



MATERIAL SAFETY DATA SHEET

Version Number:- 02

PRODUCT NAME: CHOLINE CHLORIDE

CAS Number: 67-48-1

1. IDENTIFICATION:

Product Code : 93505

Company Name : ADVENT CHEMBIO PRIVATE LIMITED

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2. HAZARDS IDENTIFICATION:

Hazard classification : Not a hazardous substance or mixture according to Regulation

Physical hazards : Not a hazardous substance or mixture according to Regulation

Labels elements : No hazard pictogram, no signal word, no hazard statement, no precautionary statement required.

Signal word : Not a hazardous substance or mixture according to Regulation

Hazard statement : Not a hazardous substance or mixture according to Regulation

Precautionary statement

Prevention : Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves/ protective clothing/ eye protection/ face protection.
No smoking. Keep container tightly closed. 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): Rinse skin with water/ shower.
IF IN EYES: Rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF INHALED: Remove person to fresh air.

Storage : Store in a dry & well-ventilated place. Keep container tightly closed. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

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 : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.



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Version Number:- 02

PRODUCT NAME: CHOLINE CHLORIDE

CAS Number: 67-48-1

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

3. COMPOSITION/ INFORMATION ON INGRADIENTS:

Ingredient	CAS Number	Percent	Hazardous
Choline Chloride	67-48-1	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	: Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Inhalation	: Move to fresh air. If breathing stops, provide artificial respiration. If breathing is difficult, give oxygen.
Skin contact	: Flush with plenty of water for at least 15 minutes.
Eye contact	: Flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses
Most important symptoms/effects, acute and delayed	: The most important known symptoms and effects are described in the labelling.
Indication of immediate medical attention and special treatment needed	: No data available.

5. FIRE FIGHTING MEASURES:**General information****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 : Carbon oxides, Nitrogen oxides (NO_x), Hydrogen chloride gas, Combustible.
Development of hazardous combustion gases or vapours possible in the event of fire.

Special protective equipment and precautions for firefighters

Special firefighting procedures : Fight fire from a protected location. Move containers from fire area if you can do so without risk.

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.



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Version Number:- 02

PRODUCT NAME: CHOLINE CHLORIDE

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6. ACCIDENTAL RELEASE MEASURES:

Personal precautions, protective equipment and emergency procedures	:	ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Avoid breathing mists or vapors. Keep upwind. Keep unauthorized personnel away.
Methods and material for containment and cleaning up	:	Use only non-sparking tools. Take precautionary measures against static discharges. Stop leak if possible without any risk.
Notification Procedures	:	Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.
Environmental precautions	:	Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. HANDLING AND STORAGE:

Precautions for safe handling	:	Do not handle until all safety precautions have been read and understood. 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	:	Keep away from food, drink and animal feeding stuffs. Keep container tightly closed in a dry, well-ventilated place. Ground container and transfer equipment to eliminate static electric sparks.

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. 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.



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Version Number:- 02

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CAS Number: 67-48-1

9. PHYSICAL AND CHEMICAL PROPERTIES:

Appearance	: White crystalline powder.
Odor	: No data available
Solubility	: Soluble in water.
Formula	: $C_5H_{14}ClNO$
Molecular Weight	: 139.63 g/mol
Density	: No data available
pH	: 5.5 - 7.5
% Volatiles by volume @ 21C (70F)	: No data available
Boiling Point	: 300°C
Melting Point	: 302 - 305°C
Flash Point	: No data available
Vapor Density (Air=1)	: No data available
Vapor Pressure (mm Hg)	: No data available
Evaporation Rate (BuAc=1)	: No data available

10. STABILITY AND REACTIVITY:

Reactivity	The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.
Chemical stability	: Material is stable under ambient conditions..
Possibility of hazardous reactions	: Violent reactions possible with: Strong oxidizing agents, Strong acids, Strong bases
Conditions to avoid	: No data available
Incompatible materials	: No data available
Hazardous decomposition products	: In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION:

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral Product	: LD 50 Oral - Mouse - 3.900 mg/kg
Dermal Product	: No data available



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Inhalation Product	:	No data available
Repeated dose toxicity Product	:	No data available.
Skin corrosion/irritation Product	:	Skin - Rabbit Result: No skin irritation - 20 h
Serious eye damage/eye irritation Product	:	Irritating to eyes.
Respiratory or skin sensitization Product	:	Eyes - Rabbit Result: No eye irritation
Carcinogenicity Product	:	No data available.
IARC Monographs on the Evaluation of Carcinogenic Risks to Humans	:	No data available.
US. National Toxicology Program (NTP) Report on Carcinogens	:	No data available.
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	:	No data available.
Germ cell mutagenicity	:	Test Type: Ames test Test system: Salmonella typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative Test Type: Mutagenicity (mammal cell test): chromosome aberration. Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 473 Result: negative Test Type: sister chromatid exchange assay Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 479 Result: negative
Reproductive toxicity Product	:	No data available.
Specific target organ toxicity - single exposure Product	:	No data available.
Specific target organ toxicity - repeated exposure Product	:	No data available.
Aspiration hazard Product	:	No data available.



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Other effects : No data available.

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

Fish Product : static test LC50 - Leuciscus idus (Golden orfe) - > 10.000 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates : static test EC50 - Daphnia magna (Water flea) - 500 mg/l - 48 h

Toxicity to algae : static test ErC50 - Desmodesmus subspicatus (green algae) - > 500 mg/l - 72 h

Toxicity to bacteria : static test EC50 - Pseudomonas putida - 132,8 mg/l - 17 h

Chronic hazards to the aquatic environment

Toxicity to daphnia and other aquatic invertebrates : semi-static test NOEC - Daphnia magna (Water flea) - 30,2 mg/l - 21 d

Persistence and degradability

Biodegradation Product : aerobic - Exposure time 5 d
Result: > 75 % - Readily biodegradable.

BOD/COD ratio Product : No data available.

Bioaccumulative potential

Bioconcentration factor (BCF) Product : No data available on bioaccumulation.

Partition coefficient n-octanol / water (log Kow) Product : No data available.

Mobility in soil : No data available.

Other adverse effects : No data available.

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.



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Version Number:- 02

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CAS Number: 67-48-1

14. TRANSPORT INFORMATION:

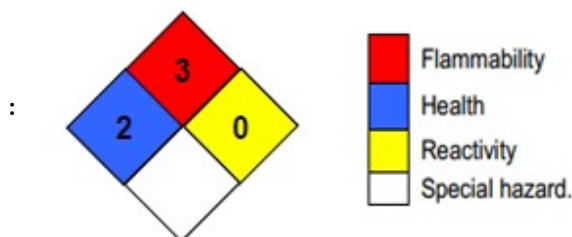
	UN No.	UN proper shipping name	Hazard Class(es)	Packaging group	Marine Pollutant
ADR/RID	NA	Choline Chloride		Not dangerous goods	
IMDG	NA	Choline Chloride		Not dangerous goods	
IATA	NA	Choline Chloride		Not dangerous goods	

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

Issue Date : 20/02/2025

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