# Safety Data Sheet according to (EC) No 1907/2006 as amended



Ponal Rapido Expansionskleber (CS)

SDS No. : 367799
V008.0
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## Kit/Multi-component Product

1. SDS No.367800 - Ponal Rapido Expansionskleber, Komp. A
2. SDS No.367801 - Ponal Rapido Expansionskleber, Komp. B

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

### 1.1. Product identifier

Ponal Rapido Expansionskleber, Komp. A

UFI: FPKD-WWWR-Q202-Q4ND

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

Intended use:
Foam, 2-component without propellant gas

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

Henkel AG & Co. KGaA
Henkelstr. 67
40589 Düsseldorf

Germany

Phone: +49 211 797 0

SDSinfo.Adhesive@henkel.com
For Safety Data Sheet updates please visit our website www.mysds.henkel.com or www.henkel-adhesives.com.

### 1.4. Emergency telephone number

The Henkel information service also provides an around-the-clock telephone service on phone no.+49-(0)211-797-3350 for exceptional cases.

Further information is available at Poison Control Centers.

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

**Classification (CLP):**

| | |
|---|---|
| Acute toxicity | Category 4 |
| H332 Harmful if inhaled. | |
| Route of Exposure: Inhalation | |
| Skin irritation | Category 2 |
| H315 Causes skin irritation. | |
| Serious eye irritation | Category 2 |
| H319 Causes serious eye irritation. | |
| Respiratory sensitizer | Category 1 |
| H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. | |
| Skin sensitizer | Category 1 |
| H317 May cause an allergic skin reaction. | |
| Carcinogenicity | Category 2 |
| H351 Suspected of causing cancer. | |
| Specific target organ toxicity - single exposure | Category 3 |
| H335 May cause respiratory irritation. | |
| Target organ: respiratory tract irritation | |
| Specific target organ toxicity - repeated exposure | Category 2 |
| H373 May cause damage to organs through prolonged or repeated exposure. | |

### 2.2. Label elements

**Label elements (CLP):**

**Hazard pictogram:**

**Contains** Diphenylmethane diisocyanate, isomers and homologues

**Signal word:** Danger

**Hazard statement:**
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.

**Supplemental information** As from 24 August 2023 adequate training is required before industrial or professional use.
Further information: https://www.feica.eu/PUinfo

**Precautionary statement:**
P102 Keep out of reach of children.
P101 If medical advice is needed, have product container or label at hand.
P260 Do not breathe vapors.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/eye protection.
P302+P352 IF ON SKIN: Wash with plenty of water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501 Dispose of contents/container in accordance with national regulation.

### 2.3. Other hazards

Information according to XVII. 56 REACH
Persons already sensitised to diisocyanates may develop allergic reactions when using this product. Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product. This product should not be used under conditions of poor ventilation unless a protective mask with an appropriate gas filter (i.e. type A1 according to standard EN 14387) is used.

**Following substances are present in a concentration ≥ the concentration limit for depiction in Section 3 and fulfill the criteria for PBT/vPvB, or were identified as endocrine disruptor (ED):**

None

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

**Declaration of the ingredients according to CLP (EC) No 1272/2008:**

| Hazardous components<br>CAS No.<br>EC No<br>REACH-Reg. No. | Concentration | Classification | Specific Conc. Limits, M-factors and ATEs | Add. Information |
|---|---|---|---|---|
| Diphenylmethane diisocyanate, isomers and homologues<br>9016-87-9 | 40- < 60 % | Carc. 2, H351<br>Acute Tox. 4, H332<br>STOT RE 2, H373<br>Eye Irrit. 2, H319<br>STOT SE 3, H335<br>Skin Irrit. 2, H315<br>Resp. Sens. 1, H334<br>Skin Sens. 1, H317 | Eye Irrit. 2; H319; C >= 5 %<br>Skin Irrit. 2; H315; C >= 5 %<br>Resp. Sens. 1; H334; C >= 0,1 %<br>STOT SE 3; H335; C >= 5 %<br>=====<br>inhalation:ATE = 1,5 mg/l;dust/mist | |
| 4,4'- methylenediphenyl diisocyanate<br>101-68-8<br>202-966-0<br>01-2119457014-47 | 40- < 60 % | Carc. 2, H351<br>Acute Tox. 4, H332<br>STOT RE 2, H373<br>Eye Irrit. 2, H319<br>STOT SE 3, H335<br>Skin Irrit. 2, H315<br>Resp. Sens. 1, H334<br>Skin Sens. 1, H317 | Eye Irrit. 2; H319; C >= 5 %<br>Skin Irrit. 2; H315; C >= 5 %<br>Resp. Sens. 1; H334; C >= 0,1 %<br>STOT SE 3; H335; C >= 5 %<br>=====<br>inhalation:ATE = 1,5 mg/l;dust/mist | |
| o-(p-Isocyanatobenzyl)phenyl isocyanate<br>5873-54-1<br>227-534-9<br>01-2119480143-45 | 1- < 5 % | STOT RE 2, H373<br>Carc. 2, H351<br>Acute Tox. 4, H332<br>Eye Irrit. 2, H319<br>STOT SE 3, H335<br>Skin Irrit. 2, H315<br>Skin Sens. 1, H317<br>Resp. Sens. 1, H334 | Eye Irrit. 2; H319; C >= 5 %<br>Skin Irrit. 2; H315; C >= 5 %<br>Resp. Sens. 1; H334; C >= 0,1 %<br>STOT SE 3; H335; C >= 5 %<br>=====<br>inhalation:ATE = 1,5 mg/l;dust/mist | |
| 2,2'-Methylenediphenyl diisocyanate<br>2536-05-2<br>219-799-4<br>01-2119927323-43 | 0,1- < 1 % | STOT RE 2, H373<br>Carc. 2, H351<br>Acute Tox. 4, H332<br>Eye Irrit. 2, H319<br>STOT SE 3, H335<br>Skin Irrit. 2, H315<br>Resp. Sens. 1, H334<br>Skin Sens. 1, H317 | Eye Irrit. 2; H319; C >= 5 %<br>Skin Irrit. 2; H315; C >= 5 %<br>Resp. Sens. 1; H334; C >= 0,1 %<br>STOT SE 3; H335; C >= 5 %<br>=====<br>inhalation:ATE = 1,5 mg/l;dust/mist | |

**If no ATE values are displayed, please refer to LD/LC50 values in Section 11.**
**For full text of the H - statements and other abbreviations see section 16 "Other information".**

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

General information:
In case of adverse health effects seek medical advice.

Inhalation:
Move to fresh air, consult doctor if complaint persists.

Skin contact:
Rinse with running water and soap. Skin care. Remove contaminated clothes immediately.

Eye contact:
Immediately flush eyes with soft jet of water or eye rinse solution for at least 5 minutes. If pains remain (intensive smarting, sensitivity to light, visual disturbance) continue flushing and contact/seek doctor or hospital.

Ingestion:
Rinse mouth and throat. Drink 1-2 glasses of water. Seek medical advice.

**4.2. Most important symptoms and effects, both acute and delayed**
SKIN: Redness, inflammation.

RESPIRATORY: Irritation, coughing, shortness of breath, chest tightness.

May cause an allergic skin reaction.

Causes serious eye irritation.

**4.3. Indication of any immediate medical attention and special treatment needed**
See section: Description of first aid measures

## SECTION 5: Firefighting measures

**5.1. Extinguishing media**
**Suitable extinguishing media:**
carbon dioxide, foam, powder, water spray jet, fine water spray

**Extinguishing media which must not be used for safety reasons:**
High pressure waterjet

**5.2. Special hazards arising from the substance or mixture**
In the event of fire, isocyanate vapors may be formed.
In the event of a fire, carbon monoxide (CO), carbon dioxide (CO2) and nitrogen oxides (NOx) can be released.

**5.3. Advice for firefighters**
Wear self-contained breathing apparatus.
Wear protective equipment.

## SECTION 6: Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Ensure adequate ventilation.
Avoid contact with skin and eyes.
Wear protective equipment.
Danger of slipping on spilled product.

**6.2. Environmental precautions**
Do not empty into drains / surface water / ground water.

**6.3. Methods and material for containment and cleaning up**
Remove with liquid-absorbing material (sand, peat, sawdust).
Dispose of contaminated material as waste according to Section 13.

**6.4. Reference to other sections**
See advice in section 8

## SECTION 7: Handling and storage

**7.1. Precautions for safe handling**
Ensure that workrooms are adequately ventilated.
Avoid skin and eye contact.

Hygiene measures:
Do not eat, drink or smoke while working.
Wash hands before work breaks and after finishing work.
Remove any dirt that gets onto the skin with vegetable oil; skin care.

**7.2. Conditions for safe storage, including any incompatibilities**
Store in sealed original container protected against moisture.
Store in a cool, dry place.
Avoid strictly temperatures below + 2°C and above + 30 °C.
Do not store together with food or other consumables (coffee, tea, tobacco, etc.).
Do not store together with oxidants.
Do not store together with flammable solutions.

