

# SAFETY DATA SHEET

## Section 1. Identification

June, 2024

GHS product identifier : ISO 540A  
Product code : ISO 540A  
Other means of identification : NA  
Product type : Liquid.  
Material uses : Urethane Elastomer  
Supplier's details : Forsch Polymer Corp  
3025 S. Wyandot St.  
Englewood, Co. 80110  
  
Non-Emergency phone: (303) 322-9611

e-mail address of person responsible for this SDS [Bill@forschpolymer.com](mailto:Bill@forschpolymer.com)  
[James@forschpolymer.com](mailto:James@forschpolymer.com)

Emergency telephone : 303-548-7716  
number (24h/7 day)

## Section 2. Hazards identification

: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

OSHA/HCS status

Classification of the substance or mixture

ACUTE TOXICITY (inhalation) - Category 2  
SERIOUS EYE DAMAGE! EYE IRRITATION - Category 2A  
RESPIRATORY SENSITIZATION - Category 1  
SKIN SENSITIZATION - Category 1  
AQUATIC HAZARD (ACUTE) - Category 3  
AQUATIC HAZARD (LONG-TERM) - Category 3

GHS label elements  
Hazard pictograms



Signal Word

: Danger  
  
: Harmful if swallowed or if inhaled.  
Causes serious eye irritation.  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
May cause an allergic skin reaction.  
Harmful to aquatic life with long lasting effects.

Hazard statements

Section 2. Hazards identification

**Precautionary statements** Wear protective gloves: > 8 hours (breakthrough time): butyl rubber, Ethyl Vinyl Alcohol Laminate (EVAL). Wear eye or face protection. In case of inadequate ventilation wear respiratory protection. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Avoid breathing vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. **IF INHALED:** Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. If experiencing respiratory symptoms: Call a POISON CENTER or physician. **IF SWALLOWED:** Call a POISON CENTER or physician if you feel unwell. Rinse mouth. **IF ON SKIN:** Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention. **IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention. Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Other hazards which do not result in classification** None known.

Section 3. Composition/information on ingredients

**Substance/mixture** : Mixture

| Ingredient name                                        | %       | CAS number |
|--------------------------------------------------------|---------|------------|
| Dicyclohexylmethane-4,4'-diisocyanate                  | 13 - 30 | 5124-30-1  |
| 3-isocyanatomethy1-3,5,5-trimethylcyclohexylisocyanate | 1 - 3   | 4098-71-9  |

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

**Occupational exposure limits, if available, are listed in Section 8.**

Section 4. First aid measures

Description of necessary first aid measures

**Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

**Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. In the event of any complaints or symptoms, avoid further exposure.

**Skin contact** Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

## Section 4. First aid measures

|           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ingestion | : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**Most important symptoms/effects, acute and delayed**

**Potential acute health effects**

|              |                                                                                                                                                                                                                   |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Eye contact  | : Causes serious eye irritation.                                                                                                                                                                                  |
| Inhalation   | : Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure. |
| Skin contact | : May cause an allergic skin reaction.                                                                                                                                                                            |
| Ingestion    | : Harmful if swallowed. Irritating to mouth, throat and stomach.                                                                                                                                                  |

**Over-exposure signs/symptoms**

|              |                                                                                                |
|--------------|------------------------------------------------------------------------------------------------|
| Eye contact  | : Adverse symptoms may include the following:<br>Pain or irritation<br>Redness                 |
| Inhalation   | : Adverse symptoms may include the following:<br>Wheezing and breathing difficulties<br>asthma |
| Skin contact | : Adverse symptoms may include the following:<br>Irritation<br>Redness                         |
| Ingestion    | : No specific data                                                                             |

**Indication of immediate medical attention and special treatment needed, if necessary**

|                            |                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Notes to physician         | : No specific treatment. Treat symptomatically. Call medical doctor or poison control center immediately if large quantities have been ingested.                                                                                                                                                                                                                                                    |
| Protection of first-aiders | : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. |

See toxicological information (Section 11)

Section 5. Fire-fighting measures

|                                                |                                                                                                                                                                                                                                                                                           |
|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Flash point                                    | : Closed cup: >150°C (>302°F) [DIN 51758 EN 22719 (Pensky-Martens Closed Cup)]                                                                                                                                                                                                            |
| Extinguishing media                            |                                                                                                                                                                                                                                                                                           |
| Suitable extinguishing media                   | : Use an extinguishing agent suitable for the surrounding fire.                                                                                                                                                                                                                           |
| Unsuitable extinguishing media                 | : None known.                                                                                                                                                                                                                                                                             |
| Specific hazards arising from the chemical     | In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. |
| Hazardous thermal decomposition products       | Decomposition products may include the following materials:<br>carbon dioxide<br>carbon monoxide<br>nitrogen oxides                                                                                                                                                                       |
| Special protective actions for fire-fighters   | Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.                                                                                               |
| Special protective equipment for fire-fighters | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.                                                                                                                       |

