



SAFETY DATA SHEET

DIPHENYLMETHANE-4,4-DIISOCYANTE (MDI) ISOMERS

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

1.1. Product identifier

Product name	DIPHENYLMETHANE-4,4-DIISOCYANTE (MDI) ISOMERS
Product number	20732
Synonyms; trade names	ISONATE M309, MDI, POLYMETHANE POLYPHENYL ISOCYANATE, PAPI 2940, ONGRONAT 2100, MDI M220, PAPI 27, LUPRANAT M 20 R, LUPRANAT M 50, LUPRANAT M 70 R, LUPRANAT M 10 R, LUPRANAT MP 105, LUPRANAT MP 109/1, LUPRANAT MX 118-1, SUPRASEC 5025 (HH2), ISOPMDI 92140, LUPRANAT M 20 FB, ONGRONAT CO 2160, ONGRONAT CO 2170, ONGRONAT CO 2150
REACH registration notes	Exempt -polymer exempt by Article 2(9)
CAS number	9016-87-9
EC number	618-498-9

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

Identified uses	Adhesive.
Uses advised against	Consumer spray applications, Consumer applications requiring temperatures above 40°C, Professional cleaning applications with aprotic polar solvents (meeting the IUPAC definition)

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.	20732

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards	Not Classified
Health hazards	Acute Tox. 4 - H332 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Resp. Sens. 1 - H334 Skin Sens. 1 - H317 Carc. 2 - H351 STOT SE 3 - H335 STOT RE 2 - H373
Environmental hazards	Not Classified

2.2. Label elements

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EC number 618-498-9

Hazard pictograms



Signal word Danger

Hazard statements
H332 Harmful if inhaled.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing vapour/ spray.
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.

Supplemental label information
EUH204 Contains isocyanates. May produce an allergic reaction.

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 DIPHENYLMETHANE-4,4-DIISOCYANTE (MDI) ISOMERS
REACH registration notes Exempt -polymer exempt by Article 2(9)
CAS number 9016-87-9
EC number 618-498-9
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 and keep warm and at rest in a position comfortable for breathing. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Get medical attention.
Ingestion Do not induce vomiting. 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. Wash contaminated clothing before reuse. It is important to remove the substance from the skin immediately. Get medical attention if irritation persists after washing.

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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.

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

Inhalation Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. May cause damage to organs through prolonged or repeated exposure if inhaled. Symptoms following overexposure may include the following: Coughing, chest tightness, feeling of chest pressure. Wheezing/breathing difficulties. Effects may be delayed.

Ingestion The product irritates mucous membranes and may cause abdominal discomfort if swallowed.

Skin contact May cause skin irritation. May cause an allergic skin reaction.

Eye contact Causes serious eye irritation.

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.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Extinguish with alcohol-resistant foam, carbon dioxide or dry powder. Do not use water, if avoidable.

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 When heated, vapours/gases hazardous to health may be formed. Keep upwind to avoid inhalation of gases, vapours, fumes and smoke.

Hazardous combustion products Thermal decomposition or combustion products may include the following substances: Carbon dioxide (CO₂). Carbon monoxide (CO). Hydrogen cyanide (HCN). Nitrous gases (NO_x). Isocyanates.

5.3. Advice for firefighters

Protective actions during firefighting Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Control run-off water by containing and keeping it out of sewers and watercourses. Contain and collect extinguishing water.

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Follow precautions for safe handling described in this safety data sheet. Provide adequate ventilation. Avoid inhalation of vapours and contact with skin and eyes.

6.2. Environmental precautions

Environmental precautions Do not discharge into drains or watercourses or onto the ground. Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.

6.3. Methods and material for containment and cleaning up

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Methods for cleaning up

Pick up with absorbent material (e.g. sand, sawdust, general-purpose binder). Dispose of absorbed material in accordance with regulations. Neutralize with a solution of 5 - 10 % Sodium carbonate, 0,2 - 2 % detergents and 90 - 95 % water. Collect and place in suitable waste disposal containers and seal securely. Clean contaminated objects and areas thoroughly, observing environmental regulations.