**7.3. Specific end use(s)**
Foam, 2-component without propellant gas

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

**Occupational Exposure Limits**

Valid for
Germany

| Ingredient [Regulated substance] | ppm | mg/m³ | Value type | Short term exposure limit category / Remarks | Regulatory list |
|---|---|---|---|---|---|
| Diphenylmethane diisocyanate, isomers and homologs<br>9016-87-9 | | | STEL (Short Term Exposure Limit) factor: | 1<br>Substance listed with both Peak factor and STEL factor. The Peak factor is supplied with the AGW values. | TRGS 900 |
| Diphenylmethane diisocyanate, isomers and homologs<br>9016-87-9 | | | Skin designation: | Can be absorbed through the skin. | TRGS 900 |
| Diphenylmethane diisocyanate, isomers and homologs<br>9016-87-9 | | | Short Term Exposure Classification: | Category I: substances for which the localized effect has an assigned OEL or for substances with a sensitizing effect in respiratory passages. | TRGS 900 |
| Diphenylmethane diisocyanate, isomers and homologs<br>9016-87-9 | | 0,05 | Exposure limit(s): | 2<br>If the AGW and BGW values are complied with, there should be no risk of reproductive damage (see Number 2.7). | TRGS 900 |
| Diphenylmethane diisocyanate, isomers and homologs<br>9016-87-9<br>[Diisocyanates] | | | Hazard Designation: | | EU_OEL |
| Diphenylmethane diisocyanate, isomers and homologs<br>9016-87-9<br>[Diisocyanates] | | | Hazard Designation: | | EU_OEL |
| Diphenylmethane diisocyanate, isomers and homologs<br>9016-87-9<br>[Diisocyanates] | | | Short Term Exposure Limit (STEL): | Effective date: 9 April 2026 | EU_OEL |
| Diphenylmethane diisocyanate, isomers and homologs<br>9016-87-9<br>[Diisocyanates] | | | Hazard Designation: | | EU_OEL |
| Diphenylmethane diisocyanate, isomers and homologs<br>9016-87-9<br>[Diisocyanates] | | | Time Weighted Average (TWA): | Effective date: 9 April 2026 | EU_OEL |
| Diphenylmethane diisocyanate, isomers and homologs<br>9016-87-9<br>[Diisocyanates] | | | Time Weighted Average (TWA): | Effective date: 1 January 2029 | EU_OEL |
| Diphenylmethane diisocyanate, isomers and homologs<br>9016-87-9<br>[Diisocyanates] | | | Short Term Exposure Limit (STEL): | Effective date: 1 January 2029 | EU_OEL |
| 4,4'-Methylenediphenyl diisocyanate<br>101-68-8 | | | Skin designation: | Can be absorbed through the skin. | TRGS 900 |
| 4,4'-Methylenediphenyl diisocyanate<br>101-68-8 | | | STEL (Short Term Exposure Limit) factor: | 1<br>Substance listed with both Peak factor and STEL factor. The Peak factor is supplied with the AGW values. | TRGS 900 |
| 4,4'-Methylenediphenyl diisocyanate<br>101-68-8 | | 0,05 | Exposure limit(s): | 2<br>If the AGW and BGW values are complied with, there should be no risk of reproductive damage (see Number 2.7). | TRGS 900 |
| 4,4'-Methylenediphenyl diisocyanate<br>101-68-8 | | | Short Term Exposure Classification: | Category I: substances for which the localized effect has an assigned OEL or for substances with a sensitizing | TRGS 900 |

| | | | | | |
|---|---|---|---|---|---|
| | | | | effect in respiratory passages. | |
| 4,4'-Methylenediphenyl diisocyanate 101-68-8 [Diisocyanates] | | | Hazard Designation: | | EU_OEL |
| 4,4'-Methylenediphenyl diisocyanate 101-68-8 [Diisocyanates] | | | Hazard Designation: | | EU_OEL |
| 4,4'-Methylenediphenyl diisocyanate 101-68-8 [Diisocyanates] | | | Time Weighted Average (TWA): | Effective date: 1 January 2029 | EU_OEL |
| 4,4'-Methylenediphenyl diisocyanate 101-68-8 [Diisocyanates] | | | Time Weighted Average (TWA): | Effective date: 9 April 2026 | EU_OEL |
| 4,4'-Methylenediphenyl diisocyanate 101-68-8 [Diisocyanates] | | | Hazard Designation: | | EU_OEL |
| 4,4'-Methylenediphenyl diisocyanate 101-68-8 [Diisocyanates] | | | Short Term Exposure Limit (STEL): | Effective date: 1 January 2029 | EU_OEL |
| 4,4'-Methylenediphenyl diisocyanate 101-68-8 [Diisocyanates] | | | Short Term Exposure Limit (STEL): | Effective date: 9 April 2026 | EU_OEL |
| o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1 | | | STEL (Short Term Exposure Limit) factor: | 1 Substance listed with both Peak factor and STEL factor. The Peak factor is supplied with the AGW values. | TRGS 900 |
| o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1 | | | Short Term Exposure Classification: | Category I: substances for which the localized effect has an assigned OEL or for substances with a sensitizing effect in respiratory passages. | TRGS 900 |
| o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1 | | 0,05 | Exposure limit(s): | 2 | TRGS 900 |
| o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1 [Diisocyanates] | | | Time Weighted Average (TWA): | Effective date: 9 April 2026 | EU_OEL |
| o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1 [Diisocyanates] | | | Short Term Exposure Limit (STEL): | Effective date: 1 January 2029 | EU_OEL |
| o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1 [Diisocyanates] | | | Hazard Designation: | | EU_OEL |
| o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1 [Diisocyanates] | | | Short Term Exposure Limit (STEL): | Effective date: 9 April 2026 | EU_OEL |
| o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1 [Diisocyanates] | | | Time Weighted Average (TWA): | Effective date: 1 January 2029 | EU_OEL |
| o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1 [Diisocyanates] | | | Hazard Designation: | | EU_OEL |
| o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1 [Diisocyanates] | | | Hazard Designation: | | EU_OEL |
| 2,2'-Methylenediphenyl diisocyanate 2536-05-2 | | | STEL (Short Term Exposure Limit) factor: | 1 Substance listed with both Peak factor and STEL factor. The Peak factor is supplied with the AGW values. | TRGS 900 |
| 2,2'-Methylenediphenyl diisocyanate 2536-05-2 | | | Short Term Exposure Classification: | Category I: substances for which the localized effect has an assigned OEL or for substances with a sensitizing effect in respiratory passages. | TRGS 900 |
| 2,2'-Methylenediphenyl diisocyanate 2536-05-2 | | 0,05 | Exposure limit(s): | 2 | TRGS 900 |
| 2,2'-Methylenediphenyl diisocyanate 2536-05-2 [Diisocyanates] | | | Short Term Exposure Limit (STEL): | Effective date: 9 April 2026 | EU_OEL |
| 2,2'-Methylenediphenyl diisocyanate 2536-05-2 [Diisocyanates] | | | Hazard Designation: | | EU_OEL |
| 2,2'-Methylenediphenyl diisocyanate 2536-05-2 [Diisocyanates] | | | Hazard Designation: | | EU_OEL |
| 2,2'-Methylenediphenyl diisocyanate | | | Short Term Exposure | Effective date: 1 January 2029 | EU_OEL |

| | | | | | |
|---|---|---|---|---|---|
| 2536-05-2 [Diisocyanates] | | | Limit (STEL): | | |
| 2,2'-Methylenediphenyl diisocyanate 2536-05-2 [Diisocyanates] | | | Hazard Designation: | | EU_OEL |
| 2,2'-Methylenediphenyl diisocyanate 2536-05-2 [Diisocyanates] | | | Time Weighted Average (TWA): | Effective date: 9 April 2026 | EU_OEL |
| 2,2'-Methylenediphenyl diisocyanate 2536-05-2 [Diisocyanates] | | | Time Weighted Average (TWA): | Effective date: 1 January 2029 | EU_OEL |

**Predicted No-Effect Concentration (PNEC):**

| Name on list | Environmental Compartment | Exposure period | Value | | | | Remarks |
|---|---|---|---|---|---|---|---|
| | | | mg/l | ppm | mg/kg | others | |
| 4,4'- methylenediphenyl diisocyanate 101-68-8 | aqua (freshwater) | | 0,0037 mg/l | | | | |
| 4,4'- methylenediphenyl diisocyanate 101-68-8 | aqua (intermittent releases) | | 0,037 mg/l | | | | |
| 4,4'- methylenediphenyl diisocyanate 101-68-8 | aqua (marine water) | | 0,00037 mg/l | | | | |
| 4,4'- methylenediphenyl diisocyanate 101-68-8 | sediment (freshwater) | | | | 11,7 mg/kg | | |
| 4,4'- methylenediphenyl diisocyanate 101-68-8 | sediment (freshwater) | | | | 1,17 mg/kg | | |
| 4,4'- methylenediphenyl diisocyanate 101-68-8 | Soil | | | | 2,33 mg/kg | | |
| 4,4'- methylenediphenyl diisocyanate 101-68-8 | Predator | | | | | | no potential for bioaccumulation |
| o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1 | aqua (freshwater) | | 0,0037 mg/l | | | | |
| o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1 | Freshwater - intermittent | | 0,037 mg/l | | | | |
| o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1 | aqua (marine water) | | 0,00037 mg/l | | | | |
| o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1 | sediment (freshwater) | | | | 11,7 mg/kg | | |
| o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1 | sediment (marine water) | | | | 1,17 mg/kg | | |
| o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1 | Soil | | | | 2,33 mg/kg | | |
| 2,2'-Methylenediphenyl diisocyanate 2536-05-2 | aqua (freshwater) | | 0,0037 mg/l | | | | |
| 2,2'-Methylenediphenyl diisocyanate 2536-05-2 | aqua (marine water) | | 0,00037 mg/l | | | | |
| 2,2'-Methylenediphenyl diisocyanate 2536-05-2 | Freshwater - intermittent | | 0,037 mg/l | | | | |
| 2,2'-Methylenediphenyl diisocyanate 2536-05-2 | sediment (freshwater) | | | | 11,7 mg/kg | | |
| 2,2'-Methylenediphenyl diisocyanate 2536-05-2 | sediment (marine water) | | | | 1,17 mg/kg | | |
| 2,2'-Methylenediphenyl diisocyanate 2536-05-2 | Soil | | | | 2,33 mg/kg | | |
| 2,2'-Methylenediphenyl diisocyanate 2536-05-2 | Predator | | | | | | no potential for bioaccumulation |

**Derived No-Effect Level (DNEL):**

| Name on list | Application Area | Route of Exposure | Health Effect | Exposure Time | Value | Remarks |
|---|---|---|---|---|---|---|
| 4,4'- methylenediphenyl diisocyanate 101-68-8 | Workers | inhalation | Long term exposure - local effects | | 0,05 mg/m3 | no potential for bioaccumulation |
| 4,4'- methylenediphenyl diisocyanate 101-68-8 | Workers | inhalation | Acute/short term exposure - local effects | | 0,1 mg/m3 | no potential for bioaccumulation |
| 4,4'- methylenediphenyl diisocyanate 101-68-8 | General population | inhalation | Long term exposure - local effects | | 0,025 mg/m3 | no potential for bioaccumulation |
| 4,4'- methylenediphenyl diisocyanate 101-68-8 | General population | inhalation | Acute/short term exposure - local effects | | 0,05 mg/m3 | no potential for bioaccumulation |
| o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1 | Workers | inhalation | Acute/short term exposure - local effects | | 0,1 mg/m3 | |
| o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1 | Workers | inhalation | Long term exposure - local effects | | 0,05 mg/m3 | |
| o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1 | General population | inhalation | Acute/short term exposure - local effects | | 0,05 mg/m3 | |
| o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1 | General population | inhalation | Long term exposure - local effects | | 0,025 mg/m3 | |
| o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1 | Workers | dermal | Long term exposure - local effects | | | |
| o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1 | Workers | dermal | Acute/short term exposure - local effects | | | |
| o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1 | General population | dermal | Long term exposure - local effects | | | |
| o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1 | General population | dermal | Acute/short term exposure - local effects | | | |
| 2,2'-Methylenediphenyl diisocyanate 2536-05-2 | Workers | inhalation | Acute/short term exposure - local effects | | 0,1 mg/m3 | no potential for bioaccumulation |
| 2,2'-Methylenediphenyl diisocyanate 2536-05-2 | Workers | inhalation | Long term exposure - local effects | | 0,05 mg/m3 | no potential for bioaccumulation |
| 2,2'-Methylenediphenyl diisocyanate 2536-05-2 | General population | inhalation | Acute/short term exposure - local effects | | 0,05 mg/m3 | no potential for bioaccumulation |
| 2,2'-Methylenediphenyl diisocyanate 2536-05-2 | General population | inhalation | Long term exposure - local effects | | 0,025 mg/m3 | no potential for bioaccumulation |
| 2,2'-Methylenediphenyl diisocyanate 2536-05-2 | Workers | dermal | Long term exposure - local effects | | | no potential for bioaccumulation |
| 2,2'-Methylenediphenyl diisocyanate 2536-05-2 | Workers | dermal | Acute/short term exposure - local effects | | | no potential for bioaccumulation |
| 2,2'-Methylenediphenyl diisocyanate 2536-05-2 | General population | dermal | Long term exposure - local effects | | | no potential for bioaccumulation |
| 2,2'-Methylenediphenyl diisocyanate 2536-05-2 | General population | dermal | Acute/short term exposure - local effects | | | no potential for bioaccumulation |

