Safety Data Sheet

1. Identification of the substance/mixture and of the company/undertaking
   Product identifier:
   Product name: α-Methylstyrene
   Product code (SDS NO): 5061E-1
   Details of the supplier of the safety data sheet
   Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.
   Address: 3-1, Honmachibashi, Chuo-ku, Osaka 540-0029, JAPAN
   Division: Safety Management Dept. of Chemicals
   Telephone number: +81-6-6946-8061
   FAX: +81-6-6946-1607
   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 3
   Self-reactive substances and mixtures: Type G
   HEALTH HAZARDS
   Skin corrosion/irritation: Category 2
   Serious eye damage/eye irritation: Category 2B
   Carcinogenicity: Category 2
   Specific target organ toxicity – single exposure: Category 3 (Respiratory tract irritation)
   Specific target organ toxicity – single exposure: Category 3 (Narcosis)
   Specific target organ toxicity – repeated exposure: Category 1 (Liver)
   Specific target organ toxicity – repeated exposure: Category 2 (Respiratory apparatus; kidney)
   Aspiration hazard: Category 1
   ENVIRONMENT HAZARDS
   Hazardous to the aquatic environment (Acute): Category 2
   Hazardous to the aquatic environment (Long-term): Category 2
   (Note) GHS classification without description: Not applicable/Out of classification/Not classifiable
   Label elements

   Signal word: Danger
   HAZARD STATEMENT
   Flammable liquid and vapor
   Causes skin irritation
   Causes eye irritation
   Suspected of causing cancer
   May cause respiratory irritation
   May cause drowsiness or dizziness
   Causes damage to organs through prolonged or repeated exposure
   May cause damage to organs through prolonged or repeated exposure
   May be fatal if swallowed and enters airways
Toxic to aquatic life
Toxic to aquatic life with long lasting effects

PRECAUTIONARY STATEMENT

Prevention
Avoid release to the environment.
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.
Do not breathe dust/fume/gas/mist/vapors/spray.
Use only outdoors or in a well-ventilated area.
Wash contaminated parts thoroughly after handling.
Wear protective gloves and face protection.
Do not eat, drink or smoke when using this product.

Response
In case of fire: Use appropriate media other than water for extinction.
Collect spillage.
Get medical advice/attention if you feel unwell.
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/shower.
If skin irritation occurs: Get medical advice/attention.
Take off 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 eye irritation persists: Get medical advice/attention.
Do NOT induce vomiting.
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

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

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

Specific Physical and Chemical hazards
Flammable liquid. Vapor/air mixture may explode.

3. Composition/information on ingredients
Mixture/Substance selection:

Substance
Ingredient name: α-Methylstyrene
Content(%): 99(min)
Chemical formula: C9H10
Chemicals No, Japan: 3-5; 3-8
CAS No.: 98-83-9
MW: 118.18
ECNO: 202-705-0

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

Impurities and stabilizing additives
Stabilizer: TBC 5~20ppm
4. First-aid measures
   Descriptions of first-aid measures
   General measures
   Get medical attention/advice if you feel unwell.

   IF INHALED
   Remove person to fresh air and keep comfortable for breathing.
   Call a POISON CENTER or doctor/physician if you feel unwell.

   IF ON SKIN (or hair)
   Take off immediately all contaminated clothing. Rinse skin with water/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.
   Call a POISON CENTER or doctor/physician if you feel unwell.

5. Fire-fighting measures
   Extinguishing media
   Suitable extinguishing media
   Use appropriate extinguishing media suitable for surrounding facilities.

   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/flame resistant/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.

   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.

   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/sparks/open flames/hot surfaces. - No smoking.
- Ground/bond container and receiving equipment.
- Use explosion-proof electrical/ventilating/lighting equipment.
- Use only non-sparking tools.
- Take precautionary measures against static discharge.

Exhaust/ventilator
- Exhaust/ventilator should be available.

Safety treatments
- Avoid contact with skin.
- Avoid contact with eyes.

Safety Measures/Incompatibility
- Use only outdoors or in a well-ventilated area.
- Wear protective gloves, protective clothing or face protection.
- When using do not eat, drink or smoke.

