TCI EUROPE N.V.

SAFETY DATA SHEET

According to 1907/2006/EC, Article 31

Revision number: 1 **Revision date:** 10/03/2018

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

1.1 Product identifiers

Product name: Hexamethylene Diisocyanate
Product code: H0324

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

Identified uses: Reagents.

1.3 Details of the supplier of the safety data sheet

Supplier:

TCI EUROPE N.V.
Boerenveldseweg 6
Haven 1063
B-2070 Zwijndrecht
Telephone: +32(0)3 735 07 00
E-mail: sales-eu@tcichemicals.com

1.4 Emergency telephone number: +32(0)70 245 245

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Acute toxicity (Oral)	Category 4
Acute toxicity (Dermal)	Category 3
Acute toxicity (Inhalation)	Category 1
Skin corrosion/irritation	Category 1B
Serious eye damage/eye irritation	Category 1
Respiratory sensitization	Category 1
Skin sensitization	Category 1
Specific target organ toxicity - Single exposure [Category 3]	Respiratory tract irritation
Specific target organ toxicity - Repeated exposure [Category 1]	Organs

2.2 Label elements

Pictograms or hazard symbols

Signal word Danger

Hazard statements

H302-Harmful if swallowed.
H311-Toxic in contact with skin.
H330-Fatal if inhaled.
H314-Causes severe skin burns and eye damage.
H334-May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317-May cause an allergic skin reaction.
H372-Causes damage to organs through prolonged or repeated exposure.
H335-May cause respiratory irritation.

Precautionary statements

P260-Do not breathe mist, vapours or spray.
P284-Wear respiratory protection.
P301+P330+P331+P310-IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor.
P303+P361+P353+P310+P363-IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Immediately call a POISON CENTER or doctor. Wash contaminated clothing before reuse.
P304+P340+P310-IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor.
P305+P351+P338+P310-IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

2.3 Other hazards May cause polimerization.

Results of PBT and vPvB assessment

PBT:	Not applicable
vPvB:	Not applicable

SECTION 3: Composition/information on ingredients

3.1 Substances

Components:	Hexamethylene Diisocyanate
Percent:	>98.0%(GC)
CAS RN:	822-06-0
EC-No:	212-485-8
Synonyms:	1,6-Diisocyanatohexane
Chemical Formula:	$C_8H_{12}N_2O_2$

SECTION 4: First aid measures

4.1 Description of first aid measures

Inhalation:	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
Skin contact:	Remove/Take off immediately all contaminated clothing. Gently wash with plenty of soap and water. Immediately call a POISON CENTER or doctor/physician.
Eye contact:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.Immediately call a POISON CENTER or doctor/physician.
Ingestion:	Immediately call a POISON CENTER or doctor/physician. Rinse mouth. Do NOT induce vomiting.
Protection of first-aiders:	A rescuer should wear personal protective equipment, such as rubber gloves and air-tight goggles.

4.2 Most important symptoms and effects, both acute and delayed

No data available

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media:	Dry chemical, foam, water spray, carbon dioxide.
Unsuitable extinguishing media:	Solid streams of water

5.2 Special hazards arising from the substance or mixture	This substance may polimerize explosively when heated or involved in a fire. Container may explode when heated. Combat fire from a sheltered position. Carbon monoxide, carbon dioxide etc
5.3 Advice for firefighters	Fire-extinguishing work is done from the windward and the suitable fire-extinguishing method according to the surrounding situation is used. Uninvolved persons should evacuate to a safe place. In case of fire in the surroundings: Keep containers cool by spraying with water. Eliminate all ignition sources if safe to do so. When extinguishing fire, be sure to wear personal protective equipment

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures	Use personal protective equipment. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Entry to non-involved personnel should be controlled around the leakage area by roping off, etc
6.2 Environmental precautions	Prevent product from entering drains
6.3 Methods and materials for containment and cleaning up	Absorb spilled material in dry sand or inert absorbent before recovering it into a covered container. In case of large amount of spillage, contain a spill by bunding. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.
6.4 Reference to other sections	For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling	Handling is performed in a well ventilated place. Wear suitable protective equipment. Prevent generation of vapour or mist. Wash hands and face thoroughly after handling. Use a closed system if possible. Use a ventilation, local exhaust if vapour or aerosol will be generated. Avoid contact with skin, eyes and clothing.
7.2 Conditions for safe storage, including any incompatibilities	Keep container tightly closed. Store in a refrigerator. Store under inert gas. Protect from moisture. Store locked up. Store away from incompatible materials such as oxidizing agents. Heat-sensitive, Moisture-sensitive
7.3 Specific end use(s)	No further relevant information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

