

Revision date: 19 Nov 2020 Version: F1 Print date: 11 Dec 2020

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

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

1.1. Product identifier

Trade name/designation:

ISO-TOP THERMFOAM B 1

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

No data available

1.3. Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor):

ISO- CHEMIE GmbH

Röntgenstraße 12
 73431 Aalen
 Germany

Telephone: +49 (0)7361 9490-0

Telefax: +49 (0)7361 9490-90

E-mail: info@iso-chemie.de

Website: www.iso-chemie.de

1.4. Emergency telephone number

24h: +49 (0)761 19240

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP]:

| Hazard classes and hazard categories | Hazard statements | Classification procedure |
|--|---|--------------------------|
| Aerosols (<i>Aerosol 1</i>) | H222; H229: Extremely flammable aerosol.; Pressurised container: May burst if heated. | |
| Skin corrosion/irritation (<i>Skin Irrit. 2</i>) | H315: Causes skin irritation. | |
| Respiratory or skin sensitisation (<i>Skin Sens. 1</i>) | H317: May cause an allergic skin reaction. | |
| Serious eye damage/eye irritation (<i>Eye Irrit. 2</i>) | H319: Causes serious eye irritation. | |
| Acute toxicity (inhalative) (<i>Acute Tox. 4</i>) | H332: Harmful if inhaled. | |
| Respiratory or skin sensitisation (<i>Resp. Sens. 1</i>) | H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled. | |
| STOT-single exposure (<i>STOT SE 3</i>) | H335: May cause respiratory irritation. | |
| Carcinogenicity (<i>Carc. 2</i>) | H351: Suspected of causing cancer. | |
| STOT-repeated exposure (<i>STOT RE 2</i>) | H373: May cause damage to organs through prolonged or repeated exposure. (Inhalation) | |

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms:



GHS02
Flame



GHS08
Health hazard



GHS07
Exclamation mark

Signal word: Danger

Hazard statements for physical hazards

| | |
|------|---|
| H222 | Extremely flammable aerosol. |
| H229 | Pressurised container: May burst if heated. |

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| hazard statements for health hazards | |
|--------------------------------------|---|
| 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. (Inhalation) |

Supplemental hazard information: -

| Precautionary statements | |
|--------------------------|---|
| P101 | If medical advice is needed, have product container or label at hand. |
| P102 | Keep out of reach of children. |

| Precautionary statements Prevention | |
|-------------------------------------|--|
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P211 | Do not spray on an open flame or other ignition source. |
| P251 | Do not pierce or burn, even after use. |

| Precautionary statements Response | |
|-----------------------------------|--|
| P362 + P364 | Take off contaminated clothing and wash it before reuse. |

| Precautionary statements Storage | |
|----------------------------------|--|
| P410 + P412 | Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F. |

| Precautionary statements Disposal | |
|-----------------------------------|---|
| P501 | Dispose of contents/container to Dispose of waste according to applicable legislation.. |

2.3. Other hazards



Adverse physicochemical effects:

The vapour of the product is heavier than air and may accumulate below ground level, in pits, channels and basements in higher concentration. Ignition


SECTION 3: Composition / information on ingredients

3.2. Mixtures

Hazardous ingredients / Hazardous impurities / Stabilisers:

| product identifiers | Substance name Classification according to Regulation (EC) No 1272/2008 [CLP] | Concentration |
|--|--|---------------|
| CAS No.: 9016-87-9 REACH No.: 01-2119457024-46-XXXX | Diphenylmethandiisocyanat, Isomere und Homologe Acute Tox. 4, Carc. 2, Eye Irrit. 2, Resp. Sens. 1, STOT RE 2, STOT SE 3, Skin Irrit. 2, Skin Sens. 1 H315-H317-H319-H332-H334-H335-H351-H373 | 25 % |
| CAS No.: 1244733-77-4 EC No.: 807-935-0 REACH No.: 01-2119486772-26 | Reaktionsmasse von Tris(2-chlorpropyl)Phosphat und Tris(2-chlor-1-methylethyl)Phosphat und Phosphorsäure, bis(2-Chlor-1-Methylethyl)2-Chlorpropylester und Phosphorsäure, 2-Chlor-1-Methylethyl-bis(2-Chlorpropyl)Ester, Tris(2-Chlor-1-Methylethyl)Phosphat The substance is classified as not hazardous according to regulation (EC) No 1272/2008 [CLP]. | 1 - < 25 % |
| CAS No.: 74-98-6 EC No.: 200-827-9 REACH No.: 01-2119469442-21 | propane Flam. Gas 1, Press. Gas (Liq.) H220-H280 | 1 - < 10 % |
| CAS No.: 75-28-5 EC No.: 200-857-2 | isobutane Carc. 1A, Flam. Gas 1, Muta. 1B, Press. Gas (Liq.)  Danger H220-H280-H340-H350 | 1 - < 10 % |
| CAS No.: 115-10-6 EC No.: 204-065-8 REACH No.: 01-2119472128-37 | dimethyl ether Flam. Gas 1, Press. Gas (Liq.)  Danger H220 | 1 % |

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| product identifiers | Substance name Classification according to Regulation (EC) No 1272/2008 [CLP] | Concentration |
|--|--|---------------|
| CAS No.: 106-99-0 EC No.: 203-450-8 | buta-1,3-diene Carc. 1A, Flam. Gas 1, Muta. 1B, Press. Gas (Liq.)  H220-H280-H340-H350 | < 0.1 % |

Full text of H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information:

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Remove victim out of the danger area. Remove contaminated, saturated clothing. If unconscious but breathing normally, place in recovery position and seek medical advice. Do not leave affected person unattended.

Warning First aider: Pay attention to self-protection!

Following inhalation:

Provide fresh air. In case of respiratory tract irritation, consult a physician. If breathing is irregular or stopped, administer artificial respiration. No mouth-to-mouth or mouth-to-nose resuscitation. Use Ambu bag or ventilator. Get immediate medical advice/attention. Get medical advice/attention if you feel unwell.

In case of skin contact:

After contact with skin, wash immediately with plenty of water and soap. If skin irritation or rash occurs: Get medical advice/attention. Take off immediately all contaminated clothing.

After eye contact:

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Following ingestion:

Do NOT induce vomiting. Rinse mouth. Let water be drunk in little sips (dilution effect). Get medical advice/attention if you feel unwell.

Self-protection of the first aider:

Use personal protection equipment. No direct artificial respiration to be given by first aider. First aider: Pay attention to self-protection!

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

Skin corrosion/irritation Allergic reactions Serious eye damage/eye irritation Asthmatic complaints Respiratory complaints Irritation to respiratory tract Subsequent observance for pneumonia and lung oedema. Dyspnoea

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water spray jet alcohol resistant foam Extinguishing powder Carbon dioxide (CO₂)

5.2. Special hazards arising from the substance or mixture

Combustible Pressurised container: May burst if heated.

Hazardous combustion products:

In case of fire: Gases/vapours, toxic Phosphorus oxide Nitrogen oxides (NO_x) Hydrogen cyanide (hydrocyanic acid) Carbon monoxide Carbon dioxide (CO₂) Hydrogen chloride (HCl)

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing. Move undamaged containers from immediate hazard area if it can be done safely. Use water spray jet to protect personnel and to cool endangered containers. Dilute toxic gases with water mist, expect toxic / caustic rainwater.

5.4. Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Personal precautions:

Remove persons to safety. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof machinery, apparatus, ventilation facilities, tools etc.

Protective equipment:

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

6.1.2. For emergency responders

Personal protection equipment:

Personal protection equipment: see section 8

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6.2. Environmental precautions

Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up

For containment:

Let the product harden and remove it mechanically.

For cleaning up:

Clean contaminated articles and floor according to the environmental legislation. Cleaning agent: Acetone

6.4. Reference to other sections

Safe handling: see section 7 Personal protection equipment: see section 8 Disposal: see section 13

6.5. Additional information

Use appropriate container to avoid environmental contamination.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Protective measures

Advices on safe handling:

Wear personal protection equipment (refer to section 8). Remove contaminated, saturated clothing immediately.

Fire prevent measures:

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof machinery, apparatus, ventilation facilities, tools etc. Take precautionary measures against static discharges. Vapours are heavier than air, spread along floors and form explosive mixtures with air.

