

# Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 08/02/2010

Reviewed on 07/29/2010

## 1 Identification of substance:

### Product details:

**Product name:** Acryloyl chloride

**Stock number:** L10363

### Manufacturer/Supplier:

Alfa Aesar, A Johnson Matthey Company  
Johnson Matthey Catalog Company, Inc.  
30 Bond Street  
Ward Hill, MA 01835-8099  
Emergency Phone: (978) 521-6300  
CHEMTREC: (800) 424-9300  
Web Site: www.alfa.com

**Information Department:** Health, Safety and Environmental Department

### Emergency information:

During normal hours the Health, Safety and Environmental Department. After normal hours call Chemtrec at (800) 424-9300.

## 2 Hazards identification

### Hazard description:



T+ Very toxic  
F Highly flammable

### Information pertaining to particular dangers for man and environment

R 11 Highly flammable.  
R 14 Reacts violently with water.  
R 22 Harmful if swallowed.  
R 26 Very toxic by inhalation.  
R 34 Causes burns.

### Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH	4	Health (acute effects) = 4
FIRE	3	Flammability = 3
REACTIVITY	2	Reactivity = 2

### GHS label elements



**Danger**

2.6/2 - Highly flammable liquid and vapour.



**Danger**

3.1/1 - Fatal if inhaled.  
3.1/4 - Harmful if swallowed.



**Danger**

3.2/1B - Causes severe skin burns and eye damage.

### Prevention:

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

### Response:

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Specific treatment is urgent (see on this label).

### Storage:

Store locked up.

### Disposal:

Dispose of contents/container in accordance with local/regional/national/international regulations.

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**Product name: Acryloyl chloride**

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### 3 Composition/Data on components:

**Chemical characterization:****Description: (CAS#)**

Acryloyl chloride (CAS# 814-68-6)

**Identification number(s):****EINECS Number:** 212-399-0**Impurities and stabilising additives:** 400ppm phenothiazine

### 4 First aid measures

**General information**

Immediately remove any clothing soiled by the product.

Remove breathing apparatus only after contaminated clothing has been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

**After skin contact**

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

**After eye contact**

Rinse opened eye for several minutes under running water. Then consult a doctor.

**After swallowing** Seek immediate medical advice.

### 5 Fire fighting measures

**Suitable extinguishing agents** CO<sub>2</sub>, sand, extinguishing powder. Do not use water.**For safety reasons unsuitable extinguishing agents** Water**Special hazards caused by the material, its products of combustion or resulting gases:**

Reacts violently with water

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Hydrogen chloride (HCl)

**Protective equipment:**

Wear self-contained respirator.

Wear fully protective impervious suit.

### 6 Accidental release measures

**Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

**Measures for environmental protection:**

Do not allow material to be released to the environment without proper governmental permits.

**Measures for cleaning/collecting:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Use neutralizing agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

Keep away from ignition sources.

**Additional information:**

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

### 7 Handling and storage

**Handling****Information for safe handling:**

Handle under dry protective gas.

Keep container tightly sealed.

Ensure good ventilation at the workplace.

Open and handle container with care.

**Information about protection against explosions and fires:**

Keep ignition sources away.

Protect against electrostatic charges.

Fumes can combine with air to form an explosive mixture.

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**Product name: Acryloyl chloride**

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**Storage**

**Requirements to be met by storerooms and receptacles:** Refrigerate

**Information about storage in one common storage facility:**

Store away from oxidizing agents.

Store away from strong bases.

Store in the dark.

Protect from heat.

Store away from water/moisture.

**Further information about storage conditions:**

Store under dry inert gas.

This product is moisture sensitive.

Keep container tightly sealed.

Protect from humidity and water.

Protect from exposure to light.

Refrigerate

### 8 Exposure controls and personal protection

**Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

**Components with limit values that require monitoring at the workplace:** Not required.

**Additional information:** No data

**Personal protective equipment**

**General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

**Breathing equipment:** Use suitable respirator when high concentrations are present.

**Protection of hands:**

Impervious gloves

Check protective gloves prior to each use for their proper condition.

**Material of gloves**

The selection of suitable gloves not only depends on the material, but also on quality.

Quality will vary from manufacturer to manufacturer.

**Eye protection:**

Safety glasses

Tightly sealed goggles

Full face protection

**Body protection:** Protective work clothing.

### 9 Physical and chemical properties:

General Information	
<b>Form:</b>	Liquid
<b>Color:</b>	Colorless
	Pale yellow
<b>Odor:</b>	Acrid
<b>Change in condition</b>	
<b>Melting point/Melting range:</b>	Not determined
<b>Boiling point/Boiling range:</b>	74-76°C (165-169°F)
<b>Sublimation temperature / start:</b>	Not determined
<b>Flash point:</b>	-4°C (25°F)
<b>Ignition temperature:</b>	Not determined
<b>Decomposition temperature:</b>	Not determined
<b>Explosion limits:</b>	
<b>Lower:</b>	Not determined
<b>Upper:</b>	Not determined
<b>Vapor pressure at 20°C (68°F):</b>	106.6 hPa (80 mm Hg)
<b>Density at 20°C (68°F):</b>	1.114 g/cm <sup>3</sup>

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**Product name: Acryloyl chloride**

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**Solubility in / Miscibility with Water:** Reacts violently

## 10 Stability and reactivity

**Thermal decomposition / conditions to be avoided:**

Decomposition will not occur if used and stored according to specifications.

