

SAFETY DATA SHEET

Revision Date 08/04/2023

1. PRODUCT AND COMPANY IDENTIFICATION

- 1.1 Product identifiers**
 Product name : Di-t-Butyl dicarbonate
 Product Number : RB8003
 Brand : Advanced ChemTech
 CAS-No. : 24424-99-5
- 1.2 Relevant identified uses of the substance or mixture and uses advised against**
 Identified uses : Laboratory chemicals, Manufacture of substances
- 1.3 Details of the supplier of the safety data sheet**
 Company : Advanced ChemTech
 5609 Fern Valley Rd, Louisville, KY 40228 USA
 Telephone : +1 833-317-5620
 Fax : +1 502-968-1000
- 1.4 Emergency telephone number** : +1 800-424-9300 Chemtrec

2. HAZARDS IDENTIFICATION

- 2.1 Classification of the substance or mixture:**
GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
 Flammable liquids (Category 3), H226
 Acute toxicity, Inhalation (Category 1), H330
 Skin irritation (Category 2), H315
 Eye irritation (Category 2A), H319
 Skin sensitisation (Category 1), H317
 Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
 For the full text of the H-Statements mentioned in this Section, see Section 16.

- 2.2 GHS Label elements, including precautionary statements:**

Pictogram



Signal word

Danger

Hazard statement(s)

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 statement(s)

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
 P233 Keep container tightly closed.
 P240 Ground/bond container and receiving equipment.
 P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
 P242 Use only non-sparking tools.
 P243 Take precautionary measures against static discharge.
 P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
 P264 Wash skin thoroughly after handling.
 P271 Use only outdoors or in a well-ventilated area.
 P272 Contaminated work clothing should not be allowed out of the workplace.
 P280 Wear protective gloves/ eye protection/ face protection.
 P284 Wear respiratory protection.
 P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
 P304 + P340 + P310 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
 P337 + P313 If eye irritation persists: Get medical advice/ attention.
 P362 Take off contaminated clothing and wash before reuse.
 P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
 P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
 P403 + P235 Store in a well-ventilated place. Keep cool.
 P405 Store locked up.
 P501 Dispose of contents/ container to an approved waste disposal plant.

- 2.3 Hazards not otherwise classified (HNO) or not covered by GHS – none**

3. COMPOSITION/INFORMATION ON INGREDIENTS

- 3.1 Substances**
 Synonyms : Di-tert-butyl pyrocarbonate Boc anhydride
 Formula : C₁₀H₁₈O₅
 Molecular Weight : 218.25g/mole
 CAS-No. : 24424-99-5

Component	Classification	Concentration
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Di(tert-butyl) carbonate		
	Flam. Liq. 3; Acute Tox. 1; Skin Irrit. 2; Eye Irrit. 2A; Skin Sens. 1; STOT SE 3; H226, H315, H317, H319, H330, H335	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

If inhaled: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact: For the full text of the H-Statements mentioned in this Section, see Section 16.

In case of eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician

If swallowed: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

The most important known symptoms and effects are described in the labeling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed:

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture:

Carbon oxides

5.3 Advice for firefighters:

Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information:

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, protective equipment, and emergency procedure:

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection see section 8.

6.2 Environmental precautions:

Prevent further leakage or spillage if safe to do so. Do not let product enter drains

6.3 Methods and materials for containment and cleaning up:

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections:

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling:

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities:

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Recommended storage temperature 2 - 8 °C Avoid heating above: 40°C Handle and store under inert gas. Moisture sensitive. Handle and open container with care. Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s):

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters: Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls: Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product

Personal protective equipment

Eye/face protection: Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection: 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.

Body Protection: Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose 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).

