

# Safety data sheet as per Commission Regulation (EU) 2015/830

## Product: Alpha-Methylstyrene



### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifier

|               |                           |
|---------------|---------------------------|
| Trade name    | Alpha-Methylstyrene (AMS) |
| Chemical Name | 2-phenylpropene           |
| CAS Number    | 98-83-9                   |
| EC Number     | 202-705-0                 |

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

|                          |  |
|--------------------------|--|
| Relevant identified uses | Monomer for resins/ polymers           |
| Uses identified against  | Not for use other than those specified |

#### 1.3 Details of the supplier of the safety data sheet:

|                |   |
|----------------|---|
| Manufacturer   | Prasol Chemicals Pvt. Ltd.,<br>Prasol House, Plot No.A-17/2/3,<br>T.T.C. Indl. Area, Khairne M.I.D.C.,<br>Navi Mumbai - 400 710.<br>Maharashtra, India. |
| Telephone      | +91-22-27782555   |
| Telefax        | +91-22-27782430   |
| e-mail address | sales@prasolchem.com; inquiry@prasolchem.com  |

#### 1.4 Emergency telephone number

|           |                  |
|-----------|------------------|
| Telephone | +91-22- 27782555 |
| Language  | English          |

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

##### Classification according to Regulation (EC) No 1272/2008 (CLP)

|                                |            |      |   |
|--------------------------------|------------|------|---|
| Flammable Liquid               | Category 3 | H226 | Flammable liquid and vapor                      |
| Eye Irritation                 | Category 2 | H319 | Causes serious eye irritation                   |
| Specific Target Organ Toxicity | Category 3 | H335 | May cause respiratory irritation.               |
| Aquatic Chronic Toxicity       | Category 2 | H411 | Toxic to aquatic life with long lasting effects |

Information concerning particular hazards for human and environment: No further information

#### 2.2 Label elements

##### Labeling according to Regulation (EC) No 1272/2008 (CLP)

Hazard pictograms



GHS02



GHS07



GHS09

Signal word

Danger

Hazard statements

H226 Flammable liquid and vapor  
H319 Causes serious eye irritation  
H335 May cause respiratory irritation.  
H411 Toxic to aquatic life with long lasting effects

Precautionary statements

General

P103 Read label before use.

Prevention

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

P233 Keep container tightly closed

P240 Ground and bond container and receiving equipment

P241 Use explosion - proof [electrical/ventilating/lighting/...] equipment

P242 Use non-sparking tools

P243 Take action to prevent static discharge

P261 Avoid breathing fume/gas/mist/ vapours/spray

P264 Wash hands thoroughly after handling.

P271 Use only outdoors or in a well -ventilated area

P273 Avoid release to the environment.

P280 Use protective gloves and eye protection.

P391 Collect spillage

Response

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

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|                 |                |   |
|-----------------|----------------|---|
| <b>Storage</b>  | P304+P340      | IF INHALED: Remove person to fresh air and keep comfortable for breath  |
|                 | P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing |
|                 | P312           | Call a doctor if you feel unwell.   |
|                 | P337+P331      | If eye irritation persists: Get medical advice.   |
|                 | P370+P378      | In case of fire: Use CO <sub>2</sub> , dry powder, foam or water spray to extinguish.   |
| <b>Disposal</b> | P403+P233      | Store in a well-ventilated place. Keep container tightly closed.  |
|                 | P403+P235      | Store in a well-ventilated place. Keep cool.  |
|                 | P405           | Store locked up.  |
| <b>Disposal</b> | P501           | Dispose of contents and container in accordance with national regulations   |

### 2.3 Other hazards

Not a PBT, vPVB substance according to the criteria of REACH regulation

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

| Ingredient           | CAS No. | EC No.    | Concentration (%) |
|----------------------|---------|-----------|-------------------|
| Alpha methyl styrene | 98-83-9 | 202-705-0 | 99 min            |

**Additional information:**

|                   |                                |
|-------------------|--------------------------------|
| Molecular Formula | C <sub>9</sub> H <sub>10</sub> |
| Molecular Weight  | 118.18                         |

