

SAFETY DATA SHEET Revised edition no : 2 Date : 05/ 2017

AROPOL 303-150 A

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Trade name : Aropol 303-150 B Type of product : Polyurethanic component. Use: Industrial. Company identification : Omelcom 360 rue de la Outarde 01500 Château-Gaillard - France T Tél : +33 4 74 39 79 40 Mail : contact@omelcom.fr

Emergency phone nr : Tel +33 480 420404

2 HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture Classification according to Regulation (EC) No 1272/2008 Skin irritatation – Category 2 – H315 Eye irritation – Category 2 – H319 For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008:



Signal word: WARNING Hazard pictograms

H315 Causes skin irritation

H319 Causes serious eye irritation

Precautionary statements

P264 Wash skin thoroughly after handling

P280 Wear eye protection/face protection

P280 Wear protective gloves

P332+P313 If skin irritation occurs: Get medical advice/attention

P337+P313 If eye irritation persists: Get medical advice/attention

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

2.3. Other hazards

No data available

3 COMPOSITION/ INFORMATION ON INGREDIENTS

3.1. Mixture

This product is a mixture.

| CASRN / EC-No. / Index-No | REACH Registration Number | Concentration | Component | Classification: REGULATION (EC) No 1272/2008 |
|---|------------------------------|----------------|------------------------------------|---|
| CASRN Confidential EC-No. Confidential Index-No | | 50.0 - < 70.0% | Polyether tpolyol | Not classified |
| CASRN Confidential EC-No. Confidential Index-No | 01-2119492852-28 | 1.0 - < 5.0% | Trirthyl phosphate | Acute Tox. – 4 – H302 Eye Irrit. – 2 – H319 |
| CASRN 33329-35-0 EC-No. 251-459-0 Index-No | 01-2119985661-27 | 1.0 - < 3.0% | Tris(dimethylamino) prpyl amine | Acute Tox. – 4 – H312 Skin Corr. – 1A –H314 Eye Dam. – 1 – H318 |

If present in this product, any not classified components disclosed above for which no country specific OEL value(s) is(are) indicated under Section 8, are being disclosed as voluntarily disclosed components. For the full text of the H-Statements mentioned in this Section, see Section 16.



SAFETY DATA SHEET Revised edition no : 2

Date : 05/ 2017

4 FIRST AID MEASURES

4.1. Description of first aid measures

General advice First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation Seek medical attention immediately. Move person to fresh air; if effects occur, consult a physician. **Skin contact** Remove contaminated clothing and wash before reuse. Wash off with plenty of water. Seek medical attention immediately. Wash skin thoroughly with soap and water.

Eye contact Seek medical attention immediately. Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtains medical attention without delay, preferably from an ophthalmologist.

Ingestion Seek medical attention immediately.

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

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

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

Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. No specific antidote

5 FIRE-FIGHTING MEASURES

5.1. Extinguishing media Suitable extinguishing media

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Unsuitable extinguishing media Do not use direct water stream. May spread fire.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

5.3. Advice for firefighters

Fire Fighting Procedures Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with selfcontained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6 ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Isolate area. Refer to section 7, Handling, for additional precautionary measures. Keep unnecessary and unprotected personnel from entering the area. Keep upwind of spill. Ventilate are of leak or spill. Spilled material may cause a slipping hazard. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.



6.2. Environmental precautions

Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

6.3. Methods and material for containment and cleaning up

Contain spilled material if possible. Absorb with materials such as: Dirt. Stand. Sawdust. Collect in suitable and properly labelled containers. Wash the spill site with water. See Section 13, Disposal Considerations, for additional information.

6.4. Reference to other sections

References to other sections, if applicable, have been provided in the previous sub-sections.

7 HANDLING AND STORAGE

7.1. Precautions for safe handling

Avoid breathing vapor. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Use with adequate ventilation. Keep container closed. This material is hygroscopic in nature. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

7.2. Conditions for safe storage, including any incompatibilities

Protect from atmospheric moisture. Store in a dry place. Avoid prolonged exposure to heat and air. Store in the following material(s): Carbon steel. Stainless steel. Polypropylene. Polyethylene-lined container. Teflon. Glass-lined container. Aluminium. Plasite 3066 lined container. Plasite 3070 lined container. 316 stainless steel. See Section 10 for more specific information.

Storage stability Storage temperature: 15 - 25 °C Storage Period: 6 Month

7.3. Specific end use(s)

See the technical data sheet on this product for further information.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits are listed below, if they exist.

| Component | Regulation | Type of Listing | Value/Notation |
|--------------------|------------|-----------------|------------------------|
| Triethyl phosphate | US WEEL | TWA | 7.45 mg/m ³ |

8.2. Exposure controls

Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations. **Individual protection measures**

Eye/face protection Use chemical googgles. Chemical goggles should be consistent with EN 166 or equivalent. **Skin protection**

Hand protection Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur.

Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and microorganisms. Examples of preferred glove barrier materials include: Butyl rubber. Polyethylene. Neoprene. Natural rubber ("latex"). Polyvinyl chloride ("PVC" or "vinyl"). Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl alcohol ("PVA"). Ethyl vinyl alcohol laminate ("EVAL"). When prolonged or frequently repeated contact may occur, a glove with a protection class of 4 or higher (breakthrough time greater than 120 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 1 or higher (breakthrough time greater than 10 minutes according to EN 374) is recommended. Glove thickness alone is not a good indicator of the level of protection a glove provides against a chemical substance as this level of protection is also highly dependent on the specific composition of the material that the glove is fabricated from. The thickness of the glove must, depending on model and type of material, generally be more than 0.35 mm to offer sufficient protection for prolonged and frequent contact with the substance. As an exception to this general rule it is known that multilayer laminate gloves may offer prolonged protection at thicknesses less than 0.35 mm. Other glove materials with a thickness of less than 0.35 mm any offer sufficient protection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity,



SAFETY DATA SHEET Revised edition no : 2

Date : 05/ 2017

thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Wear clean, body-covering clothing.

Respiratory protection Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions, no respiratory protection should be needed; however, if handling at elevated temperatures without sufficient ventilation, use an approved air-purifying respirator. Use the following CE approved air-purifying respirator: Organic vapor cartridge with a particulate pre-filter, type AP2. **Environmental exposure controls**

See SECTION 7: Handling and storage and SECTION 13: Disposal considerations for measures to prevent excessive environmental exposure during use and waste disposal.

