

Revision Date 07-Mar-2012

Revision Number 3

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

**Product Identifier**

**Product Description:** Fumaryl chloride  
**Cat No.** 165970000; 165970250; 165975000; 165971000  
**Synonyms** Fumaroyl Dichloride.

**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 Pharmaceuticaaan 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
Acute dermal toxicity	Category 4
Acute Inhalation Toxicity - Dusts and Mists	Category 4
Skin Corrosion/Irritation	Category 1 B
Serious Eye Damage/Eye Irritation	Category 1

**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*

**Symbol(s)** C - Corrosive  
**R-phrases** R29 - Contact with water liberates toxic gas  
 R34 - Causes burns  
**Risk Combination Phrases** R20/21/22 - Harmful by inhalation, in contact with skin and if swallowed

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**SECTION 2. HAZARDS IDENTIFICATION**

Label Elements



Signal Word

**Danger**

**Hazard Statements**

- H302 - Harmful if swallowed
- H332 - Harmful if inhaled
- H312 - Harmful in contact with skin
- H314 - Causes severe skin burns and eye damage
- EUH029 - Contact with water liberates toxic gas

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

- P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
- P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
- P280 - Wear eye protection/ face protection
- P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P310 - Immediately call a POISON CENTER or doctor/ physician
- P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
- P402 + P404 - Store in a dry place. Store in a closed container
- P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell
- P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing

**Other Hazards**

Lachrymator (substance which increases the flow of tears).

**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.

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**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Fumaryl chloride 627-63-4	EEC No. 211-005-4	95	627-63-4	Xn; R20/21/22 R29 C; R34	Skin Corr. 1B (H314) Acute Tox. 4 (H302) Acute Tox. 4 (H312) Acute Tox. 4 (H332) (EUH029)	-
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**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**

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

**Skin Contact**

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical attention is required.

**Ingestion**

Do not induce vomiting. Call a physician immediately.

**Inhalation**

Remove from exposure, lie down. Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Immediate medical attention is required.

**Notes to Physician**

Treat symptomatically

**SECTION 5. FIRE-FIGHTING MEASURES**

**Extinguishing media**

**Suitable Extinguishing Media**

Carbon dioxide (CO<sub>2</sub>). Dry chemical. chemical foam.

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

Water.

**Special hazards arising from the substance or mixture**

Combustible material. Flammable. Contact with water liberates toxic gas. Water reactive. Produce flammable gases on contact with water.

**Advice for fire-fighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

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**SECTION 6. ACCIDENTAL RELEASE MEASURES****Personal precautions, protective equipment and emergency procedures**

Ensure adequate ventilation

**Environmental precautions**

Prevent further leakage or spillage if safe to do so

**Methods and material for containment and cleaning up**

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.. Wear self-contained breathing apparatus and protective suit. Do not expose spill to water. Do not let this chemical enter the environment.

**SECTION 7. HANDLING AND STORAGE****Precautions for Safe Handling**

Do not breathe dust. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. Do not ingest. Use only in area provided with appropriate exhaust ventilation. Handle under inert gas, protect from moisture. Do not allow contact with water. Do not allow contact with water because of violent reaction.

**Conditions for safe storage, including any incompatibilities**

Keep in a dry place. Keep container tightly closed. Keep away from heat and sources of ignition. Protect from moisture. Corrosives area. Store under an inert atmosphere. Keep refrigerated.

**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**

Ensure adequate ventilation, especially in confined areas Ensure that eyewash stations and safety showers are close to the workstation location

**Personal protective equipment****Eye Protection**

Goggles

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**Hand Protection**  
**Skin and body protection**  
**Respiratory Protection**

Protective gloves  
 Wear appropriate protective gloves and clothing to prevent skin exposure  
 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**  
**Environmental exposure controls**

Handle in accordance with good industrial hygiene and safety practice  
 No information available.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State</b>	Liquid
<b>Appearance</b>	Yellow
<b>odor</b>	pungent
<b>pH</b>	No information available.
<b>Vapor Pressure</b>	1.86 hPa @ 20 °C
<b>Vapor Density</b>	5.3
<b>Boiling Point/Range</b>	161 - 164°C / 321.8 - 327.2°F @ 760 mmHg
<b>Melting Point/Range</b>	-2°C / 28.4°F
<b>Flash Point</b>	73°C / 163.4°F
<b>Autoignition Temperature</b>	No information available.
<b>Water Solubility</b>	decomposes
<b>Specific Gravity</b>	1.410
<b>Molecular Formula</b>	C4 H2 Cl2 O2
<b>Molecular Weight</b>	152.96

**SECTION 10. STABILITY AND REACTIVITY**

**Reactivity**

**Chemical Stability**

Moisture sensitive.

**Possibility of Hazardous Reactions**

**Hazardous Polymerization** No information available.  
**Hazardous Reactions .** No information available.

**Conditions to Avoid**

Excess heat, Incompatible products, Exposure to moist air or water.

**Incompatible Materials**

Water, Strong oxidizing agents, Strong bases, Alcohols.

**Hazardous Decomposition Products**

Hydrogen chloride gas. Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Phosgene.



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**SECTION 11. TOXICOLOGICAL INFORMATION**

Information on Toxicological Effects

Acute Toxicity

**Product Information** No acute toxicity information is available for this product

**Component Information**

<b>Component</b>	<b>LD50 Oral</b>	<b>LD50 Dermal</b>	<b>LC50 Inhalation</b>
Fumaryl chloride	810 µL/kg ( Rat )	1410 µL/kg ( Rabbit )	

Chronic Toxicity

**Carcinogenicity** There are no known carcinogenic chemicals in this product

**Sensitization** No information available.  
**Mutagenic Effects** No information available.  
**Reproductive Effects** No information available.  
**Developmental Effects** No information available.  
**Target Organs** No information available.  
**Other Adverse Effects** The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information  
**Endocrine Disruptor Information** None known

**SECTION 12. ECOLOGICAL INFORMATION**

Toxicity

**Ecotoxicity effects** Do not empty into drains

Persistence and degradability

No information available

Bioaccumulative potential

No information available.

Mobility in soil

No information available.

Results of PBT and vPvB assessment

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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

UN-No 1780  
 Hazard Class 8  
 Packing Group II  
 Proper Shipping Name FUMARYL CHLORIDE

ADR

UN-No 1780  
 Hazard Class 8  
 Packing Group II  
 Proper Shipping Name FUMARYL CHLORIDE

IATA

UN-No 1780  
 Hazard Class 8  
 Packing Group II  
 Proper Shipping Name FUMARYL CHLORIDE

## 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
Fumaryl chloride	211-005-4	-		X	X	-	X	X	-	-	-

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**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**

R29 - Contact with water liberates toxic gas

R34 - Causes burns

R20/21/22 - Harmful by inhalation, in contact with skin and if swallowed

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Revision Summary 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.

End of Safety Data Sheet