



MATERIALS SAFETY DATA SHEET (MSDS) Methyl isocyanide (C2H3N)	MSDS Number:	
	Version number:	
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	Page No:	

1. Product Identification

Trade Name	Methyl isocyanate
Other means of identification - Synonyms	Isocyanic Acid, Methyl Ester
CAS No	624-83-9
Recommended use	For Laboratory Use Only

Manufacturer/Importer/Supplier/Distributor information

Manufacturer Supplier	
E-Mail	
Contact Person	Entity 1 Made by India
Emergency Telephone	

2. Hazard(s) identification

Physical hazards	
Flammable liquids	Category 1
Health hazards	
Acute toxicity, oral	Category 3
Acute toxicity, dermal	Category 2



Acute toxicity, inhalation	Category 1
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Sensitization, respiratory	Category 1
Sensitization, skin	Category 1
Reproductive toxicity	Category 1
Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
Environmental hazards	Not classified
OSHA defined hazards	Not classified

Label elements



Signal word

DANGER

Hazard statements	Extremely flammable liquid and vapor. Toxic if swallowed. Fatal in contact with skin. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye damage. Fatal if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. May damage fertility or the unborn child.
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Precautionary Statements

Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. 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 vapor. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection. Wear respiratory protection.
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Response	If swallowed: Immediately call a poison centre/doctor. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poisoncenter/doctor. Specific treatment is urgent (see this label). Rinse mouth. If skin irritation or rash occurs: Get medical advice/attention. Take off immediately all contaminated clothing and wash it before reuse. In case of fire: Use appropriate media to extinguish.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

3. Composition and ingredient information

Chemical name	CAS number	%
Methyl isocyanate	624-83-9	22

4. First-aid measures

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Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician or poison control centre immediately.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. Call a physician or poison control centre immediately. Take off contaminated clothing and wash before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control centre immediately.



Ingestion	Call a physician or poison control centre immediately. Rinse mouth. Do not induce vomiting without advice from poison control centre. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
Most important symptoms / effects, acute and delayed	Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Skin irritation. May cause an allergic skin reaction. Dermatitis. Rash. May cause allergic respiratory reaction. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	Take off immediately all contaminated clothing. IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse. Discard any shoes or clothing items that cannot be decontaminated.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	Water spray, BC-powder, Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Water jet.
Special hazards arising from the substance or mixture	In case of insufficient ventilation and/or in use, may form flammable/explosive vapour-air mixture. Solvent vapours are heavier than air and may spread along floors. Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures.
Hazardous combustion products	Nitrogen oxides (NO _x), Carbon monoxide (CO), Carbon dioxide (CO ₂).
Advice for firefighters	In case of fire and/or explosion do not breathe fumes. Co-ordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.



6. Accidental Release Measures

<p>Personal precautions, protective equipment and emergency procedures</p>	<p>Clear area. Ensure adequate ventilation. Wear suitable personal protective clothing and equipment.</p>
<p>Environmental precautions</p>	<p>Do not discharge into drains/surface waters/groundwater.</p>
<p>Methods and material for containment and cleaning up</p>	<p>For small amounts: Absorb isocyanate with suitable absorbent material (see § 40 CFR, sections 260, 264 and 265 for further information). Shovel into open container. Spill area can be decontaminated with the following recommended decontamination solution: Mixture of 90 % water, 5-8 % household ammonia, 2-5 % detergent. Allow solution to stand for at least 10 minutes. Pick up with suitable absorbent material. Place into appropriately labelled waste containers. Do not make container pressure tight. Move container to a well-ventilated area (outside). Allow to stand for at least 48 hours to allow escape of evolved carbon dioxide. Dispose of absorbed material in accordance with regulations. For large amounts: For spills, stop leaks and provide diking to contain the material. Prevent entry into sewage systems, ground and surface waters. If temporary control of isocyanate vapor is required, a blanket of protein foam or other suitable foam (available from most fire departments) may be placed over the spill. Transfer as much liquid as possible via pump or vacuum device into closed but not sealed containers for disposal. For residues: The following measures should be taken for final cleanup: Spill area can be decontaminated with the following recommended decontamination solution: Mixture of 90 % water, 5-8 % household ammonia, 2-5 % detergent. Wash down spill area with decontamination solution. Allow solution to stand for at least 10 minutes. Pick up with suitable absorbent material. Place into appropriately labelled waste containers. Do not make container pressure tight. Move container to a well-ventilated area (outside). Allow to stand for at least 48 hours to allow escape of evolved carbon dioxide. Dispose of absorbed material in accordance with regulations.</p>
<p>Environmental precautions</p>	<p>Avoid discharge into drains, water courses or onto the ground. Use appropriate containment to avoid environmental contamination.</p>

