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Material Safety Data Sheet
METHYL METHACRYLATE

Section 1 - Product Identification

Synonyms : Methyl 2-methyl-2-propenoate, Methacrylic Acid Methyl Ester
Chemical Formula : C5H8O2
Company Identification : Tradeasia International Pte. Limited
Address : 133 Cecil Street # 12-03 Keck Seng Tower, Singapore
Tel: +65-6227 6365
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Email: contact@chemtradeasia.com
Recommended use : Laboratory chemicals

Section 2 – Composition/Information on Ingredients

Chemical Name	EC No/CAS No	Purity, %
Methyl methacrylate	80-62-6	max. 99.9

Section 3 – Hazards Identification

3.1 Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008
Flammable liquids (Category 2), H225
Skin irritation (Category 2), H315
Skin sensitization (Category 1), H317
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

3.2 Label elements
Signal Word Danger
Hazard Statements
Highly flammable liquid and vapor
Causes skin irritation
Causes serious eye irritation
May cause an allergic skin reaction
May cause respiratory irritation

Precautionary Statements
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Avoid breathing dust/fume/gas/mist/vapors/spray
Contaminated work clothing should not be allowed out of the workplace
Use only outdoors or in a well-ventilated area
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
Take precautionary measures against static discharge
Keep cool

Section 4 – Composition/ information on ingredients

4.1 Composition comments
Formula : C5H8O2
Molecular weight : 100.12 g/mol
CAS-No. : 80-62-6
EC-No. : 201-297-1

Section 5 – First-Aid Measures

5.1. Description of first aid measures
General advice
Show this material safety data sheet to the doctor in attendance.
If inhaled
After inhalation: fresh air.
In case of skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.
In case of eye contact
After eye contact: rinse out with plenty of water. Remove contact lenses.
If swallowed
After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

5.2. Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the section 2

5.3. Indication of any immediate medical attention and special treatment needed
N.A.

Section 6 – Fire Fighting Measures

Suitable extinguishing media : Water spray or fog, Dry chemical powder,Alcohol-resistant foam and Carbon dioxide.
Specific hazard arising from the chemical : May produce toxic fumes of carbon monoxide, carbon dioxide if burning.
Special protective action for fire-fighters : Keep adjacent containers cool by spraying with water.
Protective Equipment : Wear full protective clothing and self-contained breathing apparatus.

Section 7 – Accidental Release Measures

7.1. Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.

7.2. Environmental precautions
Do not let product enter drains. Risk of explosion.

7.3. Methods and material for containment and cleaning up
Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions. Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

Section 8 – Handling and Storage

8.1. Precautions for safe Handling
Advice on protection against fire and explosion
Keep away from open flames, hot surfaces and sources of ignition.Take precautionary measures against static discharge.
Hygiene measures
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

8.2. Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

Section 9 – Exposure Controls/Personal Protection

9.1 Exposure Standard : Occupational Exposure Limits
TLV-TWA = 50 ppm (205 mg/m3)
TLV-STEL = 100 ppm (410 mg/m3)
REL-TWA = 100 ppm (410 mg/m3)
PEL-TWA = 100 ppm (410 mg/m3) (OSHA)

9.1. Appropriate engineering controls
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective threshold limit value.

9.2. Individual protection measures, such as personal protective equipment (PPE)
Respiratory Protection **:** Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear an appropriate respirator when ventilation is inadequate.
Hand Protection : Butyl rubber gloves, Nature rubber gloves, Neoprene rubber gloves, Nitrile rubber gloves.
Eye Protection : Chemical splash goggles (chemical monogoggles).
Other Protection : Use protective clothing which is chemical resistant to this material.
Safety shoes and boots should also be chemical resistant.

Section 10 – Physical and Chemical Properties

10.1. Information on basic physical and chemical properties
Appearance : Clear liquid.
Odour : Specially odour.

pH Value : No data available.
Boiling Point (oC) : 100.3 ºC
Melting Point (oC) : - 48 ºC
Flash Point : 11 ºC (Abel)
Evaporating Rate : 3.1 (n-Butyl Acetate = 1)
Lower/Upper Flammability limits : 2.1 – 12.5 %V
Vapour Pressure (kPa) : 5.533 kPa (40 mmHg) @ 25.5 ºC
Specific Gravity : 0.944 – 0.948 @ 20 ºC (ASTM D4052)
Density (g/cm3) : 0.942 – 0.946 @ 20 ºC (ASTM D4052)
Vapour Density : 3.45 @ 20 ºC (air = 1)
Solubility in Water : 1.25 g/100 ml. @ 20 ºC (ASTM D1722)
Auto Ignition Temperature : 421ºC

Section 11 – Stability and Reactivity

11.1. Reactivity
This product stable under normal condition by filling inhibitor.

11.2. Chemical stability
This product stable under normal condition by filling inhibitor.

11.3. Possibility of hazardous reactions
May undergo auto-polymerization

11.4. Conditions to avoid:
Oxidizing agents, Peroxides, Amines, Bases, Acids, Reducing agents, Halogens.

11.5. Incompatible materials
Oxidizing agents, Peroxides, Amines, Bases, Acids, Reducing agents, Halogens.

11.6. Hazardous decomposition products
Thermal decomposition is highly dependent on conditions. Carbon monoxide, carbon dioxide and other organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation. May form explosive peroxides.