6.4. Reference to other sections

Reference to other sections Wear protective clothing as described in Section 8 of this safety data sheet. Collect and dispose of spillage as indicated in Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Avoid inhalation of vapours/spray and contact with skin and eyes. Provide adequate general and local exhaust ventilation.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store in tightly-closed, original container in a well-ventilated place. Keep away from food, drink and animal feeding stuffs. Avoid excessive heat for prolonged periods of time. Store at temperatures between 15°C and 40°C. Protect from moisture. Contents may develop pressure upon prolonged storage. Suitable container materials: Carbon steel. Stainless steel. Polyethylene. (HDPE/LDPE) Store away from the following materials: Acids. Alkalis. Amines. Alcohols. Water Strong oxidising agents.

7.3. Specific end use(s)

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

DNEL

Industry - Dermal; Short term systemic effects: 50 mg/kg/day
 Industry - Inhalation; Short term systemic effects: 0.1 mg/m³
 Industry - Dermal; Short term local effects: 28.7 mg/m³
 Industry - Inhalation; Short term local effects: 0.1 mg/m³
 Industry - Inhalation; Long term systemic effects: 0.05 mg/m³
 Consumer - Dermal; Short term systemic effects: 25 mg/kg/day
 Consumer - Inhalation; Short term systemic effects: 0.05 mg/m³
 Consumer - Oral; Short term systemic effects: 20 mg/kg/day
 Consumer - Dermal; Short term local effects: 17.2 mg/m³

PNEC

- marine water; 0.1 mg/l
 - Fresh water; 1 mg/l
 - Intermittent release; 10 mg/l
 - STP; 1 mg/l
 - Soil; 1 mg/l

8.2. Exposure controls

Protective equipment



Appropriate engineering controls

Provide eyewash station and safety shower.

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Eye/face protection	Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. 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. Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. Butyl rubber. Thickness: ≥ 0.7 mm Nitrile rubber. Thickness: ≥ 0.4 mm Chloroprene rubber. Thickness: ≥ 0.5 mm Do not use the following: Polyvinyl chloride (PVC). Laminate of polyethylene and ethylene vinyl alcohol (PE/EVOH). To protect hands from chemicals, gloves should comply with European Standard EN374.
Other skin and body protection	Wear appropriate clothing to prevent any possibility of skin contact.
Hygiene measures	Wash hands and any other contaminated areas of the body with soap and water before leaving the work site. Care should be taken to avoid contact with contaminants when removing contaminated clothing. Wash contaminated clothing before reuse.
Respiratory protection	Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. If ventilation is inadequate, suitable respiratory protection must be worn. Combination filter, type A2/P2. EN 136/140/141/145/143/149

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Viscous liquid.
Colour	Amber. to Brown.
Odour	Musty (mouldy).
Odour threshold	No information available.
pH	No information available.
Melting point	$< 10^{\circ}\text{C}$
Initial boiling point and range	$> 300^{\circ}\text{C}$ @ 1013 mbar
Flash point	$> 200^{\circ}\text{C}$ Closed cup.
Evaporation rate	No information available.
Evaporation factor	Data lacking.
Flammability (solid, gas)	No information available.
Upper/lower flammability or explosive limits	Data lacking.
Other flammability	No information available.
Vapour pressure	< 0.01 Pa @ 25°C
Vapour density	8.5
Relative density	1.22 @ 20°C
Bulk density	No information available.
Solubility(ies)	Reacts with water.

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Partition coefficient	No information available.
Auto-ignition temperature	>400°C
Decomposition Temperature	> 230°C
Viscosity	20-260 mPa s @ 25°C
Explosive properties	Not considered to be explosive.
Explosive under the influence of a flame	No information available.
Oxidising properties	Does not meet the criteria for classification as oxidising.

