

Material Safety Data Sheet

According to OSHA and ANSI

Printing date 05/28/2011

Reviewed on 10/28/2010

1 Identification of the substance/mixture and of the company/undertaking**Product identifier****Product name:** Acrylic acid**Stock number:** L04280**CAS Number:**

79-10-7

EINECS Number:

201-177-9

Index number:

607-061-00-8

Relevant identified uses of the substance or mixture and uses advised against.**Sector of Use** SU24 Scientific research and development**Details of the supplier of the safety data sheet****Manufacturer/Supplier:**

Alfa Aesar, A Johnson Matthey Company

Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Tel: 800-343-0660

Fax: 800-322-4757

Email: tech@alfa.com

www.alfa.com

Information Department: Health, Safety and Environmental Department**Emergency telephone number:**

During normal hours the Health, Safety and Environmental Department at (800) 343-0660. After normal hours call Carechem 24 at (866) 928-0789.

2 Hazards identification**Classification of the substance or mixture**

GHS02 Flame

H226 Flammable liquid and vapour.



GHS06 Skull and crossbones

H301 Toxic if swallowed.

H311 Toxic in contact with skin.



GHS05 Corrosion

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.



GHS09 Environment

H400 Very toxic to aquatic life.



GHS07

H332 Harmful if inhaled.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

C; Corrosive

R35: Causes severe burns.



Xn; Harmful

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



N; Dangerous for the environment

R50: Very toxic to aquatic organisms.

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R10: Flammable.

Label elements**Labelling according to EU guidelines:****Code letter and hazard designation of product:**

C Corrosive

N Dangerous for the environment

Risk phrases:

10 Flammable.

20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

35 Causes severe burns.

50 Very toxic to aquatic organisms.

Safety phrases:

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

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.

61 Avoid release to the environment. Refer to special instructions/Safety data sheets

Hazard description:**WHMIS classification****Classification system****HMIS ratings (scale 0-4)**

(Hazardous Materials Identification System)

| | |
|------------|---|
| HEALTH | 3 |
| FIRE | 2 |
| REACTIVITY | 1 |

Health (acute effects) = 3

Flammability = 2

Reactivity = 1

Other hazards**Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.**3 Composition/information on ingredients****Chemical characterization: Substances****(CAS#) Description:**

Acrylic acid (CAS# 79-10-7)

Identification number(s):**EINECS Number:** 201-177-9**Index number:** 607-061-00-8**Impurities and stabilising additives:**

Stabilized with 4-Methoxyphenol (CAS# 150-76-5)

See section 7 for information concerning this stabilizer.

4 First aid measures**Description of first aid measures****General information** Immediately remove any clothing soiled by the product.**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.

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5 Firefighting measures**Extinguishing media****Suitable extinguishing agents**

Use carbon dioxide, extinguishing powder or foam. Water may be ineffective but may be used for cooling exposed containers.

Special hazards arising from the substance or mixture

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Advice for firefighters**Protective equipment:**

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures**Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

Environmental precautions:

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

Methods and material for containment and cleaning up:

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.

Keep away from ignition sources.

Reference to other sections

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****Precautions for safe handling**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

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.

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

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility:

Vent the material periodically.

Store away from oxidizing agents.

Keep away from heat and direct sunlight.

Store away from strong bases.

Avoid UV light and other radiation with high energy.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

The stabilizer is only effective in the presence of oxygen. Maintain contact with atmosphere containing 5-21% oxygen. Never use tanks with inert gas for storage.

Protect from heat and direct sunlight.

Recommended storage temperature: 15-21°C

8 Exposure controls/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:

Acrylic acid

ACGIH TLV ppm
2; Not classifiable as human carcinogen

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| | |
|---------------------|--|
| Australia TWA | 10 |
| Belgium TWA | 10 |
| Denmark TWA | 2 |
| France TWA | 10 |
| Germany MAK | 10 |
| Korea TLV | 2 |
| Netherlands MAC-TGG | 2 |
| Russia TWA | 5 mg/m ³ ; 15 mg/m ³ -STEL |
| Switzerland MAK-W | 0.3 mg/m ³ , skin, Carcinogen |
| United Kingdom TWA | 10; 20-STEL |

Control parameters**Components with limit values that require monitoring at the workplace:****Additional information:** No data**Exposure controls****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.

Avoid contact with the eyes and skin.

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

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

Impervious gloves

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****Information on basic physical and chemical properties****General Information****Appearance:**

| | |
|-------------------------|-----------------|
| Form: | Liquid |
| Color: | Colorless |
| Odor: | Not determined |
| Odour threshold: | Not determined. |

pH-value: Not determined.**Change in condition**

| | |
|---|------------------------|
| Melting point/Melting range: | 13°C (55 °F) |
| Boiling point/Boiling range: | 138-139°C (280-282 °F) |
| Sublimation temperature / start: | Not determined |

Flash point: 54°C (129 °F)**Flammability (solid, gaseous)** Not applicable.**Ignition temperature:** 390°C (734 °F)**Decomposition temperature:** Not determined**Auto igniting:** Not determined.**Explosion limits:**

| | |
|---------------|--------------------|
| Lower: | 2.0 Vol % (47.5°C) |
| Upper: | 8 Vol % (47.5°C) |

Vapor pressure: Not determined**Density at 20°C (68 °F):** 1.051 g/cm³ (8.771 lbs/gal)**Relative density** Not determined.**Vapour density** Not determined.**Evaporation rate** Not determined.**Solubility in / Miscibility with****Water:** Fully miscible

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Segregation coefficient (n-octanol/water): Not determined.