Conditions for safe storage, including any incompatibilities

Recommendation for storage
- Keep container tightly closed.
- Store in a cool, dry place. Do not store in direct sunlight.

8. Exposure controls/personal protection

Control parameters

Adopted value

(α-Methylstyrene)
- ACGIH(2009) TWA: 10 ppm (URT irr; kidney dam; female repro dam)
- OSHA–PEL
  - α-Methylstyrene STEL: C 100 ppm, 480 mg/m3

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.

Safety and Health measures
- Wash … thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Take off contaminated clothing and wash it before reuse.
9. Physical and Chemical Properties
Information on basic physical and chemical properties

Physical properties
- Appearance: Liquid
- Color: Colorless, clear
- Odor: Characteristic odor
- pH data N.A.

Phase change temperature
- Initial Boiling Point/Boiling point: 164°C
- Melting point/Freezing point: -23°C
- Flash point: (α-Methylstyrene) 40°C
- Auto-ignition temperature: 574°C

Explosive properties: Flammability or explosive limit
- Lower limit: 0.9 vol %
- Upper limit: 6.6 vol %

Vapor pressure: 300 Pa (20°C)

10. Stability and Reactivity
Reactivity
- N.A.

Chemical stability
- Stable under normal storage/handling conditions.

Possibility of hazardous reactions
- The substance may polymerize. Decomposes on burning. This produces toxic fumes. Reacts with strong oxidants. Attacks aluminium and copper. (ICSC 0732)

Conditions to avoid
- Contact with incompatible materials.
- Contact with fire source.

Incompatible materials
- Strong oxidizing agents

Hazardous decomposition products
- Carbon oxides

11. Toxicological Information
Information on toxicological effects

Acute toxicity
- Acute toxicity (Oral)
  - [GHS Cat. Japan, base data]
  - (α-Methylstyrene)
    - rat LD50=4900mg/kg (SIDS, 2002)

Irritant properties
- Skin corrosion/irritation
  - [GHS Cat. Japan, base data]
\( \alpha \)-Methylstyrene, KISHIDA CHEMICAL CO., LTD., 5061E-1, 28/01/2019

Serious eye damage / irritation

<table>
<thead>
<tr>
<th>[GHS Cat. Japan, base data]</th>
<th>( \alpha )-Methylstyrene</th>
</tr>
</thead>
<tbody>
<tr>
<td>rabbit Draize test: moderate irritation (SID, 2002)</td>
<td>( \alpha )-Methylstyrene</td>
</tr>
<tr>
<td>rabbit recover after 48 hours (NITE primary risk assessment, 2008)</td>
<td>( \alpha )-Methylstyrene</td>
</tr>
</tbody>
</table>

No Allergic and sensitizing effects data available

No Mutagenic effects data available

Carcinogenicity

<table>
<thead>
<tr>
<th>[GHS Cat. Japan, base data]</th>
<th>( \alpha )-Methylstyrene</th>
</tr>
</thead>
<tbody>
<tr>
<td>cat.2: (NTP TR543, 2007)</td>
<td>( \alpha )-Methylstyrene</td>
</tr>
<tr>
<td>IARC-Gr.2B: Possibly carcinogenic to humans</td>
<td>( \alpha )-Methylstyrene</td>
</tr>
<tr>
<td>ACGIH-A3(2009): Confirmed Animal Carcinogen with Unknown Relevance to Humans</td>
<td>( \alpha )-Methylstyrene</td>
</tr>
</tbody>
</table>

No Teratogenic effects data available

No reproductive toxicity data available

Delayed and immediate effects and also chronic effects from short and long-term exposure

STOT

|-----------------------------|------------------------------------------|

12. Ecological Information

Ecotoxicity

Aquatic toxicity

Toxic to aquatic life

Toxic to aquatic life with long lasting effects

Aquatic acute toxicity component(s) data

<table>
<thead>
<tr>
<th>[GHS Cat. Japan, base data]</th>
<th>( \alpha )-Methylstyrene</th>
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</thead>
<tbody>
<tr>
<td>Crustacea (Daphnia magna) EC50=2.62mg/L/48hr (NITE primary risk assessment, 2008)</td>
<td>( \alpha )-Methylstyrene</td>
</tr>
</tbody>
</table>