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

|   |  |
|---|--|
| <b>General information</b>  | Take off all contaminated clothing immediately.  |
| <b>After inhalation</b>   | If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If unconscious, evaluate the need for artificial respiration. Get immediate medical attention       |
| <b>After skin contact</b>   | Wash off with plenty of water immediately, seek medical advice if necessary.   |
| <b>After eye contact</b>  | Rinse with plenty of water immediately and seek medical advice.  |
| <b>After swallowing</b>   | Do not induce vomiting and seek medical advice immediately.  |
| <b>4.2 Most important symptoms and effects, both acute and delayed</b>                | General: Unconsciousness Dizziness Headache.<br>In case of ingestion: Gastric and intestinal problems.<br>After contact with skin: Irritant.<br>After eye contact: Irritant. |
| <b>4.3 Indication of any immediate medical attention and special treatment needed</b> | Treat symptomatically and supportively.  |

## SECTION 5: Firefighting measures

|  |   |
|--|---|
| <b>5.1 Extinguishing media</b>                                   |   |
| <b>Suitable extinguishing media</b>                              | CO <sub>2</sub> , dry powder, foam or water spray   |
| <b>Unsuitable extinguishing media</b>                            | water jet   |
| <b>5.2 Special hazards arising from the substance or mixture</b> | Flammable. Explosive mixtures with air may even form at room temperature. Beware of re-ignition<br>Vapours form potentially explosive mixtures with air. Heavier than air, they proceed at floor level and may back-flash over great distances when ignited. Ignition by hot surfaces, sparks and open flames.<br>May form toxic carbon oxides if case of fire.                                       |
| <b>5.3 Advice for firefighters</b>                               | Do not expose to high temperature.<br>Danger of bursting and explosion.<br>Use fine water spray to cool endangered containers.<br>Move undamaged containers from immediate hazard area.<br>Do not allow fire water to penetrate into surface or ground water.<br>Fire residuals and contaminated extinguishing water must be disposed of in accordance with the regulations of the local authorities. |



**SECTION 6: Accidental release measures**

- ◆ **6.1 Personal precautions, protective equipment and emergency procedures** Remove persons not involved upwind. Wear a self-contained breathing apparatus and chemical protective clothing. Solvent-resistant protective clothing recommended.
- 6.2 Environmental precautions** Plug leak if safely possible. Do not allow to enter drains, surface waters, basements or pits. When released into the environment, alert police and fire brigade.
- 6.3 Methods and material for containment and cleaning up** In case of spills of large quantities: Dam spills and pump to remove. Explosion protection required. Absorb leftover product with non-flammable liquid-binding material (e.g. earth, sand, vermiculite or ground sand stone) and place in closed containers for disposal.
- 6.4 Reference to other sections** Section 8 for information on personal protection equipment. Section 13 for disposal information

**SECTION 7: Handling and storage**

- ◆ **7.1 Precautions for safe handling** Provide adequate ventilation, and local exhaust as needed. Provide room air exhaust at ground level. Concentrated vapours are heavier than air. Avoid the formation of aerosol. Do not breathe vapours. Use only explosion-protected equipment/instruments. Do not use air pressure.
- 7.2 Conditions for safe storage, including any incompatibilities** Keep away from sources of ignition. - No smoking. Take precautionary measures against static discharge. Beware of re-ignition. Potentially explosive mixture may form within partially empty containers. Emergency cooling must be provided for in case of a fire in the vicinity. Do not weld.
- Advice on protection against fire and explosion** Keep container dry. Keep container tightly closed in a cool, well-ventilated place. Protect from direct sunlight.
- Storage** Keep container dry. Keep container tightly closed in a cool, well-ventilated place. Protect from direct sunlight.
- Advice on common storage** Observe prohibition against storing together!
- Storage class** 3 Flammable liquids
- Storage stability** Stable under recommended storage conditions
- 7.3 Specific end use(s)** Raw material for the production of plastics and synthetic resins

