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SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Product: Toluene Diisocyanate (TDI 80/20)	**Revision date:** 2026-10-29	**Version:** 1.0	**Brand:** Richest

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

Product name	Toluene Diisocyanate (TDI 80/20)
Synonyms	TDI; Toluene diisocyanate; mixture of toluene-2,4-diisocyanate (80 %) and toluene-2,6-diisocyanate (20 %)
CAS No.	26471-62-5
EC No.	247-722-4
Molecular formula	C9H6N2O2
Molecular weight	174.16 g/mol
Relevant identified uses	Manufacture of flexible polyurethane foam, elastomers, coatings, adhesives, paints and synthetic leather
Uses advised against	None
Company	Richest Group Ltd.
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SECTION 2: Hazards identification

GHS Classification	Acute Tox. (Inhalation) 2; Skin Irrit. 2; Eye Irrit. 2; Resp. Sens. 1; Skin Sens. 1; Carc. 2; STOT SE 3 (respiratory irritation); Aquatic Chronic 3
Pictogram(s)	GHS06 (Skull and crossbones); GHS07 (Exclamation mark); GHS08 (Health hazard)
Signal word	Danger
Hazard statement(s)	H315 Causes skin irritation H317 May cause an allergic skin reaction

Precautionary statement(s)	P201 Obtain special instructions before use P202 Do not handle until all safety precautions have been read and understood P260 Do not breathe dust/fume/gas/mist/vapours/spray P264 Wash skin thoroughly after handling P271 Use only outdoors or in a well-ventilated area P273 Avoid release to the environment P280 Wear protective gloves/protective clothing/eye protection/face protection P284 Wear respiratory protection P302+P352 IF ON SKIN: Wash with plenty of soap and water P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing P310 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 P308+P313 IF exposed or concerned: Get medical advice/attention P333+P313 If skin irritation or rash occurs: Get medical advice/attention P337+P313 If eye irritation persists: Get medical advice/attention P403+P233 Store in a well-ventilated place. Keep container tightly closed P405 Store locked up P501 Dispose of contents/container to an approved waste disposal plant
Other hazards	Reacts with water.

SECTION 3: Composition/information on ingredients

Component	Toluene diisocyanate (toluene-2,4-diisocyanate 80 % / toluene-2,6-diisocyanate 20 %)
CAS No.	26471-62-5
EC No.	247-722-4
Classification	Acute Tox. (Inhalation) 2; Skin Irrit. 2; Eye Irrit. 2; Resp. Sens. 1; Skin Sens. 1; Carc. 2; STOT SE 3; Aquatic Chronic 3; H330, H315, H319, H334, H317, H351, H335, H412
Concentration (%)	≤100 %

SECTION 4: First aid measures

If inhaled	Remove person from the scene to fresh air immediately. Maintain airway patency. If breathing is difficult, give oxygen. If breathing stops, perform
In case of skin contact	Remove contaminated clothing and rinse with soap and plenty of water. Get medical attention.
In case of eye contact	Rinse eyes thoroughly with plenty of water for at least 15 minutes. Get medical attention immediately.
If swallowed	Give water to dilute. Get medical attention.
Most important symptoms and effects	Respiratory irritation, asthma-like symptoms, breathing difficulties; skin and eye irritation; allergic reactions.
Indication of any immediate medical attention	Immediate medical attention is required in case of inhalation or eye contact.

SECTION 5: Firefighting measures	
Suitable extinguishing media	Foam, dry powder, carbon dioxide (CO2), sand
Unsuitable extinguishing media	Do not use a direct water jet (reacts with water)
Special hazards arising from the chemical	Carbon monoxide, carbon dioxide, nitrogen oxides and trace hydrogen cyanide. Its vapor can form explosive mixtures with air; fire and high heat may cause combustion and explosion.
Advice for firefighters	Wear self-contained breathing apparatus and full protective clothing. Cool containers with water spray. Use smothering, isolating and cooling methods.