9 PHYSICAL AND CHEMICAL PROPERTIES

| 9.1. Information on basic physical and chemical Appearance | l properties | |
|---|--|------------------------|
| Physical state: | Liquid | |
| Color | Yellow | |
| Odor | Amine | |
| Odor Threshold | No test data available | |
| рН | Not applicable | |
| Melting point/range | No test data available | |
| Freezing point | No test data available | |
| Boiling point (760 mmHg) Flash point, closed cup Evaporation Rate (Butyl Acetate = 1) | > 100 °C > 100 °C No test data available | Estimated Estimated |
| Flammability (solid, gas) | No applicable to liquids | |
| Lower explosion limit | No test data available | |
| Upper explosion limit | No test data available | |
| Vapor Pressure | Very low | |
| Relative Vapor Density (air = 1) | No test data available | |
| Relative Density (water = 1) Water solubility | 1.06 – 1.10 at 25 °C /25°C Slightly soluble | Supplier |
| Partition coefficient: n-octanol/water | No data available | |
| Auto-ignition temperature | No test data available | |
| Decomposition temperature | No test data available | |
| Dynamic Viscosity | 2,400 mPa.s at 25°C | |
| Kinematic Viscosity Explosive properties | 1,210 – 2,330 cSt at 25°C Not explosive | ASTM D 445 |
| Oxidizing properties | No | |
| 9.2. Other information Molecular weight: | No test data available | |

Note: The physical data presented above are typical values and should not be construed as a specification.



SAFETY DATA SHEET Revised edition no : 2 Date : 05/ 2017

10 STABILITY AND REACTIVITY

10.1. Reactivity

No data available

10.2. Chemical stability

Stable under recommended storage conditions. See Storage, Section 7.

10.3. Possibility of hazardous reactions

Will not occur by itself

10.4. Conditions to avoid

Product can oxidize at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

10.5. Incompatible materials

Avoid contact with oxidizing materials. Avoid contact with: Strong acids. Strong bases. Avoid unintended contact with isocyanates. The reaction of polyols and isocyanates generates heat.

10.6. Hazardous decomposition products

Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Carbon dioxide. Alcohols. Ethers. Hydrocarbons. Ketones. Polymer fragments.

11 TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appear in this section when such data is available.

11.1. Information on toxicological effects Acute

toxicity

Acute oral toxicity Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

As product: Single dose oral LD50 has not been determined.

Acute dermal toxicity Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product: The dermal LD50 has not been determined.

Acute inhalation toxicity At room temperature, exposure to vapor is minimal due to low volatility. Vapor from heated material may cause respiratory irritation and other effects. Symptoms of excessive exposure may be anaesthetic or narcotic effects; dizziness and drowsiness may be observed.

As product: The LC50 has not been determined.

Skin corrosion/irritation Prolonged contact may cause slight skin irritation with local redness.

Serious eye damage/eye irritation May cause slight temporary eye irritation.

May cause slight temporary corneal injury.

SensitizationFor respiratory sensitization: No relevant data found For

skin sensitization: No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure) Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure) Contains a component which is reported to be a weak organophosphate-type cholinesterase inhibitor.

Excessive exposure may produce organophosphate type cholinesterase inhibition.

Signs and symptoms of excessive exposure may be headache, dizziness, incoordination, muscle twitching, tremors, nausea, abdominal cramps, diarrhea, sweating pinpoint pupils, blurred vision, salivation, tearing, tightness in chest, excessive urination convulsions. **Carcinogenicity** No relevant data found

Teratogenicity No relevant data found

Reproductive toxicity In animal studies on component(s), effects on reproduction were seen only at doses that produced significant toxicity to the parent animals.

Mutagenicity Contains component(s) which were negative in some in vitro genetic toxicity studies and positive in others. Contains component(s) which were negative in some animal genetic toxicity studies and positive in others. **Aspiration Hazard** Based on physical properties, not likely to be an aspiration hazard.

COMPONENTS INFLUENCING TOXICOLOGY:

Polyether polyol

Acute inhalation toxicity The LC50 has not been determined.



Triethyl phosphate

Acute inhalation toxicity LC50,rat, 4 Hour, dust/mist, > 2.35 mg/l No deaths occurred at this concentration. **Tris(dimethylamino) propyl amine**

Acute inhalation toxicity LC50, rat, 4 Hour, 6.9 mg/l

12 ECOLOGICAL INFORMATION

Ecotoxicological information on this product or its components appear in this section when such data is available. **12.1. Toxicity**

Polyether polyol

Acute toxicity to fish

Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 greater than 100 mg/L in most sensitive species).

LC50, Leuciscus idus (Golden orfe), semi-static test, 96 Hour, > 1,000 mg/l, OECD Test Guideline 203 or Equivalent **Acute toxicity to aquatic invertebrates**

EC50, copepod Acartia tonsa, static test, 48 Hour, > 1,000 mg/l, Other guidelines

EC50, Daphnia magna (Water flea), static test, 24 Hour, > 100 mg/l, OECD Test Guideline 202 or Equivalent **Acute toxicity to algae/aquatic plants**

EC50, Desmodesmus subspicatus (green algae), static test, 72 Hour, Growth rate inhibition, > 100 mg/l, OECD Test Guideline 201 or Equivalent

EC50, Skeletonema costatum (marine diatom), static test, 72 Hour, Growth rate inhibition, > 1,000 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria

EC50, activated sludge, static test, 3 Hour, Respiration rates., > 10,000 mg/l, OECD 209 Test

Chronic toxicity to aquatic invertebrates

NOEC, Daphnia magna (Water flea), semi-static test, 21 d, mortality, >= 10 mg/l

LOEC, Daphnia magna (Water flea), semi-static test, 21 d, mortality, > 10 mg/l

Polyether polyol 1

Acute toxicity to fish

For this family of materials:

Material is not classified as dangerous to aquatic organisms.

For this family of materials:

LC50, Leuciscus idus (Golden orfe), semi-static test, 96 Hour, > 1,000 mg/l, OECD Test Guideline 203 or Equivalent **Acute toxicity to aquatic invertebrates** For this family of materials:

EC50, Daphnia magna (Water flea), static test, 48 Hour, > 100 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants For this family of materials:

EC50, Desmodesmus subspicatus (green algae), static test, 72 Hour, Growth rate inhibition, > 100 mg/l, OECD Test Guideline 201 or Equivalent

Chronic toxicity to aquatic invertebrates

NOEC, Daphnia magna (Water flea), semi-static test, 21 d, mortality, >= 10 mg/l

LOEC, Daphnia magna (Water flea), semi-static test, 21 d, mortality, > 10 mg/l

Triethyl phosphate

Acute toxicity to fish

Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 greater than 100 mg/L in most sensitive species).

