



Safety Data Sheet

1. Identification of the substance/mixture and of the company/undertaking

Product identifier:

Product name: Methacrylic acid

SDS No. : 4837E-2

Details of the supplier of the safety data sheet

Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.

Address: 3-1, Honmachibashi, Chuo-ku, Osaka, JAPAN

Division: Chemical Safety Management Department

Telephone number: +81-6-6946-8061

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e-mail address: kagakuhinanzenkanri@kishida.co.jp

2. Hazards identification

GHS classification and label elements of the product**Classification of the substance or mixture****PHYSICAL AND CHEMICAL HAZARDS**

Flammable liquids: Category 4

Self-reactive substances and mixtures: Type G

HEALTH HAZARDS

Acute toxicity (Dermal): Category 3

Skin corrosion/irritation: Category 1A

Serious eye damage/eye irritation: Category 1

Specific target organ toxicity – single exposure: Category 1(respiratory system)

Specific target organ toxicity – repeated exposure: Category 1(respiratory system)

Aspiration hazard: Category 1

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment (Acute): Category 3

Label elements

Signal word: Danger

HAZARD STATEMENT

Combustible liquid

Toxic in contact with skin

Causes severe skin burns and eye damage

Causes damage to organs(respiratory system)

Causes damage to organs through prolonged or repeated exposure(respiratory system)

May be fatal if swallowed and enters airways

Harmful to aquatic life

PRECAUTIONARY STATEMENT**Prevention**

Avoid release to the environment.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Do not breathe dust/fume/gas/mist/vapors/spray.

Wash contaminated parts thoroughly after handling.



Wear protective gloves/protective clothing/eye protection/face protection.

Do not eat, drink or smoke when using this product.

Response

In case of fire: Use appropriate media other than water to extinguish.

Get medical advice/attention if you feel unwell.

Call a POISON CENTER/doctor/physician if you feel unwell.

IF exposed or concerned: Call a POISON CENTER/doctor/physician.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

IF ON SKIN: Wash with plenty of soap and water.

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

Take off immediately all contaminated clothing and wash it before reuse.

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

IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Storage

Store in a well-ventilated place.

Disposal

Dispose of contents/container in accordance with local/national regulation.

Specific Physical and Chemical hazards

Heating may cause fire.

3. Composition/information on ingredients

Mixture/Substance selection:

Substance

Ingredient name:Methacrylic acid

Content (%):98(min)

Chemical formula:CH₂:C(CH₃)COOH

Chemicals No, Japan:2-1025

CAS No.:79-41-4

MW:86.09

ECNO:201-204-4

Note : The figures shown above are not the specifications of the product.

Stabilizing additives

4-Methoxyphenol(p-) (CAS No.150-76-5)

4. First-aid measures

Descriptions of first-aid measures

General measures

Get medical advice/attention if you feel unwell.

IF INHALED

Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTER/doctor/physician if you feel unwell.

IF ON SKIN (or hair)

Take off immediately all contaminated clothing. Rinse skin with water or shower.

Wash with plenty of soap and water.

If skin irritation or rash occurs: Get medical advice/attention.

IF IN EYES

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

If eye irritation persists: Get medical advice/attention.

**IF SWALLOWED**

Rinse mouth. Do NOT induce vomiting.
Immediately call a POISON CENTER/doctor/physician.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

In case of fire, use water mist, foam, dry powder, CO2 to extinguish.

Unsuitable extinguishing media

Indoor firefighting equipment or outdoor firefighting equipment

Sprinkler equipment

Dry-powder firefighting equipment – except for phosphate etc.,hydrogen carbonate etc.

Straight stream water extinguisher

Water mist extinguisher

Reinforcing liquid jet extinguisher

Dry-powder extinguisher – except for phosphate etc.,hydrogen carbonate etc.

Bucket of water or tank of water

Specific hazards arising from the substance or mixture

Containers may explode when heated.

Fire may produce irritating, corrosive and/or toxic gases.

Advice for firefighters

Specific fire-fighting measures

Evacuate non-essential personnel to safe area.

Special protective equipment and precautions for fire-fighters

Wear fire resistant or flame retardant clothing.

Wear protective gloves/protective clothing/eye protection/face protection.

Firefighters should wear self-contained breathing apparatus with full face piece operated positive pressure mode.

6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

Ventilate area until material pick up is complete.

Wear proper protective equipment.

Environmental precautions

Prevent spills from entering sewers, watercourses or low areas.

Methods and materials for containment and cleaning up

Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.

Sweep up, place in a bag and hold for waste disposal.

Preventive measures for secondary accident

Collect spillage.

