

# SAFETY DATA SHEETS

According to Globally Harmonized System of Classification and Labelling of Chemicals (GHS) - Sixth revised edition

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## 1. Identification

### 1.1 GHS Product identifier

Product name            Dimethylcarbamoyl chloride

### 1.2 Other means of identification

Product number        -

Other names            N,N-dimethyl-carbamic acid chloride

### 1.3 Recommended use of the chemical and restrictions on use

Identified uses        For industry use only. Dimethylcarbamoyl chloride is used as a chemical intermediate in the production of pharmaceuticals and pesticides and in dye synthesis. (-)

Uses advised against   no data available

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## 2. Hazard identification

### 2.1 Classification of the substance or mixture

Acute toxicity - Oral, Category 4

Skin irritation, Category 2

Eye irritation, Category 2

Acute toxicity - Inhalation, Category 3

Specific target organ toxicity – single exposure, Category 3

Carcinogenicity, Category 1B

## 2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Danger

Hazard statement(s)

H302 Harmful if swallowed

H315 Causes skin irritation

H319 Causes serious eye irritation

H331 Toxic if inhaled

H335 May cause respiratory irritation

H350 May cause cancer

Precautionary statement(s)

Prevention

P264 Wash ... thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P271 Use only outdoors or in a well-ventilated area.

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

Response

P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor/...if you feel unwell.

P330 Rinse mouth.

P302+P352 IF ON SKIN: Wash with plenty of water/...

P321 Specific treatment (see ... on this label).

P332+P313 If skin irritation occurs: Get medical advice/attention.

P362+P364 Take off contaminated clothing and wash it before reuse.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313 If eye irritation persists: Get medical advice/attention.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P311 Call a POISON CENTER/doctor/...

P312 Call a POISON CENTER/doctor/...if you feel unwell.

P308+P313 IF exposed or concerned: Get medical advice/ attention.

#### Storage

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

#### Disposal

P501 Dispose of contents/container to ...

### 2.3 Other hazards which do not result in classification

none

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## 3. Composition/information on ingredients

### 3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Dimethylcarbamoyl chloride	Dimethylcarbamoyl chloride	79-44-7	none	100%

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## 4. First-aid measures

### 4.1 Description of necessary first-aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

#### If inhaled

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

#### In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

#### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

#### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### 4.2 Most important symptoms/effects, acute and delayed

Material is extremely destructive to the mucous membranes, upper respiratory tract, eyes, and skin. Symptoms of exposure include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. (USCG, 1999)

### 4.3 Indication of immediate medical attention and special treatment needed, if necessary

no data available

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## 5. Fire-fighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Excerpt from ERG Guide 156 [Substances - Toxic and/or Corrosive (Combustible / Water-Sensitive)]: Note: Most foams will react with the material and release

corrosive/toxic gases. SMALL FIRE: CO<sub>2</sub>, dry chemical, dry sand, alcohol-resistant foam. LARGE FIRE: Water spray, fog or alcohol-resistant foam. FOR CHLOROSILANES, DO NOT USE WATER; use AFFF alcohol-resistant medium-expansion foam. Move containers from fire area if you can do it without risk. Use water spray or fog; do not use straight streams. FIRE INVOLVING TANKS OR CAR/TRAILER LOADS: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Do not get water inside containers. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire. (ERG, 2016)

## 5.2 Specific hazards arising from the chemical

Special Hazards of Combustion Products: Toxic fumes of NO<sub>x</sub> and HCl (USCG, 1999)

## 5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

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## 6. Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. 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. Discharge into the environment must be avoided.

### 6.3 Methods and materials for containment and cleaning up

PRECAUTIONS FOR "CARCINOGENS": A high-efficiency particulate arrestor (HEPA) or charcoal filters can be used to minimize amt of carcinogen in exhausted air ventilated safety cabinets, lab hoods, glove boxes or animal rooms ... Filter housing that is designed so that used filters can be transferred into plastic bag without contaminating maintenance staff is avail commercially. Filters should be placed in plastic bags immediately after removal ... The plastic bag should be sealed immediately ... The sealed bag should be labelled properly ... Waste liquids ... should be placed or collected in proper containers for

disposal. The lid should be secured & the bottles properly labelled. Once filled, bottles should be placed in plastic bag, so that outer surface ... is not contaminated ... The plastic bag should also be sealed & labelled. ... Broken glassware ... should be decontaminated by solvent extraction, by chemical destruction, or in specially designed incinerators. /Chemical Carcinogens/

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## 7. Handling and storage

### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

PRECAUTIONS FOR "CARCINOGENS": Storage site should be as close as practical to lab in which carcinogens are to be used, so that only small quantities required for ... expt need to be carried. Carcinogens should be kept in only one section of cupboard, an explosion-proof refrigerator or freezer (depending on chemico-physical properties ...) that bears appropriate label. An inventory ... should be kept, showing quantity of carcinogen & date it was acquired ... Facilities for dispensing ... should be contiguous to storage area. /Chemical Carcinogens/

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## 8. Exposure controls/personal protection

### 8.1 Control parameters

Occupational Exposure limit values

NIOSH recommends that dimethyl carbamoyl chloride be regulated as a potential human carcinogen.

NIOSH usually recommends that occupational exposures to carcinogens be limited to the lowest feasible concn.