LC50, Leuciscus idus (Golden orfe), static test, 48 Hour, 2,140 mg/l, OECD Test Guideline 203 or Equivalent Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), static test, 48 Hour, 350 mg/l, OECD Test Guideline 202 or Equivalent **Acute toxicity to algae/aquatic plants**

EC50, Desmodesmus subspicatus (green algae), 72 Hour, Growth rate inhibition, 900 mg/l, OECD Test Guideline 201 **Toxicity to bacteria**

EC50, activated sludge, Respiration inhibition, 30 min, > 2,985 mg/l, OECD 209 Test

Tris(dimethylamino)propyl amine Acute

toxicity to fish

Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 greater than 100 mg/L in most sensitive species).

LC50, Oryzias latipes (Orange-red killifish), static test, 48 Hour, 430 mg/l, OECD Test Guideline 203 or Equivalent

12.2. Persistence and degradability

Polyether polyol

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.



SAFETY DATA SHEET Revised edition no : 2

Date : 05/ 2017

10-day Window: Not applicable

Biodegradation: < 60 % Exposure time: 28 d

Method: OECD Test Guideline 301D or Equivalent

Polyether polyol 1

Biodegradability: For this family of materials: Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do notnecessarily mean that the material is not biodegradable under environmental conditions. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

10-day Window: Fail

Biodegradation: 40 % Exposure time: 28 d

Method: OECD Test Guideline 301B or Equivalent

10-day Window: Not applicable

Biodegradation: 99 % Exposure time: 28 d

Method: OECD Test Guideline 302B or Equivalent

Triethyl phosphate

Biodegradability: Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

10-day Window: Not applicable

Biodegradation: > 90 % **Exposure time:** 28 d

Method: OECD Test Guideline 302B or Equivalent

Tris(dimethylamino)propyl amine

Biodegradability: Material is not readily biodegradable according to OECD/EEC guidelines.

12.3. Bioaccumulative potential

Polyether polyol

Bioaccumulation: For this family of materials: No bioconcentration is expected because of the relatively high water solubility.

Polyether polyol 1

Bioaccumulation: No bioconcentration is expected because of the relatively high water solubility.

Triethyl phosphate

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): 0.80 Measured

Tris(dimethylamino)propyl amine

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3). **Partition coefficient: n-octanol/water(log Pow):** 0.6 Estimated.

12.4. Mobility in soil <u>Polyether</u>

polyol No relevant data found. **Polyether polyol 1** No

relevant data found.

Triethyl phosphate

Potential for mobility in soil is very high (Koc between 0 and 50).

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Partition coefficient (Koc): 48 Estimated.

Tris(dimethylamino)propyl amine

Expected to be relatively immobile in soil (Koc > 5000).

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Partition coefficient (Koc): > 5000 Estimated.

12.5 Results of PBT and vPvB assessment Polyether

<u>polyol</u>

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Polyether polyol 1

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Triethyl phosphate



Date : 05/ 2017

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT). <u>Tris(dimethylamino)propyl amine</u>

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

12.6 Other adverse effects

Polyether polyol

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer. **Polyether polyol 1**

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer. Triethyl phosphate

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer. **Tris(dimethylamino)propyl amine**

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

13 DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Any disposal practice must be in compliance with all local and national laws and regulations. Do not dump into any sewers, on the ground, or into any body of water.

The definitive assignment of this material to the appropriate EWC group and thus its proper EWC code will depend on the use that is made of this material. Contact the authorized waste disposal services.

14 TRANSPORT INFORMATION

Not classified as dangerous in the meaning of transport regulations.

15 REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture REACh Regulation (EC) No 1907/2006

This product contains only components that have been either pre-registered, registered, are exempt from registration are regarded as registered or are not subject to registration according to Regulation (EC) No. 1907/2006 (REACH). The aforementioned indications of the REACH registration status are provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. It is the buyer's/user's responsibility to ensure that his/her understanding of the regulatory status of this product is correct.

15.2. Chemical Safety Assessment Not

applicable.

16 OTHER INFORMATION

Full text of H-Statements referred to under section 2 and 3.

- H302 Harmful if swallowed
- H312 Harmful in contact with skin
- H314 Causes severe skin burns and eye damage
- H315 Causes skin irritation
- H319 Causes serious eye irritation
- H332 Harmful if inhaled

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) No 1272/2008

Skin Irrit. - 2 - H315 - Calculation method Eye Irrit. - 2 - H319 - Calculation method

Legend

TWA 8-hr TWA

US WEEL USA. Workplace Environmental Exposure Levels (WEEL)

Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

POZZI-AROSIO srl urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and



SAFETY DATA SHEET Revised edition no : 2

Date : 05/ 2017

any hazards associated with the product. The information herein is provided in good faith and believed to accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that this activities comply all federal, state provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.



AROPOL 303-150 в

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Trade name : Aropol 303-150 B Type of product : Polyurethanic component. Use: Industrial. Company identification : Omelcom 360 rue de la Outarde 01500 Château-Gaillard - France Tél : +33 4 74 39 79 40 Mail : contact@omelcom.fr

Emergency phone nr : Tel +33 480 420404

2 HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture Classification according to Regulation (EC) No 1272/2008

| Acute toxicity (Inhalation) | Category 4 | H332 |
|---|------------|------|
| Skin irritation | Category 2 | H315 |
| Eye irritation | Category 2 | H319 |
| Respiratory sensitization | Category 1 | H334 |
| Skin sensitisation | Category 1 | H317 |
| Carcinogenicity | Category 2 | H351 |
| Specific target organ toxicity – single exposure | Category 3 | H335 |
| Specific target organ toxicity – repeated exposure (Inhalation) | Category 2 | H373 |
| | | |

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements Labelling according to Regulation (EC) No 1272/2008 Hazard pictograms



Signal Word: DANGER Hazard 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 (Respiratory Tract) through prolonged or repeated exposure if inhaled

Precautionary statements

- P260 Do not breathe dust/fume/gas/mist/vapours/spray
- P280 Wear protective gloves/protective clothing/eye protection/face protection
- P284 In case of inadequate ventilation wear respiratory protection

P302+P352 IF ON SKIN: Wash with plenty of soap and water

- P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rising.

P308+P313 If exposed or concerned: Get medical advice/attention

Supplemental information

EUH204 Contains isocyanates. May produce an allergic reaction.

2.3. Other hazards

This product contains no substances assessed to be PBT or vPvB at levels of 0.1% or higher.



3 COMPOSITION INFORMATION ON INGREDIENTS

3.1. Substance

| This | product | is a | substai | nce |
|------|---------|------|---------|-----|
| | | | | |

| CASRN / EC-No./ Index-No. | REACH Registration Number | Concentration | Component | Classification: REGULATION (EC) No 1272/2008 |
|--|---------------------------------|------------------|--|---|
| CASRN 9016-87-9 EC-No. 618-498-9 Index-No | | 100.0% | Diphenylmethane Diisocyante isomers and homologues | 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 |
| CASRN 101-68-8 EC-No. 202-966-0 Index-No. 615-005-00-9 | 01-2119457014-47 | >=30.0 - <=50.0% | 4,4'-methylenediphenyl diisocyanate | 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 |

For the full text of the H-Statements mentioned in this Section, see Section 16. Note: CAS 101-68-8 is an MDI isomer that is part of CAS 9016-87-9.

