

# SAFETY DATA SHEET

<b>Version:</b>	1.1
<b>Revision Date:</b>	2016-09-13
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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifiers

<b>Product Number:</b>	F0210
<b>Product name:</b>	Ethyl fumaroyl chloride
<b>CAS Registry Nr:</b>	26367-48-6

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

Laboratory chemicals, Manufacture of substances.

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

<b>Company:</b>	Chemodex AG
	CH - 9000 St. Gallen
	Switzerland, Europe
	Tel: +41 71 244 48 25
	Fax: +41 71 244 48 26
	Email: info@chemodex.com
	Website: www.chemodex.com

### 1.4 Emergency telephone number

<b>Tox Info Suisse:</b>	+41 44 251 51 51
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## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Oral (Category 4)	H302
Skin corrosion (Category 1B)	H314
Serious eye damage (Category 1)	H318
Respiratory sensitisation (Category 1)	H334
Skin sensitisation (Category 1)	H317

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 2.2 GHS Label elements, including precautionary statements

Pictogram	
Signal word	Danger

### Hazard statement(s)

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.

### Precautionary statement(s)

P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P285	In case of inadequate ventilation wear respiratory protection.
P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
P301 + P330 + P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
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.
P321	Specific treatment (see supplemental first aid instructions on this label).
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P363	Wash contaminated clothing before reuse.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

## 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

<b>Synonyms:</b>	(E)-3-(Chloroformyl)-acrylic acid ethyl ester Ethyl fumaryl chloride
<b>Formula:</b>	C <sub>6</sub> H <sub>7</sub> ClO <sub>3</sub>
<b>Molecular Weight:</b>	162.57 g/mol
<b>CAS-No.:</b>	26367-48-6

## Hazardous components

Component	Classification	Concentration
<b>Ethyl fumaroyl chloride</b>		
	Acute Tox. 4; Skin Corr. 1B; Eye Dam. 1; Resp. Sens. 1; Skin Sens. 1; H302, H314, H317, H334	-

For the full text of the H-Statements mentioned in this Section, see Section 16.

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## SECTION 4: First aid measures

### 4.1 Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

#### If inhaled

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

#### In case of skin contact

Take off contaminated clothing and shoes immediately. 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. Continue rinsing eyes during transport to hospital.

#### If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### 4.3 Indication of any immediate medical attention and special treatment needed

No data available

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### 5.2 Special hazards arising from the substance or mixture

Carbon oxides, Hydrogen chloride gas

### 5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

### 5.4 Further information

No data available

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## SECTION 6: Accidental release measures

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

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

For personal protection see section 8.

### 6.2 Environmental precautions

Do not let product enter drains.

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

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

### 6.4 Reference to other sections

For disposal see section 13.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Normal measures for preventive fire protection.

For precautions see section 2.2.

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

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Moisture sensitive. Handle and store under inert gas.

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Components with workplace control parameters

Contains no substances with occupational exposure limit values.

### 8.2 Exposure controls

#### Appropriate engineering controls

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

#### Personal protective equipment

##### Eye/face protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

##### Skin protection

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.

##### Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

##### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

##### Control of environmental exposure

Do not let product enter drains.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

a)	<b>Appearance:</b>	Form: liquid Colour: clear, colourless
b)	<b>Odour:</b>	No data available
c)	<b>Odour Threshold:</b>	No data available
d)	<b>pH:</b>	No data available
e)	<b>Melting point/freezing point:</b>	No data available
f)	<b>Initial boiling point and boiling range:</b>	86 °C (187 °F) at 27 hPa (20 mmHg)
g)	<b>Flash point:</b>	No data available
h)	<b>Evaporation rate:</b>	No data available
i)	<b>Flammability (solid, gas):</b>	No data available

j)	<b>Upper/lower flammability or explosive limits:</b>	No data available
k)	<b>Vapour pressure:</b>	No data available
l)	<b>Vapour density:</b>	No data available
m)	<b>Relative density:</b>	No data available
n)	<b>Water solubility:</b>	No data available
o)	<b>Partition coefficient (n-octanol/water):</b>	No data available
p)	<b>Auto-ignition temperature:</b>	No data available
q)	<b>Decomposition temperature:</b>	No data available
r)	<b>Viscosity:</b>	No data available
s)	<b>Explosive properties:</b>	No data available
t)	<b>Oxidizing properties:</b>	No data available

## 9.2 Other safety information

No data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

No data available

### 10.5 Incompatible materials

Strong oxidizing agents, Bases, Water, Alcohols

### 10.6 Hazardous decomposition products

Other decomposition products - no data available  
In the event of fire: see section 5

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

no data available
Inhalation: no data available
Dermal: no data available
no data available
<b>Skin corrosion/irritation</b>
No data available
<b>Serious eye damage/eye irritation</b>
No data available
<b>Respiratory or skin sensitisation</b>
No data available
<b>Germ cell mutagenicity</b>
No data available
<b>Carcinogenicity</b>
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
<b>Reproductive toxicity</b>
No data available
<b>Specific target organ toxicity - single exposure</b>
No data available
<b>Specific target organ toxicity - repeated exposure</b>
No data available
<b>Aspiration hazard</b>
No data available
<b>Additional Information</b>
RTECS: Not available
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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## SECTION 12: Ecological information

### 12.1 Toxicity

No data available

### 12.2 Persistence and degradability

No data available

### 12.3 Bioaccumulative potential

No data available

### 12.4 Mobility in soil

No data available

#### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

#### 12.6 Other adverse effects

No data available

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### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods

<b>Product</b>
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
<b>Contaminated packaging</b>
Dispose of as unused product.

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### SECTION 14: Transport information

#### DOT (US)

UN number: 3265	Class: 8	Packing group: II
Proper shipping name:	Corrosive liquid, acidic, organic, n.o.s. (Ethyl fumaroyl chloride)	
Marine pollutant:	No	
Poison Inhalation Hazard:	No	

#### IMDG

UN number: 3265	Class: 8	Packing group: II	EMS-No: F-A, S-B
Proper shipping name:	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Ethyl fumaroyl chloride)		
Marine pollutant:	No		

#### IATA

UN number: 3265	Class: 8	Packing group: II
Proper shipping name:	Corrosive liquid, acidic, organic, n.o.s. (Ethyl fumaroyl chloride)	



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**SECTION 15: Regulatory information****SARA 302 Components**

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**

Acute Health Hazard

**Massachusetts Right To Know Components**

No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components**

Ethyl fumaroyl chloride

CAS-No. 26367-48-6

Revision Date

**New Jersey Right To Know Components**

Ethyl fumaroyl chloride

CAS-No. 26367-48-6

Revision Date

**California Prop. 65 Components**

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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**SECTION 16: Other information****Full text of H-Statements referred to under sections 2 and 3.**

Acute Tox.	Acute toxicity
Eye Dam.	Serious eye damage
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Resp. Sens.	Respiratory sensitisation
Skin Corr.	Skin corrosion

**HMIS Rating**

Health hazard: 3

Chronic Health Hazard: \*

Flammability: 0

Physical Hazard 0

**NFPA Rating**

Health hazard: 3

Fire Hazard: 0

Reactivity Hazard: 0

**Further information**

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The above information is believed to be correct but shall not be taken as being 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. Chemodex Ltd. and its affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.chemodex.com](http://www.chemodex.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.