7. Handling and storage

Precautions for safe handling

Preventive measures

(Exposure Control for handling personnel)

Do not breathe dust/fume/gas/mist/vapors/spray.

(Protective measures against fire and explosion)

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

(Exhaust/ventilator)



Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

Safety Measures

Wear protective gloves/protective clothing/eye protection/face protection.

When using do not eat, drink or smoke.

Any incompatibilities

See "10.Stability and Reactivity"

Advice on general occupational hygiene

Wash contaminated parts thoroughly after handling.

Do not eat, drink or smoke when using this product.

Take off immediately all contaminated clothing and wash it before reuse.

Storage

Conditions for safe storage

Keep container tightly closed.

Store in a cool, dry place. Do not store in direct sunlight.

Keep under lock and key.

Container and packaging materials for safe handling

Glass

Polyethylene

8. Exposure controls/personal protection

Control parameters

Adopted value

(Methacrylic acid)

ACGIH(1992) TWA: 20ppm (Skin & eye irr)

(4-Methoxyphenol(p-))

ACGIH(1992) TWA: 5mg/m³ (Eye irr; skin dam)

Exposure controls

Appropriate engineering controls

Do not use in areas without adequate ventilation.

Eye wash station should be available.

Washing facilities should be available.

Individual protection measures

Respiratory protection

Wear respiratory protection.

Hand protection

Wear protective gloves.

Eye protection

Wear eye/face protection.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Liquid or solid

Color: Colorless

Odor: Pungent odor

Melting point/Freezing point: 16°C

Boiling point or initial boiling point: (Methacrylic acid)159 through 163°C

Boiling range data is not available.

Flammability (gases, liquids and solids) data is not available.

Lower and upper explosion limit/flammability limit:



Lower explosion limit: 1.6 vol %
Upper explosion limit: 8.8 vol %
Flash point: (Methacrylic acid)73°C
Auto-ignition temperature data is not available.
Decomposition temperature data is not available.
pH data is not available.
Dynamic viscosity: 1.35
Kinematic viscosity: 1.36 mm²/sec (24°C)
Solubility:
Solubility in water: Soluble
n-Octanol/water partition coefficient: log Pow0.93
Vapor pressure: 130 Pa (25°C)
Density and/or relative density: 1.02
Relative vapor density (Air=1): 2.97
Relative density of the Vapor/air - mixture at 20°C (Air = 1): 1
Particle characteristics data is not available.

10. Stability and Reactivity

Reactivity

Not available.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

Vapours are uninhibited and may polymerize, causing blockage of vents.

The substance readily polymerizes due to heating or under the influence of light, oxidizing agents such as peroxides, or in the presence of traces of hydrochloric acid. This generates fire or explosion hazard. Attacks metals. (ICSC 0917)

Conditions to avoid

Contact with incompatible materials.

Contact with fire source.

Incompatible materials

Oxidizing agents, Hydrochloric acid

Hazardous decomposition products

Carbon oxides

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[GHS Cat. Japan, base data]

(Methacrylic acid)

rat LD50=2224mg/kg (EU-RAR, 2002); 2260mg/kg (ACGIH 7th, 2001; EU-RAR, 2002)

(4-Methoxyphenol(p-))

rat LD50=1600mg/kg (ACGIH, 1997; PATTY, 6th, 2012)

Acute toxicity (Dermal)

[GHS Cat. Japan, base data]

(Methacrylic acid)

rabbit LD50=500-1000mg/kg (EU-RAR No.25, 2002)

(4-Methoxyphenol(p-))

rabbit LD50>2000mg/kg (NICNAS IMAP, 2018; REACH Registration dossier, Accessed Oct. 2018)

Irritant properties

Skin corrosion/irritation



[GHS Cat. Japan, base data]

(Methacrylic acid)

rabbit corrosive (NITE Initial Risk Assessment Report, 2005); EU Skin Corr.1A (ECHA CL Invt., Access on Jun. 2017)

Serious eye damage/irritation

[GHS Cat. Japan, base data]

(Methacrylic acid)

rabbit corrosive (NITE Initial Risk Assessment Report, 2005)

(4-Methoxyphenol(p-))

rabbit mild to moderate irritation recover within 7 days (NICNAS IMAP, Accessed Oct. 2018)

Allergenic and sensitizing effects data is not available.

Mutagenic effects data is not available.

Carcinogenic effects data is not available.

Reproductive toxicity data is not available.

