SAFETY DATA SHEET

Creation Date 06-Apr-2010 **Revision Date** 19-Dec-2025 **Revision Number** 6

This safety data sheet was created pursuant to the requirements of: US OSHA Hazard Communication Standard 2024 (29 CFR 1910.1200)

1. Identification

Product Name **Methylenedi-p-phenyl diisocyanate**

Cat No. : **AC414280000; AC414281000; AC414285000**

CAS No 101-68-8
Synonyms MDI

Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company
Fisher Scientific Company
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No. **US:**001-800-424-9300 / **Europe:**001-703-527-3887

2. Hazard(s) identification

Classification
This chemical is considered hazardous according to [US] OSHA (29 CFR 1910.1200, 2024)

Acute Inhalation Toxicity - Dusts and Mists	Category 4
Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2
Respiratory Sensitization	Category 1
Skin Sensitization	Category 1
Carcinogenicity	Category 2
Specific target organ toxicity (single exposure) Target Organs - Respiratory system.	Category 3
Specific target organ toxicity - (repeated exposure) Target Organs - Respiratory system.	Category 2

Label Elements

Signal Word
Danger

Hazard Statements
Causes skin irritation
Causes serious eye irritation
May cause an allergic skin reaction
Harmful if inhaled
May cause allergy or asthma symptoms or breathing difficulties if inhaled
May cause respiratory irritation
Suspected of causing cancer
May cause damage to organs through prolonged or repeated exposure

Precautionary Statements
Prevention
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
Wash face, hands and any exposed skin thoroughly after handling
In case of inadequate ventilation wear respiratory protection
Contaminated work clothing should not be allowed out of the workplace
Do not breathe dust/fume/gas/mist/vapors/spray
Wear protective gloves/protective clothing/eye protection/face protection
Response
IF exposed or concerned: Get medical attention/advice
Inhalation
IF INHALED: Remove person to fresh air and keep comfortable for breathing
If experiencing respiratory symptoms: Call a POISON CENTER or doctor
Skin
IF ON SKIN: Wash with plenty of soap and water
Take off contaminated clothing
If skin irritation or rash occurs: Get medical advice/attention
Eyes
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
Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
Lachrymator (substance which increases the flow of tears)

Hazards classified under paragraph (d)(1)(ii) of 1910.1200
No information available

3. Composition/information on Ingredients

Component	CAS No	Weight %
Methylene bisphenol isocyanate (MDI)	101-68-8	>95
Benzene, 1-isocyanato-2-[(4-isocyanatophenyl)methyl]-	5873-54-1	<2.5

4. First-aid measures

General Advice If symptoms persist, call a physician.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Get medical attention.

Inhalation Remove to fresh air. If breathing is difficult, give oxygen. Get medical attention.

Ingestion Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

Most important symptoms and effects May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause allergic skin reaction. . Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

Notes to Physician Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam.

Unsuitable Extinguishing Media No information available

Flash Point 202 °C / 395.6 °F

Method - No information available

Autoignition Temperature 600 °C / 1112 °F

Explosion Limits

Upper No data available
Lower No data available
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products
Carbon monoxide (CO). Carbon dioxide (CO_2). Nitrogen oxides (NOx).
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
2	1	1	N/A

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust

formation.

Environmental Precautions Should not be released into the environment. See Section 12 for additional Ecological Information.

Methods for Containment and Clean Up Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal.

7. Handling and Storage

Handling Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Ensure adequate ventilation. Avoid dust formation.

Storage. Keep containers tightly closed in a dry, cool and well-ventilated place. To maintain product quality: Keep refrigerated. Incompatible Materials. Strong oxidizing agents. Acids. Bases. Alcohols. Amines. copper. Copper alloys. Water.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH	Mexico OEL (TWA)
Methylene bisphenol isocyanate (MDI)	TWA: 0.005 ppm	Ceiling: 0.02 ppm Ceiling: 0.2 mg/m³ (Vacated) Ceiling: 0.02 ppm (Vacated) Ceiling: 0.2 mg/m³	IDLH: 75 mg/m³ REL = 0.005 ppm (TWA) REL = 0.05 mg/m³ (TWA) Ceiling: 0.020 ppm Ceiling: 0.2 mg/m³	TWA: 0.005 ppm

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH: NIOSH - National Institute for Occupational Safety and Health

Engineering Measures Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. Tight sealing safety goggles.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Recommended Filter type: Particulates filter conforming to EN 143.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance

Physical State Solid
Color White
Odor Slight

Odor Threshold	No information available	
Property	**Values**	**Remarks • Method**
Melting Point/Range	40 °C / 104 °F	
Softening Point	No data available	
Boiling Point/Range	392 °C / 737.6 °F	
Flash Point	202 °C / 395.6 °F	**Method -** No information available
Flammability (liquid)	Not applicable	Solid
Flammability (solid,gas)	No information available	
Explosion Limits	No data available	
Autoignition Temperature	600 °C / 1112 °F	
Decomposition Temperature	No data available	
pH	No information available	
Viscosity	Not applicable	Solid
Water Solubility	Decomposes in contact with water	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Component	**log Pow**	
Methylene bisphenol isocyanate (MDI)	4.5	
Vapor Pressure	<0.01 Pa @ 25 °C	
Density / Specific Gravity	1.22	
Bulk Density	No data available	
Vapor Density	Not applicable	Solid
Particle characteristics	No data available	

Other Information

Molecular Formula	C15 H10 N2 O2
Molecular Weight	250.26
Evaporation Rate	Not applicable - Solid

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Stable under normal conditions. Moisture sensitive.

Conditions to Avoid Incompatible products. Excess heat. Avoid dust formation. Exposure to moisture.