4 FIRST AID MEASURES

4.1. Description of first aid measures

General advice: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

Skin contact: Remove material from skin immediately by washing with soap and plenty of water.

Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists. Wash clothing before reuse. An MDI skin decontamination study demonstrated that cleaning very soon after exposure is important, and that a polyglycol-based skin cleanser or corn oil may be more effective that soap and water. Discard items which cannot be decontaminated , including leather articles such as shoes, belts and watchbands. Suitable emergency safety shower facility should be available in work area.

Eye contact: Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for a least 15 minutes. Obtain medical attention without delay, preferably from ophthalmologist. Suitable emergency eye wash facility should be immediately available.

Ingestion: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

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

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

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

Notes to physician: Maintain adequate ventilation and oxygenation of the patient. May cause respiratory sensitization or asthma-like symptoms. Bronchodilators, expectorants and antitussives may be of help. Treat bronchospasm with inhaled beta2 agonist and oral or parenteral corticosteroids. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. If you are sensitized to diisocyanates, consult your physician regarding working with other respiratory irritants or sensitizers. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Excessive exposure may aggravate pre-existing asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome).



5 FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Unsuitable extinguishing media: Do not use direct water stream. May spread fire.

5.2. Special hazards arising from the substance or mixture

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Isocyanates. Hydrogen cyanide. Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: Material reacts slowly with water, releasing carbon dioxide which can cause pressure buildup and rupture of closed containers. Elevated temperature accelerate this reaction. Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Dense smoke is produced when product burns.

5.3. Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. Water is not recommended, but may be applied in large quantities as a fine spray when other extinguishing agents are not available. Do not use direct water stream. May spread fire. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container.

Move container from fire area if this is possible without hazard. Use water spray to cool fire-exposed containers and fire-affected zone until fire is out. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots and gloves). Avoid contact with this material during firefighting operations. If contact is likely, change to full chemical resistant firefighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6 ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Isolate area. Keep unnecessary and unprotected personnel from entering the area. Keep personnel out of low areas. Keep upwind of spill. Spilled material may cause a slipping hazard. Ventilate area of leak or spill. If available, use foam to smother or suppress. Refer to Section 7, Handling, for additional precautionary measures. See section 10 for more specific information. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

6.2. Environmental precautions

Prevent from entering into soil, ditches, sewers, waterways and/or ground/water. See Section 12, Ecological Information.

6.3. Methods and material for containment and cleaning up

Do NOT use absorbent materials such as: Cement powder (Note: may generate heat). Do not place in sealed containers. Contain spilled material if possible. Absorb with materials such as: Dirt. Vermiculite. Sand. Clay. Collect in suitable ad properly labeled open containers. Suitable containers include: Metal drums. Plastic drums. Polylined fiber pacs. Wash the spill site with large quantities of water. Attempt to neutralize by adding suitable decontaminated solution: Formulation 1: sodium carbonate 5-10%; liquid detergent 0.2-2%; water to make up to 100%, OR formulation 2: concentred ammonia solution 3-8%; liquid detergent 0.2-2%; water to make up to 100%. If ammonia is used, use good ventilation to prevent vapour exposure. Contact Pozzi-Arosio for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

6.4. Reference to other sections

References to other sections, if applicable, have been provided in the previous sud-sections.



7 HANDLING AND STORAGE

7.1. Precautions for safe handling

Avoid breathing vapour. Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Use with adequate ventilation. Wash thoroughly after handling. Keep container closed. This material is hygroscopic in nature. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

7.2. Conditions for safe storage, including any incompatibilities

Store in a dry place. Protect from atmospheric moisture. Do not store product contaminated with water to prevent potential hazardous reaction. See section 10 for more specific information.

Additional storage and handling information on this product may be obtained by calling your sales or customer service contact. **Storage stability**

Storage Period: 6 Months Storage temperature: 15 - 35°C

7.3. Specific end uses

See the technical data sheet on this product for further information

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

| | Component | | | Regulation | Type of listing | Value/Notation |
|-------------------------------|---------------|---------|-----|--|---|---|
| Diphenylmethane homologues | Diisocyanate, | isomers | and | GB EH40 | TWA | 0.02 mg/m ³ , NCO |
| | | | | Further information: 52+ as asthmagens and resy responsiveness via an in become hyper-responsiv quantities, may cause re a runny nose to asthma hyper-responsive and it i hyper-responsive and it i hyper-responsive. Sub- distinguished from subst pre-existing airway hy themselves. The latter sensitisers. Further infor assessments of the evid it is reasonably practical should be prevented. W standards of control to p that can cause occupatio as is reasonably practical sis reasonably practical surveillance is appropri substance which may consultation with an occ of surveillance; Sen: Ca the list of WELs has occupational asthma in other substances not it tl HSE's asthma web page | 33: Substances that can caus piratory sensitisers) can indu- neunological irritant or other u- ve, further exposure to the s spiratory symptoms. These sy- spiratory symptoms. These sy- simpossible to identify in adva- stances that can cause - per-responsiveness, but wh substances are not classifi mation can be found in the H ence for agents implicated in ole, exposure to substances the here this is not possible, the ence for agents implicated in- ole, exposure to substances the here this is not possible, the event workers from becomin onal asthma, COSHH requires able. Activities giving rise to sh nation when risk management ate for all employees exposi- cause occupational asthma upational health professional pable of causing occupations been assigned only to tho the categories shown in Tab- hese tables may cause occup as (<u>www.hse.gov.uk/asthma</u>) p | e occupational asthma (also known ce a state of specific airway hyper- mechanism. Once the airways have substance, sometimes even in tiny ymptoms can range in severity from dopsed to a sensitiser will become ance those who are likely to become occupational asthma should be symptoms of asthma in people with ich do not include the disease ed as asthmagens or respiratory SE publication Asthmagen? Critical occupational asthma; 54: Wherever hat can cause occupational asthma e primary aim is to apply adequate g hyperresponsive. For substances that exposure be reduced to as low ortterm peak concentrations should ent is being considered. Health sed or liable to be exposed to a and there should be appropriate over the degree of a risk and level al asthma; 55: The 'Sen' notation in se substances which may cause e 1. It should be remembered that ational asthma. provide further information. 0.07 mg/m ³ , NCO |
| | | | | | | |



