

1. Product and Company Identification

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Product Name TOLUENEDIISOCYANATE
Part Number RXSOL-19-1450-210

Company Details:

RX MARINE INTERNATIONAL
105, A wing , BSEL , TECH PARK.
VASHI ,NEW BOMBAY 400703 INDIA

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2. Composition / Information on ingredients

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Name of Substance	Cas Number	EINECS No	Wt. %	Index-No.
Synonyms	584-84-9	209-544-5	100 %	615-006-00-4
4-methyl-m-phenylene diisocyanate	584-84-9	209-544-5	100 %	615-006-00-4

3. Hazards Identification

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Signal Word	None
Hazard Statements	H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H330 Fatal if inhaled. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H335 May cause respiratory irritation. H351 Suspected of causing cancer. H412 Harmful to aquatic life with long lasting effects.
Precautionary statements - prevention	P202 Do not handle until all safety precautions have been read and understood. P273 Avoid release to the environment. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P302 + P352 IF ON SKIN: Wash with plenty of water. P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Supplemental Hazard Statements none "As from 24 August 2023 adequate training is required before industrial or professional use."
Other hazards	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher. Lachrymator.

4. First Aid Measures

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General advice	First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.
Eye contact	After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

Skin contact	In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.
If inhaled	After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.
Swallowed	If swallowed, do not induce vomiting. Allow victim to rinse his mouth and then to drink 2-4 cupfuls of water. Never give anything by mouth to an unconscious person. Call a physician.
Most important symptoms for both acute and delayed	The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11 4.3 Indication of any immed
Indication of any immediate medical attention and special treatment needed	No data available

5. Fire-fighting Measures

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Extinguishing media Suitable extinguishing media	Water Foam Carbon dioxide (CO ₂) Dry powder
Suitable extinguishing media	For this substance/mixture no limitations of extinguishing agents are given.
Special hazards arising from the substance or mixture	Carbon oxides Nitrogen oxides (NO _x) Combustible. Vapors are heavier than air and may spread along floors. Forms explosive mixtures with air on intense heating. Development of hazardous combustion gases or vapours possible in the event of fire.
Advice for firefighters	Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.
Further information	Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

6. Accidental Release Measures

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Personal precautions, protective equipment and emergency procedures	Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.
Environmental Precaution	Do not let product enter drains
Methods and materials for containment and cleaning up	Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemisorb®). Dispose of properly. Clean up affected area.
Reference to other sections	For disposal see section 13.

7. Handling and Storage

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Advice on safe handling	Advice on safe handling Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols. Hygiene measures Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.
Storage	Storage conditions Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons. Storage stability Recommended storage temperature 2 - 8 °C Store under inert gas. Product is sensitive to light and moisture. Storage class Storage class (TRGS 510)
Specific end use(s)	Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. Exposure controls and personal protection

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Control parameters

Exposure controls Personal protective equipment

Ingredients with workplace control parameters

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

Body Protection

protective clothing

Respiratory protection

required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system. Recommended Filter type: Filter type ABEK The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Control of environmental exposure

Do not let product enter drains.

9. Physical and chemical properties

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Form

Clear, liquid

Colour

Colourless

Odour

No data available

Melting point/freezing point

20 - 22 °C - lit.

Boiling point and boiling range

115 - 120 °C at 13 hPa - lit

Flash Point

132 °C - closed cup

Freezing Point

No Data Available

pH

No data available

Viscosity

No data available

Flammability (solid, gas)

No data available

Upper/lower flammability or explosive limits

Upper explosion limit 9,5 %(V) Lower explosion limit 0,9 %(V)

Explosive properties

No data available

Vapor pressure

0,04 hPa at 25 °C

Relative vapor density

6,01 - (Air = 1.0)

Density Relative density

1,214 g/cm³ at 25 °C 1,21 at 25 °C - Regulation (EC) No. 440/2008, Annex, A.3

Water solubility

No data available

Solubility in other solvents

No data available

Partition coefficient: octanol

Log Pow 3,43 at 22 °C - Bioaccumulation is not expected.

Autoignition temperature

No data available

Particle characteristics

No data available

Explosive properties

none

Oxidizing properties

No data available

Other safety information Surface tension

25 mN/m at 25 °C

10. Stability and reactivity

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Reactivity	Forms explosive mixtures with air on intense heating. A range from approx. 15 Kelvin below the flash point is to be rated as critical.
Stability	The product is chemically stable under standard ambient conditions (room temperature) . .
Possibility of hazardous reactions	No data available
Incompatible materials	Alcohols, Strong bases, Amines, acids, Strong oxidizing agents
Hazardous Decomposition	In the event of fire see section 5
Condition to Avoid	Heat. Strong heating.
Polymerization	Will not occur.

