

8/30/05



SIGMA-ALDRICH

Material Safety Data Sheet

Date Printed: 06/15/2005
Date Updated: 04/07/2004
Version 1.60

Section 1 - Product and Company Information

Product Name	Diethyl pyrocarbonate, approx. 97% NMR		
Product Number	D5758		
Brand	Sigma Chemical		
Company	Sigma-Aldrich		
Street Address	3050 Spruce Street		
City, State, Zip, Country	SAINT LOUIS, MO 63103 US		
Technical Phone:	314 771 5765		
Fax:	800 325 5052	Emergency Phone:	414 273 3850 Ext. 5996

Section 2 - Composition/Information on Ingredient

<u>Substance Name</u>	<u>CAS #</u>	<u>SARA 313</u>	<u>EC no</u>	<u>Annex I Index Number</u>
DIETHYL PYROCARBONATE	1609-47-8	No	216-542-8	

Formula C6H10O5
Synonyms Baycovin, Dicarboxylic acid diethyl ester, DEPC, Diethyl dicarbonate, Diethylester kyseliny diuhlicite (Czech), Diethyl ester of pyrocarbonic acid, Diethyl oxydiformate, Diethyl pyrocarbonate, Diethyl pyrocarbonic acid, Diethylpyrokarbonat (Czech), DKD, Ethyl pyrocarbonate, Oxydiformic acid diethyl ester, Piref, Pyrocarbonate d'ethyle (French), Pyrocarbonic acid, diethyl ester, Pyrokohlensaure diaethyl ester (German)

Section 3 - Hazards Identification

Emergency Overview
Harmful.
Harmful if swallowed. Irritating to eyes, respiratory system and skin.
Combustible. May develop pressure.

HMIS Rating
Health: 2 Flammability: 2 Reactivity: 1

NFPA Rating
Health: 2 Flammability: 2 Reactivity: 1

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

Oral Exposure
If swallowed, wash out mouth with water provided person is conscious. Call a physician.

Inhalation Exposure
If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

Dermal Exposure
In case of contact, immediately wash skin with soap and copious amounts of water.

Eye Exposure
In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

Flash Point: 156.2 °F 69 °C

Autoignition Temp: N/A

Extinguishing Media
Suitable
Water spray, Carbon dioxide, dry chemical powder, or appropriate foam.

Firefighting
Protective Equipment
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s)
Combustible liquid. Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

Procedure to be Followed in Case of Leak or Spill
Evacuate area.

Procedure(s) of Personal Precaution(s)
Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up
Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors.

Section 7 - Handling and Storage

Handling
User Exposure
Do not breathe vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure. Always open containers slowly to allow any excess pressure to vent.

Storage
Suitable
Keep tightly closed. Keep away from heat and open flame. Handle and store under argon. Store at 2-8°C

Special Requirements
May develop pressure. Open carefully. Moisture sensitive.

Section 8 - Exposure Controls / PPE

Engineering Controls
Safety shower and eye bath. Open only in a fume hood.

Personal Protective Equipment
Respiratory
Government approved respirator.
Hand
Compatible chemical-resistant gloves.
Eye
Chemical safety goggles.

General Hygiene Measures
Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

Appearance	Color
Physical State Clear liquid	Almost colorless

Molecular Weight: 162.14 AMU

pH	N/A
BP/BP Range	160 - 163 °C
MP/MP Range	N/A
Freezing Point	N/A
Vapor Pressure	N/A
Vapor Density	N/A
Saturated Vapor Conc.	N/A
SG/Density	1.12 g/cm ³
Bulk Density	N/A
Odor Threshold	N/A
Volatile%	N/A
VOC Content	N/A
Water Content	N/A
Solvent Content	N/A
Evaporation Rate	N/A
Viscosity	N/A
Partition Coefficient	N/A
Decomposition Temp.	N/A
Flash Point °F	156.2 °F
Flash Point °C	69 °C
Explosion Limits	N/A

Method: closed cup
Method: closed cup

Flammability	N/A
Autoignition Temp	N/A
Refractive Index	1.398
Solubility	N/A

N/A = not available

Section 10 - Stability and Reactivity

Stability

Stable

Decomposes easily

Conditions of Instability

Unstable at room temperature Moisture causes hydrolysis to ethanol and carbon dioxide; pressure may build up in the package.

Materials to Avoid

Strong oxidizing agents, Strong acids, Strong bases, Strong reducing agents, Ammonia.

Hazardous Decomposition Products

Hazardous Decomposition Products

Carbon monoxide, Carbon dioxide.

Hazardous Polymerization
Hazardous Polymerization
Will not occur.

Section 11 - Toxicological Information

Route of Exposure

Skin Contact

Causes skin irritation.

Skin Absorption

May be harmful if absorbed through the skin.

Eye Contact

Causes eye irritation.

Inhalation

May be harmful if inhaled.

Ingestion

Harmful if swallowed.

Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

RTECS Number: LQ9350000

Toxicity Data

Oral - Rat: 850 mg/kg (LD50)

Intraperitoneal - Rat: 47 MG/KG (LD50)

Oral - Mouse: 1558 mg/kg (LD50)

Oral - Dog: 500 mg/kg (LD50)

Oral - Cat: 100 mg/kg (LD50)

Oral - Rabbit: 500 mg/kg (LD50)

Chronic Exposure - Carcinogen

Result: Diethyl pyrocarbonate may react with ammonia to form urethane. Animal studies indicate that urethane is a carcinogen

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation

Contact a licensed professional waste disposal service to dispose of this material.

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber.

Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: Combustible liquid, n.o.s.

UN#: 1993

Class: COMBUSTIBLE LIQUID

Packing Group: Packing Group III

Hazard Label: None

PIH: Not PIH

IATA

Non-Hazardous for Air Transport: Non-hazardous for air transport.

Section 15 - Regulatory Information

EU Additional Classification

Symbol of Danger: Xn

Indication of Danger

Harmful.

Risk Statements R: 22 36/37/38

Harmful if swallowed. Irritating to eyes, respiratory system and skin.

Safety Statements S: 26 36

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.

US Classification and Label Text

Indication of Danger

Harmful.

Risk Statements

Harmful if swallowed. Irritating to eyes, respiratory system and skin.

Safety Statements

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.

US Statements

Combustible. May develop pressure.

United States Regulatory Information

SARA Listed: No

TSCA Inventory Item: Yes

Canada Regulatory Information

WHMIS Classification

This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

Section 16 - Other Information

Disclaimer

For R&D use only. Not for drug, household or other uses.

Warranty

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. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.