Page : 5 / 14 SAFETY DATA SHEET Revised

edition no : 11 Date : 08/ 2019

| | Further information: 52+ as asthmagens and res responsiveness via an ir become hyper-responsi quantities, may cause re a runny nose to asthma hyper-responsive. Sub distinguished from subs pre-existing airway hy themselves. The latter sensitisers. Further infor assessments of the evid it is reasonably practical should be prevented. W standards of control to p that can cause occupati as is reasonably practical receive particular atte surveillance is appropr substance which may consultation with an occ of surveillance.; Sen: Ca the list of WELs has occupational asthma in other substances not it t HSE's asthma web page | 53: Substances that can cau: piratory sensitisers) can indu mmunological irritant or other ve, further exposure to the espiratory symptoms. These s a. Not all workers who are ei is impossible to identify in adv stances that can cause tances which may trigger the per-responsiveness, but will substances are not classif rmation can be found in the H lence for agents implicated in ble, exposure to substances //here this is not possible, th prevent workers from becomin onal asthma, COSHH require able.Activities giving rise to sl ntion when risk manager iate for all employees expo cause occupational asthma apable of causing occupation been assigned only to tho the categories shown in Tab hese tables may cause occup s (www.hse.gov.uk/asthma) | se occupational asthma (also known ice a state of specific airway hyper- mechanism. Once the airways have substance, sometimes even in tiny symptoms can range in severity from vacposed to a sensitiser will become occupational asthma should be symptoms of asthma in people with hich do not include the disease fied as asthmagens or respiratory dSE publication Asthmagen? Critical occupational asthma; 54: Wherever that can cause occupational asthma e primary aim is to apply adequate g hyperresponsive. For substances s that exposure be reduced to as low nortterm peak concentrations should hent is being considered. Health used or liable to be exposed to a and there should be appropriate l over the degree of a risk and level al asthma.; 55: The 'Sen' notation in pse substances which may cause pational asthma. provide further information. |
|-------------------------------------|---|---|--|
| 4,4'-methylenediphenyl diisocyanate | ACGIH Further information: resp | TWA o sens: Respiratory sensitizat | 0.005 ppm |
| | GB EH40 | TWA | 0.02 mg/m ³ , NCO |
| | Further information: 52+ as asthmagens and res responsiveness via an ir become hyper-responsi quantities, may cause re a runny nose to asthma hyper-responsive. Sub distinguished from subs pre-existing airway hype disease themselves. The sensitisers. Further inform assessments of the evider is reasonably practicable should be prevented. Wh standards of control to pr that can cause occupatior as is reasonably practicat receive particular attention is appropriate for all emplo | 53: Substances that can cau: piratory sensitisers) can indu mmunological irritant or other ve, further exposure to the espiratory symptoms. These sa a. Not all workers who are e is impossible to identify in adv stances that can cause tances which may trigger the er-responsiveness, but which latter substances are not class nation can be found in the H nece for agents implicated in on exposure to substances th event workers from becomin al asthma, COSHH requires ole. Activities giving rise to sh o when risk management is on when risk management is | Leven state of specific airway hyper- mechanism. Once the airway hyper- mechanism. Once the airways have substance, sometimes even in tiny symptoms can range in severity from synosed to a sensitiser will become rance those who are likely to become occupational asthma should be symptoms of asthma in people with do not include the suffied as asthmagens or respiratory ISE publication Asthmagen? Critical ccupational asthma; 54: Wherever it iat can cause occupational asthma e primary aim is to apply adequate g hyperresponsive. For substances that exposure be reduced to as low iortterm peak concentrations should eing considered. Health surveillance |
| | cause occupational asth occupational health profee Capable of causing occup been assigned only to th categories shown in Table tables may cause occupat HSE's asthma web pages | ima and there should be ssional over the degree of a pational asthma.; 55: The 'S loose substances which may a 1. It should be remembered ional asthma. (www.hse.gov.uk/asthma) pr | appropriate consultation with an risk and level of surveillance.; Sen: en' notation in the list of WELs has cause occupational asthma in the d that other substances not it these ovide further information. |
| | GB EH40 | STEL | 0.07 mg/m ³ , NCO |
| | Further information: 52+5 as asthmagens and respi responsiveness via an im become hyper-responsive quantities, may cause resp runny nose to asthma. No responsive and it is impos responsive and it is impos responsive. Substances th substances which may tri hyper-responsiveness, bi substances are not classif can be found in the HSE agents implicated in occ exposure to substances this is not possible, the p workers from becoming asthma, COSHH require practicable. Activities givin attention when risk manac all employees exposed or i asthma and there shou professional over the deg occupational asthma.; 55: those substances which n 1. It should be remembere asthma. | 3: Substances that can caus iratory sensitisers) can induu munological irritant or other i 6, further exposure to the s piratory symptoms. These syi it all workers who are expose sible to identify in advance th nat can cause occupational a gger the symptoms of asthm it which do not include th fied as asthmagens or respire publication Asthmagen? Critic upational asthma; 54: Whe nat can cause occupational a sthat exposure be reduu grise to shortterm peak con- gement is being considered. I liable to be exposed to a subs a tobarter peak con- gement is being considered. I liable to be exposed to a subs ree of a risk and level of sur The 'Sen' notation in the list any cause occupational asth d that other substances not it (www.hse.gov.uk/asthma) pr | The occupational asthma (also known ce a state of specific airway hyper- mechanism. Once the airways have substance, sometimes even in tiny mptoms can range in severity from a ed to a sensitiser will become hyper- ose who are likely to become hyper- sthma should be distinguished from a in people with pre-existing airway the disease themselves. The latter atory sensitisers. Further information cal assessments of the evidence for prever it is reasonably practicable, asthma should be prevented. Where tates standards of control to prevent ances that can cause occupational ced to as low as is reasonably centrations should receive particular Health surveillance is appropriate for tance which may cause occupational tion with an occupational health veillance.; Sen: Capable of causing of WELs has been assigned only to ma in the categories shown in Table these tables may cause occupational |



Page : 6 / 14 SAFETY DATA SHEET Revised

edition no : 11 Date : 08/ 2019

Biological occupational exposure limits

| Components | CAS-No. | Control parameters | Biological specimen | Sampling time | Permissible concentration | Basis |
|--|-----------|---|---------------------|--------------------------------------|------------------------------|----------------|
| Diphenylmethane Diisocyanate, isomers and homologues | 9016-87-9 | isocyanate-derived diamine (Isocyanates) | Urine | At the end of the period of exposure | 1 µmol/mol creatinine | GB EH40 BAT |
| | 101-68-8 | | Urine | | | |
| 4,4'- methylenediphenyl diisocyanate | | isocyanate-derived diamine (Isocyanates) | | At the end of the period of exposure | 1 µmol/mol creatinine | GB EH40 BAT |

Derived No Effect Level

4,4'-methylenediphenyl diisocyanate

Workers

| Acute – systemic effects Acute – local effect | | cal effects | Long-term – systemic effects | | Long term – local effects | | |
|--|------------|----------------|---------------------------------|--------|------------------------------|--------|---------------|
| Dermal | Inhalation | Dermal | Inhalation | Dermal | Inhalation | Dermal | Inhalation |
| 50 mg/kg bw/day | 0.1 mg/m3 | 28.7 mg/cm2 | 0.1 mg/m3 | n.a. | 0.05 mg/m3 | n.a. | 0.05 mg/m3 |

Consumers

| Acute – systemic effects Acute – local effects | | Long-term – systemic effects | | | Long term – local effects | | | | |
|--|---------------|------------------------------|----------------|---------------|------------------------------|----------------|------|--------|----------------|
| Dermal | Inhalation | Oral | Dermal | Inhalation | Dermal | Inhalation | Oral | Dermal | Inhalation |
| 25 mg/kg bw/day | 0.05 mg/m3 | 20 mg/kg bw/day | 17.2 mg/cm2 | 0.05 mg/m3 | n.a. | 0.025 mg/m3 | n.a. | n.a. | 0.025 mg/m3 |

Predicted No Effect Concentration

4,4'-methylenediphenyl diisocyanate

| Compartment | PNEC | Remarks |
|--------------------------|---------------------------|---------|
| Fresh water | 1 mg/l | |
| Marine water | 0.1 mg/l | |
| Intermittent use/release | 10 mg/l | |
| Soil | 1 mg/kg dry weight (d.w.) | |
| Sewage treatment plant | 1 mg/l | |

8.2. Exposure controls

Engineering controls: Use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations. Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines. Exhaust systems should be designed to move the air away from the source of vapor/aerosol generation and people working at this point. The odour and irritancy of this material are inadequate to warn of excessive exposure. **Individual protection measures**

Eye/Face Protection: Use chemical goggles. Chemical goggles should be consistent with EN 166 or equivalent. **Skin Protection**

Hand Protection: Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Butyl rubber. Polyethylene. Chlorinated polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Viton. Neoprene. Polyvinyl chloride ("PVC or "vinyl"). Nitrile/butadiene rubber ("nitrile or NBR"). When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN374) is recommended. When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN374) is recommended.



Glove thickness alone is not a good indicator of the level of protection a glove provides against a chemical substance as this level of protection is also highly dependent on the specific composition of the material that the glove is fabricated from. The thickness of the glove must, depending on model and type of material, generally be more than 0.35 mm to offer sufficient protection for prolonged and frequent contact with the substance. As an exception to this general rule it is known that multilayer laminate gloves may offer prolonged protection at thicknesses less than 0.35 mm. Other glove materials with a thickness of less than 0.35 mm may offer sufficient protection when only brief contact is expected. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factor such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Respiratory Protection: Atmospheric levels should be maintained below the exposure guideline. When atmospheric levels may exceed the exposure guideline, use an approved air-purifying respirator equipped with an organic vapor sorbent and a particle filter. For situations where the atmospheric levels may exceed the level for which an air-purifying respirator is effective, use a positive-pressure air-supplying respirator (air line or self-contained breathing apparatus). For emergency response or for situations where the atmospheric level is unknown, use an approve positive-pressure self-contained breathing apparatus or positive-pressure air line with auxiliary selfcontained air supply.

Use the following CE approved air-purifying respirator: Organic vapor cartridge with a highly toxic particulate prefilter, type AP3 (meeting standard EN 14387).

Environmental exposure controls

See SECTION 7: Handling and storage and SECTION 13: Disposal considerations for measures to prevent excessive environmental exposure during use and waste disposal.

9 PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties Appareance

| Physical State | Liquid | |
|--|------------------------|-----------------------------|
| Colour | Brown | |
| Odour | Musty | |
| Odour threshold | 0.4 ppm | Based on Literature for MDI |
| | Odor is inadequate wa | rning of excessive exposure |
| рН | Not applicable | |
| Melting point/range | No test data available | |
| Freezing point | forms crystals below 1 | 0°C Literature |
| Boiling point (760 mmHg) | Decomposes prior to b | oiling |
| Flash point - closed cup | >204°C | Literature |
| Evaporation rate (Butyl Acetate=1) | No test data available | |
| Flammability (solid,gas) | Not applicable | |
| Lower explosion limit | No test data available | |
| Upper explosion limit | No test data available | |
| Vapour pressure | <0.00001 mmHg @ 25 | 5°C Literature |
| Relative Vapour Density (air=1) | 8.5 | Literature |
| Relative Density (water=1) | 1.23 at 25°C/25°C | Literature |
| Water solubility | Not applicable | |
| Partition coefficient: n-octanol/water | Reacts with water | |
| Auto-ignition temperature | >600°C | Literature |
| Decomposition temperature | No test data available | |
| Dynamic Viscosity | 160 - 240 mPa.s at 25 | ° C ASTM D4889 |
| Kinematic Viscosity | No test data available | |
| Explosive properties | Not explosive | |
| Oxidizing properties | No | |
| 9.2. Other information | | |

Molecular weight

No test data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.



10 STABILITY AND REACTIVITY

10.1. Reactivity

Diisocyantes react with many materials and the rate of reaction increases with temperature as well as increased contact, these reactions can become violent. Contact is increased by stirring or if the other material mixes with the diisocyanate. Diisocyanates are not soluble in water and sink to the bottom, but react slowly at the interface. The reaction forms carbon dioxide gas and a layer of solid polyurea. Reaction with water will generate carbon dioxide and heat.

10.2. Chemical stability

Stable under recommended storage conditions. See Storage, Section 7.

10.3. Possibility of hazardous reactions

Can occur. Exposure to elevated temperatures can cause product to decompose and generate gas. This can cause pressure build-up and/or rupturing of closed containers. Polymerization can be catalyzed by: Strong bases. Water.

10.4. Conditions to avoid

Exposure to elevated temperatures can cause product to decompose.

Generation of gas during decomposition can cause pressure in closed systems. Pressure build-up can be rapid. Avoid moisture. Material reacts slowly with water, releasing carbon dioxide which can cause pressure buildup and rupture of closed containers. Elevated temperatures accelerate this reaction.

10.5. Incompatible materials

Avoid contact with: Acids. Alcohols. Amines. Water. Ammonia.