11. Toxicological information

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Acute toxicity	<p>LD50 Oral - Rat - male - 5.110 mg/kg</p> <p>(OECD Test Guideline 401)</p> <p>Remarks: (in analogy to similar compounds)</p> <p>The value is given in analogy to the following substances: m-tolyldiene diisocyanate</p> <p>LC50 Inhalation - Rat - male and female - 4 h - 0,12 mg/l - vapor</p> <p>(OECD Test Guideline 403)</p> <p>Remarks: (in analogy to similar products)</p> <p>LD50 Dermal - Rabbit - male and female - > 9.400 mg/kg</p> <p>(OECD Test Guideline 402)</p> <p>Remarks: (in analogy to similar products)</p> <p>The value is given in analogy to the following substances: m-tolyldiene diisocyanate</p>
Serious eye damage/irritation	Eyes - Rabbit Result: Irritating to eyes. (Draize Test) Remarks: (ECHA) Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)
Skin corrosion and irritation	Skin - Rabbit Result: Irritating to skin. - 24 h Remarks: (RTECS) Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)
Respiratory or skin sensitization	Open epicutaneous test - Guinea pig Result: positive Remarks: (ECHA) Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2) May cause allergy or asthma symptoms or breathing difficulties if inhaled. Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)
Germ cell mutagenicity	Test Type: Ames test Test system: S. typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: positive Test Type: In vivo micronucleus test Species: Rat Application Route: Inhalation Method: Mutagenicity (micronucleus test) Result: negative Test Type: unscheduled DNA synthesis assay Species: Rat Application Route: Inhalation Result: negative Remarks: (ECHA) Test Type: Micronucleus test Species: Mouse Application Route: Inhalation Method: OECD Test Guideline 474 Result: negative
Carcinogenicity	Suspected of causing cancer.
Reproductive toxicity	No data available
Specific target organ toxicity - single exposure	Inhalation - May cause respiratory irritation. - Respiratory Tract Remarks:

Aspiration hazard	Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)
Additional Information Endocrine disrupting properties Product:	No data available
	Assessment The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
	RTECS: CZ6300000
	Cough, Shortness of breath, Headache, Nausea, Vomiting
	To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. Ecological information

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Toxicity to fish	static test LC50 - Oncorhynchus mykiss (rainbow trout) - 133 mg/l - 96 h (OECD Test Guideline 203)
Toxicity to daphnia and others	static test EC50 - Daphnia magna (Water flea) - 12,5 mg/l - 48 h (OECD Test Guideline 202) Remarks: (in analogy to similar products)
Toxicity to algae	EC50 - Skeletonema costatum (marine diatom) - 3.230 mg/l - 96 h (OECD Test Guideline 201) Remarks: (in analogy to similar products)
Toxicity to bacteria	EC50 - activated sludge - > 100 mg/l - 3 h (OECD Test Guideline 209) Remarks: (in analogy to similar products)
Toxicity to daphnia and other aquatic invertebrates(Chronic toxicity)	tatic test EC50 - Daphnia magna (Water flea) - 2 mg/l - 21 d (OECD Test Guideline 211) Remarks: (in analogy to similar products)
Persistence and degradability	Biodegradability aerobic Biochemical oxygen demand - Exposure time 28 d Result: 0 % - Not biodegradable (OECD Test Guideline 302C) Remarks: (in analogy to similar compounds)
Bioaccumulative potential	Bioaccumulation Cyprinus carpio (Carp) - 60 d at 24,8 °C - 0,8 mg/l(4-methyl-m-phenylene diisocyanate) Bioconcentration factor (BCF): 180 (OECD Test Guideline 305)
Mobility in soil	No data available
Results of PBT and vPvB assessment	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Endocrine disrupting properties Product:	Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
Other adverse effects	No data available

13. Disposal considerations

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Waste treatment methods	No data available
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14. Transport information

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UN Number	ADR/RID: 2078 IMDG: 2078 IATA: 2078
Proper shipping name	ADR/RID: TOLUENE DIISOCYANATE IMDG: TOLUENE DIISOCYANATE IATA: Toluene diisocyanate
Transport hazard class(es)	ADR/RID: 6.1 IMDG: 6.1 IATA: 6.1
Environmental hazards	ADR/RID: no I MDG Marine pollutant: no IATA: no
Special precaution for user	Tunnel restriction code (D/E)
Packing Instruction group	ADR/RID: II IMDG: II IATA: II

15. Regulatory information

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Safety, health and environmental regulations/legislation specific for the substance or mixture	This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.
Authorisations and/or restrictions on use	REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) : 4-methyl-m-phenylene diisocyanate
National legislation	Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. H1 ACUTE TOXIC 26 Toluene diisocyanate
Other information	Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable. Take note of Dir 94/33/EC on the protection of young people at work.
Chemical Safety Assessment	For this product a chemical safety assessment was not carried out

16. Other information

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Other Information

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