**Biological Exposure Indices:**

None

**8.2. Exposure controls:**

Respiratory protection:
Suitable breathing mask when there is inadequate ventilation.
Combination filter: ABEKP (EN 14387)
This recommendation should be matched to local conditions.

Hand protection:
Use attached gloves. Perforation time < 5 minutes.

Eye protection:
Goggles which can be tightly sealed.
Protective eye equipment should conform to EN166.

Skin protection:
Suitable protective clothing
Protective clothing should conform to EN 14605 for liquid splashes or to EN 13982 for dusts.

Advices to personal protection equipment:
The information provided on personal protective equipment is for guidance purposes only. A full risk assessment should be conducted prior to using this product to determine the appropriate personal protective equipment to suit local conditions. Personal protective equipment should conform to the relevant EN standard.

## SECTION 9: Physical and chemical properties

**9.1. Information on basic physical and chemical properties**

| | |
|---|---|
| Delivery form | liquid |
| Colour | Light brown |
| Odor | Mild |
| Physical state | liquid |
| Melting point | Not applicable, Product is a liquid |
| Solidification temperature | 3 °C (37.4 °F) |
| Initial boiling point (0,6 kPa) | 200 °C (392 °F) |
| Flammability | The product is not flammable. |
| Explosive limits | Not applicable, The product is not flammable. |
| Flash point | 230 °C (446 °F) |
| Auto-ignition temperature | > 250 °C (> 482 °F) |
| Decomposition temperature | Not applicable, Substance/mixture is not self-reactive, no organic peroxide and does not decompose under foreseen conditions of use |
| pH | Not applicable, Product reacts with water. |
| Viscosity (kinematic) (20 °C (68 °F); ) | 25.000 - 30.000 mm2/s |
| Viscosity, dynamic (Brookfield; 20 °C (68 °F)) | 25.000 - 30.000 mPa.s no method / method unknown |
| Solubility (qualitative) (23 °C (73.4 °F); Solvent: Water) | Reacts with water: generation of heat. |
| Partition coefficient: n-octanol/water | Not applicable<br>Mixture |
| Vapour pressure (20 °C (68 °F)) | 0,001 Pa |
| Density (20 °C (68 °F)) | 1,05 - 1,15 g/cm3 no method / method unknown |
| Relative vapour density: | Currently under determination |
| Particle characteristics | Not applicable<br>Product is a liquid |

**9.2. Other information**

Other information not applicable for this product

## SECTION 10: Stability and reactivity

**10.1. Reactivity**
Pressure build-up in closed containers.
Reaction with water, alcohols, amines.
Reaction with water, formation of CO2

**10.2. Chemical stability**
Stable under recommended storage conditions.

**10.3. Possibility of hazardous reactions**
See section reactivity

**10.4. Conditions to avoid**
Humidity

**10.5. Incompatible materials**
See section reactivity.

**10.6. Hazardous decomposition products**
At higher temperatures isocyanate may be released.
Carbon dioxide is generated under contact with moisture, leading to pressure in the cans. Danger of cans bursting!

## SECTION 11: Toxicological information

**General toxicological information:**
Cross-reactions with other isocyanate compounds are possible.

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

**Acute oral toxicity:**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

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

| Hazardous substances<br>CAS-No. | Value type | Value | Species | Method |
|---|---|---|---|---|
| Diphenylmethane diisocyanate, isomers and homologues<br>9016-87-9 | LD50 | > 10.000 mg/kg | rat | OECD Guideline 401 (Acute Oral Toxicity) |
| 4,4'- methylenediphenyl diisocyanate<br>101-68-8 | LD50 | > 2.000 mg/kg | rat | other guideline: |
| o-(p-Isocyanatobenzyl)phenyl isocyanate<br>5873-54-1 | LD50 | > 2.000 mg/kg | rat | other guideline: |
| 2,2'-Methylenediphenyl diisocyanate<br>2536-05-2 | LD50 | > 2.000 mg/kg | rat | EU Method B.1 (Acute Toxicity (Oral)) |

**Acute dermal toxicity:**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

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

| Hazardous substances<br>CAS-No. | Value type | Value | Species | Method |
|---|---|---|---|---|
| Diphenylmethane diisocyanate, isomers and homologues<br>9016-87-9 | LD50 | > 9.400 mg/kg | rat | OECD Guideline 402 (Acute Dermal Toxicity) |
| 4,4'- methylenediphenyl diisocyanate<br>101-68-8 | LD50 | > 9.400 mg/kg | rabbit | OECD Guideline 402 (Acute Dermal Toxicity) |
| o-(p-Isocyanatobenzyl)phenyl isocyanate<br>5873-54-1 | LD50 | > 9.400 mg/kg | rabbit | OECD Guideline 402 (Acute Dermal Toxicity) |
| 2,2'-Methylenediphenyl diisocyanate<br>2536-05-2 | LD50 | > 9.400 mg/kg | rabbit | OECD Guideline 402 (Acute Dermal Toxicity) |

**Acute inhalative toxicity:**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances<br>CAS-No. | Value type | Value | Test atmosphere | Exposure time | Species | Method |
|---|---|---|---|---|---|---|
| Diphenylmethane diisocyanate, isomers and homologues<br>9016-87-9 | Acute toxicity estimate (ATE) | 1,5 mg/l | dust/mist | 4 h | | Expert judgement |
| 4,4'- methylenediphenyl diisocyanate<br>101-68-8 | Acute toxicity estimate (ATE) | 1,5 mg/l | dust/mist | 4 h | | Expert judgement |
| o-(p-Isocyanatobenzyl)phenyl isocyanate<br>5873-54-1 | Acute toxicity estimate (ATE) | 1,5 mg/l | dust/mist | 4 h | | Expert judgement |
| 2,2'-Methylenediphenyl diisocyanate<br>2536-05-2 | Acute toxicity estimate (ATE) | 1,5 mg/l | dust/mist | 4 h | | Expert judgement |

**Skin corrosion/irritation:**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances<br>CAS-No. | Result | Exposure time | Species | Method |
|---|---|---|---|---|
| Diphenylmethane diisocyanate, isomers and homologues<br>9016-87-9 | irritating | | rabbit | OECD Guideline 404 (Acute Dermal Irritation / Corrosion) |
| 4,4'- methylenediphenyl diisocyanate<br>101-68-8 | irritating | 4 h | rabbit | OECD Guideline 404 (Acute Dermal Irritation / Corrosion) |
| o-(p-Isocyanatobenzyl)phenyl isocyanate<br>5873-54-1 | irritating | | rabbit | OECD Guideline 404 (Acute Dermal Irritation / Corrosion) |

**Serious eye damage/irritation:**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances<br>CAS-No. | Result | Exposure time | Species | Method |
|---|---|---|---|---|
| Diphenylmethane diisocyanate, isomers and homologues<br>9016-87-9 | irritating | | rabbit | OECD Guideline 405 (Acute Eye Irritation / Corrosion) |
| Diphenylmethane diisocyanate, isomers and homologues<br>9016-87-9 | irritating | | human | Weight of evidence |
| 4,4'- methylenediphenyl diisocyanate<br>101-68-8 | irritating | | human | Weight of evidence |

**Respiratory or skin sensitization:**

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

| Hazardous substances<br>CAS-No. | Result | Test type | Species | Method |
|---|---|---|---|---|
| Diphenylmethane diisocyanate, isomers and homologues<br>9016-87-9 | sensitising | Skin sensitisation | guinea pig | OECD Guideline 406 (Skin Sensitisation) |
| 4,4'- methylenediphenyl diisocyanate<br>101-68-8 | sensitising | Buehler test | guinea pig | OECD Guideline 406 (Skin Sensitisation) |
| 4,4'- methylenediphenyl diisocyanate<br>101-68-8 | sensitising | Respiratory sensitisation | guinea pig | not specified |
| o-(p-Isocyanatobenzyl)phenyl isocyanate<br>5873-54-1 | sensitising | Respiratory sensitisation | guinea pig | not specified |
| o-(p-Isocyanatobenzyl)phenyl isocyanate<br>5873-54-1 | not sensitising | Buehler test | guinea pig | OECD Guideline 406 (Skin Sensitisation) |
| o-(p-Isocyanatobenzyl)phenyl isocyanate<br>5873-54-1 | sensitising | Mouse local lymphnode assay (LLNA) | mouse | OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay) |
| 2,2'-Methylenediphenyl diisocyanate<br>2536-05-2 | sensitising | Mouse local lymphnode assay (LLNA) | mouse | OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay) |
| 2,2'-Methylenediphenyl diisocyanate<br>2536-05-2 | sensitising | Respiratory sensitisation | guinea pig | not specified |

**Germ cell mutagenicity:**

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

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

| Hazardous substances<br>CAS-No. | Result | Type of study / Route of administration | Metabolic activation / Exposure time | Species | Method |
|---|---|---|---|---|---|
| Diphenylmethane diisocyanate, isomers and homologues<br>9016-87-9 | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | EU Method B.13/14 (Mutagenicity) |
| 4,4'- methylenediphenyl diisocyanate<br>101-68-8 | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | EU Method B.13/14 (Mutagenicity) |
| o-(p-Isocyanatobenzyl)phenyl isocyanate<br>5873-54-1 | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| 2,2'-Methylenediphenyl diisocyanate<br>2536-05-2 | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| 4,4'- methylenediphenyl diisocyanate<br>101-68-8 | negative | inhalation | | rat | OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test) |
| o-(p-Isocyanatobenzyl)phenyl isocyanate<br>5873-54-1 | negative | inhalation | | rat | OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test) |
| 2,2'-Methylenediphenyl diisocyanate<br>2536-05-2 | negative | inhalation | | rat | OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test) |

**Carcinogenicity**

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

| Hazardous components<br>CAS-No. | Result | Route of application | Exposure time / Frequency of treatment | Species | Sex | Method |
|---|---|---|---|---|---|---|
| Diphenylmethane diisocyanate, isomers and homologues<br>9016-87-9 | carcinogenic | inhalation: aerosol | 2 y<br>6 h/d | rat | male/female | OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies) |
| 4,4'- methylenediphenyl diisocyanate<br>101-68-8 | carcinogenic | inhalation: aerosol | 2 y<br>6 h/d | rat | male/female | OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies) |
| o-(p-Isocyanatobenzyl)phenyl isocyanate<br>5873-54-1 | carcinogenic | inhalation: aerosol | 2 y<br>6 h/d, 5 d/w | rat | male/female | OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies) |
| 2,2'-Methylenediphenyl diisocyanate<br>2536-05-2 | carcinogenic | inhalation: aerosol | 2 y<br>6 h/d, 5 d/w | rat | male/female | OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies) |

**Reproductive toxicity:**

No data available.

