

# I U C L I D

# D a t a s e t

Existing Chemical	Substance ID: 616-38-6
CAS No.	616-38-6
EINECS Name	dimethyl carbonate
EINECS No.	210-478-4
Molecular Weight	90.08
Structural Formula	H3CO-CO-OCH3
Molecular Formula	C3H6O3

Dataset created by: EUROPEAN COMMISSION - European Chemicals Bureau

This dossier is a compilation based on data reported by the European Chemicals Industry following 'Council Regulation (EEC) No. 793/93 on the Evaluation and Control of the Risks of Existing Substances'. All (non-confidential) information from the single datasets, submitted in the IUCLID/HEDSET format by individual companies, was integrated to create this document.

The data have not undergone any evaluation by the European Commission.

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**1.0.1 OECD and Company Information**

**Name:** Enichem Synthesis  
**Street:** VIA MEDICI VASCELLO, 40  
**Town:** 20138 Milan  
**Country:** Italy

**Name:** Snpe Chimie  
**Street:** Chemin de la Loge  
**Town:** 31078 TOULOUSE  
**Country:** France  
**Phone:** (16)62 25 73 00  
**Telefax:** (16)61 25 78 33  
**Telex:** 531 913

**1.0.2 Location of Production Site**

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**1.0.3 Identity of Recipients**

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**1.1 General Substance Information**

**Substance type:** organic  
**Physical status:** liquid

**1.1.1 Spectra**

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**1.2 Synonyms**

CARBONIC ACID DIMETHYL ESTER  
**Source:** Snpe Chimie TOULOUSE

- DIMETHYL CARBONATE  
**Source:** Snpe Chimie TOULOUSE

- DIMETHYLCARBONAT  
**Source:** Snpe Chimie TOULOUSE

- METHYL CARBONATE  
**Source:** Snpe Chimie TOULOUSE

DMC, METHYLCARBONATE, DIMETHYLCARBONATE.  
**Source:** Enichem Synthesis Milan

**Source:** Snpe Chimie TOULOUSE

**1.3 Impurities**

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**1.4 Additives**

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**1.5 Quantity**

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**1.6.1 Labelling**

**Labelling:** as in Directive 67/548/EEC  
**Symbols:** F  
D  
**Specific limits:** no data  
**R-Phrases:** (11) Highly flammable  
**S-Phrases:** (2) Keep out of reach of children  
(9) Keep container in a well-ventilated place  
(16) Keep away from sources of ignition - No smoking

**1.6.2 Classification**

**Classification:** as in Directive 67/548/EEC  
**Class of danger:** highly flammable  
**R-Phrases:** (11) Highly flammable

**1.7 Use Pattern**

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**1.7.1 Technology Production/Use**

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**1.8 Occupational Exposure Limit Values**

**Type of limit:** TLV (US)  
**Limit value:** 328 mg/m<sup>3</sup>  
**Short term expos.**  
**Limit value:** 262 mg/m<sup>3</sup>  
**Remark:** RM:the threshold limit values-short term exposure limit (TLV STEL)AND THE THRESHOLD LIMIT VALUE-TIME WEIGHTED AVERAGE(TLV-TWA)ARE REFERRED TO METHANOL THAT FORM BY SUBSTANCE HYDROLYSIS.(ACGHI 1993-94).  
**Source:** Enichem Synthesis Milan

**1.9 Source of Exposure**

**Remark:** RM:COUNTRY ENICHEM SYNTHESIS ,RAVENNA PLANT ITALY.RM:PRODUCED BY DIRECT REACTION OF METHANOL,OXYGEN AND CARBON MONOXIDE AND CATALYZED BY COPPER SALTS, IN CLOSED SYSTEM. THE BEST REACTION CONDITIONS ARE RATHER MILD (ABOUT 120-130°C OF TEMPERATURE AND 20-30 ATM. OF PRESSURE.RE: MASSI MAURI M., ROMANO U.ET AL., ING. CHIM.ITAL.,V.21,N°1-3,GEN-MAR 1985.

