

# SAFETY DATA SHEET

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

### 1.1 Product identifier

**Product name** : ENVIROLASTIC® AR425 Polyurea (Part A) - Isocyanate

**Product code** : B81V3200

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

**Material uses** : Paint or paint related material.

: Industrial use only.

### 1.3 Details of the supplier of the safety data sheet

Mfg. in U.S.A and exported by:  
The Sherwin-Williams Company  
101 Prospect Avenue N.W.  
Cleveland, OH 44115

EU Only Representative: Valspar B.V.  
Zuiveringweg 89  
8243 PE Lelystad  
P.O. Box 2139  
The Netherlands  
Phone: +31 (0)320 29 22 00

**e-mail address of person responsible for this SDS** : sds@sherwin.com

### 1.4 Emergency telephone number

#### National advisory body/Poison Center

**Telephone number** : Not available.

#### Supplier

**Telephone number** : +1 703-741-5970

**Hours of operation** : Emergency contact available 24 hours a day

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**Product definition** : Mixture

#### Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

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

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

**SECTION 2: Hazards identification****2.2 Label elements****Hazard pictograms**

:

**Signal word**

: Danger

**Hazard statements**

: Causes skin irritation.  
 May cause an allergic skin reaction.  
 Causes serious eye irritation.  
 Harmful if inhaled.  
 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
 May cause respiratory irritation.  
 Suspected of causing cancer.  
 May cause damage to organs through prolonged or repeated exposure.

**Precautionary statements****Prevention**

: Obtain special instructions before use. Wear protective gloves, protective clothing, eye protection, face protection, or hearing protection. Wear respiratory protection.  
 Do not breathe vapor.

**Response**

: IF INHALED: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor.

**Storage**

: Not applicable.

**Disposal**

: Not applicable.

**Hazardous ingredients**

: 4,4'-methylenediphenyl diisocyanate  
 methylenediphenyl diisocyanate

**Supplemental label elements**

: Contains isocyanates. May produce an allergic reaction. FOR INDUSTRIAL USE ONLY

**Special packaging requirements**

Not applicable.

**2.3 Other hazards**

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

**Other hazards which do not result in classification**

: None known.

**SECTION 3: Composition/information on ingredients****3.2 Mixture**

:

Product/ingredient name	Identifiers	%	Classification	Specific Conc. Limits, M-factors and ATEs	Type
Diphenylmethane Diisocyanate Polymer	CAS: 9016-87-9	≥25 - ≤50	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	ATE [Inhalation (gases)] = 4500 ppm	[1] [2]
4, 4'-Diphenylmethane	REACH #:	≥10 - ≤25	Acute Tox. 4, H332	ATE [Inhalation	[1] [2]

### SECTION 3: Composition/information on ingredients

Diisocyanate	01-2119457014-47 EC: 202-966-0 CAS: 101-68-8 Index: 615-005-00-9		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	(dusts and mists)] = 1.5 mg/l Skin Irrit. 2, H315: C ≥ 5% Eye Irrit. 2, H319: C ≥ 5% Resp. Sens. 1, H334: C ≥ 0.1% STOT SE 3, H335: C ≥ 5%	
Diphenylmethane Diisocyanate	EC: 247-714-0 CAS: 26447-40-5 Index: 615-005-00-9	≥10 - ≤25	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	ATE [Inhalation (vapours)] = 11 mg/ l Skin Irrit. 2, H315: C ≥ 5% Eye Irrit. 2, H319: C ≥ 5% Resp. Sens. 1, H334: C ≥ 0.1% STOT SE 3, H335: C ≥ 5%	[1]
4-Methyl-1,3-dioxolan-2-one	REACH #: 01-2119537232-48 EC: 203-572-1 CAS: 108-32-7 Index: 607-194-00-1	≥10 - ≤25	Eye Irrit. 2, H319  <b>See Section 16 for the full text of the H statements declared above.</b>	-	[1] [2]

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

#### Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

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

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

- General** : In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and seek medical advice.
- Eye contact** : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.
- Inhalation** : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
- Skin contact** : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.
- Ingestion** : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.
- 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.

**SECTION 4: First aid measures****4.2 Most important symptoms and effects, both acute and delayed**

There are no data available on the mixture itself. Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]. See Sections 2 and 3 for details.

Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin.

If splashed in the eyes, the liquid may cause irritation and reversible damage.

Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Based on the properties of the isocyanate components and considering toxicological data on similar mixtures, this mixture may cause acute irritation and/or sensitization of the respiratory system, leading to an asthmatic condition, wheezing and tightness of the chest. Sensitized persons may subsequently show asthmatic symptoms when exposed to atmospheric concentrations well below the OEL. Repeated exposure may lead to permanent respiratory disability. Repeated or prolonged contact with irritants may cause dermatitis.

Contains Diphenylmethane Diisocyanate Polymer, 4,4'-methylenediphenyl diisocyanate, methylenediphenyl diisocyanate. May produce an allergic reaction.


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

**Notes to physician** : 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.

**Specific treatments** : No specific treatment.

See toxicological information (Section 11)

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

**Suitable extinguishing media** : Recommended: alcohol-resistant foam, CO<sub>2</sub>, powders, water spray or mist. 

**Unsuitable extinguishing media** : Do not use water jet.

**5.2 Special hazards arising from the substance or mixture**

**Hazards from the substance or mixture** : Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard.

**Hazardous combustion products** : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen, hydrogen cyanide, monomeric isocyanates.

**5.3 Advice for firefighters**

**Special protective actions for fire-fighters** : Cool closed containers exposed to fire with water. Do not release runoff from fire to drains or watercourses.

**Special protective equipment for fire-fighters** : Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** : Exclude sources of ignition and ventilate the area. Avoid breathing vapor or mist. Refer to protective measures listed in sections 7 and 8.

Keep unnecessary and unprotected personnel from entering.

**For emergency responders** : If specialized 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".

### 6.2 Environmental precautions

: Do not allow to enter drains or watercourses. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

### 6.3 Methods and materials for containment and cleaning up

: 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). Place in a suitable container. The contaminated area should be cleaned immediately with a suitable decontaminant. One possible (flammable) decontaminant comprises (by volume): water (45 parts), ethanol or isopropyl alcohol (50 parts) and concentrated (d: 0,880) ammonia solution (5 parts). A non-flammable alternative is sodium carbonate (5 parts) and water (95 parts). Add the same decontaminant to the remnants and let stand for several days until no further reaction in an unsealed container. Once this stage is reached, close container and dispose of according to local regulations (see section 13).

### 6.4 Reference to other sections

: See Section 1 for emergency contact information.  
See Section 8 for information on appropriate personal protective equipment.  
See Section 13 for additional waste treatment information.

## SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

**Persons with a history of asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used.**

**Examination of lung function should be carried out on a regular basis on persons spraying this mixture.**

### 7.1 Precautions for safe handling

: Prevent the creation of flammable or explosive concentrations of vapors in air and avoid vapor concentrations higher than the occupational exposure limits. In addition, the product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard. Mixture may charge electrostatically: always use earthing leads when transferring from one container to another. Operators should wear antistatic footwear and clothing and floors should be of the conducting type. Care should be taken when re-opening partly-used containers. Precautions should be taken to minimize exposure to atmospheric humidity or water. CO<sub>2</sub> will be formed, which, in closed containers, could result in pressurization. Keep away from heat, sparks and flame. No sparking tools should be used. Avoid contact with skin and eyes. Avoid the inhalation of dust, particulates, spray or mist arising from the application of this mixture. Avoid inhalation of dust from sanding. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Put on appropriate personal protective equipment (see Section 8). Never use pressure to empty. Container is not a pressure vessel. Always keep in containers made from the same material as the original one. Comply with the health and safety at work laws. Do not allow to enter drains or watercourses.

**SECTION 7: Handling and storage****Information on fire and explosion protection**

Vapors are heavier than air and may spread along floors. Vapors may form explosive mixtures with air.

When operators, whether spraying or not, have to work inside the spray booth, ventilation is unlikely to be sufficient to control particulates and solvent vapors in all cases. In such circumstances, they should wear a compressed-air-fed respirator during the spraying process and until the particulate and solvent vapor concentrations have fallen below the exposure limits.

**7.2 Conditions for safe storage, including any incompatibilities**

: Store in accordance with local regulations.

**Notes on joint storage**

Keep away from: oxidizing agents, strong alkalis, strong acids.

**Additional information on storage conditions**

Observe label precautions. Store in a dry, cool and well-ventilated area. Keep away from heat and direct sunlight.

Keep container tightly closed.

Keep away from sources of ignition. No smoking. Prevent unauthorized access.

Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

Contaminated absorbent material may pose the same hazard as the spilled product.