9.2. Other information

Saturation concentration	0.15
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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	The following materials may react with the product: Acids. Alkalis. Amines. Alcohols. Water Contents may develop pressure upon prolonged storage.
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10.4. Conditions to avoid

Conditions to avoid	Avoid excessive heat for prolonged periods of time. Protect from moisture.
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10.5. Incompatible materials

Materials to avoid	Avoid contact with the following materials: Acids. Alkalis. Amines. Alcohols. Strong oxidising agents. Water
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10.6. Hazardous decomposition products

Hazardous decomposition products	Thermal decomposition or combustion products may include the following substances: Carbon monoxide (CO). Carbon dioxide (CO ₂). Nitrous gases (NO _x). Hydrogen cyanide (HCN). Isocyanates.
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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

Acute toxicity oral (LD ₅₀ mg/kg)	10,000.0
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Species	Rat
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Acute toxicity - dermal

Acute toxicity dermal (LD ₅₀ mg/kg)	9,400.0
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Species	Rabbit
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Acute toxicity - inhalation

ATE inhalation (gases ppm)	4,500.0
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ATE inhalation (vapours mg/l) 11.0

ATE inhalation (dusts/mists mg/l) 1.5

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 vivo Based on available data the classification criteria are not met.

Carcinogenicity

Carcinogenicity Suspected of causing cancer.
NOAEL 0.2 mg/l, Inhalation, Rat
NOAEL 1 mg/kg, Inhalation, Rat

Reproductive toxicity

Reproductive toxicity - fertility Fertility: - NOAEL 4 mg/m³, , Rat

Specific target organ toxicity - single exposure

STOT - single exposure May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure May cause damage to organs through prolonged or repeated exposure if inhaled.
NOAEL 0.2 mg/kg, Inhalation, Rat

Aspiration hazard

Aspiration hazard No information available.

Inhalation

Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. May cause damage to organs through prolonged or repeated exposure if inhaled. Symptoms following overexposure may include the following: Coughing, chest tightness, feeling of chest pressure. Wheezing/breathing difficulties. Effects may be delayed.

Ingestion

The product irritates mucous membranes and may cause abdominal discomfort if swallowed.

Skin contact

Causes skin irritation. May cause an allergic skin reaction.

Eye contact

Causes serious eye irritation.

SECTION 12: Ecological information

Ecotoxicity

The product components are not classified as environmentally hazardous. However, large or frequent spills may have hazardous effects on the environment.

12.1. Toxicity

Toxicity

Not considered toxic to fish.

Acute aquatic toxicity

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Acute toxicity - fish	LC ₅₀ , 96 hours: > 1000 mg/l, Fish
Acute toxicity - aquatic invertebrates	EC ₅₀ , 24 hours: > 500 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC ₅₀ , 72 hours: 1640 mg/l, Scenedesmus subspicatus

12.2. Persistence and degradability

Persistence and degradability The product is not readily biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient No information available.

12.4. Mobility in soil

Mobility Reacts strongly with water.

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.

12.6. Other adverse effects

Other adverse effects Not determined.

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 The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

No transport warning sign required.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user

Not applicable.

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

Transport in bulk according to Not applicable.

Annex II of MARPOL 73/78
and the IBC Code

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.

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 Entry number: 56

15.2. Chemical safety assessment

No 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.

Classification procedures according to Regulation (EC) 1272/2008

Acute Tox. 4 - H332: Read-across data. Skin Irrit. 2 - H315: Read-across data. Skin Sens. 1B - H317: Read-across data. Eye Irrit. 2 - H319: Read-across data. Carc. 2 - H351: On basis of test data. Resp. Sens. 1 - H334: Read-across data. STOT SE 3 - H335: Read-across data. STOT RE 2 - H373: On basis of test data.

Revision comments

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

Revision date

20/01/2021

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Version number	3.002
Supersedes date	29/03/2019
SDS number	20732
SDS status	Approved.
Hazard statements in full	H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H332 Harmful if inhaled. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H335 May cause respiratory irritation. H351 Suspected of causing cancer. H373 May cause damage to organs through prolonged or repeated exposure.
Signature	Jitendra Panchal

This 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. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.