**Source:** Enichem Synthesis Milan

**1.10.1 Recommendations/Precautionary Measures**

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**1.10.2 Emergency Measures**

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**1.11 Packaging**

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**1.12 Possib. of Rendering Subst. Harmless**

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**1.13 Statements Concerning Waste**

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**1.14.1 Water Pollution**

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**1.14.2 Major Accident Hazards**

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**1.14.3 Air Pollution**

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**1.15 Additional Remarks**

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**1.16 Last Literature Search**

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**1.17 Reviews**

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**1.18 Listings e.g. Chemical Inventories**

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**2.1 Melting Point**

**Value:** ca. .5 - 4.7 degree C  
**Decomposition:** no  
**Method:** other  
**GLP:** no data  
**Source:** Snpe Chimie TOULOUSE

(1)

**2.2 Boiling Point**

**Value:** ca. 90 degree C at 1016 hPa  
**Decomposition:** no  
**Method:** other  
**GLP:** no data  
**Source:** Snpe Chimie TOULOUSE

(2)

**2.3 Density**

**Type:** density  
**Value:** ca. 1.07 g/cm<sup>3</sup> at 20 degree C  
**Method:** other  
**GLP:** no data  
**Source:** Snpe Chimie TOULOUSE

(3)

**2.3.1 Granulometry**

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**2.4 Vapour Pressure**

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**2.5 Partition Coefficient**

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**2.6.1 Water Solubility**

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**2.6.2 Surface Tension**

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**2.7 Flash Point**

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**2.8 Auto Flammability**

**Value:** = 458 degree C  
**Method:** other  
**GLP:** no data  
**Source:** Snpe Chimie TOULOUSE

(4)

**2.9 Flammability**

**Result:** spontaneously flammable in air  
**Method:** other  
**GLP:** no data  
**Remark:** Produit stable dans les conditons normales d'utilisation.  
**Source:** Snpe Chimie TOULOUSE

(5)

**2.10 Explosive Properties**

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**2.11 Oxidizing Properties**

**Result:** no oxidizing properties  
**Method:** other  
**GLP:** no data  
**Remark:** Données ENICHEM  
**Source:** Snpe Chimie TOULOUSE

**2.12 Additional Remarks**

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**3.1.1 Photodegradation**

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**3.1.2 Stability in Water**

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**3.1.3 Stability in Soil**

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**3.2 Monitoring Data (Environment)**

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**3.3.1 Transport between Environmental Compartments**

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**3.3.2 Distribution**

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**3.4 Mode of Degradation in Actual Use**

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**3.5 Biodegradation**

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**3.6 BOD5, COD or BOD5/COD Ratio**

C O D

Method: other

Year:

GLP: no data

COD: = 756 mg/g substance

Source: Snpe Chimie TOULOUSE

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**3.7 Bioaccumulation**

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**3.8 Additional Remarks**

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**AQUATIC ORGANISMS**

**4.1 Acute/Prolonged Toxicity to Fish**

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**4.2 Acute Toxicity to Aquatic Invertebrates**

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**4.3 Toxicity to Aquatic Plants e.g. Algae**

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**4.4 Toxicity to Microorganisms e.g. Bacteria**

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**4.5 Chronic Toxicity to Aquatic Organisms**

**4.5.1 Chronic Toxicity to Fish**

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**4.5.2 Chronic Toxicity to Aquatic Invertebrates**

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**TERRESTRIAL ORGANISMS**

**4.6.1 Toxicity to Soil Dwelling Organisms**

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**4.6.2 Toxicity to Terrestrial Plants**

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**4.6.3 Toxicity to other Non-Mamm. Terrestrial Species**

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**4.7 Biological Effects Monitoring**

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**4.8 Biotransformation and Kinetics**

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**4.9 Additional Remarks**

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## **5.1 Acute Toxicity**

### **5.1.1 Acute Oral Toxicity**

Type: LD50  
Species: rat  
Sex:  
Number of  
Animals:  
Vehicle:  
Value: ca. 13000 mg/kg bw  
Method: other  
Year: GLP: no data  
Test substance:  
Source: Snpe Chimie TOULOUSE

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### **5.1.2 Acute Inhalation Toxicity**

Type: LC50  
Species: rat  
Sex:  
Number of  
Animals:  
Vehicle:  
Exposure time: 4 hour(s)  
Value: >= 140 mg/l  
Method: other  
Year: GLP: no data  
Test substance:  
Source: Snpe Chimie TOULOUSE

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### **5.1.3 Acute Dermal Toxicity**