**STOT-single exposure:**

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

| Hazardous substances<br>CAS-No. | Assessment | Route of exposure | Target Organs | Remarks |
|---|---|---|---|---|
| Diphenylmethane diisocyanate, isomers and homologues<br>9016-87-9 | May cause respiratory irritation. | | | |
| 4,4'- methylenediphenyl diisocyanate<br>101-68-8 | May cause respiratory irritation. | | | |

**STOT-repeated exposure:**

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

| Hazardous substances<br>CAS-No. | Result / Value | Route of application | Exposure time / Frequency of treatment | Species | Method |
|---|---|---|---|---|---|
| Diphenylmethane diisocyanate, isomers and homologues<br>9016-87-9 | NOAEL 0,0002 mg/l | inhalation: aerosol | 2 y<br>6 h per d, 5 d per week | rat | OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies) |
| 4,4'- methylenediphenyl diisocyanate<br>101-68-8 | NOAEL 0,0002 mg/l | inhalation: aerosol | main: 2 y; satellite:1 y<br>6 h/d; 5 d/w | rat | OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies) |
| o-(p-Isocyanatobenzyl)phenyl isocyanate<br>5873-54-1 | NOAEL 0,2 mg/m³ | inhalation: aerosol | 2 y<br>6 h/d, 5 d/w | rat | OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies) |
| 2,2'-Methylenediphenyl diisocyanate<br>2536-05-2 | NOAEL 0,2 mg/m³ | inhalation: aerosol | 2 y<br>6 h/d, 5 d/w | rat | OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies) |

**Aspiration hazard:**

No data available.

**11.2 Information on other hazards**

**11.2.1 Endocrine disrupting properties**

No data available.

## SECTION 12: Ecological information

**General ecological information:**

Do not empty into drains, soil or bodies of water.

### 12.1. Toxicity

**Toxicity (Fish):**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances<br>CAS-No. | Value type | Value | Exposure time | Species | Method |
|---|---|---|---|---|---|
| Diphenylmethane diisocyanate, isomers and homologues<br>9016-87-9 | LC50 | > 1.000 mg/l | 96 h | Brachydanio rerio (new name: Danio rerio) | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| 4,4'- methylenediphenyl diisocyanate<br>101-68-8 | LL50 | > 100 mg/l | 96 h | Danio rerio | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| o-(p-Isocyanatobenzyl)phenyl isocyanate<br>5873-54-1 | LC50 | Toxicity > Water Solubility | 96 h | Danio rerio | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| 2,2'-Methylenediphenyl diisocyanate<br>2536-05-2 | LC50 | Toxicity > Water solubility | 96 h | Danio rerio | OECD Guideline 203 (Fish, Acute Toxicity Test) |

**Toxicity (aquatic invertebrates):**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances<br>CAS-No. | Value type | Value | Exposure time | Species | Method |
|---|---|---|---|---|---|
| Diphenylmethane diisocyanate, isomers and homologues<br>9016-87-9 | EC50 | > 1.000 mg/l | 24 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| 4,4'- methylenediphenyl diisocyanate<br>101-68-8 | EC50 | > 100 mg/l | 48 h | Daphnia magna | EU Method C.2 (Acute Toxicity for Daphnia) |
| o-(p-Isocyanatobenzyl)phenyl isocyanate<br>5873-54-1 | EC50 | Toxicity > Water Solubility | 24 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| 2,2'-Methylenediphenyl diisocyanate<br>2536-05-2 | EC50 | Toxicity > Water solubility | 24 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |

**Chronic toxicity (aquatic invertebrates):**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances<br>CAS-No. | Value type | Value | Exposure time | Species | Method |
|---|---|---|---|---|---|
| Diphenylmethane diisocyanate, isomers and homologues<br>9016-87-9 | NOEC | 10 mg/l | 21 d | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test) |
| 4,4'- methylenediphenyl diisocyanate<br>101-68-8 | NOEC | 10 mg/l | 21 d | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test) |
| o-(p-Isocyanatobenzyl)phenyl isocyanate<br>5873-54-1 | NOEC | Toxicity > Water solubility | 21 day | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test) |
| 2,2'-Methylenediphenyl diisocyanate | NOEC | Toxicity > Water solubility | 21 day | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test) |

| | | | | | |
|---|---|---|---|---|---|
| 2536-05-2 | | | | | |

**Toxicity (Algae):**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances<br>CAS-No. | Value type | Value | Exposure time | Species | Method |
|---|---|---|---|---|---|
| Diphenylmethane diisocyanate, isomers and homologues<br>9016-87-9 | EC50 | > 1.640 mg/l | 72 h | Desmodesmus subspicatus | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| 4,4'- methylenediphenyl diisocyanate<br>101-68-8 | EL50 | > 100 mg/l | 72 h | Desmodesmus subspicatus | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| 4,4'- methylenediphenyl diisocyanate<br>101-68-8 | NOELR | 100 mg/l | 72 h | Desmodesmus subspicatus | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| o-(p-Isocyanatobenzyl)phenyl isocyanate<br>5873-54-1 | EC50 | Toxicity > Water Solubility | 72 h | Desmodesmus subspicatus (reported as Scenedesmus subspicatus) | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| o-(p-Isocyanatobenzyl)phenyl isocyanate<br>5873-54-1 | NOELR | Toxicity > Water Solubility | 72 h | Desmodesmus subspicatus (reported as Scenedesmus subspicatus) | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| 2,2'-Methylenediphenyl diisocyanate<br>2536-05-2 | EC50 | Toxicity > Water solubility | 72 h | Desmodesmus subspicatus (reported as Scenedesmus subspicatus) | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| 2,2'-Methylenediphenyl diisocyanate<br>2536-05-2 | NOELR | Toxicity > Water solubility | 72 h | Desmodesmus subspicatus (reported as Scenedesmus subspicatus) | OECD Guideline 201 (Alga, Growth Inhibition Test) |

**Toxicity (microorganisms):**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances<br>CAS-No. | Value type | Value | Exposure time | Species | Method |
|---|---|---|---|---|---|
| Diphenylmethane diisocyanate, isomers and homologues<br>9016-87-9 | EC50 | > 100 mg/l | 3 h | activated sludge | OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test) |
| 4,4'- methylenediphenyl diisocyanate<br>101-68-8 | EC50 | > 1.000 mg/l | 3 h | activated sludge of a predominantly domestic sewage | OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test) |

**12.2. Persistence and degradability**

**Biodegradability (Screening Tests):**
The table below presents the data of the classified substances present in the mixture.

| Hazardous substances<br>CAS-No. | Result | Test type | Degradability | Exposure time | Method |
|---|---|---|---|---|---|
| Diphenylmethane diisocyanate, isomers and homologues<br>9016-87-9 | not inherently biodegradable | aerobic | 0 % | 28 d | OECD Guideline 302 C (Inherent Biodegradability: Modified MITI Test (II)) |
| Diphenylmethane diisocyanate, isomers and homologues<br>9016-87-9 | not readily biodegradable. | not specified | 0 % | 28 d | OECD 301 A - F |
| 4,4'- methylenediphenyl diisocyanate<br>101-68-8 | not readily biodegradable. | aerobic | 0 % | 28 d | OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test) |
| o-(p-Isocyanatobenzyl)phenyl isocyanate<br>5873-54-1 | not inherently biodegradable | aerobic | 0 % | 28 d | OECD Guideline 302 C (Inherent Biodegradability: Modified MITI Test (II)) |
| 2,2'-Methylenediphenyl diisocyanate<br>2536-05-2 | not inherently biodegradable | aerobic | 0 % | 28 day | OECD Guideline 302 C (Inherent Biodegradability: Modified MITI Test (II)) |

**(Bio)degradability (Simulation Tests):**
The table below presents the data of the classified substances present in the mixture.

| Hazardous substances<br>CAS-No. | Environmental Compartment | DT50 | Temperature | Method |
|---|---|---|---|---|
| 2,2'-Methylenediphenyl diisocyanate<br>2536-05-2 | Fresh water | 1 day | | OECD Test Guideline 307 |

**12.3. Bioaccumulative potential**

**Partition Coefficient (octanol/water)**
The table below presents the data of the classified substances present in the mixture.

| Hazardous substances<br>CAS-No. | LogPow | Temperature | Method |
|---|---|---|---|
| 4,4'- methylenediphenyl diisocyanate<br>101-68-8 | 4,51 | 22 °C | OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method) |
| o-(p-Isocyanatobenzyl)phenyl isocyanate<br>5873-54-1 | 5,22 | | QSAR (Quantitative Structure Activity Relationship) |
| 2,2'-Methylenediphenyl diisocyanate<br>2536-05-2 | 5,22 | | QSAR (Quantitative Structure Activity Relationship) |

**Bioconcentration factor (BCF)**
The table below presents the data of the classified substances present in the mixture.

| Hazardous substances<br>CAS-No. | Bioconcentration factor (BCF) | Exposure time | Temperature | Species | Method |
|---|---|---|---|---|---|
| Diphenylmethane diisocyanate, isomers and homologues<br>9016-87-9 | 200 | | | Cyprinus carpio | OECD Guideline 305 (Bioconcentration: Flow-through Fish Test) |
| 4,4'- methylenediphenyl diisocyanate<br>101-68-8 | 92 - 200 | 28 d | | Cyprinus carpio | OECD Guideline 305 E (Bioaccumulation: Flow-through Fish Test) |
| o-(p-Isocyanatobenzyl)phenyl isocyanate<br>5873-54-1 | 200 | 28 day | | Cyprinus carpio | OECD Guideline 305 E (Bioaccumulation: Flow-through Fish Test) |
| 2,2'-Methylenediphenyl diisocyanate<br>2536-05-2 | 200 | 28 day | | Cyprinus carpio | OECD Guideline 305 E (Bioaccumulation: Flow-through Fish Test) |

**12.4. Mobility in soil**

No data available.