Advices on general occupational hygiene

When using do not eat, drink or smoke. Avoid contact with eyes and skin. Wash hands before breaks and after work.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions:

Keep container tightly closed in a cool, well-ventilated place. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

Requirements for storage rooms and vessels:

Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

Hints on storage assembly:

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Storage class: 2B - Aerosol dispensers and lighters

7.3. Specific end use(s)

Recommendation:

construction industry

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. Occupational exposure limit values

| Limit value type (country of origin) | Substance name | ① Long-term occupational exposure limit value ② short-term occupational exposure limit value ③ Instantaneous value ④ Monitoring and observation processes ⑤ Remark |
|--------------------------------------|---|--|
| SI | Diphenylmethandiisocyanat, Isomere und Homologe CAS No.: 9016-87-9 | ① 0.05 mg/m ³ ② 0.05 mg/m ³ ⑤ (als MDI berechnet), (frakcija ki jo je mogoče vdihniti), računati je treba z možnostjo prodiranja skozi kožo |
| TRGS 900 (DE) | Diphenylmethandiisocyanat, Isomere und Homologe CAS No.: 9016-87-9 | ① 0.05 mg/m ³ ② 0.05 mg/m ³ ③ 0.1 mg/m ³ ⑤ (als MDI berechnet), (einatembare Fraktion), kann über die Haut aufgenommen werden |
| PL | propane CAS No.: 74-98-6 | ① 1,800 mg/m ³ |
| NO | propane CAS No.: 74-98-6 | ① 500 ppm (900 mg/m ³) |
| HTP (FI) | propane CAS No.: 74-98-6 | ① 800 ppm (1,500 mg/m ³) ② 1,100 ppm (2,000 mg/m ³) |

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| Limit value type (country of origin) | Substance name | ① Long-term occupational exposure limit value ② short-term occupational exposure limit value ③ Instantaneous value ④ Monitoring and observation processes ⑤ Remark |
|--------------------------------------|-------------------------------------|--|
| PT | propane CAS No.: 74-98-6 | ① 1,000 ppm |
| TRGS 900 (DE) | propane CAS No.: 74-98-6 | ① 1,000 ppm (1,800 mg/m ³) ② 4,000 ppm (7,200 mg/m ³) |
| DK | propane CAS No.: 74-98-6 | ① 1,000 ppm (1,800 mg/m ³) ② 2,000 ppm (3,600 mg/m ³) |
| BE | propane CAS No.: 74-98-6 | ① 1,000 ppm |
| MAK (AT) | propane CAS No.: 74-98-6 | ② 2,000 ppm (3,600 mg/m ³) ⑤ (max. 3x60 min./Schicht, Momentanwert) |
| IE | propane CAS No.: 74-98-6 | ① 1,000 ppm |
| MAK (AT) | propane CAS No.: 74-98-6 | ① 1,000 ppm (1,800 mg/m ³) |
| SI | propane CAS No.: 74-98-6 | ① 1,000 ppm (1,800 mg/m ³) ② 4,000 ppm (7,200 mg/m ³) |
| HTP (FI) | isobutane CAS No.: 75-28-5 | ① 800 ppm (1,900 mg/m ³) ② 1,000 ppm (2,400 mg/m ³) |
| PT | isobutane CAS No.: 75-28-5 | ① 1,000 ppm |
| MAK (AT) | isobutane CAS No.: 75-28-5 | ② 1,600 ppm (3,800 mg/m ³) ⑤ (max. 3x60 min./Schicht) |
| BE | isobutane CAS No.: 75-28-5 | ② 980 ppm (2,370 mg/m ³) |
| TSH (SK) | isobutane CAS No.: 75-28-5 | ① 1,000 ppm (2,400 mg/m ³) |
| SI | isobutane CAS No.: 75-28-5 | ① 1,000 ppm (2,400 mg/m ³) ② 4,000 ppm (9,600 mg/m ³) |
| IE | isobutane CAS No.: 75-28-5 | ② 1,000 ppm |
| ACGIH (US) | isobutane CAS No.: 75-28-5 | ① 1,000 ppm |
| TRGS 900 (DE) | isobutane CAS No.: 75-28-5 | ① 1,000 ppm (2,400 mg/m ³) ② 4,000 ppm (9,600 mg/m ³) |
| MAK (AT) | isobutane CAS No.: 75-28-5 | ① 800 ppm (1,900 mg/m ³) |
| BE | dimethyl ether CAS No.: 115-10-6 | ① 1,000 ppm (1,920 mg/m ³) |
| CZ | dimethyl ether CAS No.: 115-10-6 | ① 522 ppm (1,000 mg/m ³) ② 1,044 ppm (2,000 mg/m ³) |
| PL | dimethyl ether CAS No.: 115-10-6 | ① 1,000 mg/m ³ |
| NO | dimethyl ether CAS No.: 115-10-6 | ① 200 ppm (384 mg/m ³) |
| TRGS 900 (DE) | dimethyl ether CAS No.: 115-10-6 | ① 1,000 ppm (1,900 mg/m ³) ② 8,000 ppm (15,200 mg/m ³) |
| IE | dimethyl ether CAS No.: 115-10-6 | ① 1,000 ppm (1,920 mg/m ³) |
| HTP (FI) | dimethyl ether CAS No.: 115-10-6 | ① 1,000 ppm (2,000 mg/m ³) |
| SE | dimethyl ether CAS No.: 115-10-6 | ① 500 ppm (950 mg/m ³) ③ 800 ppm (1,500 mg/m ³) |

