

4,4'-methylenedicyclohexyl diisocyanate

Version number: GHS 1.0

Date of compilation: 2022-05-02

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

1.1 Product identifier

| | |
|---------------------------------|--|
| Identification of the substance | 4,4'-methylenedicyclohexyl diisocyanate |
| CAS number | 5124-30-1 |
| Alternative name(s) | 1,1'-methylenebis(4-isocyanatocyclohexane) |
| Article number | A0004556 |

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

| | |
|--------------------------|-------------|
| Relevant identified uses | General use |
|--------------------------|-------------|

1.3 Details of the supplier of the safety data sheet

Chemos GmbH & Co. KG
 Sonnenring 7
 84032 Altdorf
 Germany

Telephone: +49 871-966346-0
 Telefax: +49 871-966346-13
 e-mail: chemos@chemos.de
 Website: <http://www.chemos.de/>

e-mail (competent person) chemos@chemos.de

1.4 Emergency telephone number

| | |
|-------------------------------|----------------|
| Emergency information service | +49 89 1 92 40 |
|-------------------------------|----------------|

| Poison centre | | | | |
|----------------|---|----------------------|-------------------|---------|
| Country | Name | Postal code/ city | Telephone | Telefax |
| United Kingdom | National Poison Information Centre Medical Toxicology Unit | SE14 5ER Lon- don | +44 171 635 91 91 | |

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification acc. to GHS

| Section | Hazard class | Category | Hazard class and cat- egory | Hazard state- ment |
|---------|---|----------|--------------------------------|-----------------------|
| 3.1I | acute toxicity (inhal.) | 2 | Acute Tox. 2 | H330 |
| 3.2 | skin corrosion/irritation | 2 | Skin Irrit. 2 | H315 |
| 3.3 | serious eye damage/eye irritation | 2 | Eye Irrit. 2 | H319 |
| 3.4R | respiratory sensitisation | 1 | Resp. Sens. 1 | H334 |
| 3.4S | skin sensitisation | 1 | Skin Sens. 1 | H317 |
| 3.8R | specific target organ toxicity - single exposure (respiratory tract irritation) | 3 | STOT SE 3 | H335 |

For full text of abbreviations: see SECTION 16.

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2.2 Label elements

Labelling

- Signal word danger

- Pictograms

GHS06, GHS08



- Hazard statements

| | |
|------|-------------------------|
| H315 | Causes skin irritation. |
|------|-------------------------|

| | |
|------|--------------------------------------|
| H317 | May cause an allergic skin reaction. |
|------|--------------------------------------|

| | |
|------|--------------------------------------|
| 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.

- Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/....

P284 In case of inadequate ventilation wear respiratory protection.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P310 Immediately call a POISON CENTER/doctor.

P362+P364 Take off contaminated clothing and wash it before reuse.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P501 Dispose of contents/container to industrial combustion plant.

2.3 Other hazards

Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

| | |
|-------------------|---|
| Name of substance | 4,4'-methylenedicyclohexyl diisocyanate |
|-------------------|---|

Identifiers

CAS No 5124-30-1

EC No 225-863-2

| Specific Conc. Limits | M-Factors | ATE | Exposure route |
|---|-----------|--|---|
| Resp. Sens. 1; H334: C ≥ 0.5 % Skin Sens. 1; H317: C ≥ 0.5 % | - | 0.5 mg _I /4h 0.434 mg _I /4h | inhalation: vapour inhalation: dust/mist |

Molecular formula C₁₅H₂₂N₂O₂

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SECTION 4: First aid measures**4.1 Description of first aid measures**

General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. In case of respiratory tract irritation, consult a physician. Provide fresh air.

Following skin contact

Wash with plenty of soap and water.

Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects are not known to date.

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Firefighting measures**5.1 Extinguishing media**

Suitable extinguishing media

Water spray, BC-powder, Carbon dioxide (CO₂)

Unsuitable extinguishing media

Water jet

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

Carbon monoxide (CO), Carbon dioxide (CO₂)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Co-ordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

For non-emergency personnel

Remove persons to safety.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

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6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains

Advice on how to clean up a spill

Wipe up with absorbent material (e.g. cloth, fleece). Collect spillage: sawdust, kieselgur (diatomite), sand, universal binder

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Recommendations

- Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Use only in well-ventilated areas.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

- Ventilation requirements

Keep any substance that emits harmful vapours or gases in a place that allows these to be permanently extracted.

- Packaging compatibilities

Only packagings which are approved (e.g. acc. to ADR) may be used.

7.3 Specific end use(s)

See section 16 for a general overview.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

This information is not available.

Human health values

| Relevant DNELs and other threshold levels | | | | |
|---|-----------------------|------------------------------------|-------------------|-------------------------|
| Endpoint | Threshold level | Protection goal, route of exposure | Used in | Exposure time |
| DNEL | 0.3 mg/m ³ | human, inhalatory | worker (industry) | chronic - local effects |
| DNEL | 0.6 mg/m ³ | human, inhalatory | worker (industry) | acute - local effects |

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Environmental values

| Relevant PNECs and other threshold levels | | | | |
|---|-----------------|-----------------------|------------------------------|------------------------------|
| Endpoint | Threshold level | Organism | Environmental compartment | Exposure time |
| PNEC | 0.003 mg/l | aquatic organisms | freshwater | short-term (single instance) |
| PNEC | 0 mg/l | aquatic organisms | marine water | short-term (single instance) |
| PNEC | 1.91 mg/l | aquatic organisms | sewage treatment plant (STP) | short-term (single instance) |
| PNEC | 2.93 mg/kg | aquatic organisms | freshwater sediment | short-term (single instance) |
| PNEC | 0.293 mg/kg | aquatic organisms | marine sediment | short-term (single instance) |
| PNEC | 2.38 mg/kg | terrestrial organisms | soil | short-term (single instance) |

8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection.

