

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 05/15/2009

Reviewed on 05/15/2009

1 Identification of substance:**Product details:****Product name:** Methacryloyl chloride**Stock number:** B24590**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 Composition/Data on components:**Chemical characterization:****Description: (CAS#)**

Methacryloyl chloride (CAS# 920-46-7): 100%

Identification number(s):**EINECS Number:** 213-058-9**Additional information:** Stabilized with 400ppm phenothiazine**Impurities and stabilising additives:** MEHQ (CAS# 150-76-5)**3 Hazards identification****Hazard description:**

T+ Very toxic
 F Highly flammable

Information pertaining to particular dangers for man and environment

R 11 Highly flammable.

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
FIRE	3
REACTIVITY	1

Health (acute effects) = 4
 Flammability = 3
 Reactivity = 1

GHS label elements**Danger**

2.6/2 - Highly flammable liquid and vapour.

**Danger**

3.1/3 - Toxic if swallowed.

3.1/1 - Fatal if inhaled.

**Danger**

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

Prevention:

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

Keep container tightly closed.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting/ equipment.

Use only non-sparking tools.

(Contd. on page 2)

USA

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 05/15/2009

Reviewed on 05/15/2009

Product name: Methacryloyl chloride

(Contd. of page 1)

Take precautionary measures against static discharge.
 Do not breathe dust/fume/gas/mist/vapours/spray.
 Wash thoroughly after handling.
 Do not eat, drink or smoke when using this product.
 Use only outdoors or in a well-ventilated area.
 Wear protective gloves/protective clothing/eye protection/face protection.
 Wear respiratory protection.

Response:

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
 IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 Immediately call a POISON CENTER or doctor/physician.
 Specific treatment is urgent (see label).
 Specific treatment (see label).
 Rinse mouth.
 Wash contaminated clothing before reuse.
 In case of fire: Use for extinction: CO₂, powder or water spray.

Storage:

Store in a well-ventilated place. Keep container tightly closed.
 Store in a well-ventilated place. Keep cool.
 Store locked up.

Disposal:

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

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

Do not induce vomiting; immediately call for medical help.
 Seek immediate medical advice.

5 Fire fighting measures**Suitable extinguishing agents**

In case of fire, use sand, carbon dioxide or powdered extinguishing agent. Never use water.

For safety reasons unsuitable extinguishing agents Water**Special hazards caused by the material, its products of combustion or resulting gases:**

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.

(Contd. on page 3)

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 05/15/2009

Reviewed on 05/15/2009

Product name: Methacryloyl chloride

(Contd. of page 2)

*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.***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 alcohols.**Store in the dark.**Protect from heat.**Store away from water/moisture.**Store away from strong bases.***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.

USA

(Contd. on page 4)

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 05/15/2009

Reviewed on 05/15/2009

Product name: Methacryloyl chloride

(Contd. of page 3)

9 Physical and chemical properties:

General Information	
Form:	Liquid
Color:	Colorless
Odor:	Acrid
Change in condition	
Melting point/Melting range:	-60°C (-76°F)
Boiling point/Boiling range:	95-96°C (203-205°F)
Sublimation temperature / start:	Not determined
Flash point:	2°C (36°F)
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Explosion limits:	
Lower:	Not determined
Upper:	Not determined
Vapor pressure at 20°C (68°F):	62.65 hPa (47 mm Hg)
Density at 20°C (68°F):	1.07 g/cm ³
Solubility in / Miscibility with Water:	
	Reacts

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:

Oxidizing agents

Bases

Alcohols

Amines

Heat

Ultraviolet radiation

Free radical initiators

Dangerous reactions

Danger of polymerization

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

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

Avoid loss of stabilizer.

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	115 mg/m ³ /2H (mouse)
	LC50/4H	60 mg/m ³ /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:**

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:

Danger through skin absorption.

(Contd. on page 5)

USA

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Product name: Methacryloyl chloride

(Contd. of page 4)

Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.
 To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.
 No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

12 Ecological information:**General notes:**

Do not allow product to reach ground water, water course or sewage system.
 Danger to drinking water if even small quantities leak into the ground.
 Do not allow material to be released to the environment without proper governmental permits.

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. (Methacryloyl 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. (Methacryloyl chloride)

Maritime transport IMDG:

IMDG Class: 6.1
UN Number: 3383
Label: 6.1+3
Packaging group: I
Proper shipping name: TOXIC BY INHALATION LIQUID, FLAMMABLE, N.O.S. (Methacryloyl chloride)

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 6.1

(Contd. on page 6)

USA

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Product name: Methacryloyl chloride

(Contd. of page 5)

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

15 Regulations**Product related hazard informations:****Hazard symbols:**

T+ Very toxic
F Highly flammable

Risk phrases:

11 Highly flammable.
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 Domestic Substances List (DSL).

Information about limitation of use:

For use only by technically qualified individuals.
This product is subject to the reporting requirements of section 313 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

USA