



Safety Data Sheet

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

Product identifier:

Product name: Methacrylic acid

SDS No. : 4837E-3

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

Research and Development

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

FAX: +81-6-6946-1607

Section 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 1

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, short-term (acute): Category 3

(Note) GHS classification without description: Not classified/Classification not possible

Label elements



Signal word: Danger

HAZARD STATEMENT

H227 Combustible liquid

H311 Toxic in contact with skin

H314 Causes severe skin burns and eye damage

H370 Causes damage to organs (respiratory system)

H372 Causes damage to organs through prolonged or repeated exposure (respiratory system)

H304 May be fatal if swallowed and enters airways

H402 Harmful to aquatic life

PRECAUTIONARY STATEMENT

Prevention



P273 Avoid release to the environment.

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P264 Wash contaminated parts thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P270 Do not eat, drink or smoke when using this product.

Response

P370 + P378 In case of fire: Use appropriate media to extinguish.

P314 Get medical advice/attention if you feel unwell.

P310 Immediately call a POISON CENTER/doctor/physician.

P312 Call a POISON CENTER/doctor/physician if you feel unwell.

P308 + P311 IF exposed or concerned: Call a POISON CENTER/doctor/physician.

P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

P363 Wash contaminated clothing before reuse.

P361 + P364 Take off immediately all contaminated clothing and wash it before reuse.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P331 IF SWALLOWED: Do NOT induce vomiting.

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician.

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Storage

P403 Store in a well-ventilated place.

P405 Store locked up.

Disposal

P501 Dispose of contents/container in accordance with local/national regulation.

Specific adverse human health effects

See "11. Toxicological Information".

Section 3. Composition/information on ingredients

Mixture/Substance selection:

Substance

Ingredient name	Content (%)	CAS No.	Chemicals No, Japan	Chemical formula
Methacrylic acid	98(min)	79-41-4	2-1025	CH ₂ :C(CH ₃)COOH

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

Stabilizing additives

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

Section 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

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

Section 5. Fire-fighting measures**Extinguishing media****Suitable extinguishing media**

Use appropriate extinguishing media suitable for surrounding facilities.
In case of fire, use spraying loaded liquid, foam (water-soluble liquid: alcohol-resistant foam), inactive gases, dry powder, dry sand to extinguish.
*Fire Service Act Group 4 Hazardous Materials

Unsuitable extinguishing media

Indoor Fire Plug System or Outdoor Fire Plug System
Sprinkler System
Dry Chemical Extinguishing System-Others (except for phosphates etc., Hydrogen Carbonates etc.)
Fire Extinguisher Discharging Jet Water/Spraying Water
Fire Extinguisher Discharging Jet Loaded Liquid
Fire Extinguisher Discharging Dry Extinguishing agents-Others (except for phosphates etc., Hydrogen Carbonates etc.)
Water Bucket or Water Tank
*Cabinet Order Concerning the Control of Hazardous Materials (Attached Table 5) Group 4 Hazardous Materials

Specific hazards arising from the substance or mixture

Fire may produce irritating, corrosive and/or toxic gases.
Runoff from fire control or dilution water may cause pollution.
See "10.Stability and Reactivity".

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 a full facepiece operated in the positive pressure mode.



Section 6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

- Keep unauthorized personnel away.
- Ventilate area until material pick up is complete.
- Wear proper protective equipment.

Environmental precautions

- Prevent spills from entering sewers, watercourses, low areas or rivers. To be careful not discharged to the environment without being properly handled waste water contaminated.

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.

Section 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.
- Wash hands et al thoroughly after handling.
- 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 locked up. (P405)
- Store in a cool, dry place. Do not store in direct sunlight.
- Storage in accordance with local/national regulation.

Container and packaging materials for safe handling

- Use closed unbreakable containers.



Section 8. Exposure controls/personal protection

Control parameters

Control value and concentration standard value are not available in ISHA.

Adopted value

(Methacrylic acid)

JSOH(2012) 2ppm; 7.0mg/m³

(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

Recommend to use protective equipment in conformity with the standards.