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| Limit value type (country of origin) | Substance name | ① Long-term occupational exposure limit value ② short-term occupational exposure limit value ③ Instantaneous value ④ Monitoring and observation processes ⑤ Remark |
|--------------------------------------|-------------------------------------|--|
| NPEL (SK) | dimethyl ether CAS No.: 115-10-6 | ① 1,000 ppm (1,920 mg/m ³) |
| MAK (AT) | dimethyl ether CAS No.: 115-10-6 | ① 1,000 ppm (1,910 mg/m ³) |
| DK | dimethyl ether CAS No.: 115-10-6 | ① 1,000 ppm (1,920 mg/m ³) |
| MAK (AT) | dimethyl ether CAS No.: 115-10-6 | ② 2,000 ppm (3,820 mg/m ³) ⑤ (max. 3x60 min./Schicht, Momentanwert) |
| HR | dimethyl ether CAS No.: 115-10-6 | ① 1,000 ppm (1,920 mg/m ³) |
| ES | dimethyl ether CAS No.: 115-10-6 | ① 1,000 ppm (1,920 mg/m ³) ⑤ VLI |
| IOELV (EU) | dimethyl ether CAS No.: 115-10-6 | ① 1,000 ppm (1,920 mg/m ³) |
| VRI (FR) | dimethyl ether CAS No.: 115-10-6 | ① 1,000 ppm (1,920 mg/m ³) ⑤ réglementaire indicative |
| SI | dimethyl ether CAS No.: 115-10-6 | ① 1,000 ppm (1,920 mg/m ³) ② 8,000 ppm (15,360 mg/m ³) |
| NL | dimethyl ether CAS No.: 115-10-6 | ① 950 mg/m ³ ② 1,500 mg/m ³ |
| TRK (AT) | buta-1,3-diene CAS No.: 106-99-0 | ① 5 ppm (11 mg/m ³) |
| BE | buta-1,3-diene CAS No.: 106-99-0 | ① 1 ppm (2.2 mg/m ³) |
| CZ | buta-1,3-diene CAS No.: 106-99-0 | ① 0.979 ppm (2.2 mg/m ³) ② 1.78 ppm (4 mg/m ³) ⑤ (1,3-Butadiene, může pronikat pokožkou) |
| PL | buta-1,3-diene CAS No.: 106-99-0 | ① 4.4 mg/m ³ |
| NO | buta-1,3-diene CAS No.: 106-99-0 | ① 1 ppm (2.2 mg/m ³) ⑤ (Kreftframkallende) |
| IE | buta-1,3-diene CAS No.: 106-99-0 | ① 1 ppm (2.2 mg/m ³) |
| SRA (FI) | buta-1,3-diene CAS No.: 106-99-0 | ① 1 ppm (2.2 mg/m ³) |
| SE | buta-1,3-diene CAS No.: 106-99-0 | ① 0.5 ppm (1 mg/m ³) ② 5 ppm (10 mg/m ³) |
| DK | buta-1,3-diene CAS No.: 106-99-0 | ① 1 ppm (2.2 mg/m ³) |
| TRK (AT) | buta-1,3-diene CAS No.: 106-99-0 | ② 20 ppm (44 mg/m ³) ⑤ (max. 4x15 min./Schicht) |
| HR | buta-1,3-diene CAS No.: 106-99-0 | ① 1 ppm (2.2 mg/m ³) |
| ES | buta-1,3-diene CAS No.: 106-99-0 | ① 2 ppm (4.5 mg/m ³) |
| TSH (SK) | buta-1,3-diene CAS No.: 106-99-0 | ① 1 ppm (2.2 mg/m ³) |
| TRGS 910 (DE) | buta-1,3-diene CAS No.: 106-99-0 | ① 0.2 ppm (0.5 mg/m ³) ⑤ (Akzeptanzkonzentration (4E-5)) |
| TRGS 910 (DE) | buta-1,3-diene CAS No.: 106-99-0 | ① 2 ppm (5 mg/m ³) ② 16 ppm (40 mg/m ³) ⑤ (Toleranzkonzentration (4E-3)) |

