



SAFETY DATA SHEET TOLUENE-DIISOCYANATE

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

1.1. Product identifier

Product name	TOLUENE-DIISOCYANATE
Product number	2549
Synonyms; trade names	LUPRANAT T 80 A, DESMODUR T 80
REACH registration number	01-2119454791-34-XXXX
CAS number	26471-62-5
EU index number	615-006-00-4
EC number	247-722-4

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

Identified uses	Chemical Industrial application Chemicals used in the synthesis and / or formulation of industrial products Surface coating Adhesive. Polymer Additive
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1.3. Details of the supplier of the safety data sheet

Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com
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1.4. Emergency telephone number

Emergency telephone	SGS - +32 (0)3 575 55 55 (24h)
Sds No.	2549

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards	Not Classified
Health hazards	Acute Tox. 1 - H330 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Resp. Sens. 1 - H334 Skin Sens. 1 - H317 Carc. 2 - H351 STOT SE 3 - H335
Environmental hazards	Aquatic Chronic 3 - H412

2.2. Label elements

EC number	247-722-4
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TOLUENE-DIISOCYANATE

Hazard pictograms



Signal word

Danger

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

P202 Do not handle until all safety precautions have been read and understood.
P273 Avoid release to the environment.
P302+P352 IF ON SKIN: Wash with plenty of water.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501 Dispose of contents/ container in accordance with national regulations.

2.3. Other hazards

This substance is not classified as PBT or vPvB according to current EU criteria.

SECTION 3: Composition/information on ingredients

3.1. Substances

Product name	TOLUENE-DIISOCYANATE
REACH registration number	01-2119454791-34-XXXX
EU index number	615-006-00-4
CAS number	26471-62-5
EC number	247-722-4
Composition comments	The data shown are in accordance with the latest EC Directives.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	Move affected person to fresh air at once. Get medical attention.
Ingestion	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Rinse mouth thoroughly with water. Give plenty of water to drink. Get medical attention immediately.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if any discomfort continues.
Eye contact	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention immediately. Continue to rinse.

4.2. Most important symptoms and effects, both acute and delayed

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Inhalation	May cause unconsciousness, blindness and possibly death. May cause an asthma-like shortness of breath.
Ingestion	Ingestion of large amounts may cause unconsciousness.
Skin contact	Prolonged contact may cause redness, irritation and dry skin.
Eye contact	Irritation of eyes and mucous membranes.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor	No specific recommendations. If in doubt, get medical attention promptly.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards	Hydrogen cyanide (HCN). Oxides of the following substances: Carbon. Nitrogen.
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5.3. Advice for firefighters

Special protective equipment for firefighters	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Wear protective clothing as described in Section 8 of this safety data sheet. Avoid inhalation of spray mist and contact with skin and eyes. Provide adequate ventilation.
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6.2. Environmental precautions

Environmental precautions	Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.
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6.3. Methods and material for containment and cleaning up

Methods for cleaning up	Absorb spillage with inert, damp, non-combustible material. Flush contaminated area with plenty of water. Collect and place in suitable waste disposal containers and seal securely. For waste disposal, see Section 13.
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6.4. Reference to other sections

Reference to other sections	Wear protective clothing as described in Section 8 of this safety data sheet.
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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions	Avoid spilling. Avoid contact with skin and eyes. Avoid inhalation of vapours and spray/mists. Provide adequate ventilation.
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7.2. Conditions for safe storage, including any incompatibilities

Storage precautions	Store in tightly-closed, original container in a well-ventilated place. Use containers made of the following materials: Stainless steel. Store at temperatures between 18°C and 40°C.
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Storage class	Toxic storage.
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7.3. Specific end use(s)

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Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Occupational exposure limits

Long-term exposure limit (8-hour TWA): WEL 0.02 mg/m³(Sen)

Short-term exposure limit (15-minute): WEL 0.07 mg/m³(Sen)

WEL = Workplace Exposure Limit.

Ingredient comments

WEL = Workplace Exposure Limits

DNEL

Industry - Inhalation; Short term systemic effects: 0.14 mg/m³

Industry - Inhalation; Short term local effects: 0.14 mg/m³

Industry - Inhalation; Long term systemic effects: 0.035 mg/m³

Industry - Inhalation; Long term local effects: 0.035 mg/m³

PNEC

- Fresh water; 0.0125 mg/l

- marine water; 0.00125 mg/l

- Intermittent release; 0.125 mg/l

- STP; 1 mg/l

8.2. Exposure controls

Protective equipment



Eye/face protection

The following protection should be worn: Chemical splash goggles. Personal protective equipment for eye and face protection should comply with European Standard EN166.

