

## Chemical Safety Data Sheet MSDS / SDS

## 2-methyl-m-phenylene diisocyanate SDS

Revision Date:2024-04-25 Revision Number:1

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****Product identifier**

Product name: 2-methyl-m-phenylene diisocyanate

CAS: 91-08-7

**Relevant identified uses of the substance or mixture and uses advised against**

Relevant identified uses: For R&amp;D use only. Not for medicinal, household or other use.

Uses advised against: none

**Company Identification**

Company: Chemicalbook.in

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**SECTION 2: Hazards identification****Classification of the substance or mixture**

Skin irritation, Category 2

Eye irritation, Category 2

Skin sensitization, Category 1  
Acute toxicity - Category 2, Inhalation  
Specific target organ toxicity - single exposure, Category 3  
Respiratory sensitization, Category 1  
Carcinogenicity, Category 2  
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 3

### GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Danger

### Hazard statement(s)

H315 Causes skin irritation  
H319 Causes serious eye irritation  
H317 May cause an allergic skin reaction  
H330 Fatal if inhaled  
H335 May cause respiratory irritation  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled  
H351 Suspected of causing cancer  
H412 Harmful to aquatic life with long lasting effects

### Precautionary statement(s)

#### Prevention

P264 Wash ... thoroughly after handling.  
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P272 Contaminated work clothing should not be allowed out of the workplace.  
P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P271 Use only outdoors or in a well-ventilated area.  
P284 [In case of inadequate ventilation] wear respiratory protection.  
P203 Obtain, read and follow all safety instructions before use.  
P273 Avoid release to the environment.

#### Response

P302+P352 IF ON SKIN: Wash with plenty of water/...

P321 Specific treatment (see ... on this label).  
P332+P317 If skin irritation occurs: Get medical help.  
P362+P364 Take off contaminated clothing and wash it before reuse.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P333+P317 If skin irritation or rash occurs: Get medical help.  
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P316 Get emergency medical help immediately.  
P320 Specific treatment is urgent (see ... on this label).  
P319 Get medical help if you feel unwell.  
P342+P316 If experiencing respiratory symptoms: Get emergency medical help immediately.  
P318 IF exposed or concerned, get medical advice.

#### **Storage**

P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
P405 Store locked up.

#### **Disposal**

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

#### **Other hazards which do not result in classification**

no data available

### **SECTION 3: Composition/information on ingredients**

#### **Substance**

Chemical name:	2-methyl-m-phenylene diisocyanate
Common names and synonyms:	2-methyl-m-phenylene diisocyanate
CAS number:	91-08-7
EC number:	202-039-0
Concentration:	100%

## SECTION 4: First aid measures

### Description of necessary first-aid measures

#### If inhaled

Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.

#### Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention .

#### Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

#### Following ingestion

Rinse mouth. Give one or two glasses of water to drink. Refer for medical attention .

### Most important symptoms/effects, acute and delayed

no data available

### Indication of immediate medical attention and special treatment needed, if necessary

no data available

## SECTION 5: Firefighting measures

### Suitable extinguishing media

Use dry chemical, carbon dioxide or alcohol-resistant foam.

### Specific hazards arising from the chemical

Combustible. Gives off irritating or toxic fumes (or gases) in a fire.

### Special protective actions for fire-fighters

Use water spray, powder, alcohol-resistant foam, carbon dioxide. In case of fire: keep drums, etc., cool by spraying with water. NO direct contact with water.

## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Evacuate danger area! Consult an expert! Personal protection: complete protective clothing including self-contained breathing apparatus. Collect leaking liquid in sealable containers. Absorb remaining liquid in dry sand or inert absorbent. Then store and dispose of according to local regulations.

### Environmental precautions

Prevent further spillage or leakage if it is safe to do so. Do not let the chemical enter drains. Discharge into the environment must be avoided.

### Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

## SECTION 7: Handling and storage

### Precautions for safe handling

NO open flames. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

### Conditions for safe storage, including any incompatibilities

Separated from food and feedstuffs. See Chemical Dangers. Cool. Dry. Keep in a well-ventilated room.

## SECTION 8: Exposure controls/personal protection

### Control parameters

### Occupational Exposure limit values

TLV: 0.001 ppm as TWA; 0.005 ppm as STEL; (skin); (SEN); A3 (confirmed animal carcinogen with unknown relevance to humans). MAK: sensitization of respiratory tract and skin (SAH); carcinogen category: 3A

### Biological limit values

no data available

### Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

### Individual protection measures, such as personal protective equipment (PPE)

#### Eye/face protection

Wear face shield or eye protection in combination with breathing protection.

#### Skin protection

Protective gloves. Protective clothing.

#### Respiratory protection

Use ventilation, local exhaust or breathing protection.

