

(Alpha) Methyl Styrene

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SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product identifier used on the label

: **(Alpha) Methyl Styrene**

Other means of identification : None reported.

Recommended use of the chemical and restrictions on use

: Raw material for the production of plastics and synthetic resins.
Use pattern: Professional Use Only
Restriction on use: None known

Chemical family : Pure substance

Name, address, and telephone number
of the supplier:

Comet Chemical Company Ltd.

3463 Thomas Street
Innisfill, ON, Canada
L9S 3W4

Supplier's Telephone # : (705) 436-5580

24 Hr. Emergency Tel # : GFL Environmental - 1-888-772-2543

Name, address, and telephone number of
the manufacturer:

Refer to supplier

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Clear colourless liquid. Pungent odour.

Most important hazards: Flammable. May be ignited by open flames and sparks. Causes eye irritation. May cause respiratory irritation. Occupational exposure to the substance or mixture may cause adverse effects.

This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Hazard classification:

Flammable Liquid - Category 3
Serious eye damage/eye irritation - Category 2A
Reproductive toxicity - Category 2
Specific target organ toxicity, single exposure - Category 3 (respiratory)

Label elements

Hazard pictogram(s)



Signal Word

WARNING!

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Hazard statement(s)

Flammable liquid and vapor.
 Causes serious eye irritation.
 Suspected of damaging fertility or the unborn child.
 May cause respiratory irritation.

Precautionary statement(s)

Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources - No smoking.
 Keep container tightly closed.
 Ground and bond container and receiving equipment.
 Use explosion-proof electrical and ventilating equipment.
 Use only non-sparking tools.
 Take precautionary measures against static discharge.
 Wash thoroughly after handling.
 Avoid breathing mist or vapours.
 Use only outdoors or in a well-ventilated area.
 Wear protective gloves/clothing and eye/face protection.
 IF exposed or concerned: Get medical advice/attention.
 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 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 INHALED: Remove person to fresh air and keep comfortable for breathing.
 Call a POISON CENTRE or doctor/physician if you feel unwell.
 In case of fire: Use water fog, dry chemical, CO₂ or 'alcohol' foam to extinguish.
 Store locked up.
 Store in a well-ventilated place. Keep cool.
 Keep container tightly closed.
 Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards

Burning produces obnoxious and toxic fumes. Ingestion may cause irritation of the mouth, throat and stomach. Prolonged skin contact may cause dermatitis (rash), characterized by red, dry, itching skin. Direct skin contact may cause slight or mild, transient irritation. Inhalation of high concentrations may cause dizziness, disorientation, incoordination, narcosis, nausea or narcotic effects.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance

<u>Chemical name</u>	<u>Common name and synonyms</u>	<u>CAS #</u>	<u>Concentration (% by weight)</u>
a-Methyl styrene	AMS; alpha Methyl-styrene	98-83-9	100.00

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

Ingestion : If swallowed: Immediately call a poison center/doctor. Do not induce vomiting. Rinse mouth thoroughly. Never give anything by mouth to an unconscious person. If vomiting occurs spontaneously, keep victim's head lowered (forward) to reduce the risk of aspiration.

Inhalation : Immediately remove person to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Call a POISON CENTER or doctor/physician if you feel unwell.

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Skin contact : Wash affected areas with soap and water. Take off contaminated clothing and wash before re-use. Get medical attention if irritation develops and persists.

Eye contact : Flush with large amounts of water for 15 minutes. Remove contact lenses, if present and easy to do. If irritation or symptoms develop, seek medical attention.

Most important symptoms and effects, both acute and delayed

: Causes serious eye irritation. Symptoms may include redness, pain, tearing and conjunctivitis. May cause respiratory irritation. Symptoms may include sore throat, running nose and shortness of breath. Direct skin contact may cause slight or mild, transient irritation. Symptoms may include mild redness and swelling. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Suspected of damaging fertility or the unborn child.

Indication of any immediate medical attention and special treatment needed

: Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

: Use media suitable to the surrounding fire such as water fog or fine spray, alcohol foams, carbon dioxide and dry chemical.

Unsuitable extinguishing media

: Do not use a solid water stream as it may scatter and spread fire.