Biological limit values

no data available

### 8.2 Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### 8.3 Individual protection measures, such as personal protective equipment (PPE)

#### Eye/face protection

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### Skin protection

Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. 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. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

#### Respiratory protection

Wear dust mask when handling large quantities.

#### Thermal hazards

no data available

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## 9. Physical and chemical properties

Physical state	clear liquid
Colour	Clear, colorless liquid.
Odour	no data available
Melting point/ freezing point	236°C(dec.)(lit.)
Boiling point or initial boiling point and boiling range	348°C(lit.)
Flammability	Class IIIA Combustible Liquid: Fl.P. at or above 60°C and below 93.33°C.
Lower and upper explosion limit / flammability limit	no data available
Flash point	82°C(lit.)

Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	In water:Decomposes
Partition coefficient n-octanol/water (log value)	no data available
Vapour pressure	1.95 mm Hg @ 25°C
Density and/or relative density	1.168
Relative vapour density	3.73 (Relative to Air)
Particle characteristics	no data available

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## 10. Stability and reactivity

### 10.1 Reactivity

no data available

### 10.2 Chemical stability

RAPIDLY HYDROLYZES IN WATER TO DIMETHYLAMINE, CARBON DIOXIDE & HYDROCHLORIC ACID; ITS HALF-LIFE @ 0 DEG C IS ABOUT 6 MIN.

### 10.3 Possibility of hazardous reactions

DIMETHYLCARBAMOYL CHLORIDE is water reactive. Incompatible with strong oxidizing agents, alcohols, bases (including amines). May react vigorously or explosively if mixed with diisopropyl ether or other ethers in the presence of trace amounts of metal salts [J. Haz. Mat., 1981, 4, 291]. Gives toxic fumes of NO<sub>x</sub> and HCl when burned (USCG, 1999).

### 10.4 Conditions to avoid

no data available

### 10.5 Incompatible materials

EXTREMELY REACTIVE

### 10.6 Hazardous decomposition products



WHEN HEATED TO DECOMPOSITION IT EMITS VERY TOXIC FUMES OF /HYDROGEN CHLORIDE AND NITROGEN OXIDES/.

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## 11. Toxicological information

### Acute toxicity

- Oral: LD50 Rat oral 1 g/kg
- Inhalation: LC50 Rat inhalation 180 ppm/6 hr
- Dermal: no data available

### Skin corrosion/irritation

no data available

### Serious eye damage/irritation

no data available

### Respiratory or skin sensitization

no data available

### Germ cell mutagenicity

no data available

### Carcinogenicity

The Human Health Assessment Group in EPA's Office of Health and Environmental Assessment has evaluated dimethylcarbamoyl chloride carcinogenicity. According to their analysis, the weight-of-evidence for dimethylcarbamoyl chloride is group B2, which is based on inadequate evidence in humans and sufficient evidence in animals. As a group B2 chemical, dimethylcarbamoyl chloride is considered to be probably carcinogenic to humans.

### Reproductive toxicity

No information is available on the reproductive or developmental effects of dimethylcarbamoyl chloride in humans or animals.

### STOT-single exposure

no data available

### STOT-repeated exposure

no data available

Aspiration hazard

no data available

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## 12. Ecological information

### 12.1 Toxicity

- Toxicity to fish: no data available
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

### 12.2 Persistence and degradability

no data available

### 12.3 Bioaccumulative potential

Since dimethylcarbamoyl chloride rapidly hydrolyzes in water(1), bioconcentration of dimethylcarbamoyl chloride in aquatic organisms is not expected to be an important environmental fate process(SRC).

### 12.4 Mobility in soil

Since dimethylcarbamoyl chloride rapidly hydrolyzes in water and moist soil(1), adsorption to soil is not expected to be an important environmental fate process(SRC).

### 12.5 Other adverse effects

no data available

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## 13. Disposal considerations

### 13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

## Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

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### 14. Transport information

#### 14.1 UN Number

ADR/RID: UN2262

IMDG: UN2262

IATA: UN2262

#### 14.2 UN Proper Shipping Name

ADR/RID: DIMETHYLCARBAMOYL CHLORIDE

IMDG: DIMETHYLCARBAMOYL CHLORIDE

IATA: DIMETHYLCARBAMOYL CHLORIDE

#### 14.3 Transport hazard class(es)

ADR/RID: 8

IMDG: 8

IATA: 8

#### 14.4 Packing group, if applicable

ADR/RID: II

IMDG: II

IATA: II

#### 14.5 Environmental hazards

ADR/RID: no

IMDG: no

IATA: no

#### 14.6 Special precautions for user

no data available

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

no data available

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### 15. Regulatory information

#### 15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and	CAS	EC number
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	synonyms	number	
Dimethylcarbamoyl chloride	Dimethylcarbamoyl chloride	79-44-7	none
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Not Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.

## 16. Other information

### Information on revision

Creation Date Aug 12, 2017

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### Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

### References

- IPCS - The International Chemical Safety Cards (ICSC), website:

- <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website:  
<https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
  - IARC - International Agency for Research on Cancer, website:  
<http://www.iarc.fr/>
  - eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:  
[http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)
  - CAMEO Chemicals, website:  
<http://cameochemicals.noaa.gov/search/simple>
  - ChemIDplus, website:  
<http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
  - ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
  - Germany GESTIS-database on hazard substance, website:  
<http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
  - ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

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Disclaimer: 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. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.