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| Limit value type (country of origin) | Substance name | ① Long-term occupational exposure limit value ② short-term occupational exposure limit value ③ Instantaneous value ④ Monitoring and observation processes ⑤ Remark |
|--------------------------------------|-------------------------------------|--|
| BOELV (EU) | buta-1,3-diene CAS No.: 106-99-0 | ① 1 ppm (2.2 mg/m ³) |
| NL | buta-1,3-diene CAS No.: 106-99-0 | ① 2 mg/m ³ ⑤ (Kankerverwekkend) |
| ACGIH (US) | buta-1,3-diene CAS No.: 106-99-0 | ① 2 ppm (4.4 mg/m ³) |

8.1.2. Biological limit values

| Limit value type (country of origin) | Substance name | Limit value | ① parameter ② Test material ③ Time of sampling ④ Remark |
|--------------------------------------|-------------------------------------|----------------------|--|
| VLB (ES) | buta-1,3-diene CAS No.: 106-99-0 | 2.5 mg/L | ① Acido 1,2-Dihidroxiutilmercaptúrico ② orina ③ fin de exposición o fin de turno |
| VLB (ES) | buta-1,3-diene CAS No.: 106-99-0 | 2.5 pmol/g Hb | ① Mezcla de 1-N y 2-N-(hidroxiutil) valina aductos de hemoglobina (Hb) ② sangre ③ sin límite |
| ACGIH-BEI (US) | buta-1,3-diene CAS No.: 106-99-0 | 2.5 mg/L | ① 1,2 Dihydroxy-4-(N-acetylcysteinyl)-butane ② urine ③ end of exposure or end of shift |
| ACGIH-BEI (US) | buta-1,3-diene CAS No.: 106-99-0 | 2.5 pmol/g Hb | ① Mixture of N-1 and N2-(hydroxiutil) valine hemoglobin (Hb) adducts ② blood ③ No restriction |
| TRGS 910 (DE) | buta-1,3-diene CAS No.: 106-99-0 | 2,900 µg/g Creatinin | ① 3,4-Dihydroxybutyl-merkaptursäure (DHB-MA) ② Urin ③ bei Langzeitexposition: Expositionsende bzw. Schichtende nach mehreren vorangegangenen Schichten ④ Äquivalenzwert zur Toleranzkonzentration |
| TRGS 910 (DE) | buta-1,3-diene CAS No.: 106-99-0 | 10 µg/g Creatinin | ① 2-Hydroxy-3-butenyl-merkaptursäure (MHB-MA) ② Urin ③ bei Langzeitexposition: Expositionsende bzw. Schichtende nach mehreren vorangegangenen Schichten ④ Äquivalenzwert zur Akzeptanzkonzentration |
| TRGS 910 (DE) | buta-1,3-diene CAS No.: 106-99-0 | 600 µg/g Creatinin | ① 3,4-Dihydroxybutyl-merkaptursäure (DHB-MA) ② Urin ③ bei Langzeitexposition: Expositionsende bzw. Schichtende nach mehreren vorangegangenen Schichten ④ Äquivalenzwert zur Akzeptanzkonzentration |