Special hazards arising from the substance or mixture / Conditions of flammability

: Flammable liquid and vapour. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure. Vapour can travel considerable distance and flashback to a source of ignition. Vapours are heavier than air and collect in confined and low-lying areas.

Flammability classification (OSHA 29 CFR 1910.106)

: Flammable Liquids - Category 3

Hazardous combustion products

: Carbon dioxide and carbon monoxide.; Aldehydes; Ketones; Organic acids.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Do not enter without wearing specialized protective equipment suitable for the situation. Firefighter's normal protective clothing (Bunker Gear) will not provide adequate protection. A full-body encapsulating chemical protective suit with positive pressure self-contained breathing apparatus (NIOSH approved or equivalent) may be necessary.

Special fire-fighting procedures

: Evacuate personnel to safe areas. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame. Dike for water control. Avoid release to the environment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

: All persons dealing with clean-up should wear the appropriate protective equipment including self-contained breathing apparatus. Keep all other personnel upwind and away from the spill/release. Restrict access to area until completion of clean-up. Refer to Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.

Environmental precautions : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. For large spills, dike the area to prevent spreading.

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Methods and material for containment and cleaning up

- : Remove all sources of ignition. Ventilate the area. Prevent further leakage or spillage if safe to do so. Dike for water control. Use only non-sparking tools and equipment in the clean-up process. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13). Contact the proper local authorities.

Special spill response procedures

- : In Canada: For 24-hour emergency assistance, call: 1-613-996-6666 (CANUTEC).
US CERCLA Reportable quantity (RQ): None.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

- : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area. Wear protective gloves/clothing and eye/face protection. Avoid breathing mist or vapours. Avoid contact with skin, eyes and clothing. Keep away from heat and open flames. - No smoking. Use only non-sparking tools. Use explosion-proof electrical and ventilating equipment. Ground/Bond container and receiving equipment. Keep away from incompatibles. Label containers appropriately. Wash thoroughly after handling. Keep containers closed when not in use.

- Conditions for safe storage** : Store in a cool, dry, well-ventilated area. Store away from incompatibles and out of direct sunlight. Keep cool. Keep container tightly closed. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. Store locked up.

- Incompatible materials** : Strong oxidizers (e.g. Chlorine, Peroxides, etc.); Copper; Acids; Copper alloys .

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<u>Exposure Limits:</u>				
<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
a-Methyl styrene	10 ppm	N/Av	100ppm (Ceiling)	N/Av

Exposure controls

Ventilation and engineering measures

- : Provide exhaust ventilation or other engineering controls to keep the airborne concentration of vapours below their respective threshold limit value. Use explosion-proof electrical and ventilating equipment.

- Respiratory protection** : Respiratory protection is required if the concentrations exceed the TLV. Use a NIOSH approved dust respirator if dust levels exceed exposure limits. Seek advice from respiratory protection specialists.

- Skin protection** : Wear protective gloves/clothing. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

- Eye / face protection** : Wear eye/face protection. Wear safety glasses with side shields (or goggles).

- Other protective equipment** : Wear appropriate protective clothing to prevent skin contact, such as coveralls or long sleeved shirt, long pants, and shoes and socks. Wear protective gloves. An eyewash station and safety shower should be made available in the immediate working area. Other equipment may be required depending on workplace standards.

General hygiene considerations

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: Avoid breathing mist or vapours. Avoid contact with skin, eyes and clothing. Do not eat, drink, smoke or use cosmetics while working with this product. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State : Liquid
Colour : Clear, colorless.
Odour : Pungent odour.
Odour threshold : 0.06 ppm
pH : 7
Melting Point/Freezing point : -22.78°C
Initial boiling point and boiling range
: 165°C
Flash point : 48°C (118.4°F)
Flashpoint (Method) : closed cup
Evaporation rate (BuAe = 1) : Not available.
Flammability : Not applicable.
Lower explosion or flammability limit (% by vol.)
: 1.9
Upper explosion or flammability limit (% by vol.)
: 6.1
Oxidizing properties : None.
Explosive properties : Not explosive
Vapour pressure : 1.9 mm Hg @ 20°C
Relative vapour density : 4.1
Relative density / Specific gravity
: 0.91
Solubility in water : Slightly soluble. (0.06%)
Other solubility(ies) : No information available.
Partition coefficient: n-octanol/water or Coefficient of water/oil distribution
: 3.48
Auto-ignition temperature : 574°C (1065.2)
Decomposition temperature : No information available.
Viscosity : No information available.
Particle characteristics : Not applicable.
Volatiles (% by weight) : Not available.
Volatile organic Compounds (VOC's)
: No information available.
Absolute pressure of container
: Not applicable.
Flame projection length : Not applicable.
Other physical/chemical comments
: Molecular Weight: 118.2