Hand protection

The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. The selected gloves should have a breakthrough time of at least 8 hours. Nitrile rubber. glove thickness 0.4mm Butyl rubber. glove thickness 0.7mm Chloroprene rubber. glove thickness 0.5mm To protect hands from chemicals, gloves should comply with European Standard EN374.

Other skin and body protection

Wear rubber apron. Wear rubber footwear.

Respiratory protection

If ventilation is inadequate, suitable respiratory protection must be worn. Wear a respirator fitted with the following cartridge: Combination filter, type A2/P3. EN 136/140/141/145/143/149

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Liquid.

Colour

Amber. to Brown.

Odour

Pungent.

Odour threshold

No information available.

pH

No information available.

Melting point

9.5 - 10.0°C

Initial boiling point and range

252 - 254°C @ 1013 hPa

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Flash point	132°C
Evaporation rate	No information available.
Evaporation factor	No information available.
Flammability (solid, gas)	No information available.
Upper/lower flammability or explosive limits	No information available.
Other flammability	No information available.
Vapour pressure	0.015 hPa @ 20°C
Vapour density	No information available.
Relative density	1.22 @ 20°C
Bulk density	No information available.
Solubility(ies)	Insoluble in water.
Auto-ignition temperature	> 595°C
Decomposition Temperature	230°C
Viscosity	No information available.
Explosive properties	No information available.
Explosive under the influence of a flame	No information available.
Oxidising properties	No information available.
<u>9.2. Other information</u>	
Refractive index	No information available.
Particle size	No information available.
Molecular weight	174.16
Volatility	No information available.
Saturation concentration	No information available.
Critical temperature	No information available.
Volatile organic compound	No information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	There are no known reactivity hazards associated with this product.
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10.2. Chemical stability

Stability	Stable at normal ambient temperatures and when used as recommended.
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10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Not determined.
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10.4. Conditions to avoid

Conditions to avoid	Water, moisture. Store at temperatures above 15°C.
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10.5. Incompatible materials

Materials to avoid Strong oxidising agents. Tin. Amines. Alkalis. Copper. Aluminium.

10.6. Hazardous decomposition products

Hazardous decomposition products Hydrogen cyanide (HCN). Oxides of the following substances: Carbon. Nitrogen.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 4,130.0

Species Rat

Notes (oral LD₅₀) OECD 401

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 9,400.0

Species Rabbit

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ vapours mg/l) 0.107

Species Rat

ATE inhalation (vapours mg/l) 0.107

Skin corrosion/irritation

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/irritation

Serious eye damage/irritation Causes serious eye irritation.

Respiratory sensitisation

Respiratory sensitisation May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin sensitisation

Skin sensitisation May cause an allergic skin reaction.

Germ cell mutagenicity

Genotoxicity - in vitro No information available.

Carcinogenicity

Carcinogenicity Suspected of causing cancer.

Reproductive toxicity

Reproductive toxicity - fertility No information available.

Specific target organ toxicity - single exposure

STOT - single exposure May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure No information available.

Aspiration hazard

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Aspiration hazard	No information available.
Inhalation	Fatal if inhaled. May cause respiratory system irritation. May cause respiratory allergy. Vapours irritate the respiratory system. May cause coughing and difficulties in breathing.
Ingestion	Gastrointestinal symptoms, including upset stomach.
Skin contact	Irritating to skin. May cause allergic contact eczema.
Eye contact	Irritation of eyes and mucous membranes.

SECTION 12: Ecological information

Ecotoxicity	The product contains a substance which is harmful to aquatic organisms and which may cause long-term adverse effects in the aquatic environment.
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12.1. Toxicity

Toxicity	The product contains a substance which is harmful to aquatic organisms.
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Acute aquatic toxicity

Acute toxicity - fish	LC ₅₀ , 96 hours: 133 mg/l, Oncorhynchus mykiss (Rainbow trout) OECD 203
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Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: 12.5 mg/l, Daphnia magna OECD 202
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12.2. Persistence and degradability

Persistence and degradability	The product is not readily biodegradable.
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12.3. Bioaccumulative potential

Bioaccumulative potential	Bioaccumulation is unlikely to be significant because of the low water-solubility of this product.
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12.4. Mobility in soil