**12.5. Results of PBT / vPvB / PMT / vPvM assessment**

**PBT/vPvB**
This mixture does not contain any substances that are assessed to be a PBT or vPvB.
Based on available data, the classification criteria are not met.

**PMT/vPvM**
This mixture does not contain any substances that are assessed to be a PMT or vPvM.
Based on available data, the classification criteria are not met.

**12.6. Endocrine disrupting properties**

No data available.

**12.7. Other adverse effects**

No data available.

## SECTION 13: Disposal considerations

**13.1. Waste treatment methods**

Product disposal:
Dispose of waste and residues in accordance with local authority requirements.

Disposal of uncleaned packages:
Use packages for recycling only when totally empty.
Empty PU foam canisters should be returned in the original carton to PDR GmbH, D-95449 Thurnau (free of charge collection service under tel.: 0800-783 6736, Fax: 0800-783 6737, Germany) for recycling. Individual containers should be disposed of at communal collection points.

Waste code
160504 gases in pressure containers (including halons) containing dangerous substances

## SECTION 14: Transport information

**14.1. UN number or ID number**

Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.

**14.2. UN proper shipping name**

Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.

**14.3. Transport hazard class(es)**

Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.

**14.4. Packing group**

Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.

**14.5. Environmental hazards**

Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.

**14.6. Special precautions for user**

Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.

**14.7. Maritime transport in bulk according to IMO instruments**

not applicable

## SECTION 15: Regulatory information

**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

| | |
|---|---|
| Ozone Depleting Substance (ODS) (Regulation (EC) No 2024/590): | Not applicable |
| Prior Informed Consent (PIC) (Regulation (EU) No 649/2012): | Not applicable |
| Persistent organic pollutants (Regulation (EU) 2019/1021): | Not applicable |

Seveso III (2012/18/EU): Not applicable

**National regulations/information (Germany):**

WGK: WGK 1: slightly hazardous to water (Ordinance on facilities for handling substances that are hazardous to water (AwSV) )
Classification according to AwSV, Annex 1 (5.2)

BG regulations, rules, infos:
BG regulation: BGV B 1 Handling hazardous substances

Storage class according to TRGS 510: 10

**15.2. Chemical safety assessment**

A chemical safety assessment has not been carried out.

## SECTION 16: Other information

The labelling of the product is indicated in Section 2. The full text of all abbreviations indicated by codes in this safety data sheet are as follows:

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.

Abbreviations and acronyms:

ADG(-Code): Australian Dangerous Goods (Code)
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR : European Agreement concerning the International Carriage of Dangerous Goods by Road
ASTM: American Society for Testing and Materials
ATE: acute toxicity estimate
AS: Australian Standard
AwSV: Ordinance on Installations for the Handling of Substances Hazardous to Water
CAS: Chemical Abstract Service
CLP: Regulation (EC) No 1272/2008
CMR: cancerogenic, mutagenic or reprotoxic
DIN: German Institute for Standardization
ECx: Effective concentration (x% effective level)
ECHA: European Chemicals Agency
EC-Nummer: Substance number in the EU-inventories EINECS/ELINCS
ECTLV: European community threshold limit value
ED:Substance identified as having endocrine disrupting properties
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
EN : European Standard
ENCS: Japanese chemical inventory
EPA: US Environmental Protection Agency
EU: European Union
EU EXPLD1: Substance listed in Annex I, Reg (EC) No. 2019/1148
EU EXPLD2: Substance listed in Annex II, Reg (EC) No. 2019/1148
EWC: European Waste Catalogue
GHS: Globally Harmonised System for Classification and Labelling of Chemicals
GLP: Good Laboratory Practice
HSNO: Hazardous Substances and New Organisms
IARC: International Agency for Research of Cancer
IATA: International Air Transport Association
IBC-Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IC50: half maximal inhibitory concentration
ICAO: International Civil Aviation Organization
IMDG-Code: International Maritime Code for Dangerous Goods
IMO: International Maritime Organization
ISO: International Standardization Organisation
LC50: Median lethal concentration
LD50: Median lethal dose
MARPOL: International Convention for the Prevention of Marine Pollution from Ships
n.o.s.: not otherwise specified
NO(A)EC: No (adverse) effect concentration
NO(A)EL: No (adverse) effect level
NZS: New Zealand Standard
OECD: Organisation for Economic Co-operation and Development
OEL: Occupational Exposure Limit
OPPT: US EPA Office of Pollution Prevention and Toxics
OPPTS: US EPA Office of Prevention, Pesticides and Toxic Substances
PBT: Persistent, bioaccumulative, toxic
PMT: Persistent, mobile and toxic
(Q)SAR: (Quantitative) structure–activity relationship
REACH: Regulation (EC) No. 1907/2006
RID: Regulations concerning the International Transport of Dangerous Goods by Rail
SADT: Self Accelerating Decomposition Temperature
SDS: Safety Data Sheet

STOT: Specific Target Organ Toxicity
STOT SE: Specific Target Organ Toxicity - single exposure
STOT RE: Specific Target Organ Toxicity - repeated exposure
SUSMP: Standard for the Uniform Scheduling of Medicines and Poisons
SVHC: Substance of very high concern (REACH Candidate List)
TRGS: German Technical Rules for hazardous substances
UN: United Nations
VOC: Volatile Organic Compound
814.018 VOC Reg CH: Swiss Ordinance 814.018 on the Incentive Tax on Volatile Organic Compounds
vPvB: Very persistent, very bioaccumulative
vPvM: Very persistent and very mobile
VwVwS: Administrative Regulation on Substances Hazardous to Waters
WGK: Water hazard class

**Further information:**

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**Relevant changes in this safety data sheet are indicated by vertical lines at the left margin in the body of this document. Corresponding text is displayed in a different color on shadowed fields.**

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

**1.1. Product identifier**
Ponal Rapido Expansionskleber, Komp. B

UFI: 8PS8-PX7P-420A-V4EV

**1.2. Relevant identified uses of the substance or mixture and uses advised against**
Intended use:
Foam, 2-component without propellant gas

**1.3. Details of the supplier of the safety data sheet**
Henkel AG & Co. KGaA
Henkelstr. 67
40589 Düsseldorf

Germany

Phone: +49 211 797 0

SDSinfo.Adhesive@henkel.com
For Safety Data Sheet updates please visit our website www.mysds.henkel.com or www.henkel-adhesives.com.

**1.4. Emergency telephone number**
The Henkel information service also provides an around-the-clock telephone service on phone no.+49-(0)211-797-3350 for exceptional cases.

Further information is available at Poison Control Centers.

## SECTION 2: Hazards identification

**2.1. Classification of the substance or mixture**

**Classification (CLP):**

| | |
|---|---|
| Skin irritation | Category 2 |
| H315 Causes skin irritation. | |
| Skin sensitizer | Category 1 |
| H317 May cause an allergic skin reaction. | |
| Serious eye irritation | Category 2 |
| H319 Causes serious eye irritation. | |
| Chronic hazards to the aquatic environment | Category 3 |
| H412 Harmful to aquatic life with long lasting effects. | |

**2.2. Label elements**

**Label elements (CLP):**

**Hazard pictogram:**

**Contains** Ethylenediamine, ethoxylated and propoxylated MW <930

**Signal word:** Warning

**Hazard statement:**
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H412 Harmful to aquatic life with long lasting effects.

**Precautionary statement:**
P102 Keep out of reach of children.
P101 If medical advice is needed, have product container or label at hand.
P271 Use only outdoors or in a well-ventilated area.
P260 Do not breathe vapors.
P273 Avoid release to the environment.
P280 Wear protective gloves/eye protection.
P302+P352 IF ON SKIN: Wash with plenty of water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501 Dispose of contents/container in accordance with national regulation.

### 2.3. Other hazards

None if used properly.

**Following substances are present in a concentration ≥ the concentration limit for depiction in Section 3 and fulfill the criteria for PBT/vPvB, or were identified as endocrine disruptor (ED):**

None

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

**Declaration of the ingredients according to CLP (EC) No 1272/2008:**

| Hazardous components<br>CAS No.<br>EC No<br>REACH-Reg. No. | Concentration | Classification | Specific Conc. Limits, M-factors and ATEs | Add. Information |
|---|---|---|---|---|
| Carboxylic acids, di-, C4-6 polymer with glycerol and methyloxirane<br>1353675-23-6 | 40- < 60 % | Eye Irrit. 2, H319 | dermal:ATE = > 2.000 mg/kg | |
| Tris(2-chloro-1-methylethyl) phosphate<br>13674-84-5<br>237-158-7<br>01-2119486772-26 | 20- < 30 % | Acute Tox. 4, H302<br>Carc. 2, H351<br>Aquatic Chronic 3, H412 | | |
| Ethylenediamine, ethoxylated and propoxylated MW <930<br>26316-40-5<br>500-047-1<br>01-2119471488-26 | 5- < 10 % | Eye Irrit. 2, H319<br>Skin Sens. 1B, H317 | | |
| 2,2-Bis(hydroxymethyl)propionic acid<br>4767-03-7<br>225-306-3<br>01-2119454390-44 | 1- < 5 % | Eye Irrit. 2, H319<br>STOT SE 3, H335 | | |
| 1-methylimidazole<br>616-47-7<br>210-484-7<br>01-2119979544-23 | 1- < 3 % | Acute Tox. 4, H302<br>Acute Tox. 3, H311<br>Skin Corr. 1B, H314<br>Repr. 2, H361d | dermal:ATE = 400 mg/kg<br>oral:ATE = 1.144 mg/kg | |

**If no ATE values are displayed, please refer to LD/LC50 values in Section 11.**
**For full text of the H - statements and other abbreviations see section 16 "Other information".**

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

General information:
In case of adverse health effects seek medical advice.

Inhalation:
Move to fresh air, consult doctor if complaint persists.

Skin contact:
Rinse with running water and soap. Skin care. Remove contaminated clothes immediately.