Type: LD50  
Species: rat  
Sex:  
Number of  
Animals:  
Vehicle:  
Value: > 2500 mg/kg bw  
Method: other  
Year: GLP: no data  
Test substance: no data  
Source: Snpe Chimie TOULOUSE

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Type: LD50  
Species: guinea pig  
Sex:  
Number of  
Animals:  
Vehicle:  
Value: > 9350 mg/kg bw  
Method: other  
Year: GLP: no data  
Test substance:  
Source: Snpe Chimie TOULOUSE

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#### **5.1.4 Acute Toxicity, other Routes**

Type: LD50  
Species: rat  
Sex:  
Number of  
Animals:  
Vehicle:  
Route of admin.: i.p.  
Exposure time: unspecified  
Value: = 1600 mg/kg bw  
Method:  
Year: GLP: no data  
Test substance: no data  
Source: Snpe Chimie TOULOUSE

(11)

Type: LD50  
Species: mouse  
Sex:  
Number of  
Animals:  
Vehicle:  
Route of admin.: i.p.  
Exposure time: unspecified  
Value: = 800 mg/kg bw  
Method:  
Year: GLP: no data  
Test substance:  
Source: Snpe Chimie TOULOUSE

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## **5.2 Corrosiveness and Irritation**

### **5.2.1 Skin Irritation**

Species: rabbit

Concentration:

Exposure:

Exposure Time:

Number of

Animals:

PDII:

Result: not irritating

EC classificat.: not irritating

Method: other

Year:

GLP: no data

Test substance: no data

Source: Snpe Chimie TOULOUSE

(13)

Species: rat

Concentration:

Exposure:

Exposure Time:

Number of

Animals:

PDII:

Result: not irritating

EC classificat.:

Method: other

Year:

GLP: no data

Test substance: no data

Source: Snpe Chimie TOULOUSE

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### **5.2.2 Eye Irritation**

Species: rabbit

Concentration:

Dose:

Exposure Time:

Comment:

Number of

Animals:

Result: slightly irritating

EC classificat.:

Method: other

Year:

GLP: no data

Test substance:

Source: Snpe Chimie TOULOUSE

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## **5.3 Sensitization**

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**5.4 Repeated Dose Toxicity**

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**5.5 Genetic Toxicity 'in Vitro'**

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**5.6 Genetic Toxicity 'in Vivo'**

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**5.7 Carcinogenicity**

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**5.8 Toxicity to Reproduction**

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**5.9 Developmental Toxicity/Teratogenicity**

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**5.10 Other Relevant Information**

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**5.11 Experience with Human Exposure**

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- (1) Valeur mini = 0.5 °C -(1) NIOSH - Registry of toxic Effects of chemical Substances - 1985/86.
- Valeur maxi = 4.65 °C -(2) WEAST - Handbook of Chemistry and Physics ( 62) Ed. ) - 1981/82.
- (2) Réf 14 : Sakai et al, Nippon Kagaku Kaishi <1975>, 1789,1790,1791, CODEN : NKAKBB.
- (3) (1) Douglass warner, J. Amer. Chem. JOC.78 <1956> 6070. CODEN : JASCAT  
(4) Karvonen, Ann.Acad.Sci.Fenn.Ser.A, 10, No. 6, S. 10, CODEN : ASFABI Centralblatt, 1919 III,811
- (4) Données ENICHEM ( Fiche de données de sécurité )
- (5) 4,22 % - 12,87 % VOL.  
( Fiche de données de sécurité SNPE )
- (6) (A) Données ENICHEM
- (7) (1) NIOSH - Registry of Toxic effects of chemical substances 1985/86
- (8) Données INICHEM
- (9) - Donnees ENICHEM
- (10) Données ENICHEM
- (11) (1) NIOSH- Registry of Toxic Effects of Chemical Substances - 1985/86
- (12) (1) NIOSH - Registry of Toxic Effects of chemical Substances 1985-86
- (13) (A) données ENICHEM  
- Lapin : 0,5 ml/ 4 heures ( non irritant )
- (14) (A) Données ENICHEM  
- 3 ml/par jour pendant 5 jours ( non irritant )
- (15) (A) Données ENICHEM  
Fiche de données de Sécurité

**7.1 Risk Assessment**

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