Section 6. Accidental release measures

|                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                       | <b>Personal precautions, protective equipment and emergency procedures</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| For non-emergency personnel                           | : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.                                                                                                                                                                                                                                                                                  |
| For emergency responders                              | :If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Environmental precautions                             | : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.                                                                                                                                                                                                                                                                                                                                                                |
| Methods and materials for containment and cleaning up | Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal. |

## Section 7. Handling and storage

### Precautions for safe handling

**Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

**Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

**Conditions for safe storage, including any incompatibilities** : Store between the following temperatures: 2 to 40°C (35.6 to 104°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

| Ingredient name                                        | Exposure limits                                                                                                                                                                                                                                                                                          |
|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dicyclohexylmethane-4,4'-diisocyanate                  | <b>ACGIH TLV (United States, 6/2013).</b><br>TWA: 0.054 mg/m <sup>3</sup> 8 hours.<br>TWA: 0.005 ppm 8 hours.                                                                                                                                                                                            |
| 3-isocyanatomethy1-3,5,5-trimethylcyclohexylisocyanate | <b>OSHA PEL (United States, 2/2013). Absorbed through skin.</b><br>TWA: 5 mg/m <sup>3</sup> , (as CN) 8 hours.<br><b>ACGIH TLV (United States, 6/2013).</b><br>TWA: 0.005 ppm 8 hours.<br><b>OSHA PEL (United States, 2/2013). Absorbed through skin.</b><br>TWA: 5 mg/m <sup>3</sup> , (as CN) 8 hours. |

**Appropriate engineering controls** Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

**Environmental exposure controls** Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

## Section 8. Exposure controls/personal protection

|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hygiene measures       | : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.                                                                                                                                                                                                                          |
| Eye/face protection    | : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.                                                                                                                                                                                                                                                                                                                                          |
| Hand protection        | : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. > 8 hours (breakthrough time): butyl rubber, Ethyl Vinyl Alcohol Laminate (EVAL) |
| Body protection        | Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Other skin protection  | Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Respiratory protection | : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.                                                                                                                                                                                                                                                                                                                                                                     |
| Thermal hazards        | Not available.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

## Section 9. Physical and chemical properties

|                                              |                                                                                |
|----------------------------------------------|--------------------------------------------------------------------------------|
| <b>Appearance</b>                            |                                                                                |
| Physical state                               | Liquid.                                                                        |
| Color                                        | : Amber.                                                                       |
| Odor                                         | : Slight                                                                       |
| Odor threshold                               | : Not available.                                                               |
| pH                                           | : Not available.                                                               |
| Melting point/Freezing point                 | : Not available.                                                               |
| Boiling/condensation point                   | : >200°C (>392°F)                                                              |
| Flash point                                  | : Closed cup: >150°C (>302°F) [DIN 51758 EN 22719 (Pensky-Martens Closed Cup)] |
| Evaporation rate                             | : Not available.                                                               |
| Flammability (solid, gas)                    | : Not available.                                                               |
| Lower and upper explosive (flammable) limits | : Not available.                                                               |
| Vapor pressure                               | : Not available.                                                               |
| Vapor density                                | : Not available.                                                               |
| Relative density                             | : 1.05                                                                         |
| Solubility in water                          | : Reacts violently with water.                                                 |

Section 9. Physical and chemical properties

Partition coefficient: n-octanol/water : Not available.

Auto-ignition temperature : Not available.

Decomposition temperature : >200°C (>392°F)

Density : 1.05 g/cm³ [25°C (77°F)]

Viscosity : Not available.