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Unstable (reactive) upon depletion of inhibitor.
Chemical stability : Unstable in the presence of incompatible materials.

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Possibility of hazardous reactions

: Hazardous polymerization may occur; exhibits little tendency to polymerize thermally at temperatures up to 200° C; strong acids (e.g. concentrated H₂SO₄) can cause polymerization at room temperature.

Conditions to avoid

: Ensure adequate ventilation, especially in confined areas. Avoid contact with incompatible materials. Avoid heat, sparks, open flames and other ignition sources. Depletion of inhibitor.

Incompatible materials

: Acids;;; ;Copper; Copper alloys ;Strong oxidizers.

Hazardous decomposition products

: None known, refer to hazardous combustion products in Section 5.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES

Routes of entry skin & eye : YES

Routes of entry Ingestion : YES

Routes of exposure skin absorption

: NO

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

: May cause respiratory tract irritation. Symptoms may include sore throat, running nose and shortness of breath.

Sign and symptoms ingestion

: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Sign and symptoms skin

: Direct skin contact may cause slight or mild, transient irritation.

Sign and symptoms eyes

: Causes severe eye irritation. Symptoms may include redness, pain, tearing and conjunctivitis.

Potential Chronic Health Effects

: Prolonged exposure can cause redness, swelling, itching, cracking of the skin, dermatitis and sensitization.

Mutagenicity

: Not expected to be mutagenic in humans.

Carcinogenicity

: Not classifiable as a human carcinogen, based on currently available data. Contains the following chemical(s) listed as Group 3 (Not Classifiable) by IARC:
Isopropenylbenzene

Reproductive effects & Teratogenicity

: Reproductive toxicity - Category 2 Suspected of damaging fertility or the unborn child if inhaled.

Sensitization to material

: Not expected to be a skin or respiratory sensitizer.

Specific target organ effects

: Specific target organ toxicity, single exposure - Category 3 (respiratory) May cause respiratory irritation.

Not classified as specific target organ toxicity-repeated exposure.

Medical conditions aggravated by overexposure

: Pre-existing skin, eye and respiratory disorders.

Synergistic materials

: No information available.

Toxicological data

: See below for toxicological data on the substance.

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<u>Chemical name</u>	<u>LC₅₀(4hr)</u>	<u>LD₅₀</u>	
	<u>inh, rat</u>	<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
a-Methyl styrene	22.85mg/L/6hours	4900 mg/kg	14560mg/kg

Other important toxicological hazards

: None known or reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

 : Toxic to aquatic life with long lasting effects.
 The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters.

See the following tables for individual ingredient ecotoxicity data.

Ecotoxicity data:

<u>Ingredients</u>	<u>CAS #</u>	<u>Toxicity to Fish</u>		
		<u>LC50 / 96h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
a-Methyl styrene	98-83-9	2.97 mg/L (Danio rerio)	2.13mg/L (Danio rerio)	None.

<u>Ingredients</u>	<u>CAS #</u>	<u>Toxicity to Daphnia</u>		
		<u>EC50 / 48h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
a-Methyl styrene	98-83-9	1.645mg/L (Daphnia magna)	0.401mg/L (Daphnia magna)	None.

<u>Ingredients</u>	<u>CAS #</u>	<u>Toxicity to Algae</u>		
		<u>EC50 / 96h or 72h</u>	<u>NOEC / 96h or 72h</u>	<u>M Factor</u>
a-Methyl styrene	98-83-9	11.441mg/L (Green algae)	2.26mg/L (Green algae)	None.

Persistence and degradability

: Not readily biodegradable.

Bioaccumulation potential

: No data is available on the product itself.