ACGIH TLV(TWA):	0.005 ppm
JSOH OELs(TWA):	0.005 ppm

8.2 Exposure controls Install a closed system or local exhaust. Also install safety shower and eye bath.

Respiratory protection:	Half or full facepiece respirator, self-contained breathing apparatus(SCBA), supplied air respirator, etc. Use respirators approved under appropriate government standards and follow local and national regulations.
Hand protection:	Impervious gloves.
Eye protection:	Safety goggles. A face-shield, if the situation requires.
Skin and body protection:	Impervious protective clothing. Protective boots, if the situation requires.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state (20°C):	Liquid
Form:	Clear
Colour:	Colorless - Very pale yellow
Odour:	Pungent
pH:	No data available
Melting point/freezing point:	No data available
Boiling point/range:	255°C
Flash point:	138°C
Evaporation rate(Butyl Acetate=1):	No data available
Flammability(solid, gas):	No data available
Flammability or explosive limits:	
Lower:	0.9%
Upper:	9.5%
Vapour pressure:	7Pa/25°C
Vapour density:	5.8
Relative density:	1.05
Solubility(ies):	
[Water]	No data available
[Other solvents]	
Very soluble:	Ether
Soluble:	Benzene, Acetone, Toluene, Ethyl acetate, Chlorobenzene
Partition coefficient: n-octanol/water:	1.08
Autoignition temperature:	454°C
Decomposition temperature:	No data available
Dynamic Viscosity:	No data available
Kinematic viscosity:	No data available

9.2 Other safety information No data available

SECTION 10: Stability and reactivity

10.1 Reactivity No data available

10.2 Chemical stability Polymerization may occur under the influences of heat, light or on contact with polymerization initiators such as peroxides etc.

10.3 Possibility of hazardous reactions No special reactivity has been reported.

10.4 Conditions to avoid Heat, Light

10.5 Incompatible materials Oxidizing agents

10.6 Hazardous decomposition products Carbon monoxide, carbon dioxide etc

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute Toxicity:	ihl-rat LC50:124 mg/m³/4H orl-mus LD50:350 mg/kg orl-rat LD50:710 uL/kg skn-rbt LD50:570 uL/kg
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:	
IARC =	No data available
NTP =	No data available
Reproductive toxicity:	No data available
STOT-single exposure:	No data available
STOT-repeated exposure:	No data available
Aspiration hazard:	No data available
RTECS Number:	MO1740000

SECTION 12: Ecological information

12.1 Toxicity

Fish:	No data available
Crustacea:	No data available
Algae:	No data available

12.2 Persistence and degradability 7 - 28% (NH3) (by BOD) , 28 - 51% (by TOC) , 100% (by GC)

12.3 Bioaccumulative potential No data available

12.4 Mobility in soil

Log Pow:	1.08
Soil adsorption (Koc):	No data available
Henry's Law (PaM³/mol):	No data available

12.5 Results of PBT and vPvB assessment

PBT:	Not applicable
vPvB:	Not applicable

12.6 Other adverse effects No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Recycle to process, if possible. Consult your local regional authorities. Observe all federal, state and local regulations when disposing of the substance.

SECTION 14: Transport information

14.1 UN number 2281

14.2 UN proper shipping name

ADR/RID	Hexamethylene diisocyanate
IMDG/IMO	Hexamethylene diisocyanate
ICAO/IATA	Hexamethylene diisocyanate

14.3 Transport hazard class(es)

ADR/RID	6.1: Toxic substance
IMDG/IMO	6.1: Toxic substance
ICAO/IATA	6.1: Toxic substance

14.4 Packaging group

ADR/RID	II
IMDG/IMO	II
ICAO/IATA	II

14.5 Environmental hazards

Marine pollutant -

14.6 Special precautions for user No data available

SECTION 15: Regulatory information

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

Water Hazard Classes (WGK) :	Class 1 - Low hazard to waters
Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No.1907/2006	Not listed

15.2 Chemical safety assessment A chemical safety assessment has not been carried out.

SECTION 16: Other information

Prepared by: TCI EUROPE N.V.
Issue date: 10/03/2018

This SDS was prepared sincerely on the basis of the information we could obtained, however, any warranty shall not be given regarding the data contained and the assessment of hazards and toxicity. Prior to use, please investigate not only the hazards and toxicity information but also the laws and regulations of the organization, area and country where the products are to be used, which shall be given the first priority.
The products are supposed to be used promptly after purchase in consideration of safety. Some new information or amendments may be added afterwards. If the products are to be used far behind the expected time of use or you have any questions, please feel free to contact us. The stated cautions are for normal handling only. In case of special handling, sufficient care should be taken, in addition to the safety measures suitable for the situation. All chemical products should be treated with the recognition of "having unknown hazards and toxicity", which differ greatly depending on the conditions and handling when in use and/or the conditions and duration of storage. The products must be handled only by those who are familiar with specialized knowledge and have experience or under the guidance of those specialists throughout use from opening to storage and disposal. Safe usage conditions shall be set up on each user's own responsibility.

End of Safety Data Sheet