Section 12 – Toxicological Information

12.1 Health effects associated with ingredients
LD50 Acute oral toxicity : 7,872 mg/kg , (rat)
LC50 Acute Inhalation : 78,000 mg/m3/4 hours , (rat)

12.2 Toxicity
Skin Irritation : Irritating to skin. Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis.
Eye Irritation : Irritating to eyes. Inflammation of the eye is characterized by redness, pain and itching.
Respiratory Irritation : Inhalation of vapours or mists may cause irritation to the respiratory system.
Carcinogenicity : This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

Section 13 – Ecological Information

13.1.Toxicity
Fish (Bluegills, Guppies) : Low toxicity : LC50 : 232 - 368 mg/l
Algae : Low toxicity : EC50 : 170 mg/l

13.2.3. Bioaccumulative potential
N.A

13.4. Mobility in soil
Dissolves in ethanol and methanol. If product enters soil, it will highly mobile and may contaminate groundwater.

13.5. Persistence / Degradability
Readily biodegradable.

Section 14 – Disposal Considerations

14.1. Disposal methods
Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions. Notice Directive on waste 2008/98/EC.

Section 15 – Transport Information

15.1 UN number
ADR/RID: 1247 IMDG: 1247 IATA: 1247
15.2 UN proper shipping name
ADR/RID: METHYL METHACRYLATE MONOMER, STABILIZED
IMDG: METHYL METHACRYLATE MONOMER, STABILIZED
IATA: Methyl methacrylate monomer, stabilized
15.3 Transport hazard class(es)
ADR/RID: 3 IMDG: 3 IATA: 3
15.4 Packaging group
ADR/RID: II IMDG: II IATA: II
15.5 Environmental hazards
ADR/RID: no IMDG Marine pollutant: no IATA: no
15.6 Special precautions for user
No data available

Section 16 – Regulatory Information

15.1. Safety, health and environmental regulations
This material safety data sheet complies with the requirements of Regulation (EC) No.1907/2006.
National legislation
Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.: FLAMMABLE LIQUIDS

Other regulations
Take note of Dir 94/33/EC on the protection of young people at work.

Section 16 : Additional Information

16.1. List of abbreviation and acronyms used in this MSDS

H225 : Highly flammable liquid and vapor.
H315 :Causes skin irritation.
H317 : May cause an allergic skin reaction.
H335 : May cause respiratory irritation.
SDS : Safety Data Sheets
Index N° : atomic number of the element most characteristic of the properties of the substance
CAS No : Chemical Abstracts Service number
EC No : EINECS Number : European Inventory of Existing Commercial Substances
Repr. Cat. 2 : Substance presumed human reproductive toxicant
Acute Oral Cat. 5 : Substance which is of relatively low acute oral toxicity.
GHS : Globally Harmonised System of Classification and Labelling
LD_{50} : Median Lethal Dose
LC_{50} : Lethal Concentration, 50%
N.A. : Not Applicable
OSHA : Occupational Safety & Health Administration
Cal OSHA : The State of California Division of Occupational Safety and Health (DOSH)
PEL : Permissible Exposure Limits
ACGIH : American Conference of Governmental Industrial Hygienists
TLV : Threshold Limit Value
Japanese MITI : Japanese Ministry of International Trade and Industry
EC_{50} : Half maximal effective concentration
UN : United Nations
U.S. EPA TSCA Inventory: Inventory of the chemical substances manufactured or processed in the United States according to Toxic Substances Control Act compiled and published under the autority of the Environmental Protection Agency
Canadian DSL: Canadian Domestic Substances List

16.2. List of relevant hazard statements and precautionary statements used in this MSDS

Hazard Statement

H361 d: Suspected of damaging the unborn child
H319: Causes serious eye irritation
H303: May be harmful if swallowed

Precautionary Statements

Prevention

P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P281: Use personal protective equipment as required.
P264: Wash eyes thoroughly after handling.
P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

P308 + P313: If exposed or concerned: get medical advice/attention.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313: If eye irritation persists: Get medical advice/attention.

Storage

P405: Store locked up.

Disposal

P501: Dispose of contents/container to in accordance with local regulations.

16.3. References

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6. Birge W J, Black J A, EPA-560/-76-008 (April 1977) PB 267 085
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8. Robbins WA, Xun L, Jia J, Kennedy N, Elashoff DA, Ping L. ;ELSEVIER 2009;(Reproductive Toxicology)
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11. Soucek et al., 2010. Illinois Natural History Survey, University of Illinois.

For general information on the toxicology of borates see ECETOC Technical Report No. 63 (1995); Patty's Industrial Hygiene and Toxicology, 4th Edition Vol. II, (1994) Chap. 42, 'Boron'.

16.4. Disclaimer of Liability

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