Control of environmental exposure: Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance	Form: Colorless solid
b) Odor	no data available
c) Odor Threshold	no data available
d) pH	no data available
e) Melting point/freezing point	Melting point/range: 23 °C (73 °F) - lit.
f) Initial boiling point and boiling range	56 - 57 °C (133 - 135 °F) at 0.7 hPa (0.5 mmHg) - lit.
g) Flash point	37 °C (99 °F) - closed cup
h) Evaporation rate	no data available
i) Flammability (solid, gas)	no data available
j) Upper/lower flammability or explosive limits	no data available
k) Vapor pressure	no data available
l) Vapor density	no data available
m) Relative density	0.95 g/cm3 at 25 °C (77 °F)
n) Water solubility	no data available

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9.2	o) Partition coefficient: n- octanol/water	no data available
	p) Auto-ignition temperature	no data available
	q) Decomposition temperature	no data available
	r) Viscosity	no data available
	s) Explosive properties	no data available
	t) Oxidizing properties	no data available
	Other safety information:	no data available

10. STABILITY AND REACTIVITY

10.1	Reactivity: No data available
10.2	Chemical stability: Stable under recommended storage conditions.
10.3	Possibility of hazardous reactions: Vapours may form explosive mixture with air.
10.4	Conditions to avoid: Heat, flames and sparks.
10.5	Incompatible materials: Oxidizing agents, Reducing agents, Bases, Avoid contact with: Acids
10.6	Hazardous decomposition products: Other decomposition products - no data available. In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1	Information on toxicological effects
	Acute toxicity: LD50 Oral - Mammal - > 5,000 mg/kg
	Inhalation: LC50 Inhalation - Rat - 4 h - 100 mg/m3 Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Other. Lungs, Thorax, or Respiration:Dyspnea. Nutritional and Gross Metabolic:Weight loss or decreased weight gain.
	Dermal: LD50 Dermal - Mammal - > 2,000 mg/kg
	Skin corrosion/irritation: No data available
	Serious eye damage/eye irritation: No data available
	Respiratory or skin sensitization: No data available
	Germ cell mutagenicity: No data available
	Carcinogenicity:
	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.
	ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
	NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
	OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
	Reproductive toxicity: No data available
	Specific target organ toxicity - single exposure: Inhalation - May cause respiratory irritation.
	Specific target organ toxicity - repeated exposure: No data available
	Aspiration hazard: No data available
	Additional Information: RTECS: HT0230000 To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

12.1	Toxicity: No data available
12.2	Persistence and degradability: No data available
12.3	Bioaccumulative potential: No data available
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
12.6	Other adverse effects: No data available

13. DISPOSAL CONSIDERATIONS

13.1	Waste treatment methods
	Product: Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.
	Contaminated packaging: Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)			
UN number: 2929	Class: 6.1 (3)	Packing group: II	
Proper shipping name: Toxic liquids, flammable, organic, n.o.s. (Di(tert-butyl) carbonate)			
Reportable Quantity (RQ):			
IMDG			
UN number: 2929	Class: 6.1 (3)	Packing group: II	EMS-No: F-E, S-D
Proper shipping name: TOXIC LIQUID, FLAMMABLE, ORGANIC, N.O.S. (Di(tert-butyl) carbonate)			
IATA			
UN number: 2929	Class: 6.1 (3)	Packing group: II	
Proper shipping name: Toxic liquid, flammable, organic, n.o.s. (Di(tert-butyl) carbonate)			

15. REGULATORY INFORMATION

SARA 302 Components: SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.		
SARA 313 Components: SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.		
SARA 311/312 Hazards: Fire Hazard, Acute Health Hazard		
Massachusetts Right to Know Components: No components are subject to the Massachusetts Right to Know Act.		
Pennsylvania Right to Know Components		
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New Jersey Right to Know Components

Di-t-Butyl dicarbonate

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California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Eye Irrit.	Eye irritation
Flam. Liq.	Flammable liquids
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.
Skin Irrit.	Skin irritation
Skin Sens.	Skin sensitisation

HMIS Rating

Health hazard:	4
Chronic Health Hazard:	
Flammability:	3
Physical Hazard	0

NFPA Rating

Health hazard:	4
Fire Hazard:	3
Reactivity Hazard:	0

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Advanced ChemTech shall not be liable for any damage resulting in the handling or from contact with the above product.