Eye contact:
Immediately flush eyes with soft jet of water or eye rinse solution for at least 5 minutes. If pains remain (intensive smarting, sensitivity to light, visual disturbance) continue flushing and contact/seek doctor or hospital.

Ingestion:
Rinse mouth and throat. Drink 1-2 glasses of water. Seek medical advice.

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

May cause an allergic skin reaction.

Causes serious eye irritation.

SKIN: Redness, inflammation.

**4.3. Indication of any immediate medical attention and special treatment needed**
See section: Description of first aid measures

## SECTION 5: Firefighting measures

**5.1. Extinguishing media**
**Suitable extinguishing media:**
carbon dioxide, foam, powder, water spray jet, fine water spray

**Extinguishing media which must not be used for safety reasons:**
High pressure waterjet

**5.2. Special hazards arising from the substance or mixture**
In the event of a fire, carbon monoxide (CO), carbon dioxide (CO2) and nitrogen oxides (NOx) can be released.

**5.3. Advice for firefighters**
Wear self-contained breathing apparatus.
Wear protective equipment.

## SECTION 6: Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Ensure adequate ventilation.
Avoid contact with skin and eyes.
Wear protective equipment.
Danger of slipping on spilled product.

**6.2. Environmental precautions**
Do not empty into drains / surface water / ground water.

**6.3. Methods and material for containment and cleaning up**
Remove with liquid-absorbing material (sand, peat, sawdust).
Dispose of contaminated material as waste according to Section 13.

**6.4. Reference to other sections**
See advice in section 8

## SECTION 7: Handling and storage

**7.1. Precautions for safe handling**
Ensure that workrooms are adequately ventilated.
Avoid skin and eye contact.

Hygiene measures:
Wash hands before work breaks and after finishing work.
Do not eat, drink or smoke while working.

**7.2. Conditions for safe storage, including any incompatibilities**
Store in sealed original container protected against moisture.
Store in a cool, dry place.
Avoid strictly temperatures below + 2°C and above + 30 °C.
Do not store together with food or other consumables (coffee, tea, tobacco, etc.).
Do not store together with oxidants.
Do not store together with flammable solutions.

**7.3. Specific end use(s)**
Foam, 2-component without propellant gas

## SECTION 8: Exposure controls/personal protection

**8.1. Control parameters**

**Occupational Exposure Limits**

Valid for
Germany

None

**Predicted No-Effect Concentration (PNEC):**

| Name on list | Environmental Compartment | Exposure period | Value | | | | Remarks |
|---|---|---|---|---|---|---|---|
| | | | mg/l | ppm | mg/kg | others | |
| Tris(2-chloro-1-methylethyl) phosphate 13674-84-5 | aqua (freshwater) | | 0,32 mg/l | | | | |
| Tris(2-chloro-1-methylethyl) phosphate 13674-84-5 | aqua (marine water) | | 0,032 mg/l | | | | |
| Tris(2-chloro-1-methylethyl) phosphate 13674-84-5 | aqua (intermittent releases) | | 0,51 mg/l | | | | |
| Tris(2-chloro-1-methylethyl) phosphate 13674-84-5 | sediment (freshwater) | | | | 11,5 mg/kg | | |
| Tris(2-chloro-1-methylethyl) phosphate 13674-84-5 | sediment (marine water) | | | | 1,15 mg/kg | | |
| Tris(2-chloro-1-methylethyl) phosphate 13674-84-5 | Soil | | | | 0,34 mg/kg | | |
| Tris(2-chloro-1-methylethyl) phosphate 13674-84-5 | sewage treatment plant (STP) | | 19,1 mg/l | | | | |
| Tris(2-chloro-1-methylethyl) phosphate 13674-84-5 | oral | | | | 11,6 mg/kg | | |
| Ethylenediamine, ethoxylated and propoxylated MW <930 26316-40-5 | aqua (freshwater) | | 0,085 mg/l | | | | |
| Ethylenediamine, ethoxylated and propoxylated MW <930 26316-40-5 | aqua (marine water) | | 0,0085 mg/l | | | | |
| Ethylenediamine, ethoxylated and propoxylated MW <930 26316-40-5 | aqua (intermittent releases) | | 1,03 mg/l | | | | |
| Ethylenediamine, ethoxylated and propoxylated MW <930 26316-40-5 | sediment (freshwater) | | | | 0,211 mg/kg | | |
| Ethylenediamine, ethoxylated and propoxylated MW <930 26316-40-5 | sediment (marine water) | | | | 0,0211 mg/kg | | |
| Ethylenediamine, ethoxylated and propoxylated MW <930 26316-40-5 | Soil | | | | 0,0247 mg/kg | | |
| Ethylenediamine, ethoxylated and propoxylated MW <930 26316-40-5 | sewage treatment plant (STP) | | 1000 mg/l | | | | |
| 2,2-Bis(hydroxymethyl)propionic acid 4767-03-7 | sewage treatment plant (STP) | | 10 mg/l | | | | |
| 2,2-Bis(hydroxymethyl)propionic acid 4767-03-7 | aqua (freshwater) | | 0,1 mg/l | | | | |
| 2,2-Bis(hydroxymethyl)propionic acid 4767-03-7 | aqua (intermittent releases) | | 1 mg/l | | | | |
| 2,2-Bis(hydroxymethyl)propionic acid 4767-03-7 | aqua (marine water) | | 0,01 mg/l | | | | |
| 1-Methylimidazole 616-47-7 | aqua (freshwater) | | 0,045 mg/l | | | | |
| 1-Methylimidazole 616-47-7 | Freshwater - intermittent | | 1 mg/l | | | | |
| 1-Methylimidazole 616-47-7 | aqua (marine water) | | 0,004 mg/l | | | | |
| 1-Methylimidazole 616-47-7 | sediment (freshwater) | | | | 1,98 mg/kg | | |
| 1-Methylimidazole 616-47-7 | sediment (marine water) | | | | 0,198 mg/kg | | |
| 1-Methylimidazole 616-47-7 | Soil | | | | 0,37 mg/kg | | |
| 1-Methylimidazole 616-47-7 | Sewage treatment plant | | 589,6 mg/l | | | | |

**Derived No-Effect Level (DNEL):**

| Name on list | Application Area | Route of Exposure | Health Effect | Exposure Time | Value | Remarks |
|---|---|---|---|---|---|---|
| Tris(2-chloro-1-methylethyl) phosphate 13674-84-5 | Workers | Inhalation | Long term exposure - systemic effects | | 8,2 mg/m3 | |
| Tris(2-chloro-1-methylethyl) phosphate 13674-84-5 | Workers | Inhalation | Acute/short term exposure - systemic effects | | 22,6 mg/m3 | |
| Tris(2-chloro-1-methylethyl) phosphate 13674-84-5 | Workers | dermal | Long term exposure - systemic effects | | 2,91 mg/kg | |
| Tris(2-chloro-1-methylethyl) phosphate 13674-84-5 | General population | Inhalation | Long term exposure - systemic effects | | 1,45 mg/m3 | |
| Tris(2-chloro-1-methylethyl) phosphate 13674-84-5 | General population | Inhalation | Acute/short term exposure - systemic effects | | 5,6 mg/m3 | |
| Tris(2-chloro-1-methylethyl) phosphate 13674-84-5 | General population | dermal | Long term exposure - systemic effects | | 1,04 mg/kg | |
| Tris(2-chloro-1-methylethyl) phosphate 13674-84-5 | General population | oral | Long term exposure - systemic effects | | 0,52 mg/kg | |
| Tris(2-chloro-1-methylethyl) phosphate 13674-84-5 | General population | oral | Acute/short term exposure - systemic effects | | 2 mg/kg | |
| Ethylenediamine, ethoxylated and propoxylated MW <930 26316-40-5 | Workers | inhalation | Long term exposure - systemic effects | | 35,2 mg/m3 | |
| Ethylenediamine, ethoxylated and propoxylated MW <930 26316-40-5 | Workers | dermal | Long term exposure - systemic effects | | 5 mg/kg | |
| Ethylenediamine, ethoxylated and propoxylated MW <930 26316-40-5 | General population | inhalation | Long term exposure - systemic effects | | 10,4 mg/m3 | |
| Ethylenediamine, ethoxylated and propoxylated MW <930 26316-40-5 | General population | oral | Long term exposure - systemic effects | | 3 mg/kg | |
| Ethylenediamine, ethoxylated and propoxylated MW <930 26316-40-5 | General population | dermal | Long term exposure - systemic effects | | 3 mg/kg | |
| 2,2-Bis(hydroxymethyl)propionic acid 4767-03-7 | Workers | inhalation | Long term exposure - systemic effects | | 14 mg/m3 | |
| 2,2-Bis(hydroxymethyl)propionic acid 4767-03-7 | Workers | dermal | Long term exposure - systemic effects | | 4 mg/kg | |
| 2,2-Bis(hydroxymethyl)propionic acid 4767-03-7 | General population | inhalation | Long term exposure - systemic effects | | 3,5 mg/m3 | |
| 2,2-Bis(hydroxymethyl)propionic acid 4767-03-7 | General population | dermal | Long term exposure - systemic effects | | 2 mg/kg | |
| 2,2-Bis(hydroxymethyl)propionic acid 4767-03-7 | General population | oral | Long term exposure - systemic effects | | 2 mg/kg | |
| 1-Methylimidazole 616-47-7 | worker | inhalation | Long term exposure - systemic effects | | 6,3 mg/m3 | |
| 1-Methylimidazole 616-47-7 | worker | dermal | Long term exposure - systemic effects | | 1,8 mg/kg | |

**Biological Exposure Indices:**

None

**8.2. Exposure controls:**

Respiratory protection:
Suitable breathing mask when there is inadequate ventilation.
Combination filter: ABEKP (EN 14387)
This recommendation should be matched to local conditions.

Hand protection:
Use attached gloves. Perforation time < 5 minutes.

Eye protection:
Goggles which can be tightly sealed.
Protective eye equipment should conform to EN166.

Skin protection:
Suitable protective clothing
Protective clothing should conform to EN 14605 for liquid splashes or to EN 13982 for dusts.

Advices to personal protection equipment:
The information provided on personal protective equipment is for guidance purposes only. A full risk assessment should be conducted prior to using this product to determine the appropriate personal protective equipment to suit local conditions. Personal protective equipment should conform to the relevant EN standard.