Incompatible Materials Strong oxidizing agents, Acids, Bases, Alcohols, Amines, copper, Copper alloys, Water

Hazardous Decomposition Products Carbon monoxide (CO), Carbon dioxide (CO_2), Nitrogen oxides (NOx)

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Information on expected route of exposure

Inhalation Harmful by inhalation. Irritating to respiratory system. May cause allergic respiratory reaction. May cause irritation of respiratory tract.

Ingestion May be harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Ingestion may cause irritation to mucous membranes.

Eyes Irritating to eyes.

Skin Irritating to skin. May be harmful in contact with skin. May produce an allergic reaction. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Methylene bisphenol isocyanate (MDI)	LD50 = 31600 mg/kg (Rat)	-	490 mg/m³/4H (Rat)

Toxicologically Synergistic Products No information available

(b) skin corrosion/irritation; Category 2

(c) serious eye damage/irritation; Category 2

(d) respiratory or skin sensitization;
Respiratory Category 1
Skin Category 1

May cause sensitization by skin contact

(e) germ cell mutagenicity; Based on available data, the classification criteria are not met

(f) carcinogenicity; Category 2

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Methylene bisphenol isocyanate (MDI)	101-68-8	Not listed	Not listed	Not listed	Not listed	Not listed
Benzene, 1-isocyanato-2-[(4-isocyanatophenyl)methyl]-	5873-54-1	Not listed	Not listed	Not listed	Not listed	Not listed

(g) reproductive toxicity; Based on available data, the classification criteria are not met

(h) STOT-single exposure; Category 3

Results / Target organs Respiratory system.

(i) STOT-repeated exposure; Category 2

Route of exposure Inhalation
Target Organs Respiratory system.

(j) aspiration hazard; Not applicable
Solid

Other Adverse Effects See actual entry in RTECS for complete information

Symptoms / effects,both acute and delayed Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing.

Other Adverse Effects See actual entry in RTECS for complete information.

Endocrine Disrupting Properties This product does not contain any known or suspected endocrine disruptors.

12. Ecological information

Ecotoxicity

Do not empty into drains. Reacts with water so no ecotoxicity data for the substance is available.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Methylene bisphenol isocyanate (MDI)	Not listed	LC50 >1000 mg/L/96h (Brachydanio rerio)	Not listed	EC50 >1000 mg/L/24h (Daphnia)

Persistence and Degradability based on information available. May persist

Bioaccumulation/ Accumulation No information available.

Mobility Is not likely mobile in the environment.

Component	log Pow
Methylene bisphenol isocyanate (MDI)	4.5

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT Not regulated
TDG Not regulated
IATA Not regulated
IMDG/IMO Not regulated

15. Regulatory Information

United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Methylene bisphenol isocyanate (MDI)	101-68-8	X	ACTIVE	-
Benzene, 1-isocyanato-2-[(4-isocyanatophenyl)methyl]-	5873-54-1	X	ACTIVE	-

Legend:
TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)
X - Listed
'-' - Not Listed

TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT) Not applicable

TSCA 12(b) - Notices of Export Not applicable

International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Methylene bisphenol isocyanate (MDI)	101-68-8	X	-	202-966-0	X	X	X	X	X	KE-12080
Benzene, 1-isocyanato-2-[(4-isocyanatophenyl)methyl]-	5873-54-1	X	-	227-534-9	X	X	X	X	X	KE-21471

KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

U.S. Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Component	CAS No	Weight %	SARA 313 - Threshold Values %	SARA 313 - Reporting threasholds
Methylene bisphenol isocyanate (MDI)	101-68-8	>95	1.0 %	-
Benzene, 1-isocyanato-2-[(4-isocyanatophenyl)methyl]-	5873-54-1	<2.5	1.0 %	-

SARA 311/312 Hazard Categories
Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act) Not applicable

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Methylene bisphenol isocyanate (MDI)	X		-

OSHA - Occupational Safety and Health Administration Not applicable

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

Component	Hazardous Substances RQs	CERCLA Extremely Hazardous Substances RQs	SARA Reportable Quantity (RQ)
Methylene bisphenol isocyanate (MDI)	5000 lb	-	5000 lb 2270 kg

California Proposition 65 This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Methylene bisphenol isocyanate (MDI)	X	X	X	X	X
Benzene, 1-isocyanato-2-[(4-isocyanatophenyl)methyl]-	-	X	-	-	-

U.S. Department of Transportation
Reportable Quantity (RQ): Y
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade Slight risk, Grade 1

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Methylene bisphenol isocyanate (MDI)	101-68-8	-	Use restricted. See entry 56[a]. (see link for restriction details) Use restricted. See entry 75. (see link for restriction details) Use restricted. See entry 74. (see link for restriction details)	-
Benzene, 1-isocyanato-2-[(4-isocyanatophenyl)methyl]-	5873-54-1	-	Use restricted. See entry 56[b]. (see link for restriction details) Use restricted. See entry 75. (see link for restriction details) Use restricted. See entry 74. (see link for restriction details)	-

REACH links
https://echa.europa.eu/substances-restricted-under-reach

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

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Methylene bisphenol isocyanate (MDI)	101-68-8	Listed	Not applicable	Not applicable	Not applicable
Benzene, 1-isocyanato-2-[(4-isocyanatophenyl)methyl]-	5873-54-1	Listed	Not applicable	Not applicable	Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?
Not applicable

Other International Regulations

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Methylene bisphenol isocyanate (MDI)	101-68-8	Not applicable	Not applicable	Not applicable	Not applicable
Benzene, 1-isocyanato-2-[(4-isocyanato	5873-54-1	Not applicable	Not applicable	Not applicable	Not applicable

phenyl)methyl]-					

16. Other Information

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Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS