

Order Number

Customer Number

1. Identification of the substance/preparation and of the company/undertaking

Product name : Carbachol **Catalog #** : 212385

Chemical formula : C₆H₁₅ClN₂O₂ **Supplier** : EMD Biosciences, Inc.
10394 Pacific Center Court
San Diego, CA 92121
(858)450-5558/(800)854-3417
FAX: (858)453-3552

Synonym : CARBACHOL; CARBACHOL CHLORIDE; CARBACHOLIN;
CARBACHOLINE; CARBACHOLINE CHLORIDE; CARBACOLINA;
CARBAMIC ACID, ESTER WITH CHOLINE CHLORIDE;
CARBAMINOCHOLINE CHLORIDE; CARBAMINOYLCHOLINE
CHLORIDE; CARBAMIOTIN; CARBAMOYLCHOLINE CHLORIDE;
GAMMA-CARBAMOYL CHOLINE CHLORIDE;
CARBAMOYLCHOLINE-HYDROCHLORIDE; CARBAMYLCHOLINE
CHLORIDE; CARBOCHOL; CARBOCHOLIN; CARBOCHOLINE;
CARBYL; CARCHOLIN; CHOLINE CARBAMATE CHLORIDE;
CHOLINE, CHLORIDE CARBAMATE(ESTER); CHOLINE CHLORIDE,
CARBAMOYL-; CHOLINE CHLORINE CARBAMATE; COL ETYL;
DORYL; DORYL (PHARMACEUTICAL); ETHANAMINIUM,
2-(AMINOCARBONYLOXY-N,N,N-TRIMETHYL-, CHLORIDE;
(2-HYDROXYETHYL)TRIMETHYL AMMONIUM CHLORIDE
CARBAMATE; ISOPTO CARBACHOL; JESTRYL; LENTIN; LENTINE
(FRENCH); MIOSTAT; MISTURA C; MORYL; P.V. CARBACHOL; TL
457; VASOPERIF

Emergency telephone number : Call Chemtrec®
(800)424-9300 (within U.S.A.)
(703)527-3887 (outside U.S.A.)

2. Composition / information on ingredients

Substance/Preparation : Substance

Chemical name*	CAS No.	EC Number	Symbol	R-Phrases
Carbamylcholine Chloride	51-83-2	200-127-3	T+	R27/28, R36/37/38

3. Hazards identification

Physical/chemical hazards : Not applicable.

Human health hazards : DANGER!
MAY BE FATAL IF ABSORBED THROUGH SKIN OR IF SWALLOWED.
MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION.
MAY CAUSE DAMAGE TO THE FOLLOWING ORGANS: HEART, GASTROINTESTINAL
TRACT, RESPIRATORY TRACT.

4. First-aid measures

First-Aid measures

- Inhalation** : If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
- Ingestion** : If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
- Skin Contact** : In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
- Eye Contact** : Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

Effects and symptoms

- Inhalation** : Hazardous in case of inhalation (lung irritant).
- Ingestion** : Extremely hazardous in case of ingestion. May be fatal if swallowed.
- Skin Contact** : Extremely hazardous in case of skin contact (permeator). Hazardous in case of skin contact (irritant). Severe over-exposure can result in death. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.
- Eye Contact** : Hazardous in case of eye contact (irritant).

Aggravating conditions : Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

5. Fire-fighting measures

- Flammability of the Product** : May be combustible at high temperature.
- Extinguishing Media**
- Suitable** : SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use water spray, fog or foam. Do not use water jet.
- Hazardous thermal (de)composition products** : These products are carbon oxides (CO, CO₂), nitrogen oxides (NO, NO₂...), halogenated compounds, hydrogen chloride.
- Special fire-fighting procedures** : Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.
- Protection of fire-fighters** : Be sure to use an approved/certified respirator or equivalent.

6. Accidental release measures

- Personal precautions** : Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
- Small Spill and Leak** : Use appropriate tools to put the spilled solid in a convenient waste disposal container.
- Large Spill and Leak** : Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal.

7. Handling and storage

- Handling** : Keep locked up. Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents.
- Storage** : Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 20°C (68°F).
- Packaging materials**
- Recommended use** : Use original container.

8. Exposure controls/personal protection

- Engineering measures** : Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
- Hygiene measures** : Wash hands, forearms, and face thoroughly after handling compounds and before eating, smoking, using lavatory, and at the end of day.

<u>Ingredient Name</u>	<u>Occupational Exposure Limits</u>
Carbachol	Not available.

Personal protective equipment

- Respiratory system** : Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.
- Skin and body** : Lab coat.
- Hands** : Gloves.
- Eyes** : Splash goggles.