## SECTION 9: Physical and chemical properties

**9.1. Information on basic physical and chemical properties**

| | |
|---|---|
| Delivery form | liquid |
| Colour | Green, Blue |
| Odor | Mild, Amine |
| Physical state | liquid |
| Melting point | Not applicable, Product is a liquid |
| Solidification temperature | < -50 °C (< -58 °F) |
| Initial boiling point | 217 °C (422.6 °F) |
| Flammability | Not applicable<br>Non flammable product (flash point is greater than 93°C) |
| Explosive limits | Not applicable, The product is not flammable. |
| Flash point | > 93 °C (> 199.4 °F) |
| Auto-ignition temperature | > 300 °C (> 572 °F) |
| Decomposition temperature | Not applicable, Substance/mixture is not self-reactive, no organic peroxide and does not decompose under foreseen conditions of use |
| pH | Not applicable, Product is non-soluble (in water). |
| Viscosity (kinematic)<br>(20 °C (68 °F); ) | 25.000 - 40.000 mm2/s |
| Viscosity, dynamic<br>(Brookfield; 20 °C (68 °F)) | 25.000 - 40.000 mPa.s no method / method unknown |
| Solubility (qualitative)<br>(23 °C (73.4 °F); Solvent: Water) | Insoluble |
| Partition coefficient: n-octanol/water | Not applicable<br>Mixture |
| Vapour pressure<br>(20 °C (68 °F)) | 16 Pa |
| Density<br>(20 °C (68 °F)) | 1,05 - 1,15 g/cm3 no method / method unknown |
| Relative vapour density: | Currently under determination |
| Particle characteristics | Not applicable<br>Product is a liquid |

**9.2. Other information**

Other information not applicable for this product

## SECTION 10: Stability and reactivity

**10.1. Reactivity**
None if used for intended purpose.

**10.2. Chemical stability**
Stable under recommended storage conditions.

**10.3. Possibility of hazardous reactions**
See section reactivity

**10.4. Conditions to avoid**
None if used for intended purpose.

**10.5. Incompatible materials**
None if used properly.

**10.6. Hazardous decomposition products**
None known.

## SECTION 11: Toxicological information

**General toxicological information:**
Cross-reactions with other amine compounds are possible.

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

**Acute oral toxicity:**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

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

| Hazardous substances CAS-No. | Value type | Value | Species | Method |
|---|---|---|---|---|
| Carboxylic acids, di-, C4-6 polymer with glycerol and methyloxirane 1353675-23-6 | LD50 | > 2.000 mg/kg | rat | OECD Guideline 420 (Acute Oral Toxicity) |
| Tris(2-chloro-1-methylethyl) phosphate 13674-84-5 | LD50 | 632 mg/kg | rat | EU Method B.1 (Acute Toxicity (Oral)) |
| Ethylenediamine, ethoxylated and propoxylated MW <930 26316-40-5 | LD50 | > 5.000 mg/kg | rat | not specified |
| 2,2-Bis(hydroxymethyl)propionic acid 4767-03-7 | LD50 | > 2.000 mg/kg | rat | OECD Guideline 423 (Acute Oral toxicity) |
| 1-methylimidazole 616-47-7 | LD50 | 1.144 mg/kg | rat | equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity) |
| 1-methylimidazole 616-47-7 | Acute toxicity estimate (ATE) | 1.144 mg/kg | | Expert judgement |

**Acute dermal toxicity:**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

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

| Hazardous substances<br>CAS-No. | Value type | Value | Species | Method |
|---|---|---|---|---|
| Carboxylic acids, di-, C4-6 polymer with glycerol and methyloxirane<br>1353675-23-6 | Acute toxicity estimate (ATE) | > 2.000 mg/kg | | Expert judgement |
| Tris(2-chloro-1-methylethyl) phosphate<br>13674-84-5 | LD50 | > 2.000 mg/kg | rat | OECD Guideline 402 (Acute Dermal Toxicity) |
| Ethylenediamine, ethoxylated and propoxylated MW <930<br>26316-40-5 | LD50 | > 5.000 mg/kg | rabbit | not specified |
| 2,2-Bis(hydroxymethyl)propionic acid<br>4767-03-7 | LD50 | > 2.000 mg/kg | rat | OECD Guideline 402 (Acute Dermal Toxicity) |
| 1-methylimidazole<br>616-47-7 | LD50 | 400 - 640 mg/kg | rabbit | equivalent or similar to OECD Guideline 402 (Acute Dermal Toxicity) |
| 1-methylimidazole<br>616-47-7 | Acute toxicity estimate (ATE) | 400 mg/kg | | Expert judgement |

**Acute inhalative toxicity:**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

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

| Hazardous substances<br>CAS-No. | Value type | Value | Test atmosphere | Exposure time | Species | Method |
|---|---|---|---|---|---|---|
| Tris(2-chloro-1-methylethyl) phosphate<br>13674-84-5 | LC50 | > 7,19 mg/l | dust/mist | 4 h | rat | OECD Guideline 403 (Acute Inhalation Toxicity) |

**Skin corrosion/irritation:**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances<br>CAS-No. | Result | Exposure time | Species | Method |
|---|---|---|---|---|
| Tris(2-chloro-1-methylethyl) phosphate<br>13674-84-5 | slightly irritating | | rabbit | OECD Guideline 404 (Acute Dermal Irritation / Corrosion) |
| 2,2-Bis(hydroxymethyl)propionic acid<br>4767-03-7 | not irritating | 4 h | rabbit | OECD Guideline 404 (Acute Dermal Irritation / Corrosion) |
| 1-methylimidazole<br>616-47-7 | Sub-Category 1B (corrosive) | 5 min | rabbit | equivalent or similar to OECD Guideline 404 (Acute Dermal Irritation / Corrosion) |

**Serious eye damage/irritation:**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances<br>CAS-No. | Result | Exposure time | Species | Method |
|---|---|---|---|---|
| Carboxylic acids, di-, C4-6 polymer with glycerol and methyloxirane<br>1353675-23-6 | irritating | | Human, corneal epithelial model (HCE) | OECD Test Guideline 492B (Reconstructed Human Cornea-like Epithelium (RHCE) Test Method for Eye Hazard Identification) |
| Tris(2-chloro-1-methylethyl) phosphate<br>13674-84-5 | slightly irritating | | rabbit | OECD Guideline 405 (Acute Eye Irritation / Corrosion) |
| 2,2-Bis(hydroxymethyl)propionic acid<br>4767-03-7 | irritating | 24 h | rabbit | OECD Guideline 405 (Acute Eye Irritation / Corrosion) |
| 1-methylimidazole<br>616-47-7 | Category 1 (irreversible effects on the eye) | | rabbit | equivalent or similar to OECD Guideline 405 (Acute Eye Irritation / Corrosion) |

**Respiratory or skin sensitization:**

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

| Hazardous substances<br>CAS-No. | Result | Test type | Species | Method |
|---|---|---|---|---|
| Tris(2-chloro-1-methylethyl) phosphate<br>13674-84-5 | not sensitising | Guinea pig maximisation test | guinea pig | Magnusson and Kligman Method |
| Ethylenediamine, ethoxylated and propoxylated MW <930<br>26316-40-5 | Sub-Category 1B (sensitising) | Mouse local lymphnode assay (LLNA) | mouse | OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay) |
| 2,2-Bis(hydroxymethyl)propionic acid<br>4767-03-7 | not sensitising | Mouse local lymphnode assay (LLNA) | mouse | OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay) |

**Germ cell mutagenicity:**

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

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

| Hazardous substances CAS-No. | Result | Type of study / Route of administration | Metabolic activation / Exposure time | Species | Method |
|---|---|---|---|---|---|
| Tris(2-chloro-1-methylethyl) phosphate 13674-84-5 | negative | bacterial gene mutation assay | with and without | | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| 2,2-Bis(hydroxymethyl)propionic acid 4767-03-7 | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| 2,2-Bis(hydroxymethyl)propionic acid 4767-03-7 | negative | mammalian cell gene mutation assay | with and without | | OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) |
| 2,2-Bis(hydroxymethyl)propionic acid 4767-03-7 | negative | in vitro mammalian chromosome aberration test | with and without | | OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test) |
| 1-methylimidazole 616-47-7 | negative | mammalian cell gene mutation assay | with and without | | OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) |
| 1-methylimidazole 616-47-7 | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| 1-methylimidazole 616-47-7 | negative | in vitro mammalian cell micronucleus test | with and without | | OECD Guideline 487 (In vitro Mammalian Cell Micronucleus Test) |
| Tris(2-chloro-1-methylethyl) phosphate 13674-84-5 | negative | oral: gavage | | rat | not specified |

**Carcinogenicity**

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

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

| Hazardous components CAS-No. | Result | Route of application | Exposure time / Frequency of treatment | Species | Sex | Method |
|---|---|---|---|---|---|---|
| Tris(2-chloro-1-methylethyl) phosphate 13674-84-5 | carcinogenic | oral: feed | 104 w daily | mouse | male/female | other guideline: |

**Reproductive toxicity:**

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

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

| Hazardous substances CAS-No. | Result / Value | Test type | Route of application | Species | Method |
|---|---|---|---|---|---|
| 1-methylimidazole 616-47-7 | NOAEL P 90 mg/kg | screening | oral: gavage | rat | OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test) |

**STOT-single exposure:**

No data available.

**STOT-repeated exposure:**

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

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

| Hazardous substances<br>CAS-No. | Result / Value | Route of application | Exposure time / Frequency of treatment | Species | Method |
|---|---|---|---|---|---|
| Tris(2-chloro-1-methylethyl) phosphate<br>13674-84-5 | NOAEL 800 - 7500 ppm | oral: feed | 90 days<br>ad libitem | rat | OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) |
| 2,2-Bis(hydroxymethyl)propionic acid<br>4767-03-7 | NOAEL 1.000 mg/kg | oral: gavage | 91 days<br>single, daily oral gavage dose | rat | OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) |
| 1-methylimidazole<br>616-47-7 | NOAEL 90 mg/kg | oral: gavage | 91-92 d<br>daily | rat | OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) |

**Aspiration hazard:**

No data available.

**11.2 Information on other hazards**

**11.2.1 Endocrine disrupting properties**

No data available.

## SECTION 12: Ecological information

**General ecological information:**

Do not empty into drains, soil or bodies of water.