VOC : 0%

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

| Product/ingredient name                                 | Test                               | Endpoint                        | Species            | Result      |
|---------------------------------------------------------|------------------------------------|---------------------------------|--------------------|-------------|
| Dicyclohexylmethane-4,4'-diisocyanate                   | OECD 403 Acute Inhalation Toxicity | LC50 Inhalation Dusts and mists | Rat - Male, Female | 0.43 mg/l   |
|                                                         | OECD 402 Acute Dermal Toxicity     | LD50 Dermal                     | Rat - Male, Female | >7000 mg/kg |
|                                                         | -                                  | LD50 Oral                       | Rat - Male, Female | 18200 mg/kg |
| 3-isocyanatomethyl-3,5, 5-trimethylcyclohexylisocyanate | OECD 403 Acute Inhalation Toxicity | LC50 Inhalation Dusts and mists | Rat - Male, Female | 0.04 mg/l   |
|                                                         | OECD 401 Acute Oral Toxicity       | LD50 Oral                       | Rat                | 4814 mg/kg  |

Irritation/Corrosion

| Product/ingredient name                                 | Test                                       | Species | Result          |
|---------------------------------------------------------|--------------------------------------------|---------|-----------------|
| Dicyclohexylmethane-4,4'-diisocyanate                   | OECD 404 Acute Dermal Irritation/Corrosion | Rabbit  | Skin - Irritant |
|                                                         | OECD 405 Acute Eye Irritation/Corrosion    | Rabbit  | Eyes - Irritant |
| 3-isocyanatomethyl-3,5, 5-trimethylcyclohexylisocyanate | -                                          | Rabbit  | Eyes - Irritant |

Conclusion/Summary

Skin

Section 11. Toxicological information

Dicyclohexylmethane-4,4'-diisocyanate 3-isocyanatomethyl-3, 5, 5-trimethylcyclohexylisocyanate

Severely irritating to the skin.

No additional information.

Eyes

: Dicyclohexylmethane-4,4'-diisocyanate 3-isocyanatomethyl-3, 5, 5-trimethylcyclohexylisocyanate

Irritating to eyes.

Irritating to eyes.

Respiratory

: Dicyclohexylmethane-4,4'-diisocyanate 3-isocyanatomethyl-3, 5, 5-trimethylcyclohexylisocyanate

No additional information.

No additional information.

Sensitization

| Product/ingredient name                                  | Test | Route of exposure | Species        | Result                  |
|----------------------------------------------------------|------|-------------------|----------------|-------------------------|
| Dicyclohexylmethane-4,4'-diisocyanate                    | -    | -Guinea skin      | Guinea pig     | Sensitizing             |
| 3-isocyanatomethyl-3, 5, 5-trimethylcyclohexylisocyanate |      | skinRespiratory   | Guinea pig pig | Sensitizing Sensitizing |
|                                                          |      | Respiratory       | Human          | Sensitizing             |

Mutagenicity

| Product/ingredient name               | Test                                                                                                                                                                                                                                       | Result                                   |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| Dicyclohexylmethane-4,4'-diisocyanate | Experiment: In vitro<br>Subject: Bacteria<br>Metabolic activation: +/-<br>Experiment: In vitro<br>Subject: Mammalian-Animal<br>Metabolic activation: +/-<br>Experiment: In vitro<br>Subject: Mammalian-Animal<br>Metabolic activation: +/- | Negative<br><br>Negative<br><br>Negative |

Conclusion/Summary

Dicyclohexylmethane-4,4'-diisocyanate

Not mutagenic in a standard battery of genetic toxicological tests.

Carcinogenicity

Not available.

Reproductive toxicity

| Product/ingredient name               | Test                                                         | Species            | Maternal toxicity | Fertility | Developmental effects |
|---------------------------------------|--------------------------------------------------------------|--------------------|-------------------|-----------|-----------------------|
| Dicyclohexylmethane-4,4'-diisocyanate | OECD 421 Reproduction/ Developmental Toxicity Screening Test | Rat - Male, Female | Positive          | Negative  | Negative              |

Teratogenicity

Section 11. Toxicological information

| Product/ingredient name               | Test                                           | Species      | Result/Result type    |
|---------------------------------------|------------------------------------------------|--------------|-----------------------|
| Dicyclohexylmethane-4,4'-diisocyanate | OECD 414 Prenatal Developmental Toxicity Study | Rat - Female | Negative - Inhalation |

Specific target organ toxicity (single exposure)

| Product/ingredient name                                 | Category   | Route of exposure | Target organs                |
|---------------------------------------------------------|------------|-------------------|------------------------------|
| Dicyclohexylmethane-4,4'-diisocyanate                   | Category 3 | Not applicable.   | Respiratory tract irritation |
| 3-isocyanatomethy1-3,5, 5-trimethylcyclohexylisocyanate | Category 3 | Not applicable.   | Respiratory tract irritation |

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

- Eye contact

Inhalation

Skin contact

Ingestion
- : Causes serious eye irritation.

: Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

: May cause an allergic skin reaction.