7. Handling and storage

Precautions for safe handling



<p>Precautions for safe handling</p>	<p>Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Vapours may form explosive mixtures with air. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Minimize fire risks from flammable and combustible materials (including combustible dust and static accumulating liquids) or dangerous reactions with incompatible materials. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Do not breathe vapor. Do not get this material in contact with eyes. Do not get this material in contact with skin. Do not taste or swallow. Avoid contact during pregnancy/while nursing. Avoid prolonged exposure. Do not get this material on clothing. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Wash contaminated clothing before reuse.</p>
	<p>For additional information on equipment bonding and grounding, refer to the Canadian Electrical Code in Canada, (CSA C22.1), or the American Petroleum Institute (API) Recommended Practice 2003, "Protection Against Ignitions Arising out of Static, Lightning, and Stray Currents" or National Fire Protection Association (NFPA) 77, "Recommended Practice on Static Electricity" or National Fire Protection Association (NFPA) 70, "National Electrical Code".</p>
<p>Conditions for safe storage, including any incompatibilities</p>	<p>Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Avoid spark promoters. Eliminate sources of ignition. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Store in original tightly closed container. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Refrigeration recommended. Store away from incompatible materials (see Section 10 of the SDS). Keep in an area equipped with sprinklers.</p>
<p>Environmental precautions</p>	<p>Avoid discharge into drains, water courses or onto the ground. Use appropriate containment to avoid environmental contamination.</p>

8. Exposure Control / Personal Protection

Control parameters

Exposure Limits

Chemical name	OSHA PEL	ACGIH	NIOSH
<p>Methyl isocyanate CAS.No:(624-83-9)</p>	<p>PEL :0.05 mg/m3 0.02 ppm</p>	<p>STEL: 0.06 ppm TWA: 0.02 ppm</p>	<p>TWA:0.05 mg/m3 0.02 ppm</p>



Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear eye/face protection. Wear safety glasses with side shields (or goggles) and a face shield. Wear a full-face respirator, if needed.
Hand protection	Wear appropriate chemical resistant gloves.
Other	Wear appropriate chemical resistant clothing.
Respiratory protection	Wear positive pressure self-contained breathing apparatus (SCBA).
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	When using, do not eat, drink or smoke. Do not get this material on clothing. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Form	liquid
Odour	Faint odour, aromatic
Odour threshold	Not applicable
Colour	amber
pH value	Not applicable
Freezing point	No data available.
Melting point	No data available.
Boiling point	200 °C (5 mmHg)
Sublimation point	No applicable information available
Flash point (open cup)	200 °C



Flammability (derived from flash point)	not flammable
Lower explosion limit	For liquids not relevant for classification and labelling. The lower explosion point may be 5 - 15 °C below the flash point.
Upper explosion limit	For liquids not relevant for classification and labelling.
Autoignition	> 250 °C
Vapour pressure	0.00016 mmHg (20 °C)
Density	1.21 g/cm ³ (20 °C)
Relative density	No applicable information available
Vapour density	Not applicable
Partitioning coefficient n-octanol/water (log Pow)	Not applicable
Self-ignition temperature	not self-igniting
Thermal decomposition	No decomposition, if stored and handled as prescribed/indicated.
Dynamic Viscosity	350 mPa.s (25 °C)
Kinematic Viscosity	Information not available.
Solubility in water	Reacts with water.
Solubility (quantitative)	Information not available.
Solubility (qualitative)	Information not available.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Contact with incompatible materials.
Incompatible materials	Acids. Amines.
Hazardous decomposition products	No hazardous decomposition products are known.