Protective Clothing (Pictograms) :



9. Physical and chemical properties

- Physical state** : Solid. (Crystalline solid.)
- Color** : White.
- Molecular Weight** : 182.7 g/mole
- Melting Point** : Decomposition temperature: 210.06°C (410.1°F)
- Solubility** : Easily soluble in cold water.
- Flash point** : Not available.
- Explosive properties** : Risks of explosion of the product in presence of mechanical impact: Not available.
Risks of explosion of the product in presence of static discharge: Not available.

10. Stability and reactivity

Stability	: The product is stable.
Conditions to avoid	: Hygroscopic; keep container tightly closed.
Materials to avoid	: Reactive with oxidizing agents.
Hazardous Decomposition Products	: These products are carbon oxides (CO, CO ₂), nitrogen oxides (NO, NO ₂ ...), halogenated compounds, hydrogen chloride.

11. Toxicological information

RTECS #	: GA0875000
Local effects	
Skin irritation	: Hazardous in case of skin contact (irritant).
Acute toxicity	: Acute oral toxicity (LD50): 40 mg/kg [Rat].
Chronic toxicity	: Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.
Other Toxic Effects on Humans	: Toxic for humans or animal life. Extremely hazardous in case of skin contact (permeator), of ingestion. Hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation (lung irritant). Not available. Material is irritating to mucous membranes and upper respiratory tract. Exposure can cause nausea, headache and vomiting. May be fatal.
Specific effects	
Carcinogenic effects	: Classified None. by NIOSH.
Mutagenic effects	: Not available.
Reproduction toxicity	: Not available.
Teratogenic effects	: Not available.

12. Ecological information

Ecotoxicity	: Not available.
Toxicity of the Products of Biodegradation	: The products of degradation are as toxic as the product itself.

13. Disposal considerations

Methods of disposal; Waste of residues; Contaminated packaging	: Waste must be disposed of in accordance with federal, state and local environmental control regulations.
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14. Transport information

International transport regulations

UN number	: UN2811
Land - Road/Railway	
Proper shipping name	: Toxic solid, organic, n.o.s.*
ADR/RID Class	: CLASS 6.1: Toxic substance.
Packing Group	: II
ADR/RID label	:



Sea

Proper shipping name	: Toxic solid, organic, n.o.s.*
IMDG Class	: CLASS 6.1: Toxic substance.
Packing Group	: II
IMDG label	:



Air

Proper shipping name	: Toxic solid, organic, n.o.s.*
UN/ID Number	: UN2811

IATA-DGR Class : CLASS 6.1: Toxic substance.

Packing Group : II


IATA label :



Special Provisions for Transport : Not available.

15. Regulatory information

EU Regulations

- Hazard symbol(s)** : 
- Classification** : Very toxic
- Risk Phrases** : R27/28- Very toxic in contact with skin and if swallowed.
R36/37/38- Irritating to eyes, respiratory system and skin.
- Safety Phrases** : S22- Do not breathe dust.
S36/37/39- Wear suitable protective clothing, gloves and eye/face protection.
S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
- Contains** : - Carbamylcholine Chloride

U.S. Federal Regulations

- U.S. Federal Regulations** : TSCA 8(b) inventory: Carbamylcholine Chloride
SARA 302/304/311/312 extremely hazardous substances: Carbamylcholine Chloride
SARA 302/304 emergency planning and notification: Carbamylcholine Chloride
SARA 302/304/311/312 hazardous chemicals: Carbamylcholine Chloride
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Carbamylcholine Chloride: Immediate (Acute) Health Hazard
SARA 313 toxic chemical notification and release reporting: No products were found.
Clean Water Act (CWA) 307: No products were found.
Clean Water Act (CWA) 311: No products were found.
Clean air act (CAA) 112 accidental release prevention: No products were found.
Clean air act (CAA) 112 regulated flammable substances: No products were found.
Clean air act (CAA) 112 regulated toxic substances: No products were found.

HCS Classification

- HCS Classification** : CLASS: Highly toxic.
CLASS: Irritating substance.
CLASS: Target organ effects.

State Regulations

- State Regulations** : Pennsylvania RTK: Carbamylcholine Chloride: (environmental hazard, generic environmental hazard)
Massachusetts RTK: Carbamylcholine Chloride
New Jersey: Carbamylcholine Chloride

WHMIS (Canada)

- WHMIS (Canada)** : CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC).
CEPA NDSL: Carbamylcholine Chloride

16. Other information

Hazardous Material Information System (U.S.A.)

Health	*	4
Fire Hazard		1
Reactivity		0
Personal Protection		E

National Fire Protection Association (U.S.A.)



Notice to Reader

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Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist. **This product is intended for research use only.**

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