name (ADR)	: TOXIC LIQUID, FLAMMABLE, ORGANIC, N.O.S.
Proper Shipping Name (IMDG)	: TOXIC LIQUID, FLAMMABLE, ORGANIC, N.O.S.
Proper Shipping Name (IATA)	: Toxic liquid, flammable, organic, n.o.s.
Proper Shipping Name (ADN)	: TOXIC LIQUID, FLAMMABLE, ORGANIC, N.O.S.
Proper Shipping Name (RID)	: TOXIC LIQUID, FLAMMABLE, ORGANIC, N.O.S.
Transport document description (ADR)	: UN 2929 TOXIC LIQUID, FLAMMABLE, ORGANIC, N.O.S., 6.1 (3), I, (C/D)
Transport document description (IMDG)	: UN 2929 TOXIC LIQUID, FLAMMABLE, ORGANIC, N.O.S., 6.1 (3), I
Transport document description (IATA)	: UN 2929 Toxic liquid, flammable, organic, n.o.s., 6.1, I
Transport document description (ADN)	: UN 2929 TOXIC LIQUID, FLAMMABLE, ORGANIC, N.O.S., 6.1 (3), I
Transport document description (RID)	: UN 2929 TOXIC LIQUID, FLAMMABLE, ORGANIC, N.O.S., 6.1 (3), I

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR)	: 6.1 (3)
Danger labels (ADR)	: 6.1, 3



IMDG

Transport hazard class(es) (IMDG)	: 6.1 (3)
Danger labels (IMDG)	: 6.1, 3



IATA

Transport hazard class(es) (IATA)	: 6.1 (3)
Hazard labels (IATA)	: 6.1, 3



ADN

Transport hazard class(es) (ADN)	: 6.1 (3)
Danger labels (ADN)	: 6.1, 3

DI-TERT BUTYL PYROCARBONATE FOR SYNTHESIS

Safety Data Sheet



RID

Transport hazard class(es) (RID) : 6.1 (3)

Danger labels (RID) : 6.1, 3



14.4. Packing group

Packing group (ADR) : I

Packing group (IMDG) : I

Packing group (IATA) : I

Packing group (ADN) : I

Packing group (RID) : I

14.5. Environmental hazards

Dangerous for the environment : No

Marine pollutant : No

Other information : No supplementary information available

14.6. Special precautions for user

- Overland transport

Classification code (ADR) : TF1

Special provisions (ADR) : 274, 315

Limited quantities (ADR) : 0

Excepted quantities (ADR) : E5

Packing instructions (ADR) : P001

Mixed packing provisions (ADR) : MP8, MP17

Portable tank and bulk container instructions (ADR) : T14

Portable tank and bulk container special provisions (ADR) : TP2, TP27

Tank code (ADR) : L10CH

Tank special provisions (ADR) : TU14, TU15, TE19, TE21

Vehicle for tank carriage : FL

Transport category (ADR) : 1

Special provisions for carriage - Loading, unloading and handling (ADR) : CV1, CV13, CV28

Special provisions for carriage - Operation (ADR) : S2, S9, S14

Hazard identification number (Kemler No.) : 663

Orange plates :



Tunnel restriction code (ADR) : C/D

EAC code : •3W

DI-TERT BUTYL PYROCARBONATE FOR SYNTHESIS

Safety Data Sheet

APP code	: A(fl)
- Transport by sea	
Special provisions (IMDG)	: 274, 315
Packing instructions (IMDG)	: P001
Tank instructions (IMDG)	: T14
Tank special provisions (IMDG)	: TP2, TP13, TP27
EmS-No. (Fire)	: F-E
EmS-No. (Spillage)	: S-D
Stowage category (IMDG)	: B
Stowage and handling (IMDG)	: SW2
Properties and observations (IMDG)	: Toxic if swallowed, by skin contact or by inhalation.
MFAG-No	: 131

- Air transport

PCA Excepted quantities (IATA)	: E5
PCA Limited quantities (IATA)	: Forbidden
PCA limited quantity max net quantity (IATA)	: Forbidden
PCA packing instructions (IATA)	: 652
PCA max net quantity (IATA)	: 1L
CAO packing instructions (IATA)	: 658
CAO max net quantity (IATA)	: 30L
Special provisions (IATA)	: A4, A137
ERG code (IATA)	: 6F

- Inland waterway transport

Classification code (ADN)	: TF1
Special provisions (ADN)	: 274, 315, 802
Limited quantities (ADN)	: 0
Excepted quantities (ADN)	: E5
Carriage permitted (ADN)	: T
Equipment required (ADN)	: PP, EP, EX, TOX, A
Ventilation (ADN)	: VE01, VE02
Number of blue cones/lights (ADN)	: 2

- Rail transport

Classification code (RID)	: TF1
Special provisions (RID)	: 274, 315
Limited quantities (RID)	: 0
Excepted quantities (RID)	: E5
Packing instructions (RID)	: P001
Mixed packing provisions (RID)	: MP8, MP17
Portable tank and bulk container instructions (RID)	: T14
Portable tank and bulk container special provisions (RID)	: TP2, TP27
Tank codes for RID tanks (RID)	: L10CH
Special provisions for RID tanks (RID)	: TU14, TU15, TU38, TE21, TE22
Transport category (RID)	: 1
Special provisions for carriage - Loading, unloading and handling (RID)	: CW13, CW28, CW31
Hazard identification number (RID)	: 663

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

DI-TERT BUTYL PYROCARBONATE FOR SYNTHESIS

Safety Data Sheet

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

DI-TERT BUTYL PYROCARBONATE FOR SYNTHESIS is not on the REACH Candidate List

DI-TERT BUTYL PYROCARBONATE FOR SYNTHESIS is not on the REACH Annex XIV List

15.1.2. National regulations

Germany

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

SZW-lijst van kankerverwekkende stoffen : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

Denmark

Class for fire hazard : Class II-1

Store unit : 5 liter

Classification remarks : R10 <H226;H315;H317;H319;H330;H335>; Emergency management guidelines for the storage of flammable liquids must be followed

Recommendations Danish Regulation : Young people below the age of 18 years are not allowed to use the product

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Full text of R-, H- and EUH-statements:

Acute Tox. 2 (Inhalation)	Acute toxicity (inhal.), Category 2
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 3	Flammable liquids, Category 3

DI-TERT BUTYL PYROCARBONATE FOR SYNTHESIS

Safety Data Sheet

Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.
R10	Flammable
R26	Very toxic by inhalation
R36/37/38	Irritating to eyes, respiratory system and skin
T+	Very toxic
Xi	Irritant

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product