

Creation Date 25-Feb-2010

Revision Date 27-Feb-2012

Revision Number 3

## SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### Product Identifier

Product Description:

Diethyl fumarate

Cat No.

114380000; 114380010; 114380025; 114380100; 114382500

Synonyms

Fumaric Acid, Diethyl Ester.; Ethyl Fumarate

### Relevant identified uses of the substance or mixture and uses advised against

Recommended Use

Laboratory chemicals

Uses advised against

No Information available

### Details of the supplier of the safety data sheet

#### Company

Acros Organics BVBA  
Janssen Pharmaceuticaal 3a  
2440 Geel, Belgium

E-mail address

begel.sdsdesk@thermofisher.com

### Emergency Telephone Number

For information in the US, call: 001-800-ACROS-01

For information in Europe, call: +32 14 57 52 11

Emergency Number, Europe: +32 14 57 52 99

Emergency Number, US: 001-201-796-7100

CHEMTREC Phone Number, US: 001-800-424-9300

CHEMTREC Phone Number, Europe: 001-703-527-3887

## SECTION 2. HAZARDS IDENTIFICATION

### Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Acute oral toxicity

Category 4

### Classification according to EU Directives 67/548/EEC or 1999/45/EC

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16

R-phrases(s)

R22 - Harmful if swallowed

### Label Elements

Diethyl fumarate

Revision Date 27-Feb-2012

## SECTION 2. HAZARDS IDENTIFICATION



### Signal Word

Warning

### Hazard Statements

H302 - Harmful if swallowed

### Precautionary Statements - EU (§28, 1272/2008)

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

### Other Hazards

No information available.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	EC-No.	Weight %	CAS-No	67/548/EEC Classification	CLP Classification - Regulation (EC) No 1272/2008	REACH No.
Fumaric acid, diethyl ester 623-91-6	EEC No. 210-819-7	>95	623-91-6	Xn; R22	Acute Tox. 4 (H302)	-

**For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16**

## SECTION 4. FIRST AID MEASURES

### Description of first aid measures

#### Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

#### Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.

#### Ingestion

Do not induce vomiting. Obtain medical attention.

Diethyl fumarate

Revision Date 27-Feb-2012

**Inhalation** Move to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately if symptoms occur.

**Notes to Physician** Treat symptomatically

## SECTION 5. FIRE-FIGHTING MEASURES

### Extinguishing media

#### **Suitable Extinguishing Media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Cool closed containers exposed to fire with water spray.

#### **Extinguishing media which must not be used for safety reasons**

No information available.

### Special hazards arising from the substance or mixture

Combustible material. Containers may explode when heated.

### Advice for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Remove all sources of ignition. Take precautionary measures against static discharges.

### Environmental precautions

Should not be released into the environment.

### Methods and material for containment and cleaning up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

## SECTION 7. HANDLING AND STORAGE

### Precautions for Safe Handling

Wear personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition. Use explosion-proof equipment. Use only non-sparking tools. Take precautionary measures against static discharges.

### Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition.

Diethyl fumarate

Revision Date 27-Feb-2012

## Specific End Uses

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

#### Exposure limits

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

#### Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

#### Derived No Effect Level (DNEL)

No information available.

#### Predicted No Effect Concentration (PNEC)

No information available.

### Exposure controls

#### Engineering Measures

Use only under a chemical fume hood Ensure that eyewash stations and safety showers are close to the workstation location Use explosion-proof electrical/ventilating/lighting/equipment

#### Personal protective equipment

##### Eye Protection

Safety glasses with side-shields

##### Hand Protection

Protective gloves

##### Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure

##### Respiratory Protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

#### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice

#### Environmental exposure controls

No information available.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

#### Physical State

Liquid

#### Appearance

Clear

#### odor

odorless

#### pH

No information available.

#### Vapor Pressure

1 mmHg @ 53.2 °C

#### Vapor Density

#### Boiling Point/Range

218 - 219°C / 424.4 - 426.2°F

#### Melting Point/Range

1 - 2°C / 33.8 - 35.6°F

#### Flash Point

91°C / 195.8°F

#### Autoignition Temperature

No information available.

#### Water Solubility

immiscible

#### Specific Gravity

1.050

#### Molecular Formula

C8 H12 O4

#### Molecular Weight

172.18

Diethyl fumarate

Revision Date 27-Feb-2012

## SECTION 10. STABILITY AND REACTIVITY

### Reactivity

#### Chemical Stability

Stable under normal conditions.

#### Possibility of Hazardous Reactions

**Hazardous Polymerization**  
**Hazardous Reactions .**

Hazardous polymerization does not occur.  
None under normal processing..

#### Conditions to Avoid

Keep away from open flames, hot surfaces and sources of ignition, Incompatible products, Excess heat.

#### Incompatible Materials

Acids, Bases, Reducing agents.

#### Hazardous Decomposition Products

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>).

## SECTION 11. TOXICOLOGICAL INFORMATION

### Information on Toxicological Effects

#### Acute Toxicity

#### Component Information

##### **Component**

Fumaric acid, diethyl ester

LD50 Oral	LD50 Dermal	LC50 Inhalation (Dust)
1780 mg/kg ( Rat )		

#### Chronic Toxicity

##### **Carcinogenicity**

There are no known carcinogenic chemicals in this product

##### **Sensitization**

##### **Mutagenic Effects**

##### **Reproductive Effects**

##### **Developmental Effects**

##### **Target Organs**

##### **Other Adverse Effects**

No information available.

No information available

No information available.

No information available.

None known.

The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information

Diethyl fumarate

Revision Date 27-Feb-2012

Endocrine Disruptor Information      None known

## SECTION 12. ECOLOGICAL INFORMATION

### Toxicity

#### Ecotoxicity effects

Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Fumaric acid, diethyl ester		Oryzias latipes: LC50 = 24 mg/L/72h		

### Persistence and degradability

Readily biodegradable

#### Bioaccumulative potential

No information available.

Component	log Pow
Fumaric acid, diethyl ester	2.12

### Mobility in soil

No information available.

#### Results of PBT and vPvB assessment

#### Other adverse effects

No information available

## SECTION 13. DISPOSAL CONSIDERATIONS

### Waste treatment methods

#### Waste from Residues / Unused Products

Dispose of in accordance with local regulations

#### Contaminated Packaging

Empty containers should be taken to local recyclers for disposal

## SECTION 14. TRANSPORT INFORMATION

### IMDG/IMO

Not regulated

### ADR

Not regulated

### IATA

Not regulated

Diethyl fumarate

Revision Date 27-Feb-2012

## SECTION 14. TRANSPORT INFORMATION

## SECTION 15. REGULATORY INFORMATION

### Safety, health and environmental regulations/legislation specific for the substance or mixture

#### International Inventories

Component	EINECS	ELINCS	NLP	TSCA	DSL	NDSL	PICCS	ENCS	CHINA	AICS	KECL
Fumaric acid, diethyl ester	210-819-7	-		X	-	X	X	X	X	X	X

#### Legend

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**ENCS** - Japan Existing and New Chemical Substances

**CHINA** - China Inventory of Existing Chemical Substances

**AICS** - Inventory of Chemical Substances

**KECL** - Existing and Evaluated Chemical Substances

#### Chemical Safety Assessment

## SECTION 16. OTHER INFORMATION

#### Full text of R-phrases referred to under sections 2 and 3

R22 - Harmful if swallowed

Revision Date 27-Feb-2012

#### Revision Summary

Reason for revision Not applicable

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

#### Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

Diethyl fumarate

Revision Date 27-Feb-2012

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End of Safety Data Sheet