#### Thermal hazards

no data available

## SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Liquid. Liquid.
Colour:	Colorless to yellow.
Odour:	no data available
Melting point/freezing point:	18.3 °C. Remarks:Other details not available.
Boiling point or initial boiling point and boiling range:	129 - 133 °C. Atm. press.:18 mm Hg. Remarks:Other details not available.
Flammability:	no data available

Lower and upper explosion limit/flammability limit:	no data available
Flash point:	127 °C.
Auto-ignition temperature:	620 °C. Remarks:No other details available.
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	no data available
Solubility:	Solubility in water: reaction
Partition coefficient n-octanol/water:	log Pow = 3.74. Remarks:Other details not available.
Vapour pressure:	2.78 Pa. Temperature:25 °C. Remarks:00209 mmHg = 2.78 Pa, other details not available.
Density and/or relative density:	1.226 g/cm <sup>3</sup> . Temperature:20 °C.
Relative vapour density:	no data available
Particle characteristics:	no data available

## SECTION 10: Stability and reactivity

### Reactivity

no data available

### Chemical stability

no data available

### **Possibility of hazardous reactions**

No data. The substance may polymerize under the influence of water, acids, bases and heat. This generates fire or explosion hazard. Decomposes on burning. This produces toxic fumes including nitrogen oxides and cyanides. Reacts violently with alcohols, amines and bases. Attacks many plastics, rubber, aluminium, copper and zinc.

### **Conditions to avoid**

no data available

### **Incompatible materials**

no data available

### **Hazardous decomposition products**

no data available

## **SECTION 11: Toxicological information**

### **Acute toxicity**

Oral: LD50 - rat (male/female) - > 2 000 mg/kg bw. Remarks: No mortality observed.

Inhalation: no data available

Dermal: no data available

### **Skin corrosion/irritation**

no data available

### **Serious eye damage/irritation**

no data available

### **Respiratory or skin sensitization**

no data available

### **Germ cell mutagenicity**



no data available

### **Carcinogenicity**

no data available

### **Reproductive toxicity**

no data available

### **STOT-single exposure**

The substance is irritating to the eyes, skin and respiratory tract. Inhalation of the vapour may cause asthma-like reactions. Inhalation of the vapour may cause chemical bronchitis, pneumonitis and lung oedema. Exposure far above the OEL could cause death. The effects may be delayed. Medical observation is indicated.

### **STOT-repeated exposure**

Repeated or prolonged contact may cause skin sensitization. Repeated or prolonged inhalation may cause asthma. This substance is possibly carcinogenic to humans.

### **Aspiration hazard**

A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20°C.

## **SECTION 12: Ecological information**

### **Toxicity**

Toxicity to fish: LC50 - Pimephales promelas - 164 mg/L - 96 h.

Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna - 12.5 mg/L - 48 h.

Toxicity to algae: EC50 - Desmodesmus subspicatus (previous name: Scenedesmus subspicatus) - > 70 mg/L - 72 h.

Toxicity to microorganisms: EC50 - Photobacterium phosphoreum - 42 mg/L - 30 min.

### **Persistence and degradability**

no data available

**Bioaccumulative potential**

no data available

**Mobility in soil**

no data available

**Other adverse effects**

no data available

**SECTION 13: Disposal considerations****Disposal methods****Product**

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

**Contaminated packaging**

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

**SECTION 14: Transport information****UN Number**

ADR/RID: UN2078 (For reference only, please check.)

IMDG: UN2078 (For reference only, please check.)

IATA: UN2078 (For reference only, please check.)

**UN Proper Shipping Name**

ADR/RID: TOLUENE DIISOCYANATE (For reference only, please check.)

IMDG: TOLUENE DIISOCYANATE (For reference only, please check.)

IATA: TOLUENE DIISOCYANATE (For reference only, please check.)

**Transport hazard class(es)**

ADR/RID: 6.1 (For reference only, please check.)

IMDG: 6.1 (For reference only, please check.)

IATA: 6.1 (For reference only, please check.)

**Packing group, if applicable**

ADR/RID: II (For reference only, please check.)

IMDG: II (For reference only, please check.)

IATA: II (For reference only, please check.)

**Environmental hazards**

ADR/RID: No

IMDG: No

IATA: No

**Special precautions for user**

no data available

**Transport in bulk according to IMO instruments**

no data available

**SECTION 15: Regulatory information**

**Safety, health and environmental regulations specific for the product in question**

**European Inventory of Existing Commercial Chemical Substances (EINECS)**

Listed.

**EC Inventory**

Listed.

**United States Toxic Substances Control Act (TSCA) Inventory**

Listed.

**China Catalog of Hazardous chemicals 2015**

Listed.

**New Zealand Inventory of Chemicals (NZIoC)**

Listed.

**(PICCS)**

Listed.

**Vietnam National Chemical Inventory**

Listed.

**IECSC)**

Listed.

**Korea Existing Chemicals List (KECL)**

Listed.

**SECTION 16: Other information**

**Abbreviations and acronyms**

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

## References

IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)

CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>

Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

## Other Information

Technical toluene diisocyanate is either 100% 2,4- or a mixture of 2,4- and 2,6-isomers. TDI is a common name. CAS number of the mixture is 26471-62-5. Depending on the degree of exposure, periodic medical examination is suggested. The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Immediate administration of an appropriate inhalation therapy by a doctor or a person authorized by him/her, should be considered. The symptoms of asthma often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential. Anyone who has shown symptoms of asthma due to this substance should avoid all further contact with this substance. Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available. No odour warning if toxic concentrations are present. See ICSC 0339.

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any