**Storage code**

: 10

**7.3 Specific end use(s)****Recommendations**

: Not available.

**Industrial sector specific solutions**

: Not available.

Good housekeeping standards, regular safe removal of waste materials and regular maintenance of spray booth filters will minimise the risks of spontaneous combustion and other fire hazards.

**Before use of this material please refer to the Exposure Scenario(s) if attached for the specific end use, control measures and additional PPE considerations.**

**SECTION 8: Exposure controls/personal protection**

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

**8.1 Control parameters****Occupational exposure limits**

Product/ingredient name	Exposure limit values
Diphenylmethane Diisocyanate Polymer	<b>DFG MAC-values list (Germany, 7/2022). Absorbed through skin. Skin sensitizer. Inhalation sensitizer.</b> TWA: 0.05 mg/m <sup>3</sup> 8 hours. Form: inhalable fraction PEAK: 0.05 mg/m <sup>3</sup> , 4 times per shift, 15 minutes. Form: inhalable fraction CEIL: 0.1 mg/m <sup>3</sup> <b>TRGS 900 OEL (Germany, 6/2022). Absorbed through skin. Skin sensitizer. Inhalation sensitizer.</b> TWA: 0.05 mg/m <sup>3</sup> , (calculated as MDI) 8 hours. Form: inhalable fraction PEAK: 0.05 mg/m <sup>3</sup> , (calculated as MDI) 15 minutes. Form: inhalable fraction CEIL: 0.1 mg/m <sup>3</sup> , (calculated as MDI) Form: inhalable fraction
4, 4'-Diphenylmethane Diisocyanate	<b>TRGS 900 OEL (Germany, 6/2022). Absorbed through skin.</b>

**SECTION 8: Exposure controls/personal protection**

4-Methyl-1,3-dioxolan-2-one

**Skin sensitizer. Inhalation sensitizer.**TWA: 0.05 mg/m<sup>3</sup> 8 hours. Form: inhalable fractionCEIL: 0.1 mg/m<sup>3</sup> Form: inhalable fractionPEAK: 0.05 mg/m<sup>3</sup> 15 minutes. Form: inhalable fraction**DFG MAC-values list (Germany, 7/2022). Absorbed through skin. Skin sensitizer. Inhalation sensitizer.**TWA: 0.05 mg/m<sup>3</sup> 8 hours. Form: inhalable fractionCEIL: 0.1 mg/m<sup>3</sup> Form: inhalable fractionPEAK: 0.05 mg/m<sup>3</sup>, 4 times per shift, 15 minutes. Form: inhalable fraction**DFG MAC-values list (Germany, 7/2022).**PEAK: 8.5 mg/m<sup>3</sup>, 4 times per shift, 15 minutes.

PEAK: 2 ppm, 4 times per shift, 15 minutes.

TWA: 8.5 mg/m<sup>3</sup> 8 hours.

TWA: 2 ppm 8 hours.

**TRGS 900 OEL (Germany, 6/2022). [propylene carbonate]**

PEAK: 2 ppm 15 minutes.

PEAK: 8.5 mg/m<sup>3</sup> 15 minutes.TWA: 8.5 mg/m<sup>3</sup> 8 hours.

TWA: 2 ppm 8 hours.

**Biological exposure indices**

Product/ingredient name	Exposure indices
4,4'-methylenediphenyl diisocyanate	<b>DFG BEI-values list (Germany, 7/2022) Notes: danger from percutaneous absorption (see p. 211 and p. 228).</b> BGV: 10 µg/l, 4,4'-diaminodiphenylmethane (after hydrolysis) [in urine]. Form: inhalable fraction. Sampling time: end of exposure or end of shift.

**Recommended monitoring procedures**

- : Reference should be made to monitoring standards, such as the following:  
 European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.
- : Regular monitoring of all work areas should be carried out at all times, including areas that may not be equally ventilated.

**DNELs/DMELs**

Product/ingredient name	Type	Exposure	Value	Population	Effects
4-Methyl-1,3-dioxolan-2-one	DNEL	Long term Inhalation	10 mg/m <sup>3</sup>	General population [Consumers]	Local
	DNEL	Long term Inhalation	17.4 mg/m <sup>3</sup>	General population [Consumers]	Systemic
	DNEL	Long term Dermal	10 mg/kg bw/day	General population [Consumers]	Systemic
	DNEL	Long term Oral	10 mg/kg bw/day	General population [Consumers]	Systemic
	DNEL	Long term Inhalation	20 mg/m <sup>3</sup>	Workers	Local
	DNEL	Long term Inhalation	70.53 mg/m <sup>3</sup>	Workers	Systemic

## SECTION 8: Exposure controls/personal protection

	DNEL	Long term Dermal	20 mg/kg bw/day	Workers	Systemic
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### PNECs

Product/ingredient name	Compartment Detail	Value	Method Detail
4-Methyl-1,3-dioxolan-2-one	Fresh water	0.9 mg/l	-
	Marine water	0.09 mg/l	-
	Soil	0.81 mg/kg	-
	Sewage Treatment Plant	7400 mg/l	-

### 8.2 Exposure controls

Persons with a history of asthma, allergies, chronic or recurrent respiratory disease should not be exposed to any process in which this product is used.

Examination of lung function should be carried out on a regular basis on persons spraying this mixture.

- Appropriate engineering controls**
- : Provide adequate ventilation. Where reasonably practicable, this should be achieved by the use of local exhaust ventilation and good general extraction. Air-fed protective respiratory equipment must be worn by the spray operator, even when good ventilation is provided. In other operations, if local exhaust ventilation and good general extraction are not sufficient to maintain concentrations of particulates and solvent vapors below the OEL, suitable respiratory protection must be worn. (See Occupational exposure controls.)
  - : Users are advised to consider national Occupational Exposure Limits or other equivalent values.

### Individual protection measures

- 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**
- : Use safety eyewear designed to protect against splash of liquids.
- Skin protection**
- Hand protection**
- Gloves**
- : Wear suitable gloves tested to EN374.
  - : Gloves for short term exposure/splash protection (less than 10 min): Nitrile >0.35 mm  
Gloves for splash protection need to be changed immediately when in contact with chemicals.  
For long term exposure or spills (breakthrough time >480 min): Use PE laminate gloves as under gloves.  
Due to many conditions (e.g. temperature, abrasion) the practical usage of a chemical protective glove in practice may be much shorter than the permeation time determined through testing.  
There is no one glove material or combination of materials that will give unlimited resistance to any individual or combination of chemicals.  
The breakthrough time must be greater than the end use time of the product.  
The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed.  
Gloves should be replaced regularly and if there is any sign of damage to the glove material.  
Always ensure that gloves are free from defects and that they are stored and used correctly.  
The performance or effectiveness of the glove may be reduced by physical/chemical damage and poor maintenance.  
Barrier creams may help to protect the exposed areas of the skin but should not be applied once exposure has occurred.



## SECTION 8: Exposure controls/personal protection

The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment.

- Body protection** : Personnel should wear antistatic clothing made of natural fibers or of high-temperature-resistant synthetic fibers.
- : 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** : Application methods:  
Brush or roller. Approved/certified respirator with organic vapor cartridge. Filter type: A2 P2 (EN14387).  
Manual spraying. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.
- Environmental exposure controls** : Do not allow to enter drains or watercourses.

**Before use of this material please refer to the Exposure Scenario(s) if attached for the specific end use, control measures and additional PPE considerations. The information contained in this safety data sheet does not constitute the user's own assessment of workplace risks, as required by other health and safety legislation. The provisions of the national health and safety at work regulations apply to the use of this product at work.**

## SECTION 9: Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

### 9.1 Information on basic physical and chemical properties

#### Appearance

- Physical state** : Liquid.
- Color** : Not available.
- Odor** : Characteristic.
- Odor threshold** : Not available.
- pH** : Not relevant/applicable due to nature of the product.  
insoluble in water.
- Melting point/freezing point** : Not relevant/applicable due to nature of the product.
- Initial boiling point and boiling range** : 242°C
- Flash point** : Closed cup: 111°C [Pensky-Martens Closed Cup]
- Evaporation rate** : Not relevant/applicable due to nature of the product.
- Flammability** : Not relevant/applicable due to nature of the product.
- Lower and upper explosion limit** : LEL: 2.3% (4-Methyl-1,3-dioxolan-2-one)  
UEL: 21% (4-Methyl-1,3-dioxolan-2-one)
- Vapor pressure** : 0.0055 kPa (0.041 mm Hg)
- Relative vapor density** : 3.5 [Air = 1]
- Relative density** : 1.1
- Solubility(ies)** :