**SECTION 8: Exposure controls/personal protection**

- ◆ **8.1 Control parameters** Occupational Exposure Limit 50 ppm, 246mg/m<sup>3</sup> TWA
- 8.2 Exposure controls**
- Appropriate engineering controls** Explosion protection required. Provide good ventilation and/or an exhaust system in the work area.
- Personal protective equipment**
- Eye/ face protection** closed goggles, face shield
- Skin protection**
- Hand protection** Butyl-rubber 0.5 mm > 480 min
- Body protection** Use solvent-resistant protective clothing. Flame-retardant antistatic protective clothing; safety shoes
- Respiratory protection** Respiratory equipment with suitable filter or a self-contained respiratory apparatus.
- Thermal hazards** Flammable liquid; do not expose to heat
- Industrial hygiene** Do not inhale vapours / aerosols. Avoid contact with skin and eyes. Remove immediately all contaminated clothing. Use disposable clothing if appropriate. Smoking, eating and drinking should be prohibited in the application area.

**SECTION 9: Physical and chemical properties**

- ◆ **9.1 Information on basic physical and chemical properties**
- Appearance** clear colourless liquid
- Odour** Characteristic strong aromatic odor
- Odour threshold** 0.05ppm
- pH** not determined (does not liberate H ions when dissolved)
- Melting point** -23°C
- Boiling point** 163°C
- Flash point** 57.8°C (Closed cup)
- Evaporation rate** no data available

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|                                  |  |
|----------------------------------|--|
| <b>Flammability (solid, gas)</b> | flammable  |
| <b>Flammability limits</b>       | <b>Lower</b> 0.9%<br><b>Upper</b> 6.6%   |
| <b>Vapour pressure</b>           | 2.53hPa at 20°C  |
| <b>Vapour density</b>            | 4.08 (air =1)  |
| <b>Relative density</b>          | 0.909 at 20°C  |
| <b>Solubility in water</b>       | 0.1mg/l at 25°C, pH 6-7 (slightly soluble)                                       |
| <b>Partition coefficient</b>     | 3.48 at 25°C pH 6  |
| <b>Ignition temperature</b>      | 574°C  |
| <b>Decomposition temperature</b> | no data available  |
| <b>Viscosity at 20°C</b>         | 0.94cPs  |
| <b>Explosive properties</b>      | No explosive properties. Formation of explosive air/ vapour mixtures is possible |
| <b>Oxidizing properties</b>      | no oxidizing properties  |
| <b>9.2 Other information</b>     |  |
| <b>Heat of combustion</b>        | -1204.87kJ/kg  |
| <b>Heat of vaporization</b>      | 141.2BTU/lb  |

**SECTION 10: Stability and reactivity**

- ◆ **10.1 Reactivity** Vapours form potentially explosive mixtures with air. Heavier than air, they proceed at floor level and may back-flash over great distances when ignited. May become electrostatically charged. Polymerization can occur under certain conditions
- 10.2 Chemical stability** Under storage at normal ambient temperatures (-40°C to +40°C), the product is stable.
- 10.3 Possibility of hazardous reactions** Polymerisation in the presence of acids. Polymerization along with heat production. Heat development leads to self-ignition. Due to the high vapour pressure, bursting danger to containers/vessels when temperature increases. Polymerisation occurs strongly exotherm and can lead to violent reactions. As polymerisation inhibitor 4-tert-Butylpyrocatechol is used (10 - 20 ppm)
- 10.4 Conditions to avoid** Flammable. Pressure (danger of polymerization). Do not expose to temperatures exceeding 50°C.
- 10.5 Incompatible materials** Acids, peroxides, metal salts, organic metal compounds, oxidizing agents)
- 10.6 Hazardous decomposition products** Thermal decomposition products- carbon oxides