Mobility	The product is insoluble in water.
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12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment	This substance is not classified as PBT or vPvB according to current EU criteria.
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12.6. Other adverse effects

Other adverse effects	Not determined.
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SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information	Waste should be treated as controlled waste. Do not puncture or incinerate, even when empty.
Disposal methods	Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

SECTION 14: Transport information

General	Wear protective clothing as described in Section 8 of this safety data sheet.
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14.1. UN number

UN No. (ADR/RID)	2078
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UN No. (IMDG) 2078

UN No. (ICAO) 2078

UN No. (ADN) 2078

14.2. UN proper shipping name

Proper shipping name (ADR/RID) TOLUENE DIISOCYANATE

Proper shipping name (IMDG) TOLUENE DIISOCYANATE

Proper shipping name (ICAO) TOLUENE DIISOCYANATE

Proper shipping name (ADN) TOLUENE DIISOCYANATE

14.3. Transport hazard class(es)

ADR/RID class 6.1

ADR/RID classification code T1

ADR/RID label 6.1

IMDG class 6.1

ICAO class/division 6.1

ADN class 6.1

Transport labels



14.4. Packing group

ADR/RID packing group II

IMDG packing group II

ICAO packing group II

ADN packing group II

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user

EmS F-A, S-A

ADR transport category 2

Emergency Action Code 2Z

Hazard Identification Number (ADR/RID) 60

Tunnel restriction code (D/E)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

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Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

SECTION 15: Regulatory information

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

EU legislation Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).
Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).
Commission Regulation (EU) No 2015/830 of 28 May 2015.
This product may impact SEVESO storage regulations.

Restrictions (Annex XVII Regulation 1907/2006) This product is/contains a substance that is included in REGULATION (EC) No 1907/2006 (REACH) ANNEX XVII - RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, MIXTURES AND ARTICLES. Entry number: 3

Seveso Directive - Control of major accident hazards H1 4110.2

15.2. Chemical safety assessment

A chemical safety assessment has been carried out.

Inventories

EU - EINECS/ELINCS

All the ingredients are listed or exempt.

SECTION 16: Other information

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Abbreviations and acronyms used in the safety data sheet

ATE: Acute Toxicity Estimate.
 ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
 ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
 CAS: Chemical Abstracts Service.
 DNEL: Derived No Effect Level.
 IATA: International Air Transport Association.
 IMDG: International Maritime Dangerous Goods.
 Kow: Octanol-water partition coefficient.
 LC₅₀: Lethal Concentration to 50 % of a test population.
 LD₅₀: Lethal Dose to 50% of a test population (Median Lethal Dose).
 PBT: Persistent, Bioaccumulative and Toxic substance.
 PNEC: Predicted No Effect Concentration.
 REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.
 RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
 vPvB: Very Persistent and Very Bioaccumulative.
 IARC: International Agency for Research on Cancer.
 MARPOL 73/78: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978.
 cATpE: Converted Acute Toxicity Point Estimate.
 BCF: Bioconcentration Factor.
 BOD: Biochemical Oxygen Demand.
 EC₅₀: 50% of maximal Effective Concentration.
 LOAEC: Lowest Observed Adverse Effect Concentration.
 LOAEL: Lowest Observed Adverse Effect Level.
 NOAEC: No Observed Adverse Effect Concentration.
 NOAEL: No Observed Adverse Effect Level.
 NOEC: No Observed Effect Concentration.
 LOEC: Lowest Observed Effect Concentration.
 DMEL: Derived Minimal Effect Level.
 EL50: Exposure Limit 50
 hPa: Hectopascal
 LL50: Lethal Loading fifty
 OECD: Organisation for Economic Co-operation and Development
 POW: Octanol-water partition coefficient
 SCBA: self-contained breathing apparatus
 STP: Sewage Treatment Plant
 VOC: Volatile Organic Compounds

Classification abbreviations and acronyms

Acute Tox. = Acute toxicity
 Aquatic Acute = Hazardous to the aquatic environment (acute)
 Aquatic Chronic = Hazardous to the aquatic environment (chronic)

Key literature references and sources for data

Supplier's information.

Revision comments

NOTE: Lines within the margin indicate significant changes from the previous revision.

Revision date

02/10/2020

Version number

1.002

Supersedes date

28/02/2017

SDS number

2549

TOLUENE-DIISOCYANATE

SDS status

Approved.

Hazard statements in full

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.

Signature

Jitendra Panchal