: Harmful if swallowed. Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and

toxicological characteristics

- Eye contact

Inhalation

Skin contact

Ingestion
- Adverse symptoms may include the following:  
pain or irritation  
watering  
redness

Adverse symptoms may include the following:  
wheezing and breathing difficulties  
asthma

Adverse symptoms may include the following:  
irritation  
redness

effects and also chronic effects from short and long term exposure

Delayed and immediate

Short term exposure : Not available.

Potential immediate effects : Not available.

Potential delayed effects

Long term exposure : Not available.

Potential immediate effects No specific data.

Section 11. Toxicological information

Potential delayed effects : Not available.

Potential chronic health effects

| Product/ingredient name               | Test                                                     | Endpoint                                       | Species            | Result              |
|---------------------------------------|----------------------------------------------------------|------------------------------------------------|--------------------|---------------------|
| Dicyclohexylmethane-4,4'-diisocyanate | OECD 413<br>Subchronic Inhalation Toxicity: 90-day Study | Sub-chronic NOEC<br>Inhalation Dusts and mists | Rat - Male, Female | 3 mg/m <sup>3</sup> |

- General

Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
- Carcinogenicity

No known significant effects or critical hazards.
- Mutagenicity

No known significant effects or critical hazards.
- Teratogenicity

No known significant effects or critical hazards.
- Developmental effects

No known significant effects or critical hazards.
- Fertility effects

: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Other information : Not available.

Section 12. Ecological information

Toxicity

| Product/ingredient name                                                                                             | Test                                            | Endpoint |       | Exposure           | Species  | Result |      |
|---------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|----------|-------|--------------------|----------|--------|------|
| Dicyclohexylmethane-4,4'-diisocyanate<br><br><br><br><br><br>3-isocyanatomethyl-3,5,5-trimethylcyclohexylisocyanate | EU EC C.2 Acute Toxicity for Daphnia            | Acute    | EC50  | 48 hours<br>Static | Daphnia  | >8.3   | mg/l |
|                                                                                                                     | EU EC C.3 Algal Inhibition Test                 | Acute    | EgC50 | 72 hours<br>Static | Algae    | >5     | mg/l |
|                                                                                                                     | EU EC C.1 Acute Toxicity for Fish               | Acute    | LC50  | 96 hours<br>Static | Fish     | >8.1   | mg/l |
|                                                                                                                     | EU EC C.3 Algal Inhibition Test                 | Chronic  | NOECr | 72 hours<br>Static | Algae    | 0.31   | mg/l |
|                                                                                                                     | -                                               | Acute    | EC50  | 72 hours           | Algae    | 118.7  | mg/l |
|                                                                                                                     | EU EC 88/302/EC<br>DIN 38412<br>(Lumistox test) | Acute    | EC50  | 3 hours            | Bacteria | 263    | mg/l |
|                                                                                                                     |                                                 | Acute    | EC50  | 24 hours           | Daphnia  | 83.7   | mg/l |
|                                                                                                                     | DIN 38412<br>(Lumistox test)                    | Acute    | LC50  | 48 hours           | Fish     | 1.8    | mg/l |
|                                                                                                                     | OECD                                            | Chronic  | NOEC  | 21 days            | Daphnia  | 3      | mg/l |

Persistence and degradability

| Product/ingredient name                                 | Test                                       | Period  | Result |
|---------------------------------------------------------|--------------------------------------------|---------|--------|
| Dicyclohexylmethane-4,4'-diisocyanate                   | EU                                         | 28 days | 0 %    |
| 3-isocyanatomethyl-3,5, 5-trimethylcyclohexylisocyanate | EU Tested according to Directive 92/69/EEC | 28 days | 0 %    |

Section 12. Ecological information

| Product/ingredient name                                | Aquatic half-life | Photolysis | Biodegradability |
|--------------------------------------------------------|-------------------|------------|------------------|
| Dicyclohexylmethane-4,4'-diisocyanate                  | -                 | -          | Not readily      |
| 3-isocyanatomethyl-3,5,5-trimethylcyclohexylisocyanate | -                 | -          | Not readily      |

Bioaccumulative potential

Not available.

Mobility in soil

Not available.

Other adverse effects

Other ecological information : No known significant effects or critical hazards.

BOD5 Not Determined

COD Not Determined

TOC Not Determined

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14. Transport information

Proper shipping name

DOT : Not regulated.

TDG : Not regulated.

IMDG : Not regulated.

IATA : Not regulated.