Media	Result
cold water	Not soluble

**Partition coefficient: n-octanol/ water** : Not relevant/applicable due to nature of the product.

## SECTION 9: Physical and chemical properties

**Auto-ignition temperature** :

Ingredient name	°C	°F	Method
4, 4'-Diphenylmethane Diisocyanate	400	752	
4-Methyl-1,3-dioxolan-2-one	430	806	

**Decomposition temperature** : Not relevant/applicable due to nature of the product.

**Viscosity** : Kinematic (40°C): >20.5 mm<sup>2</sup>/s

**Explosive properties** : Under normal conditions of storage and use, hazardous reactions will not occur.

**Oxidizing properties** : Under normal conditions of storage and use, hazardous reactions will not occur.

### Particle characteristics

**Median particle size** : Not relevant/applicable due to nature of the product.

### 9.2 Other information

**Heat of combustion** : 23.598 kJ/g

## SECTION 10: Stability and reactivity

**10.1 Reactivity** : The product reacts slowly with water, resulting in the production of carbon dioxide.

**10.2 Chemical stability** : Stable under recommended storage and handling conditions (see Section 7).

**10.3 Possibility of hazardous reactions** : In closed containers, pressure buildup could result in distortion, expansion and, in extreme cases, bursting of the container.

**10.4 Conditions to avoid** : In a fire, hazardous decomposition products may be produced.

**10.5 Incompatible materials** : Keep away from: oxidizing agents, strong alkalis, strong acids, amines, alcohols, water. Uncontrolled exothermic reactions occur with amines and alcohols.

**10.6 Hazardous decomposition products** : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen, hydrogen cyanide, monomeric isocyanates.

**Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.**

## SECTION 11: Toxicological information

### 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

There are no data available on the mixture itself. Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]. See Sections 2 and 3 for details.

Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin.

If splashed in the eyes, the liquid may cause irritation and reversible damage.

Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Based on the properties of the isocyanate components and considering toxicological data on similar mixtures, this mixture may cause acute irritation and/or sensitization of the respiratory system, leading to an asthmatic condition, wheezing and tightness of the chest. Sensitized persons may subsequently show asthmatic symptoms when exposed to atmospheric concentrations well below the OEL. Repeated exposure may lead to permanent respiratory disability. Repeated or prolonged contact with irritants may cause dermatitis.

## SECTION 11: Toxicological information

Contains Diphenylmethane Diisocyanate Polymer, 4,4'-methylenediphenyl diisocyanate, methylenediphenyl diisocyanate. May produce an allergic reaction.

### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Diphenylmethane Diisocyanate Polymer	LC50 Inhalation Vapor	Rat	490 mg/m <sup>3</sup>	4 hours
	LD50 Dermal	Rabbit	>9400 mg/kg	-
	LD50 Oral	Rat	49 g/kg	-
4, 4'-Diphenylmethane Diisocyanate	LD50 Oral	Rat	9200 mg/kg	-
4-Methyl-1,3-dioxolan-2-one	LD50 Oral	Rat	>5000 mg/kg	-

### Acute toxicity estimates

Route	ATE value
Inhalation (gases)	9782.61 ppm
Inhalation (vapors)	16.67 mg/l
Inhalation (dusts and mists)	2.14 mg/l

### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Diphenylmethane Diisocyanate Polymer	Eyes - Mild irritant	Rabbit	-	100 mg	-
4, 4'-Diphenylmethane Diisocyanate	Eyes - Moderate irritant	Rabbit	-	100 mg	-
4-Methyl-1,3-dioxolan-2-one	Eyes - Moderate irritant	Rabbit	-	60 mg	-
	Skin - Moderate irritant	Human	-	72 hours 100 mg l	-
	Skin - Moderate irritant	Rabbit	-	500 mg	-

**Conclusion/Summary** : Not available.

### Sensitization

No data available

**Conclusion/Summary** : Not available.

### Mutagenicity

No data available

### Carcinogenicity

No data available

### Reproductive toxicity

No data available

### Teratogenicity

No data available

### Specific target organ toxicity (single exposure)

**SECTION 11: Toxicological information**

Product/ingredient name	Category	Route of exposure	Target organs
Diphenylmethane Diisocyanate Polymer	Category 3	-	Respiratory tract irritation
4, 4'-Diphenylmethane Diisocyanate	Category 3	-	Respiratory tract irritation
Diphenylmethane Diisocyanate	Category 3	-	Respiratory tract irritation

**Specific target organ toxicity (repeated exposure)**

Product/ingredient name	Category	Route of exposure	Target organs
Diphenylmethane Diisocyanate Polymer	Category 2	-	-
4, 4'-Diphenylmethane Diisocyanate	Category 2	-	-
Diphenylmethane Diisocyanate	Category 2	-	-

**Aspiration hazard**

No data available

**11.2 Information on other hazards****11.2.1 Endocrine disrupting properties**

Not available.