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| Limit value type (country of origin) | Substance name | Limit value | ① parameter ② Test material ③ Time of sampling ④ Remark |
|--------------------------------------|-------------------------------------|-----------------------|--|
| TRGS 910 (DE) | buta-1,3-diene CAS No.: 106-99-0 | 80 µg/g Cre atinin | ① 2-Hydroxy-3-butenyl-merkaptursäure (MHB- MA) ② Urin ③ bei Langzeitexposition: Expositionsende bzw. Schichtende nach mehreren vorangegan genen Schichten ④ Äquivalenzwert zur Toleranzkonzentration |

8.1.3. DNEL-/PNEC-values

| Substance name | DNEL value | ① DNEL type ② Exposure route |
|---|------------------------|---|
| Reaktionsmasse von Tris(2-chlorpropyl)Phosphat und Tris(2-chlor-1-methylethyl)Phosphat und Phosphorsäure, bis(2-Chlor-1-Methylethyl)2-Chlorpropylester und Phosphorsäure, 2-Chlor-1-Methylethyl-bis(2-Chlorpropyl)Ester, Tris(2-Chlor-1-Methylethyl)Phosphat CAS No.: 1244733-77-4 | 5.82 mg/m ³ | ① DNEL worker ② Long-term - inhalation, systemic effects |
| Reaktionsmasse von Tris(2-chlorpropyl)Phosphat und Tris(2-chlor-1-methylethyl)Phosphat und Phosphorsäure, bis(2-Chlor-1-Methylethyl)2-Chlorpropylester und Phosphorsäure, 2-Chlor-1-Methylethyl-bis(2-Chlorpropyl)Ester, Tris(2-Chlor-1-Methylethyl)Phosphat CAS No.: 1244733-77-4 | 1.46 mg/m ³ | ① DNEL Consumer ② Long-term - inhalation, systemic effects |
| Reaktionsmasse von Tris(2-chlorpropyl)Phosphat und Tris(2-chlor-1-methylethyl)Phosphat und Phosphorsäure, bis(2-Chlor-1-Methylethyl)2-Chlorpropylester und Phosphorsäure, 2-Chlor-1-Methylethyl-bis(2-Chlorpropyl)Ester, Tris(2-Chlor-1-Methylethyl)Phosphat CAS No.: 1244733-77-4 | 22.4 mg/m ³ | ① DNEL worker ② Acute - inhalation, systemic effects |
| Reaktionsmasse von Tris(2-chlorpropyl)Phosphat und Tris(2-chlor-1-methylethyl)Phosphat und Phosphorsäure, bis(2-Chlor-1-Methylethyl)2-Chlorpropylester und Phosphorsäure, 2-Chlor-1-Methylethyl-bis(2-Chlorpropyl)Ester, Tris(2-Chlor-1-Methylethyl)Phosphat CAS No.: 1244733-77-4 | 11.2 mg/m ³ | ① DNEL Consumer ② Acute - inhalation, systemic effects |
| Reaktionsmasse von Tris(2-chlorpropyl)Phosphat und Tris(2-chlor-1-methylethyl)Phosphat und Phosphorsäure, bis(2-Chlor-1-Methylethyl)2-Chlorpropylester und Phosphorsäure, 2-Chlor-1-Methylethyl-bis(2-Chlorpropyl)Ester, Tris(2-Chlor-1-Methylethyl)Phosphat CAS No.: 1244733-77-4 | 2.08 mg/kg bw/day | ① DNEL worker ② Long-term - dermal, systemic effects |
| Reaktionsmasse von Tris(2-chlorpropyl)Phosphat und Tris(2-chlor-1-methylethyl)Phosphat und Phosphorsäure, bis(2-Chlor-1-Methylethyl)2-Chlorpropylester und Phosphorsäure, 2-Chlor-1-Methylethyl-bis(2-Chlorpropyl)Ester, Tris(2-Chlor-1-Methylethyl)Phosphat CAS No.: 1244733-77-4 | 1.04 mg/kg bw/day | ① DNEL Consumer ② Long-term - dermal, systemic effects |
| Reaktionsmasse von Tris(2-chlorpropyl)Phosphat und Tris(2-chlor-1-methylethyl)Phosphat und Phosphorsäure, bis(2-Chlor-1-Methylethyl)2-Chlorpropylester und Phosphorsäure, 2-Chlor-1-Methylethyl-bis(2-Chlorpropyl)Ester, Tris(2-Chlor-1-Methylethyl)Phosphat CAS No.: 1244733-77-4 | 8 mg/kg bw/ day | ① DNEL worker ② Acute - dermal, systemic effects |