**SECTION 11: Toxicological information**

- ◆ **11.1 Information on toxicological effects**
  - Acute toxicity**

|      |            |         |               |                       |
|------|------------|---------|---------------|-----------------------|
| LD50 | oral       | rat     | 4900 mg/kg bw | Category 5            |
| LC0  | inhalation | 6h, rat | 22.85 mg/l    | practically non toxic |
| LD50 | Dermal     | rabbit  | 16 ml/kg bw   | Category 5            |
  - Skin irritation** slightly irritating
  - Serious eye irritation** slightly irritating
  - Respiratory or skin sensitization** Skin sensitizer
  - Germ cell mutagenicity** non mutagenic (Ames test)
  - Carcinogenicity** Class A3 substance –Confirmed Animal Carcinogen with Unknown Relevance to Humans
  - Reproductive toxicity** no adverse effect on reproduction (rat)
  - STOT-single exposure** irritating to eye and skin; Category 3 respiratory tract irritation
  - STOT-repeated exposure** NOAEL >100 mg/kg bw/day; rat (oral)  
NOAEL 300ppm, 8 weeks for rats (inhalation)
  - Aspiration hazard** no data available

**SECTION 12: Ecological information**

- ◆ **12.1 Toxicity**
  - Aquatic toxicity**

|                  |      |     |          |                          |
|------------------|------|-----|----------|--------------------------|
| Toxicity to fish | LC50 | 96h | 2.97mg/L | <i>Brachydanio rerio</i> |
|------------------|------|-----|----------|--------------------------|

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|  |   |     |           |                                |
|--|---|-----|-----------|--------------------------------|
| Toxicity to aquatic invertebrates              | EC50  | 48h | 1.645mg/L | <i>Daphnia magna</i>           |
| Toxicity to aquatic algae and cyanobacteria    | EC50  | 72h | 4.347mg/L | <i>Desmodesmus subspicatus</i> |
| Toxicity to microorganisms                     | EC50  | 3h  | >2000mg   | sewage, domestic               |
| Long term toxicity to aquatic invertebrates    | LC50  | 21d | 1.56mg/L  | <i>Daphnia magna</i>           |
| <b>12.2 Persistence and degradability</b>      |   |     |           |                                |
| <b>Biodegradation</b>                          | not readily biodegradable (21% in 28days)                   |     |           |                                |
| <b>12.3 Bioaccumulative potential</b>          | Bioconcentration factor 12-113                              |     |           |                                |
|  | low potential for bioaccumulation                           |     |           |                                |
| <b>12.4 Mobility in soil</b>                   | log Koc <3; very low potential for geoaccumulation          |     |           |                                |
| <b>12.5 Results of PBT and vPvB assessment</b> | Not a PBT, vPvB substance according to the REACH regulation |     |           |                                |
| <b>12.6 Other adverse effects</b>              | No further information available                            |     |           |                                |

**SECTION 13: Disposal considerations**

|                                     |   |
|-------------------------------------|---|
| <b>13.1 Waste treatment methods</b> | Observe all federal, state, and local environmental regulations.<br>Contact a licensed professional waste disposal service to dispose of this material.<br>Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.<br>Do not dispose in sewage. |
|-------------------------------------|---|

◆ **SECTION 14: Transport information**

|   | <b>ADR/RID</b>                                    | <b>IMDG</b> | <b>ICAO/IATA</b> |
|---|---|-------------|------------------|
| <b>14.1 UN Number</b>   | 2303  | 2303        | 2303             |
| <b>14.2 UN proper shipping name</b>   | UN 2303, ISOPROPENYL BENZENE                      |             |                  |
| <b>14.3 Transport hazard class</b>  | Class 3,<br>Code: F1                              | 3           | 3                |
| <b>14.4 Packaging group</b>   | III   | III         | III              |
| <b>14.5 Environmental hazards</b>   | marine pollutant                                  |             |                  |
| <b>14.6 Special precautions for the user</b>  | Flammable liquid; Flash point 58°C (closed cup)   |             |                  |
| <b>Danger group (Kemmler)</b>   | 30  |             |                  |
| <b>EmS Number</b>   | F-E, S-D  |             |                  |
| <b>14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | See regulatory information for transport approval |             |                  |