Skin protection

- Hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

- Other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|--|--------------------------|
| Physical state | liquid |
| Colour | not determined |
| Odour | characteristic |
| Melting point/freezing point | 15 °C |
| Boiling point or initial boiling point and boiling range | 155 – 160 °C at 0.67 hPa |

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| | |
|---------------------------------|---|
| Flammability | this material is combustible, but will not ignite readily |
| Lower and upper explosion limit | not determined |
| Flash point | 200 °C at 1,013 mbar |
| Auto-ignition temperature | 225 °C at 1,013 hPa (ECHA) |
| Decomposition temperature | ≥300 °C (ECHA) |
| pH (value) | not determined |
| Kinematic viscosity | not determined |
| Solubility(ies) | not determined |

Partition coefficient

| | |
|---|----------------------|
| Partition coefficient n-octanol/water (log value) | 6.11 (ECHA) |
| Soil organic carbon/water (log KOC) | 4.639 – 5.575 (ECHA) |

| | |
|-----------------|----------------|
| Vapour pressure | 0 hPa at 50 °C |
|-----------------|----------------|

Density and/or relative density

| | |
|-------------------------|---|
| Density | not determined |
| Relative vapour density | information on this property is not available |

| | |
|--------------------------|-----------------------|
| Particle characteristics | not relevant (liquid) |
|--------------------------|-----------------------|

9.2 Other information

| | |
|--|--|
| Information with regard to physical hazard classes | hazard classes acc. to GHS (physical hazards): not relevant |
|--|--|

Other safety characteristics

| | |
|-----------------|-------|
| Solvent content | 100 % |
|-----------------|-------|

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SECTION 10: Stability and reactivity**10.1 Reactivity**

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials".

10.2 Chemical stability

See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

10.5 Incompatible materials

Oxidisers

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Classification acc. to GHS**

Acute toxicity

Fatal if inhaled.

- Acute toxicity estimate (ATE)

Inhalation: vapour 0.5 mg/l/4h

Inhalation: dust/mist 0.434 mg/l/4h

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Causes serious eye irritation.

Respiratory or skin sensitisation

May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

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11.2 Information on other hazards

There is no additional information.

SECTION 12: Ecological information

12.1 Toxicity

Shall not be classified as hazardous to the aquatic environment.

Biodegradation

Not readily biodegradable.

12.2 Persistence and degradability

| Process of degradability | | |
|--------------------------|------------------|------|
| Process | Degradation rate | Time |
| oxygen depletion | 0 % | 28 d |

12.3 Bioaccumulative potential

Data are not available.

| | |
|---------------------------|---------------|
| n-octanol/water (log KOW) | 6.11 (ECHA) |
| BCF | 10,186 (ECHA) |

12.4 Mobility in soil

| | |
|--|-------------------------------------|
| Henry's law constant | 6.9 Pa m ³ /mol at 25 °C |
| The Organic Carbon normalised adsorption coefficient | 4.639 – 5.575 (ECHA) |

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Endocrine disrupting properties

Information on this property is not available.

12.7 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

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SECTION 14: Transport information

- 14.1 UN number or ID number** not assigned
- 14.2 UN proper shipping name** not assigned
- 14.3 Transport hazard class(es)** not assigned
- 14.4 Packing group** not assigned
- 14.5 Environmental hazards** non-environmentally hazardous acc. to the dangerous goods regulations
- 14.6 Special precautions for user**
Provisions for dangerous goods (ADR) should be complied within the premises.
- 14.7 Maritime transport in bulk according to IMO instruments**
The cargo is not intended to be carried in bulk.

Information for each of the UN Model Regulations

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) - Additional information

not assigned

International Maritime Dangerous Goods Code (IMDG) - Additional information

not assigned

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

not assigned

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
Relevant provisions of the European Union (EU)
Deco-Paint Directive
- | | |
|-------------|-------|
| VOC content | 100 % |
|-------------|-------|
- Industrial Emissions Directive (IED)**
- | | |
|-------------|-------|
| VOC content | 100 % |
|-------------|-------|
- 15.2 Chemical Safety Assessment**
No Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Abbreviations and acronyms

| Abbr. | Descriptions of used abbreviations |
|-------|---|
| ADR | Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road) |
| ATE | Acute Toxicity Estimate |
| BCF | Bioconcentration factor |

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| Abbr. | Descriptions of used abbreviations |
|----------|---|
| CAS | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances) |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| DNEL | Derived No-Effect Level |
| EC No | The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union) |
| EINECS | European Inventory of Existing Commercial Chemical Substances |
| ELINCS | European List of Notified Chemical Substances |
| GHS | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations |
| IATA | International Air Transport Association |
| IATA/DGR | Dangerous Goods Regulations (DGR) for the air transport (IATA) |
| ICAO | International Civil Aviation Organization |
| IMDG | International Maritime Dangerous Goods Code |
| NLP | No-Longer Polymer |
| PBT | Persistent, Bioaccumulative and Toxic |
| PNEC | Predicted No-Effect Concentration |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals |
| RID | Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail) |
| VOC | Volatile Organic Compounds |
| vPvB | Very Persistent and very Bioaccumulative |

Key literature references and sources for data

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

List of relevant phrases (code and full text as stated in section 2 and 3)

| Code | Text |
|------|--|
| 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. |

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.