<u>Components</u>	<u>Partition coefficient n-octanol/water (log Kow)</u>	<u>Bioconcentration factor (BCF)</u>
a-Methyl styrene (CAS 98-83-9)	3.48	12-140

Mobility in soil : No data is available on the product itself.

Other Adverse Environmental effects

: No data is available on the product itself.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal

: Handle waste according to recommendations in Section 7. Empty containers may contain hazardous residues.

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- Methods of Disposal** : Dispose in accordance with all applicable federal, state, provincial and local regulations.
- RCRA** : If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method.

SECTION 14. TRANSPORT INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
TDG	UN2303	ISOPROPENYL BENZENE	3	III	
TDG Additional information	May be shipped as Limited Quantity when transported in containers no larger than 5.0 kg; in packages not exceeding 30 kg gross mass. This material may be shipped as an exempted marine pollutant in accordance with TDG Section 1.45.1 and Special Provision 99.				
49CFR/DOT	UN2303	ISOPROPENYL BENZENE	3	III	
49CFR/DOT Additional information	May be shipped as a Limited Quantity according to packaging section 173.150.				
IMDG	UN2303	ISOPROPENYL BENZENE	3	III	 
IMDG Additional information	May be shipped by Limited Quantity. Consult the IMDG regulations for details.				
ICAO/IATA	UN2303	Isopropenylbenzene	3	III	
ICAO/IATA Additional information	Refer to ICAO/IATA Packing Instruction				

Special precautions for user : Keep away from heat, sparks and open flame - No smoking. Appropriate advice on safety must accompany the package.

Environmental hazards : This product meets the criteria for an environmentally hazardous material according to the IMDG Code. See Section 12 for more environmental information.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

Ingredients	CAS #	TSCA Inventory	CERCLA Reportable Quantity (RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de Minimis Concentration
a-Methyl styrene	98-83-9	Yes	N/Ap	N/Av	No	N/Ap



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SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: Flammable, Reproductive toxicity, Specific target organ toxicity, single exposure.

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

<u>Ingredients</u>	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
a-Methyl styrene	98-83-9	No	female reproductive toxicity	Yes	Yes	Yes	Yes	No	Yes

Canadian Information:

All ingredients are present on the DSL.

International Information:

Components listed below are present on the following International Inventory list:

<u>Ingredients</u>	CAS #	European EINECS	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	NewZealand IOC
a-Methyl styrene	98-83-9	202-705-0	Present	Present	(3)-8; (3)-5	KE-23939	Present	HSR001181

SECTION 16. OTHER INFORMATION

Legend

: ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstract Services
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR: Code of Federal Regulations
CNS: Central Nervous System
DOT: Department of Transportation
EPA: Environmental Protection Agency
EINECS: European Inventory of Existing Commercial chemical Substances
IARC: International Agency for Research on Cancer
IBC: Intermediate Bulk Container
IMDG: International Maritime Dangerous Goods
Inh: Inhalation
LC: Lethal Concentration
LD: Lethal Dose
N/Ap: Not Applicable
N/Av: Not Available
NIOSH: National Institute of Occupational Safety and Health
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PEL: Permissible exposure limit
RCRA: Resource Conservation and Recovery Act
RTECS: Registry of Toxic Effects of Chemical Substances
SARA: Superfund Amendments and Reauthorization Act
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values

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References : TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices
2. ECHA - European Chemical Agency
3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases
4. Safety Data Sheets from manufacturer.
5. US EPA Title III List of Lists
6. California Proposition 65 List
7. OECD - The Global Portal to Information on Chemical Substances - eChemPortal

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Revision No. : 2

Revision Information : (M)SDS sections updated 1. IDENTIFICATION 9. PHYSICAL AND CHEMICAL PROPERTIES

Other special considerations for handling : Provide adequate information, instruction and training for operators.

<p><u>Prepared for:</u> Comet Chemical Company Ltd. 3463 Thomas Street Innisfill, ON L9S 3W4 Information (M-F 8:00-5:00): 705-436-5580 www.cometchemical.com</p>	
<p><u>Prepared by:</u> ICC The Compliance Center Inc. Telephone: (888) 442-9628 (U.S.): (888) 977-4834 (Canada) http://www.thecompliancecenter.com</p>	

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