◆ **SECTION 15: Regulatory information**

|  |  |
|--|--|
| <b>15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture</b> |  |
| <b>Major accident hazard</b>   | <b>Seveso III</b> P5a Flammable liquids<br>E2 Hazardous to the Aquatic environment in Category Chronic 2 |
| <b>International Chemical Inventory Status</b>   |  |
| <b>USA (TSCA)</b>  | listed   |
| <b>Canada (DSL)</b>  | listed   |
| <b>Australia (AICS)</b>  | listed   |
| <b>Japan (MITI)</b>  | listed   |
| <b>Korea (KECL)</b>  | listed   |
| <b>Philippines (PICCS)</b>   | listed   |
| <b>China</b>   | listed   |
| <b>New Zealand</b>   | listed   |
| <b>Taiwan</b>  | listed   |
| <b>15.2 Chemical safety assessment</b>   | A Chemical Safety Assessment will be carried out at the time of REACH registration                       |

◆ **SECTION 16: Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

**Further information:**

Sections in which changes have been made since the last version are marked with a diamond ◆ in the left hand margin.

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## Product: Alpha-Methylstyrene

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### Abbreviations and acronyms in English language:

|        |   |
|--------|---|
| ADN    | European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways |
| ADR    | European Agreement concerning the International Carriage of Dangerous Goods by Road             |
| AICS   | Australian Inventory of Chemical Substances   |
| CAS    | Chemical Abstracts Service (division of the American Chemical Society)                          |
| CLP    | Classification for Labeling and Packaging   |
| DSL    | Domestic Substances List  |
| EC     | European Commission   |
| EC50   | Half maximal effective concentration  |
| EINECS | European Inventory of Existing Commercial Chemical Substances                                   |
| GHS    | Globally Harmonized System of Classification and Labeling of Chemicals                          |
| IATA   | International Air Transport Association   |
| IBC    | International Bulk Chemical   |
| ICAO   | International Civil Aviation Organization   |
| IMDG   | International Maritime Code for Dangerous Goods   |
| KECL   | Korea Existing Chemicals List   |
| KOC    | Soil adsorption coefficient   |
| KOW    | Partition Coefficient octanol-water   |
| LC50   | Lethal concentration, 50 percent  |
| LD50   | Lethal dose, 50 percent   |
| MARPOL | International Convention for the Prevention of Pollution from Ships                             |
| MITI   | Ministry of International Trade and Industry  |
| NOAEC  | No Observed Adverse Effect Concentration  |
| NOAEL  | No Observed Adverse Effect Level  |
| PBT    | Persistent, bioaccumulative and toxic substances  |
| PICCS  | Philippine Inventory of Chemicals and Chemical Substances                                       |
| RID    | Regulations Concerning the International Transport of Dangerous Goods by Rail                   |
| STOT   | Specific target organ toxicity  |
| TSCA   | Toxic Substances Control Act  |
| UN     | United Nations  |
| vPVB   | (very) Persistent, (very) Bioaccumulative   |

### Sources

Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

|        |   |
|--------|---|
| ECHA   | <a href="https://echa.europa.eu/registration-dossier/-/registered-dossier/15309">https://echa.europa.eu/registration-dossier/-/registered-dossier/15309</a>       |
| Chemid | <a href="https://chem.nlm.nih.gov/chemidplus/rn/98-83-9">https://chem.nlm.nih.gov/chemidplus/rn/98-83-9</a>   |
| HSDB   | <a href="https://toxnet.nlm.nih.gov/cgi-bin/sis/search/a?dbs+hsdb:@term+@DOCNO+196">https://toxnet.nlm.nih.gov/cgi-bin/sis/search/a?dbs+hsdb:@term+@DOCNO+196</a> |
| Inchem | <a href="http://www.inchem.org/documents/icsc/icsc/eics0732.htm">http://www.inchem.org/documents/icsc/icsc/eics0732.htm</a>                                       |
| CDC    | <a href="https://www.cdc.gov/niosh/npg/npgd0429.html">https://www.cdc.gov/niosh/npg/npgd0429.html</a>   |

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