**11.2.2 Other information**

Not available.

**SECTION 12: Ecological information****12.1 Toxicity**

There are no data available on the mixture itself.

Do not allow to enter drains or watercourses.

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

**12.2 Persistence and degradability**

Product/ingredient name	Test	Result	Dose	Inoculum
No data available				

**Conclusion/Summary** : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
No data available			

**12.3 Bioaccumulative potential**

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
4, 4'-Diphenylmethane Diisocyanate	-	200	Low
Diphenylmethane Diisocyanate	-	200	Low

**12.4 Mobility in soil****Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.**Mobility** : Not available.

## SECTION 12: Ecological information

### 12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

### 12.6 Endocrine disrupting properties

Not available.

### 12.7 Other adverse effects

No known significant effects or critical hazards.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

**Methods of disposal** : 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.

**Hazardous waste** : Yes.

**European waste catalogue (EWC)** : waste isocyanates 08 05 01\*

**Disposal considerations** : Do not allow to enter drains or watercourses. Residues in empty containers should be neutralized with a decontaminant (see section 6). Dispose of according to all federal, state and local applicable regulations. If this product is mixed with other wastes, the original waste product code may no longer apply and the appropriate code should be assigned. For further information, contact your local waste authority.

#### Packaging

**Methods of disposal** : The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

**Disposal considerations** : Using information provided in this safety data sheet, advice should be obtained from the relevant waste authority on the classification of empty containers. Empty containers must be scrapped or reconditioned. Dispose of containers contaminated by the product in accordance with local or national legal provisions.

**European waste catalogue (EWC)** : packaging containing residues of or contaminated by hazardous substances 15 01 10\*

**Special precautions** : 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.

## SECTION 14: Transport information

SECTION 14: Transport information

	ADR/RID	IMDG	IATA
14.1 UN number or ID number	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	-	-
14.3 Transport Hazard Class(es)/ Label(s)	-	-	-
14.4 Packing group	-	-	-
14.5 Environmental hazards	No.	No.	No.
Additional information	-	-	-

*This mixture is not classified as dangerous according to international transport regulations (ADR/RID, IMDG, ICAO/IATA).*

14.6 Special precautions for user
: Transport within user’s premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Maritime transport in bulk according to IMO instruments
: Not applicable.

*Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.*

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture  
EU Regulation (EC) No. 1907/2006 (REACH)  
Annex XIV - List of substances subject to authorization  
Annex XIV  
None of the components are listed.  
Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Product/ingredient name	%	Designation [Usage]
ENVIROLASTIC® AR425 Polyurea (Part A)	≥90	3
4,4'-methylenediphenyl diisocyanate	≥10 - ≤25	56 [Consumer products] 74
methylenediphenyl diisocyanate	≥10 - ≤25	56 [Consumer products] 74

## SECTION 15: Regulatory information

**Labeling** : As from August 24 2023 adequate training is required before industrial or professional use.  
Training advice [www.safeusediisocyanates.eu](http://www.safeusediisocyanates.eu).

### Other EU regulations

**VOC content (2010/75/EU)** : 0 w/w  
0 g/l

**Explosive precursors** : Not applicable.

### Seveso Directive

This product is not controlled under the Seveso Directive.

### National regulations

#### TRGS 905

Ingredient name	Carcinogen	Mutagen	Reproductive toxicity - Fertility	Reproductive toxicity - Development
Techn. ("Polymeres") MDI (in Form atembarer Aerosole, A-Fraktion)	K2	M1A	RF1A	RD1A

### Hazardous incident ordinance

This product is not controlled under the Germany Hazardous Incident Ordinance.