SECTION 6: Accidental release measures	
Personal precautions, protective equipment and emergency procedures	Evacuate personnel from the leak area to safe areas. Isolate and restrict access. Personnel should wear protective clothing, gloves, boots and respiratory protection. Remove all sources of ignition.
Environmental precautions	Do not let product enter drains or watercourses.
Methods and materials for containment and cleaning up	Cut off the leakage source if possible. Cover with sand or commercially non-reactive absorbent material. Apply foam having a protein surface to reduce vapor concentration in case of a large-area leak. Collect for disposal.

SECTION 7: Handling and storage	
Precautions for safe handling	Operators should wear a gas mask, protective goggles, protective clothing and rubber gloves. Ensure adequate ventilation.
Conditions for safe storage, including any incompatibilities	Store in a cool, dry, well-ventilated warehouse. Keep container tightly closed. Keep away from water, alcohols, amines, bases and strong oxidizing agents.

SECTION 8: Exposure controls/personal protection	
Occupational exposure limit values	China MAC: 0.2 mg/m3; ACGIH TLV-TWA: 0.036 mg/m3 (0.005 ppm), STEL: 0.14 mg/m3 (0.02 ppm)
Biological limit values	ACGIH BEI: toluene diamine in urine (with hydrolysis) 5 μg/g creatinine, end of shift
Appropriate engineering controls	Strictly closed process with full local exhaust ventilation. Provide safety shower and eye-washing equipment.
Eye/face protection	Chemical safety goggles
Skin protection	Rubber gloves

Body protection	Protective clothing
Respiratory protection	Self-suction filter respirator (half mask) when concentration in air exceeds limits; air respirator for emergency rescue or evacuation
Thermal hazards	Decomposes above 260 °C releasing toxic fumes.

SECTION 9: Physical and chemical properties

Physical state	Colorless to pale yellow clear liquid
Colour	Colorless to pale yellow
Odour	Pungent (odour threshold 0.35-0.92 mg/m3)
Melting point / freezing point	19.5-21.5 °C
Boiling point or initial boiling point and boiling range	247 °C at 1,013 hPa
Flammability	Combustible; vapours can form explosive mixtures with air
Lower and upper explosion limit / flammability limit	Lower explosion limit: 0.9 % (V); Upper explosion limit: 9.5 % (V)
Flash point	121 °C (closed cup)
Auto-ignition temperature	620 °C
Decomposition temperature	260 °C
pH	Not applicable (reacts with water)
Kinematic viscosity	ca. 2.5 mm2/s at 25 °C (dynamic: ca. 3 mPa·s at 25 °C)
Solubility	Insoluble in water (reacts with water); soluble in aromatic hydrocarbons, acetone and esters
Partition coefficient n-octanol/water	log Pow: ca. 3.4 (calculated; not relevant - substance reacts with water)
Vapour pressure	ca. 0.013 hPa at 20 °C (ca. 0.01 mmHg)
Density and/or relative density	1.22 g/cm3 at 20 °C
Relative vapour density	ca. 6.0 (Air = 1.0)
Particle characteristics	Not applicable (liquid)

SECTION 10: Stability and reactivity

Reactivity	Reacts with strong oxidants, water, alcohols, amines and bases.
Chemical stability	Stable under normal conditions; can react with strong oxidants. May catch

	fire on contact with heat, open fire or sparks.
Possibility of hazardous reactions	Polymerizes on contact with water, alcohols, amines or bases with evolution of carbon dioxide and heat; risk of pressure build-up and bursting in closed containers.
Conditions to avoid	Heat, flame and sparks; extreme temperature and direct sunlight; moisture.
Incompatible materials	Strong oxidizing agents, water, alcohols, amines, bases
Hazardous decomposition products	Carbon oxides, nitrogen oxides, trace hydrogen cyanide