Use appropriate protective equipment in accordance with local/national regulation.

Respiratory protection

Wear respiratory protection (dust-proof mask/gas mask). Select chemical cartridge corresponding to type of gases when using a gas mask.

Hand protection

Wear impervious protective glove.

Eye protection

Wear eye/face protection. Wear safety goggles in cases gas is generated.

Skin and body protection

Wear protective clothing.

Section 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)(C.C.) 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



Solubility in solvent data is not available.

n-Octanol/water partition coefficient: log Pow 0.93

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.

Other information

Other information is not available.

Section 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 is a medium strong acid. 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. This produces toxic fumes and gases. 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

Section 11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[Data for components of the product]

[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)

[Product]

Category 3, Toxic in contact with skin

[Data for components of the product]

[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****[Product]**

Category 1, Causes severe skin burns and eye damage

[Data for components of the product]

[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**[Product]**

Category 1, Causes serious eye damage

[Data for components of the product]

[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.

Specific target organ toxicity (STOT)**STOT-single exposure****[Product]**

Category 1, Causes damage to organs

[Data for components of the product]**[cat.1]**

[GHS Cat. Japan, base data]

(Methacrylic acid)

respiratory system (MOE Environmental Risk Assessment for Chemical Substances vol. 12, 2014; EU-RAR, 2002)

STOT-repeated exposure**[Product]**

Category 1, Causes damage to organs through prolonged or repeated exposure

[Data for components of the product]**[cat.1]**

[GHS Cat. Japan, base data]

(Methacrylic acid)

respiratory system (MOE Environmental Risk Assessment for Chemical Substances vol. 12, 2014; NITE Initial Risk Assessment Report, 2005)

Aspiration hazard**[Product]**

Category 1, May be fatal if swallowed and enters airways

[Data for components of the product]**[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.)

(HSDB, Access on Jun. 2017)



Section 12. Ecological Information**Toxicity****Aquatic toxicity****[Product]**

Category 3, Harmful to aquatic life

[Data for components of the product]

Hazardous to the aquatic environment, short-term (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 (chronic)

[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**[Data for components of the product]**

(Methacrylic acid)

BOD_Degradation : 91% (CSCL DB, 1993)

(4-Methoxyphenol(p-))

Rapidly degradable (BOD_Degradation : 86% (CSCL DB, 1990))

Bioaccumulative potential**[Data for components of the product]**

(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.

Section 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 as industrial waste. Accordance with local/national regulation.



Section 14. Transport Information

UN Number or ID Number : 2531

UN Proper Shipping Name :

METHACRYLIC ACID, STABILIZED

Class or division (Transport hazard class) : 8

Packing group : II

ERG GUIDE No.: 153P

IMDG Code (International Maritime Dangerous Goods Regulations)

UN Number or ID Number : 2531

UN Proper Shipping Name :

METHACRYLIC ACID, STABILIZED

Class or division (Transport hazard class) : 8

Packing group : II

IATA (Dangerous Goods Regulations)

UN Number or ID Number : 2531

UN Proper Shipping Name :

METHACRYLIC ACID, STABILIZED

Class or division (Transport hazard class) : 8

Hazard labels : Corrosive

Packing group : II

Environmental hazards

Marine pollutants (yes/no) : no

Section 15. Regulatory Information

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

U.S. Toxic Substances Control Act (TSCA) Inventory

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.

Section 16. Other information

References and sources for data

Globally Harmonized System of classification and labelling of chemicals, UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 22nd edit., 2021 UN

IMDG Code, 2022 Edition (Incorporating Amendment 41-22)

IATA Dangerous Goods Regulations (65th Edition) 2024

2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2024 TLVs and BEIs. (ACGIH)

JIS Z 7252 : 2019

JIS Z 7253 : 2019

2023 Recommendation on TLVs (JISOH)

Supplier's data/information

General Disclaimer

Please provide SDS to customers for selling or transferring.

All chemicals have unknown hazard. Handle the product with care.



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 2022).