Product/ingredient name	List name	Name on list	Classification	Notes
Diphenylmethane Diisocyanate Polymer	DFG MAC-values list	polymeric MDI (inhalable fraction); MDI oligomers; pMDI	K4	-
4, 4'-Diphenylmethane Diisocyanate	DFG MAC-values list	Diphenylmethane-4,4'-diisocyanate (inhalable fraction); 4,4'-Methylene diphenyl diisocyanate; MDI	K4	-

**Water Hazard Class (WGK)** : 1

**Technical instruction on air quality control** : TA-Luft Class I - Number 5.2.5: 100%

**AOX** : The product does not contain organically bound halogens which could lead to an AOX value in waste water.

**15.2 Chemical Safety Assessment** : No Chemical Safety Assessment has been carried out.

## SECTION 16: Other information

Indicates information that has changed from previously issued version.

### Abbreviations and acronyms

: ATE = Acute Toxicity Estimate  
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]  
DMEL = Derived Minimal Effect Level  
DNEL = Derived No Effect Level  
EUH statement = CLP-specific Hazard statement  
PBT = Persistent, Bioaccumulative and Toxic  
PNEC = Predicted No Effect Concentration  
RRN = REACH Registration Number  
vPvB = Very Persistent and Very Bioaccumulative  
N/A = Not available

**SECTION 16: Other information**

**Key literature references and sources for data** : Regulation (EC) No. 1272/2008 [CLP]  
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road  
IATA = International Air Transport Association  
IMDG = International Maritime Dangerous Goods  
Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Commission Regulation (EU) 2020/878  
Directive 2012/18/EU, and relative amendments & additions  
Directive 2008/98/EC, and relative amendments & additions  
Directive 2009/161/EU, and relative amendments & additions  
CEPE Guidelines

**Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]**

Classification	Justification
Acute Tox. 4, H332	Calculation method
Skin Irrit. 2, H315	Calculation method
Eye Irrit. 2, H319	Calculation method
Resp. Sens. 1, H334	Calculation method
Skin Sens. 1, H317	Calculation method
Carc. 2, H351	Calculation method
STOT SE 3, H335	Calculation method
STOT RE 2, H373	Calculation method

**Full text of abbreviated H statements** : 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.

**Full text of classifications [CLP/GHS]** : Acute Tox. 4 ACUTE TOXICITY - Category 4  
Carc. 2 CARCINOGENICITY - Category 2  
Eye Irrit. 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2  
Resp. Sens. 1 RESPIRATORY SENSITIZATION - Category 1  
Skin Irrit. 2 SKIN CORROSION/IRRITATION - Category 2  
Skin Sens. 1 SKIN SENSITIZATION - Category 1  
STOT RE 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2  
STOT SE 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 3

**Date of printing** : 13, Sep, 2023.

**Date of issue/ Date of revision** : 13, Sep, 2023

**Date of previous issue** : 10, Jun, 2023

: If there is no previous validation date please contact your supplier for more information.

**Version** : 5.02

**Notice to reader**

**In accordance with Regulation (EC) 1907/2006, REACH Regulation, Articles 31, 37, any required hazard-related information on the use of substances received as downstream user will be sent forward. Consequently, the safety data sheets for some products will contain a SUMI - Safe Use of Mixture Information - attached to the safety data sheet.**



**Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II**

**ENVIROLASTIC® AR425 Polyurea (Part A) - Isocyanate**

**B81V3200**

## **SECTION 16: Other information**

**SUMI(s) will be added to the SDS for products if both the following conditions are met:**

- **The product is classified as hazardous for health**
- **The product contains one or more REACH-registered substances for which extended safety data sheets (exposure scenarios) have been provided**

***It is recommended that each customer or recipient of this Safety Data Sheet (SDS) study it carefully and consult resources, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. This information is provided in good faith and believed to be accurate as of the effective date herein. However, no warranty, express or implied, is given. The information presented here applies only to the product as shipped. The addition of any material can change the composition, hazards and risks of the product. Products shall not be repackaged, modified, or tinted except as specifically instructed by the manufacturer, including but not limited to the incorporation of products not specified by the manufacturer, or the use or addition of products in proportions not specified by the manufacturer. Regulatory requirements are subject to change and may differ between various locations and jurisdictions. The customer/buyer/user is responsible to ensure that his activities comply with all country, federal, state, provincial or local laws. The conditions for use of the product are not under the control of the manufacturer; the customer/buyer/user is responsible to determine the conditions necessary for the safe use of this product. The customer/buyer/user should not use the product for any purpose other than the purpose shown in the applicable section of this SDS without first referring to the supplier and obtaining written handling instructions. Due to the proliferation of sources for information such as manufacturer-specific SDS, the manufacturer cannot be responsible for SDSs obtained from any other source.***