Bases. Metal compounds. Moist air. Strong oxidizers. Diisocyanates react with many materials and the rate of reaction increases with temperature as well as increased contact; these reactions can become violent. Contact is increased by stirring or if the other material mixes with the diisocyanate. Diisocyanates are not soluble in water and sink to the bottom, but react slowly at the interface. The reaction forms carbon dioxide gas and a layer of solid polyurea. Reaction with water will generate carbon dioxide and heat. Avoid contact with metals such as: Aluminum. Zinc. Brass. Tin. Copper. Galvanized metals. Avoid contact with absorbent materials such as: Moist organic absorbents. Avoid unintended contact with polyols. The reaction of polyols and isocyanates generate heat.

10.6. Hazardous decomposition products

Decomposition products depend upon temperature, air supply and the presence of other materials. Gases are released during decomposition.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

11.1. Information on toxicological effects Acute Toxicity Acute oral toxicity

Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

Typical for this family of materials.

LD50, Rat, > 10,000 mg/kg

Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

Typical for this family of materials.

LD50, Rabbit, > 9,400 mg/kg

Acute inhalation toxicity

At room temperature, vapors are minimal due to low volatility. However, certain operations may generate vapor or mist concentrations sufficient to cause respiratory irritation and other adverse effects. Such operations include those in which the material is heated, sprayed or otherwise mechanically dispersed such as drumming, venting or pumping. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. May cause pulmonary edema (fluid in the lungs.) Effects may be delayed. Decreased lung function has been associated with overexposure to isocyanates.

LC50, Rat, 4 Hour, dust/mist, 0.49 mg/l

For similar material(s): 4,4'-Methylenediphenyl diisocyanate (CAS 101-68-8).

LC50, Rat, 1 Hour, Aerosol, 2.24 mg/l

For similar material(s): 2,4'-Diphenylmethane diisocyanate (CAS 5873-54-1).

LC50, Rat, 4 Hour, Aerosol, 0.387 mg/l





Skin corrosion/irritation

Based on data from similar materials

Prolonged contact may cause slight skin irritation with local redness.

May stain skin.

Serious eye damage/eye irritation

Based on data from similar materials May

cause moderate eye irritation.

May cause slight temporary corneal injury.

Sensitization

For this family of materials:

Skin contact may cause an allergic skin reaction.

Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization. For this family of materials:

May cause allergic respiratory reaction.

Reexposure to extremely low isocyanate concentrations may cause allergic respiratory reactions in individuals already sensitized.

Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest.

Occasionally, breathing difficulties may be life threatening. Effects may be delayed.

Specific Target Organ Systemic Toxicity (Single Exposure) May cause

respiratory irritation.

Route of Exposure: Inhalation

Target Organs: Respiratory Tract

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols.

Carcinogenicity

Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/Polymeric MDI (6 mg/m3) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI.

Teratogenicity

In laboratory animals, MDI/polymeric MDI did not cause birth defects; other fetal effects occurred only at high doses which were toxic to the mother. **Reproductive toxicity**

No relevant data found.

Mutagenicity

Genetic toxicity data on MDI are inconclusive. MDI was weakly positive in some in vitro studies; other in vitro studies were negative. Animal mutagenicity studies were predominantly negative.

Aspiration Hazard

Based on physical properties, not likely to be an aspiration hazard.

12 ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

12.1. Toxicity Acute toxicity to fish

The measured ecotoxicity is that of the hydrolyzed product, generally under conditions maximizing production of soluble species.

Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 greater than 100 mg/L in most sensitive species).

LC50, Danio rerio (zebra fish), static test, 96 Hour, > 1,000 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), static test, 24 Hour, > 1,000 mg/l, OECD Test Guideline 202 or Equivalent **Acute toxicity to algae/aquatic plants**

NOEC, Desmodesmus subspicatus (green algae), static test, 72 Hour, Growth rate inhibition, 1,640 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria

EC50, activated sludge, static test, 3 Hour, Respiration rates., > 100 mg/l

Toxicity to soil-dwelling organisms

EC50, Eisenia fetida (earthworms), 14 d, > 1,000 mg/kg

Toxicity to terrestrial plants

EC50, Avena sativa (oats), Growth inhibition, 1,000 mg/l

EC50, Lactuca sativa (lettuce), Growth inhibition, 1,000 mg/l



12.2 Persistence and Degradability

Biodegradability: In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related diisocyanates.

10-day Window: Not applicable

| Biodegradation | Exposure Time |
|----------------|----------------------|
| 0% | 28 d |

Method

OECD Test Guideline 302C or Equivalent

12.3 Bioaccumulative potential Bioconcentration factor (BCF): 92 Cyprinus carpio (Carp) 28 d

Diphenylmethane diisocyanate, isomers and homologues

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3). Reacts with water. In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Bioconcentration factor (BCF): 92 Cyprinus carpio (Carp) 28 d

4,4'-methylenediphenyl diisocyanate

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3). Reacts with water. In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Bioconcentration factor (BCF): 92 Cyprinus carpio (Carp) 28 d

12.4 Mobility in soil

In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

12.5 Results of PBT and vPvB assessment

This substances is not considered to be persistent, bioaccumulating and toxic (PBT)

12.6 Other adverse effects

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

13 DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

This product, when being disposed of in its unused and uncontaminated state should be treated as a hazardous waste according to EC Directive 2008/98/EC. Any disposal practices must be in compliance with all national and provincial laws and any municipal or local by-laws governing hazardous waste. For used, contaminated and residual materials additional evaluations may be required. Do not dump into any sewers, on the ground, or into any body of water. Incineration under approved, controlled conditions using incinerators suitable or designed for the disposal of hazardous chemical wastes, is the preferred method for disposal. Small quantities of waste may be pre-treated for example with polyol, to neutralise prior to disposal. Empty drums should be decontaminated (see Section 6) and either punctured and scrapped or given to an approved drum reconditioner.

The definitive assignment of this material to the appropriate EWC group and thus its proper EWC code will depend on the use that is made of this material. Contact the authorized waste disposal services.

14 TRANSPORT INFORMATION

The product is not dangerous under current provisions of the Code of International Carriage of Dangerous Goods by Road (ADR) AND BY Rail (RID), of the International Maritime Dangerous Goods Code (IMDG), and of the International Air Transport Association (IATA) regulations.



14.1. UN Number Not applicable

14.2. UN proper shipping name Not regulated for transport

14.3. Transport hazard class(es) Not applicable

14.4. Packing group Not applicable

14.5. Environmental hazards No data available

14.6. Special precautions for user No data available

14.7. Transport in bulk according to Annex II of Merpol and the IBC Code Consult IMO regulations before transporting ocean bulk

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the reponsability of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15 REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture REACH Regulation (EC) No 1907/2006

The aforementioned indications of the REACH registration status are provided in good faith and believed to be accurate ad of the effective date shown above. However, no warranty, express or implied, is given. It is the buyer's/user's responsibility to ensure that his/her understanding of the regulatory status of this product is correct. This product contains only components that have been either pre-registered, are exempt from registration or are not subject to registration according to Regulation (EC) No. 1907/2006 (REACH).

Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII):

The following substance/s contained in this product is/are subject through Annex XVII of REACH regulation to restrictions on the manufacture, placing on the market and use when present in certain dangerous substances, mixtures and articles. Users of this product have to comply with the restrictions placed upon it by the aforementioned provision.

CAS-No.: 9016-87-9 Name: Diphenylmethane Diisocyanate, isomers and homologues

Restriction status: listed in REACH Annex XVII

Restricted uses: See Annex XVII to Regulation (EC) no 1907/2006 for Conditions of restriction

CAS-No.: 101-68-8 Name: 4,4'-methylenediphenyl diisocyanate

Restriction status: listed in REACH Annex XVII

Restricted uses: See Annex XVII to Regulation (EC) no 1907/2006 for Conditions of restriction

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of majoraccident hazards involving dangerous substances.

Listed in Regulation : Not applicable

Further information

Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

15.2 Chemical Safety Assessment

No Chemical Safety Assessment ha sbeen carried out for this substance/mixture.





16 OTHER INFORMATIONS

Full text of H-Statements referred to under sections 2 and 3. 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 if inhaled.

Revision

- 2 HAZARDS IDENTIFICATION
- 8 EXPOSURE CONTROLS / PERSONAL PROTECTION
- 9 PHYSICAL AND CHEMICAL PROPERTIES
- 14 TRANSPORT INFORMATION
- 15 REGULATORY INFORMATION

Legend

| ACGIH | USA. ACGIH Threshold Limit Values (TLV) |
|-------------|--|
| GB EH40 | UK. EH40 WEL – Workplace Exposure Limits |
| GB EH40 BAT | UK. Biological monitoring guidance values |
| SEN | Sensitizer |
| STEL | Short term exposure limit |
| TWA | Time weighted average |
| Acute Tox. | Acute Toxicity |
| Carc. | Carcinogenicity |
| Eye Irrit. | Eye Irritation |
| Resp. Sens. | Respiratory sensitisation |
| Skin Irrit. | Skin irritation |
| Skin Sens. | Skin sensitisation |
| STOT RE | Specific target organ toxicity – repeated exposure |
| STOT SE | Specific target organ toxicity – single exposure |
| | |

Full text of the other abbreviations

ACGIH: American Conference of Governmental Industrial Hygienists

ADR: European agreement concerning the international carriage of dangerous goods by Road

AICS: Australian Inventory of Chemical Substances

ASTM: American Society for the Testing of Materials

AND: European agreement concerning the international carriage of dangerous goods by inland waterways ATE:

Acute Toxicity Estimate

BCF: Biological Concentration Factor

BEI: Biological Exposure Index

BOD: Biochemical Oxygen Demand

BW: Body weight;

CAS: Chemical Abstracts Service (division of the American Chemical Society)

CAV: Poison Center

CE: European Community

CLP: Classification, Labeling, Packaging

CMR: Carcinogenic, Mutagenic and Reprotoxic

COD: Chemical Oxygen Demand

COV: Volatile Organic Compound

CSA: Chemical Safety Assessment CSR: Chemical Safety Report

CSR. Chemical Salety Report

DIN: Standard of the German Institute for Standardisation

DMEL: Derived Minimal Effect Level

DNEL: Derived No Effect Level

DPD: Dangerous Preparation Directive

DSD: Dangerous Substances Directive

DSL: Domestic Substances List (Canada)



EC50: Half Maximal Effective Concentration ECHA: European Chemicals Agency EC-Number: European Community number ECx: Concentration associated with x% response Elx: Loading rate associated with x% response EINECS: European Inventory of Existing Commercial Chemical Substances EmS: Emergency Schedule ENCS: Existing and New Chemical Substances (Japan) ErCx: Concentration associated with x% growth rate response ES: Exposure Scenario GefStoffVO: Ordinance on Hazardous Substances, Germany GHS: Globally Harmonized System of Classification and Labeling of Chemicals GLP: Good Laboratory Practice IARC: International Agency for Research on Cancer IATA: International Air Transport Association IATA-DGR: Dangerous Goods Regulation by the "International Air Transport Association" (IATA). IBC: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk IC50: Half Maximal Inhibitory Concentration ICAO: International Civil Aviation Organization ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO) IECS: Inventory of Existing Chemical Substances in China IMDG: International Maritime Code for Dangerous Goods IMO: International Maritime Organisation INCI: International Nomenclature of Cosmetic Ingredients IRCCS: Instituto de Hospitalización y Asistencia de Carácter Científico ISHL: Industrial Safety and Health Law (Japan) ISO: International Organisation for Standardization KAFH: Keep Away from Heat **KECI: Korea Existing Chemical Inventory** KSt: Explosion Coefficient LC50: Lethal Concentration, for 50 Percent of Test Population LD50: Lethal Dose, for 50 Percent of Test Population LDLo: Leathal Dose Low MARPOL: International Convention for the Prevention of Pollution from Ships N.A.: Not Applicable N/A: Not Applicable N/D: Not Defined/ Not Available NA: Not Available NEN1: ND: National Emergency Telephone Number: not available NEN2: ND: National Emergency Telephone Number: not available NIOSH: National Institute for Occupational Safety and Health NOAEC: No Observed Adverse Effect Concentration NOAEL: No Observed Adverse Effect Level NOELR: No Observable Effect Loading Rate NZIoC: New Zealand Inventory of Chemicals OECD: Organization for Economic Co-operation and Development **OPPTS: Office of Chemical Safety and Pollution Prevention** OSHA: Occupational Safety and Health Administration PBT: Persistent, Bioaccumulative and Toxic PICCS: Philippines Inventory of Chemicals and Chemical Substances PGK: Packaging Instruction PNEC: Predicted No Effect Concentration **PSG:** Passengers (Q)SAR: (Quantitative) Structure Activity Relationship RID: Regulation Concerning the International Transport of Dangerous Goods by Rail SADT: Self-Accelerating Decomposition Temperature STEL: Short Term Exposure Limit STOT: Specific Target Organ Toxicity SVHC: Substance of Very High Concern TCSI: Taiwan Chemical Substance Inventory TLV: Threshold Limiting Value TRGS: Technical Rule for Hazardous Substances TSCA: Toxic Substances Contro Act (United States) TWATLV: Threshold Limit Value for the Time Weighted Average 8-hour day. (ACGIH Standard) vPvB: Very Persistent. Very Bioaccumulative WGK: German Water Hazard Class.

France Polyuréthane System urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the



Page : 14 / 14 SAFETY DATA SHEET Revised

edition no : 11 Date : 08/ 2019

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