Danger of containers bursting upon heating.

**Stable until:** Depletion of inhibitor.

**Materials to be avoided:**

Bases

Active metals

Heat

Water/moisture

Light

Ultraviolet radiation

Free radical initiators

**Dangerous reactions**

Danger of polymerization

Reacts violently with water

Spontaneous polymerization can be caused in unstabilized product e.g. by ambient heat

**Dangerous products of decomposition:** Carbon monoxide and carbon dioxide

**Additional information:**

Unless inhibited, the product can polymerize resulting in a temperature and pressure increase that may rupture the container.

## 11 Toxicological information

**Acute toxicity:**

**LD/LC50 values that are relevant for classification:**

Oral	LD50	500 mg/kg (rat)
Inhalative	LC50/2H	92 mg/m <sup>3</sup> /2H (mouse)
	LCLo/4H	25 ppm/4H (rat)

**Primary irritant effect:**

**on the skin:** Corrosive effect on skin and mucous membranes.

**on the eye:** Strong corrosive effect.

**Sensitization:** No sensitizing effects known.

**Subacute to chronic toxicity:**

**Subacute to chronic toxicity:**

The Registry of Toxic Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals:

Sense Organs and Special Senses (Eye) - iritis.

Behavioral - ataxia.

Lungs, Thorax, or Respiration - emphysema.

**Subacute to chronic toxicity:**

Corrosive materials are acutely destructive to the respiratory tract, eyes, skin and digestive tract. Eye contact may result in permanent damage and complete vision loss. Inhalation may result in respiratory effects such as inflammation, edema, and chemical pneumonitis. May cause coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. Ingestion may cause damage to the mouth, throat and esophagus. May cause skin burns or irritation depending on the severity of the exposure.

**Additional toxicological information:**

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

## 12 Ecological information:

**Additional ecological information:**

**General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Do not allow material to be released to the environment without proper governmental permits.

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### 13 Disposal considerations

**Product:****Recommendation** Consult state, local or national regulations to ensure proper disposal.**Uncleaned packagings:****Recommendation:** Disposal must be made according to official regulations.

### 14 Transport information

**DOT regulations:**

**Hazard class:** 6.1  
**Identification number:** UN3383  
**Packing group:** I  
**Proper shipping name (technical name):** TOXIC BY INHALATION LIQUID, FLAMMABLE, N.O.S. (Acryloyl chloride)  
**Label:** 6.1+3

**Land transport ADR/RID (cross-border)**

**ADR/RID class:** 6.1 (TF1) Toxic substances  
**Danger code (Kemler):** 663  
**UN-Number:** 3383  
**Packaging group:** I  
**Description of goods:** 3383 TOXIC BY INHALATION LIQUID, FLAMMABLE, N.O.S. (Acryloyl chloride)

**Maritime transport IMDG:**

**IMDG Class:** 6.1  
**UN Number:** 3383  
**Label:** 6.1+3  
**Packaging group:** I  
**EMS Number:** F-E, S-D  
**Marine pollutant:** No  
**Proper shipping name:** TOXIC BY INHALATION LIQUID, FLAMMABLE, N.O.S. (Acryloyl chloride)

**Air transport ICAO-TI and IATA-DGR:**

**ICAO/IATA Class:** 6.1  
**UN/ID Number:** 3383  
**Label:** 6.1+3  
**Packaging group:** I  
**Proper shipping name:** TOXIC BY INHALATION LIQUID, FLAMMABLE, N.O.S.

UN "Model Regulation": UN3383, TOXIC BY INHALATION LIQUID, FLAMMABLE, N.O.S., 6.1 (3), I

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**Product name: Acryloyl chloride**

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## 15 Regulations

### Product related hazard informations:

#### Hazard symbols:

T+ Very toxic  
F Highly flammable

#### Risk phrases:

11 Highly flammable.  
14 Reacts violently with water.  
22 Harmful if swallowed.  
26 Very toxic by inhalation.  
34 Causes burns.

#### Safety phrases:

16 Keep away from sources of ignition - No smoking.  
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
28 After contact with skin, wash immediately with plenty of water  
36/37/39 Wear suitable protective clothing, gloves and eye/face protection.  
45 In case of accident or if you feel unwell, seek medical advice immediately.

#### National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Non-Domestic Substances List (NDSL).

#### Information about limitation of use:

For use only by technically qualified individuals.  
This product contains antimony and is subject to the reporting requirements of section 302 of the Emergency Planning and Community Right to know Act of 1986 and 40CFR372.

## 16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing MSDS:** Health, Safety and Environmental Department.

**Contact:** Zachariah Holt

#### Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)  
IMDG: International Maritime Code for Dangerous Goods  
DOT: US Department of Transportation  
IATA: International Air Transport Association  
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)  
ICAO: International Civil Aviation Organization  
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)  
GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
HMIS: Hazardous Materials Identification System (USA)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent

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