Aspiration hazard

<table>
<thead>
<tr>
<th>[GHS Cat. Japan, base data]</th>
<th>( \alpha )-Methylstyrene</th>
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</thead>
<tbody>
<tr>
<td>liver (JECDB, 2015)</td>
<td>( \alpha )-Methylstyrene</td>
</tr>
<tr>
<td>respiratory apparatus; kidney (JECDB, 2015)</td>
<td>( \alpha )-Methylstyrene</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>[GHS Cat. Japan, base data]</th>
<th>( \alpha )-Methylstyrene</th>
</tr>
</thead>
<tbody>
<tr>
<td>cat. 1; hydrocarbon, kinematic viscosity=1.03 mm2/s (20°C)</td>
<td>( \alpha )-Methylstyrene</td>
</tr>
</tbody>
</table>
Aquatic chronic toxicity component(s) data
[GHS Cat. Japan, base data]
(α-Methylstyrene)
Algae (Pseudokirchneriella subcapitata) NOEC=0.3mg/L/72 hr (MOE Japan, 2005)

Water solubility
(α-Methylstyrene)
0.012 g/100 ml (20℃) (ICSC, 2005)

Persistence and degradability
(α-Methylstyrene)
Not degrade rapidly (BOD_Degradation : 0%/14 days (MITI official bulletin))

Bioaccumulative potential
(α-Methylstyrene)
log Pow=3.38 (ICSC, 2005); BCF=140 (Check & Review, Japan)

No Mobility in soil data available
Ozone depleting chemical data not available

13. Disposal considerations
Waste treatment methods
Avoid release to the environment (~ if this is not the intended use).
Dispose of contents/container in accordance with local/national regulation.

14. Transport Information
UN No.: 2303
Proper Shipping Name :
ISOPROPENYLBENZENE
Class or division : 3
Packing group : III
ERG GUIDE No.: 128

IMDG Code (International Maritime Dangerous Goods Regulations)
UN No.: 2303
Proper Shipping Name :
ISOPROPENYLBENZENE
Class or division : 3
Packing group : III

IATA Dangerous Goods Regulations
UN No.: 2303
Proper Shipping Name :
ISOPROPENYLBENZENE
Class or division : 3
Hazard labels : Flamm.liquid
Packing group : III

Environmental hazards
MARPOL Annex III – Prevention of pollution by harmful substances
Marine pollutants (yes/no) : yes
MARPOL Annex V – Prevention of pollution by garbage discharge
Specific target organ toxicity – repeated exposure: cat.1
α-Methylstyrene
Hazardous to the aquatic environment – long-term hazard: cat.1, 2
α-Methylstyrene
Transport in bulk according to Annex II of MARPOL73/78 and IBC Code
Noxious Liquid : Cat. Y
α-Methylstyrene
15. Regulatory Information
Safety, health and environmental regulations/legislation specific for the substance or mixture
US major regulations
TSCA
α–Methylstyrene
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. 3: H226 Flammable liquid and vapor
- Self-react. G
- Skin Irrit. 2: H315 Causes skin irritation
- Eye Irrit. 2B: H320 Causes eye irritation
- Carc. 2: H351 Suspected of causing cancer
- STOT SE 3: H335 May cause respiratory irritation
- STOT SE 3: H336 May cause drowsiness or dizziness
- 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 2: H401 Toxic to aquatic life
- Aquatic Chronic 2: H411 Toxic to aquatic life with long lasting effects

Reference Book
Globally Harmonized System of classification and labelling of chemicals, (5th ed., 2013), UN Recommendations on the TRANSPORT OF DANGEROUS GOODS 20th edit., 2017 UN Classification, labelling and packaging of substances and mixtures (table3–1 ECNO6182012)
2016 EMERGENCY RESPONSE GUIDEBOOK (US DOT)
2018 TLVs and BEIs. (ACGIH)
http://monographs.iarc.fr/ENG/Classification/index.php
Supplier’s data/information

General Disclaimer
This information contained in this data sheet represents the best information currently available to us. However, no warranty is made with respect to its completeness and we assume no liability resulting from its use. It are advised to make their own tests to determinate the safety and suitability of each such product or combination for their own purposes.
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 2017).