### 12.1. Toxicity

**Toxicity (Fish):**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances<br>CAS-No. | Value type | Value | Exposure time | Species | Method |
|---|---|---|---|---|---|
| Tris(2-chloro-1-methylethyl) phosphate<br>13674-84-5 | LC50 | 51 mg/l | 96 h | Pimephales promelas | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| Ethylenediamine, ethoxylated and propoxylated MW <930<br>26316-40-5 | LC50 | 25.600 mg/l | 96 h | Pimephales promelas | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| 2,2-Bis(hydroxymethyl)propionic acid<br>4767-03-7 | LC50 | > 1.000 mg/l | 96 h | Danio rerio | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| 1-methylimidazole<br>616-47-7 | LC50 | > 100 - 220 mg/l | 96 h | Leuciscus idus | OECD Guideline 203 (Fish, Acute Toxicity Test) |

**Toxicity (aquatic invertebrates):**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances<br>CAS-No. | Value type | Value | Exposure time | Species | Method |
|---|---|---|---|---|---|
| Carboxylic acids, di-, C4-6 polymer with glycerol and methyloxirane<br>1353675-23-6 | EC50 | > 100 mg/l | | not specified | not specified |
| Tris(2-chloro-1-methylethyl) phosphate<br>13674-84-5 | EC50 | 131 mg/l | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| 2,2-Bis(hydroxymethyl)propionic acid<br>4767-03-7 | EC50 | > 100 mg/l | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| 1-methylimidazole<br>616-47-7 | EC50 | 268 mg/l | 48 h | Daphnia sp. | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |

**Chronic toxicity (aquatic invertebrates):**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances<br>CAS-No. | Value type | Value | Exposure time | Species | Method |
|---|---|---|---|---|---|
| Tris(2-chloro-1-methylethyl) phosphate<br>13674-84-5 | NOEC | 32 mg/l | 21 d | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test) |
| 1-methylimidazole<br>616-47-7 | NOEC | 1,2 mg/l | 21 d | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test) |

**Toxicity (Algae):**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances<br>CAS-No. | Value type | Value | Exposure time | Species | Method |
|---|---|---|---|---|---|
| Tris(2-chloro-1-methylethyl) phosphate<br>13674-84-5 | EC50 | 82 mg/l | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Tris(2-chloro-1-methylethyl) phosphate<br>13674-84-5 | EC10 | 42 mg/l | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| 2,2-Bis(hydroxymethyl)propionic acid<br>4767-03-7 | EC50 | 750 mg/l | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| 1-methylimidazole<br>616-47-7 | EC50 | 180 mg/l | 72 h | | OECD Guideline 201 (Alga, Growth Inhibition Test) |

**Toxicity (microorganisms):**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances<br>CAS-No. | Value type | Value | Exposure time | Species | Method |
|---|---|---|---|---|---|
| Tris(2-chloro-1-methylethyl) phosphate<br>13674-84-5 | EC50 | 784 mg/l | 3 h | activated sludge | ISO 8192 (Test for Inhibition of Oxygen Consumption by Activated Sludge) |
| 2,2-Bis(hydroxymethyl)propionic acid<br>4767-03-7 | EC50 | > 1.000 mg/l | 30 min | activated sludge | OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test) |
| 1-methylimidazole<br>616-47-7 | EC50 | 1.050 mg/l | 17 h | | DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm-Test) |

**12.2. Persistence and degradability**

**Biodegradability (Screening Tests):**
The table below presents the data of the classified substances present in the mixture.

| Hazardous substances<br>CAS-No. | Result | Test type | Degradability | Exposure time | Method |
|---|---|---|---|---|---|
| Carboxylic acids, di-, C4-6 polymer with glycerol and methyloxirane<br>1353675-23-6 | readily biodegradable | not specified | > 60 % | 28 d | OECD 301 A - F |
| Tris(2-chloro-1-methylethyl) phosphate<br>13674-84-5 | not readily biodegradable. | aerobic | 0 % | 28 d | OECD Guideline 301 C (Ready Biodegradability: Modified MITI Test (I)) |
| 2,2-Bis(hydroxymethyl)propionic acid<br>4767-03-7 | readily biodegradable | aerobic | 90 - 100 % | 28 d | OECD Guideline 301 A (new version) (Ready Biodegradability: DOC Die Away Test) |
| 1-methylimidazole<br>616-47-7 | not readily biodegradable. | aerobic | 18 % | 28 day | ISO DIS 9439 (Ultimate Aerobic BiodegradabilityMethod by Analysis of Released Carbon Dioxide) |
| 1-methylimidazole<br>616-47-7 | inherently biodegradable | aerobic | 79 % | 60 day | ISO DIS 9439 (Ultimate Aerobic BiodegradabilityMethod by Analysis of Released Carbon Dioxide) |

**(Bio)degradability (Simulation Tests):**
No data available.

### 12.3. Bioaccumulative potential

**Partition Coefficient (octanol/water)**
The table below presents the data of the classified substances present in the mixture.

| Hazardous substances<br>CAS-No. | LogPow | Temperature | Method |
|---|---|---|---|
| Tris(2-chloro-1-methylethyl) phosphate<br>13674-84-5 | 2,68 | | OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method) |
| 2,2-Bis(hydroxymethyl)propionic acid<br>4767-03-7 | -1,1 | 20 °C | OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method) |

**Bioconcentration factor (BCF)**
The table below presents the data of the classified substances present in the mixture.

| Hazardous substances<br>CAS-No. | Bioconcentration factor (BCF) | Exposure time | Temperature | Species | Method |
|---|---|---|---|---|---|
| Tris(2-chloro-1-methylethyl) phosphate<br>13674-84-5 | > 0,8 - < 2,8 | 42 d | | no data | OECD Guideline 305 C (Bioaccumulation: Test for the Degree of Bioconcentration in Fish) |

### 12.4. Mobility in soil

No data available.

### 12.5. Results of PBT / vPvB / PMT / vPvM assessment

**PBT/vPvB**
This mixture does not contain any substances that are assessed to be a PBT or vPvB.
Based on available data, the classification criteria are not met.

**PMT/vPvM**
This mixture does not contain any substances that are assessed to be a PMT or vPvM.
Based on available data, the classification criteria are not met.

### 12.6. Endocrine disrupting properties

No data available.

### 12.7. Other adverse effects

No data available.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Product disposal:
Dispose of waste and residues in accordance with local authority requirements.

Disposal of uncleaned packages:
Use packages for recycling only when totally empty.

Waste code
080409

## SECTION 14: Transport information

**14.1. UN number or ID number**

Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.

**14.2. UN proper shipping name**

Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.

**14.3. Transport hazard class(es)**

Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.

**14.4. Packing group**

Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.

**14.5. Environmental hazards**

Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.

**14.6. Special precautions for user**

Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.

**14.7. Maritime transport in bulk according to IMO instruments**

not applicable

## SECTION 15: Regulatory information

**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

| | |
|---|---|
| Ozone Depleting Substance (ODS) (Regulation (EC) No 2024/590): | Not applicable |
| Prior Informed Consent (PIC) (Regulation (EU) No 649/2012): | Not applicable |
| Persistent organic pollutants (Regulation (EU) 2019/1021): | Not applicable |

Seveso III (2012/18/EU): Not applicable

**National regulations/information (Germany):**

WGK: WGK 2: significantly water endangering (Ordinance on facilities for handling substances that are hazardous to water (AwSV) )
Classification according to AwSV, Annex 1 (5.2)

BG regulations, rules, infos:
Note the German BG-Chemie data sheet: M044 - Polyurethane-fabrication / Isocyanates

Storage class according to TRGS 510: 10

**15.2. Chemical safety assessment**

A chemical safety assessment has not been carried out.

## SECTION 16: Other information

The labelling of the product is indicated in Section 2. The full text of all abbreviations indicated by codes in this safety data sheet are as follows:

H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H351 Suspected of causing cancer.
H361d Suspected of damaging the unborn child.
H412 Harmful to aquatic life with long lasting effects.

Abbreviations and acronyms:

ADG(-Code): Australian Dangerous Goods (Code)
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR : European Agreement concerning the International Carriage of Dangerous Goods by Road
ASTM: American Society for Testing and Materials
ATE: acute toxicity estimate
AS: Australian Standard
AwSV: Ordinance on Installations for the Handling of Substances Hazardous to Water
CAS: Chemical Abstract Service
CLP: Regulation (EC) No 1272/2008
CMR: cancerogenic, mutagenic or reprotoxic
DIN: German Institute for Standardization
ECx: Effective concentration (x% effective level)
ECHA: European Chemicals Agency
EC-Nummer: Substance number in the EU-inventories EINECS/ELINCS
ECTLV: European community threshold limit value
ED:Substance identified as having endocrine disrupting properties
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
EN : European Standard
ENCS: Japanese chemical inventory
EPA: US Environmental Protection Agency
EU: European Union
EU EXPLD1: Substance listed in Annex I, Reg (EC) No. 2019/1148
EU EXPLD2: Substance listed in Annex II, Reg (EC) No. 2019/1148
EWC: European Waste Catalogue
GHS: Globally Harmonised System for Classification and Labelling of Chemicals
GLP: Good Laboratory Practice
HSNO: Hazardous Substances and New Organisms
IARC: International Agency for Research of Cancer
IATA: International Air Transport Association
IBC-Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IC50: half maximal inhibitory concentration
ICAO: International Civil Aviation Organization
IMDG-Code: International Maritime Code for Dangerous Goods
IMO: International Maritime Organization
ISO: International Standardization Organisation
LC50: Median lethal concentration
LD50: Median lethal dose
MARPOL: International Convention for the Prevention of Marine Pollution from Ships
n.o.s.: not otherwise specified
NO(A)EC: No (adverse) effect concentration
NO(A)EL: No (adverse) effect level
NZS: New Zealand Standard
OECD: Organisation for Economic Co-operation and Development
OEL: Occupational Exposure Limit
OPPT: US EPA Office of Pollution Prevention and Toxics
OPPTS: US EPA Office of Prevention, Pesticides and Toxic Substances
PBT: Persistent, bioaccumulative, toxic
PMT: Persistent, mobile and toxic
(Q)SAR: (Quantitative) structure–activity relationship

REACH: Regulation (EC) No. 1907/2006
RID: Regulations concerning the International Transport of Dangerous Goods by Rail
SADT: Self Accelerating Decomposition Temperature
SDS: Safety Data Sheet
STOT: Specific Target Organ Toxicity
STOT SE: Specific Target Organ Toxicity - single exposure
STOT RE: Specific Target Organ Toxicity - repeated exposure
SUSMP: Standard for the Uniform Scheduling of Medicines and Poisons
SVHC: Substance of very high concern (REACH Candidate List)
TRGS: German Technical Rules for hazardous substances
UN: United Nations
VOC: Volatile Organic Compound
814.018 VOC Reg CH: Swiss Ordinance 814.018 on the Incentive Tax on Volatile Organic Compounds
vPvB: Very persistent, very bioaccumulative
vPvM: Very persistent and very mobile
VwVwS: Administrative Regulation on Substances Hazardous to Waters
WGK: Water hazard class

**Further information:**

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