11. Toxicological information

Information on likely routes of exposure:

Inhalation	Fatal if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin contact	Fatal in contact with skin. Causes skin irritation. May cause an allergic skin reaction.
Eye contact	Causes serious eye damage.
Ingestion	Toxic if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics	Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause an allergic skin reaction. Skin irritation. May cause redness and pain. Dermatitis. Rash.
Information on toxicological effects	
Acute toxicity	Fatal if inhaled. Fatal in contact with skin. Toxic if swallowed. May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. Expected to be a low hazard for usual industrial or commercial handling by trained personnel.

Product	Species	Test Results
Methyl isocyanate (CAS 624-83-9)		
Acute		
Dermal LD50	Rabbit	213 mg/kg 0.12 ml/kg
Inhalation LC50	Mouse Rat	12.2 mg/l, 6 Hours 6.1 mg/l, 6 Hours 5 mg/l, 4 Hours
Oral LD50	Mouse Rat	78 - 200 mg/kg 55 - 340 mg/kg

Skin corrosion/irritation	Causes skin irritation
Serious eye damage/eye irritation	Causes serious eye damage.
Respiratory or skin sensitization (ACGIH Sensitization)	Dermal sensitization
Respiratory sensitization	May cause allergy or asthma symptoms or breathing difficulties if inhaled.



Skin sensitization	May cause an allergic skin reaction.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
Reproductive toxicity	May damage fertility or the unborn child.
Specific target organ toxicity -single exposure	Respiratory tract irritation.
Specific target organ toxicity -repeated exposure	Not classified.
Aspiration hazard	Not available.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	No data is available on the degradability of this product.
Bio accumulative potential	No data available
Mobility in soil	No data available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

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13. Disposal considerations

Waste disposal of substance	Incinerate or dispose of in a licensed facility. Do not discharge substance/product into sewer system.
Container disposal	Steel drums must be emptied and can be sent to a licensed drum reconditioner for reuse, a scrap metal dealer or an approved landfill. Do not attempt to refill or clean containers since residue is difficult to remove. Under no circumstances should empty drums be burned or cut open with gas or electric torch as toxic decomposition products may be liberated. Do not reuse empty containers.

14. Transport information

DOT



UN number	UN2480
UN proper shipping name	Methyl isocyanate
Transport hazard class(es)	
Class Subsidiary risk Label(s)	6.1(PGI, II)36.1, 3
Packing group	I
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	1, B9, B14, B30, T22, TP2, TP13, TP38, TP44
Packaging exceptions	None
Packaging non bulk	226
Packaging bulk	244
IATA	
UN number	UN2480
UN proper shipping name	Methyl isocyanate
Transport hazard class(es)	
Class	6.1(PGIII)
Subsidiary risk	3
Packing group	Not applicable.
Environmental hazards	No.
ERG Code	6H
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo	Forbidden
aircraft	
Cargo aircraft only	Forbidden
IMDG	
UN number	UN2480
UN proper shipping name	METHYL ISOCYANATE
Transport hazard class(es)	
Class	6.1(PGI, II)



Subsidiary risk	3
Packing group I	I
Environmental hazards	
Marine pollutant	No
EmS	F-E, S-D
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Transport in bulk according to	Not available.

15. Regulatory information

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

Relevant provisions of the European Union (EU)

Deco-Paint Directive (2004/42/EC)

VOC content	100 %
Directive on industrial emissions (VOCs, 2010/75/EU)	
VOC content	100 %

Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance

16. Other Information

History

Product name	Entity 1 Made by India
Product code	
Date of printing	
Date of issue/Date of revision	
Date of previous issue	
Version	
Prepared by	

17. Change Details