Viscosity:

dynamic:

Not determined.

kinematic:

Not determined.

Other information

No further relevant information available.

10 Stability and reactivity**Reactivity****Chemical stability****Thermal decomposition / conditions to be avoided:**

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

Possibility of hazardous reactions Danger of polymerization**Incompatible materials:**

Oxidizing agents

Bases

Heat

Light

UV light

Hazardous decomposition products: Carbon monoxide and carbon dioxide**11 Toxicological information****Information on toxicological effects****Acute toxicity:****LD/LC50 values that are relevant for classification:**

| | | |
|--------------------|---------|------------------------------------|
| Oral | LD50 | 33500 µg/kg (rat) |
| Dermal | LD50 | 280 µL/kg (rabbit) |
| Inhalative | LC50/2H | 5300 mg/m ³ /2H (mouse) |
| Irritation of skin | severe | 5 mg/24H (rabbit) |
| Irritation of eyes | severe | 250 µg/24H (rabbit) |

Primary irritant effect:**on the skin:**

Strong corrosive effect on skin and mucous membranes.

Irritant to skin and mucous membranes.

on the eye:

Strong corrosive effect.

Irritating effect.

Sensitization: No sensitizing effects known.**Other information (about experimental toxicology):**

Tumorigenic effects have been observed on tests with laboratory animals.

Reproductive effects have been observed on tests with laboratory animals.

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 (Olfaction) - deviated nasal septum.

Sense Organs and Special Senses (Olfaction) - ulcerated nasal septum

Behavioral - fluid intake.

Behavioral - muscle contraction or spasticity.

Skin and Appendages - cutaneous sensitization, experimental (after topical exposure).

Skin and Appendages - tumors.

Kidney, Ureter, Bladder - changes in bladder weight.

Related to Chronic Data - changes in testicular weight.

Sense Organs and Special Senses (Olfaction) - effect, not otherwise specified.

Nutritional and Gross Metabolic - weight loss or decreased weight gain.

Lungs, Thorax, or Respiration - other changes.

Blood - leukemia.

Reproductive - Paternal Effects - testes, epididymis, sperm duct.

Reproductive - Effects on Newborn - growth statistics (e.g.%, reduced weight gain).

Reproductive - Effects on Newborn - physical.

Reproductive - Maternal Effects - other effects.

Reproductive - Specific Developmental Abnormalities - other developmental abnormalities.

Reproductive - Effects on Embryo or Fetus - fetotoxicity (except death, e.g., stunted fetus).

Reproductive - Specific Developmental Abnormalities - musculoskeletal system.

Tumorigenic - carcinogenic by RTECS criteria.

Tumorigenic - equivocal tumorigenic agent by RTECS criteria.

Tumorigenic - tumors at site of application.

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Subacute to chronic toxicity:

Acrylic acid is corrosive to skin, eyes and mucous membranes. Inhalation has resulted in nasal lesions in rats and mice. Teratogenic and reproductive effects in laboratory rats has been reported.

Additional toxicological information:

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

Danger through skin absorption.

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

IARC-3: Not classifiable as to carcinogenicity to humans.

ACGIH A4: Not classifiable as a human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenicity in humans and/or animals.

12 Ecological information**Toxicity**

Aquatic toxicity: No further relevant information available.

Persistence and degradability No further relevant information available.

Behavior in environmental systems:

Bioaccumulative potential No further relevant information available.

Mobility in soil No further relevant information available.

Ecotoxicological effects:

Remark: Very toxic for aquatic organisms

Additional 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.

Also poisonous for fish and plankton in water bodies.

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

Very toxic for aquatic organisms

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Other adverse effects No further relevant information available.

13 Disposal considerations**Waste treatment methods**

Recommendation Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information**DOT regulations:**

Hazard class: 8

8

Identification number: UN2218

UN2218

Packing group: II

II

Proper shipping name (technical name): ACRYLIC ACID, STABILIZED

Label 8+3

8+3

Land transport ADR/RID (cross-border)

ADR/RID class: 8 (CF1) Corrosive substances

8 (CF1) Corrosive substances

Danger code (Kemler): 839

839

UN-Number: 2218

2218

Packaging group: II

II

Special marking: Symbol (fish and tree)

Symbol (fish and tree)

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UN proper shipping name: 2218 ACRYLIC ACID, STABILIZED

Maritime transport IMDG:



IMDG Class: 8
 UN Number: 2218
 Label: 8+3
 Packaging group: II
 Marine pollutant: No
 Segregation groups: Acids
 Proper shipping name: ACRYLIC ACID, STABILIZED

Air transport ICAO-TI and IATA-DGR:



ICAO/IATA Class: 8
 UN/ID Number: 2218
 Label: 8+3
 Packaging group: II
 Proper shipping name: ACRYLIC ACID, STABILIZED

UN "Model Regulation": UN2218, ACRYLIC ACID, STABILIZED, 8 (3), II
 Environmental hazards: Environmentally hazardous substance, liquid; Marine Pollutant
 Special precautions for user Warning: Corrosive substances
 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

15 Regulatory information

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

Product related hazard informations:

Hazard symbols:

C Corrosive
 N Dangerous for the environment

Risk phrases:

10 Flammable.
 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
 35 Causes severe burns.
 50 Very toxic to aquatic organisms.

Safety phrases:

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 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.
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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.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information(Contd. on page 8)
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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 C. Holt
Global EHS Manager

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)

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

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