Section 14. Transport information

| Regulatory information | UN number      | Classes | PG* | Label | Additional information |
|------------------------|----------------|---------|-----|-------|------------------------|
| DOT Classification     | Not regulated. | -       | -   |       | -                      |
| TDG Classification     | Not regulated. | -       |     |       | -                      |
| IMDG Classification    | Not regulated. | -       | -   |       | -                      |
| IATA Classification    | Not regulated. | -       | -   |       | -                      |

PG\* : Packing group

Section 15. Regulatory information

Safety, health and environmental regulations specific for the product  
United States Regulations

TSCA 8(b) inventory : All components are listed or exempted.

TSCA 5(a)2 final significant new use rule (SNUR) : No ingredients listed.

TSCA 5(e) substance consent order : No ingredients listed.

TSCA 12(b) export notification : No ingredients listed.

SARA 311/312 : Immediate (acute) health hazard

|                                                              | Product name                            | Concentration % |
|--------------------------------------------------------------|-----------------------------------------|-----------------|
| Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) | : Dicyclohexylmethane-4,4'-diisocyanate | 14.624          |
|                                                              | 3-isocyanatomethy1-3,5,                 | 2.265 5-        |
|                                                              | trimethylcyclohexylisocyanate           |                 |

Clean Air Act - Ozone Depleting Substances (ODS) : EPCRA Section 313 (40 CFR 372) CERCLA (Comprehensive Environmental Response, Compensation and Liability Act): 4,4-Methylene diphenyl diisocyanate (CAS 101-68-8) has a 5,000 lb. RQ (reportable quantity). Any spill or release above the RQ must be reported to the National Response Center (800-424-8802).

This product does not contain nor is it manufactured with ozone depleting substances.

|                                          | Product name                            | Concentration % |
|------------------------------------------|-----------------------------------------|-----------------|
| SARA 313 Form R - Reporting requirements | : Dicyclohexylmethane-4,4'-diisocyanate | 14.624          |
|                                          | 3-isocyanatomethy1-3,5,                 | 2.265 5-        |
|                                          | trimethylcyclohexylisocyanate           |                 |

Section 15. Regulatory information

|                             | <u>Ingredient name</u>                                                   | <u>%</u> | <u>Section 304<br/>CERCLA<br/>Hazardous<br/>Substance</u> | <u>CERCLA<br/>Reportable<br/>Quantity<br/>(Lbs)</u> | <u>Product<br/>Reportable<br/>Quantity<br/>(Lbs)</u> |
|-----------------------------|--------------------------------------------------------------------------|----------|-----------------------------------------------------------|-----------------------------------------------------|------------------------------------------------------|
| CERCLA Hazardous substances | Dicyclohexylmethane-                                                     | 14.624   | Listed                                                    | No RQ assigned                                      |                                                      |
|                             | 4,4'-diisocyanate 3-isocyanatomethyl-3,5,5-trimethylcyclohexylisocyanate | 2.265    | Listed                                                    | No RQ assigned                                      |                                                      |

- State regulations  
**PENNSYLVANIA - RTK**
- : Dicyclohexylmethane-4,4'-diisocyanate, 3-isocyanatomethy1-3,5,5-trimethylcyclohexylisocyanate
- California Prop 65**
- : This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

- Canadian regulations  
**CEPA DSL**
- : At least one component is not listed.

**WHMIS Classes**

Class D-2A: Material causing other toxic effects (Very toxic).  
Class D-2B: Material causing other toxic effects (Toxic).

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

- Brazil Regulations  
**Classification system used**
- : Norma ABNT-NBR 14725-2:2012
- ROHS: Compliant**
- International lists
- : **Australia inventory (AICS):** All components are listed or exempted.  
**China inventory (IECSC):** At least one component is not listed.  
**Japan inventory:** All components are listed or exempted.  
**Korea inventory:** At least one component is not listed.  
**Malaysia Inventory (EHS Register):** Not determined.  
**New Zealand Inventory of Chemicals (NZIoC):** At least one component is not listed.  
**Philippines inventory (PICCS):** At least one component is not listed.  
**Taiwan inventory (CSNN):** Not determined.

Section 16. Other information

Hazardous Material  
Information System (U.S.A.)



The customer is responsible for determining the PPE code for this material.

## Section 16. Other information

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

National Fire Protection  
Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

### Further information

Date of issue    June, 2024

® Indicates information that has changed from previously issued version.

### Notice to reader

*While the information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.*

**IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.**

**THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.**

*Hazards, toxicity and behavior of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behavior should be determined by the user and made known to handlers, processors and end users.*