SECTION 11: Toxicological information

Acute toxicity - Oral / Inhalation / Dermal	LD50 Oral - Rat - 5,840 mg/kg; LD50 Dermal - Rat - > 9,400 mg/kg; LC50 Inhalation - Rat - 1 h - 462 mg/m3; LC50 Inhalation - Rat - 4 h - 100 mg/m3
Skin corrosion/irritation	Causes skin irritation; may cause delayed allergic reactions
Serious eye damage/irritation	Strong irritant (rabbit)
Respiratory or skin sensitization	May cause respiratory sensitization (asthma) and skin sensitization
Germ cell mutagenicity	Some in vitro tests (Ames) showed mutagenic effects; in vivo tests negative. Not classified.
Carcinogenicity	Suspected of causing cancer (Carc. 2). IARC: Group 2B (possibly carcinogenic to humans)
Reproductive toxicity	Not classified. No adverse effects on fertility or development in available studies (ECHA).
STOT - single exposure	May cause respiratory irritation
STOT - repeated exposure	Repeated or prolonged inhalation exposure may cause asthma and decline in lung function.
Aspiration hazard	Not classified

SECTION 12: Ecological information

Toxicity to fish / daphnia / algae	The substance reacts rapidly with water forming insoluble polyureas; toxicity data refer to the hydrolysis products (ECHA): Toxicity to fish: LC50 - Danio rerio - > 100 mg/l - 96 h (nominal) Toxicity to daphnia: EC50 - Daphnia magna - > 100 mg/l - 48 h (nominal) Toxicity to algae: ErC50 - > 100 mg/l - 72 h (nominal)
Persistence and degradability	Not readily biodegradable; hydrolyzes rapidly in water (half-life < 1 h) forming chemically inert, insoluble polyureas
Bioaccumulative potential	Low potential for bioaccumulation (reacts with water; log Pow not relevant)

Mobility in soil	Reacts with soil moisture forming insoluble polyureas; not mobile in soil
Other adverse effects	Harmful to aquatic life with long lasting effects (H412)

SECTION 13: Disposal considerations

Product disposal methods	Hazardous waste. Dispose by controlled incineration in accordance with national regulations.
Contaminated packaging	Dispose of contaminated packaging in accordance with national regulations.

SECTION 14: Transport information

UN Number (ADR/RID, IMDG, IATA)	UN 2078
UN Proper Shipping Name	TOLUENE DIISOCYANATE
Transport hazard class(es)	6.1
Packing group	II
Environmental hazards (Marine pollutant)	No
Special precautions for user	Keep containers upright, closed and secured during transport.

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product	Catalogue of Hazardous Chemicals (China): Listed / EINECS: Listed (247-722-4) / TSCA: Listed / IECSC: Listed

SECTION 16: Other information

Full text of H-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
Revision date	2026-10-29
Version	1.0

Abbreviations and acronyms: CAS: Chemical Abstracts Service; EC: European Commission; EINECS: European Inventory of Existing Commercial Chemical Substances; 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 Transport Association; TWA: Time Weighted Average; STEL: Short Term Exposure Limit; LD50: Lethal Dose 50%; LC50: Lethal Concentration 50%; EC50: Effective Concentration 50%; PBT: Persistent, Bioaccumulative and Toxic; vPvB: very Persistent and very Bioaccumulative; SDS: Safety Data Sheet.

References: ECHA - European Chemicals Agency, https://echa.europa.eu/; IPCS - International Chemical Safety Cards (ICSC), http://www.ilo.org/; HSDB - Hazardous Substances Data Bank; eChemPortal - OECD Global Portal to Information on Chemical Substances; ERG - Emergency Response Guidebook by U.S. DOT.

Disclaimer: The information in this SDS is only applicable to the specified product and is provided in good faith. It is based on the knowledge available to Richest Group Ltd. at the date of issue and is intended to describe the product for the purposes of health, safety and environmental requirements only. It does not constitute any guarantee of the properties of the product. Richest Group Ltd. shall not be held liable for any damage resulting from handling or from contact with the above product.