STOT

STOT-single exposure

[cat.1]

[GHS Cat. Japan, base data]

(Methacrylic acid)

respiratory system (MOE risk assessment vol. 12, 2014; EU-RAR, 2002)

STOT-repeated exposure

[cat.1]

[GHS Cat. Japan, base data]

(Methacrylic acid)

respiratory system (MOE risk assessment vol. 12, 2014; NITE primary risk assessment, 2005)

Aspiration hazard

[cat.1]

[GHS Cat. Japan, base data]

(Methacrylic acid)

cat. 1; (Pediatrics, 102, 979-984, 1998); Dynamic viscosity=1.36 mm²/sec (24°C) (calc.)

(HSB, Access on Jun. 2017)

12. Ecological Information

Ecotoxicity

Aquatic toxicity

Harmful to aquatic life

Hazardous to the aquatic environment (Acute)

[GHS Cat. Japan, base data]

(Methacrylic acid)

Algae (*Pseudokirchneriella subcapitata*) EC50 (Speed method, pH unadjusted)=14mg/L/72hr (NITE Initial Risk Assessment Report, 2005)

(4-Methoxyphenol(p-))

Crustacea (*Daphnia magna*) EC50=2.2mg/L/48hr (NLM HSDB, 2018; EPA/OPPT)

Hazardous to the aquatic environment (Long-term)

[GHS Cat. Japan, base data]

(Methacrylic acid)

Algae (*Pseudokirchneriella subcapitata*) NOEC (speed method, pH unadjusted)=9.8mg/L/72hr (NITE Initial Risk Assessment Report, 2005); Crustacea (*Daphnia magna*) NOEC (Reproductive inhibition)=53mg/L/21days (MOE Japan, 2014)

Water solubility

(Methacrylic acid)

moderate (ICSC, 1996)

(4-Methoxyphenol(p-))



4 g/100 ml (25°C) (ICSC, 2004)

Persistence and degradability

(Methacrylic acid)

BOD_Degradation : 91% (CSCL DB, 1993)

(4-Methoxyphenol(p-))

Degrade rapidly (BOD_Degradation : 86% (CSCL DB, 1990))

Bioaccumulative potential

(Methacrylic acid)

Log Kow=0.93 (SRC PHYSPROP DB, 2017)

(4-Methoxyphenol(p-))

log Kow=1.58 (PHYSPROP DB, 2018)

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data is not available.

13. Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging

Waste treatment methods

Avoid release to the environment.

Dispose of contents/container in accordance with local/national regulation.

14. Transport Information

UN No. or ID No.: 2531

UN Proper Shipping Name :

METHACRYLIC ACID, STABILIZED

Class or division (Transport hazard class) : 8

Packing group : II

ERG GUIDE No.: 153P

Special provisions No.: 386

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 2531

Proper Shipping Name :

METHACRYLIC ACID, STABILIZED

Class or division : 8

Packing group : II

Special provisions No.: 386

IATA Dangerous Goods Regulations

UN No.: 2531

Proper Shipping Name :

METHACRYLIC ACID, STABILIZED

Class or division : 8

Hazard labels : Corrosive

Packing group : II

Special provisions No.: A209

Environmental hazards

MARPOL Annex III – Prevention of pollution by harmful substances

Marine pollutants (yes/no) : no

MARPOL Annex V – Prevention of pollution by garbage discharge

Specific target organ toxicity – repeated exposure: cat.1

Methacrylic acid



Maritime transport in bulk according to IMO instruments

Noxious Liquid ; Cat. Y

Methacrylic acid

15. Regulatory Information

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

Chemicals listed in TSCA Inventory

Methacrylic acid; 4-Methoxyphenol(p-)

Other regulatory information

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

16. Other information

GHS classification and labelling

Flam. Liq. 4: H227 Combustible liquid

Self-react. G

Acute Tox. 3: H311 Toxic in contact with skin

Skin Corr. 1A: H314 Causes severe skin burns and eye damage

Eye Dam. 1: H318 Causes serious eye damage

STOT SE 1: H370 Causes damage to organs

STOT RE 1: H372 Causes damage to organs through prolonged or repeated exposure

Asp. Tox. 1: H304 May be fatal if swallowed and enters airways

Aquatic Acute 3: H402 Harmful to aquatic life

Reference Book

Globally Harmonized System of classification and labelling of chemicals, UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 21th edit., 2019 UN

IMDG Code, 2018 Edition (Incorporating Amendment 39-18)

IATA Dangerous Goods Regulations (62nd Edition) 2021

2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2021 TLVs and BEIs. (ACGIH)

Supplier's data/information

General Disclaimer

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the products' properties.

The GHS classification data given here is based on current Japan official data (NITE published in 2020).