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| Substance name | DNEL value | ① DNEL type ② Exposure route |
|---|-------------------|---|
| Reaktionsmasse von Tris(2-chlorpropyl)Phosphat und Tris(2-chlor-1-methylethyl)Phosphat und Phosphorsäure, bis(2-Chlor-1-Methylethyl)2-Chlorpropylester und Phosphorsäure, 2-Chlor-1-Methylethyl-bis(2-Chlorpropyl)Ester, Tris(2-Chlor-1-Methylethyl)Phosphat CAS No.: 1244733-77-4 | 4 mg/kg bw/day | ① DNEL Consumer ② Acute - dermal, systemic effects |
| Reaktionsmasse von Tris(2-chlorpropyl)Phosphat und Tris(2-chlor-1-methylethyl)Phosphat und Phosphorsäure, bis(2-Chlor-1-Methylethyl)2-Chlorpropylester und Phosphorsäure, 2-Chlor-1-Methylethyl-bis(2-Chlorpropyl)Ester, Tris(2-Chlor-1-Methylethyl)Phosphat CAS No.: 1244733-77-4 | 0.52 mg/kg bw/day | ① DNEL Consumer ② Long-term - oral, systemic effects |

| Substance name | PNEC Value | ① PNEC type |
|---|--------------------|-------------------------------|
| Reaktionsmasse von Tris(2-chlorpropyl)Phosphat und Tris(2-chlor-1-methylethyl)Phosphat und Phosphorsäure, bis(2-Chlor-1-Methylethyl)2-Chlorpropylester und Phosphorsäure, 2-Chlor-1-Methylethyl-bis(2-Chlorpropyl)Ester, Tris(2-Chlor-1-Methylethyl)Phosphat CAS No.: 1244733-77-4 | 0.64 mg/l | ① PNEC aquatic, freshwater |
| Reaktionsmasse von Tris(2-chlorpropyl)Phosphat und Tris(2-chlor-1-methylethyl)Phosphat und Phosphorsäure, bis(2-Chlor-1-Methylethyl)2-Chlorpropylester und Phosphorsäure, 2-Chlor-1-Methylethyl-bis(2-Chlorpropyl)Ester, Tris(2-Chlor-1-Methylethyl)Phosphat CAS No.: 1244733-77-4 | 0.064 mg/l | ① PNEC aquatic, marine water |
| Reaktionsmasse von Tris(2-chlorpropyl)Phosphat und Tris(2-chlor-1-methylethyl)Phosphat und Phosphorsäure, bis(2-Chlor-1-Methylethyl)2-Chlorpropylester und Phosphorsäure, 2-Chlor-1-Methylethyl-bis(2-Chlorpropyl)Ester, Tris(2-Chlor-1-Methylethyl)Phosphat CAS No.: 1244733-77-4 | 7.84 mg/l | ① PNEC sewage treatment plant |
| Reaktionsmasse von Tris(2-chlorpropyl)Phosphat und Tris(2-chlor-1-methylethyl)Phosphat und Phosphorsäure, bis(2-Chlor-1-Methylethyl)2-Chlorpropylester und Phosphorsäure, 2-Chlor-1-Methylethyl-bis(2-Chlorpropyl)Ester, Tris(2-Chlor-1-Methylethyl)Phosphat CAS No.: 1244733-77-4 | 13.4 mg/kg | ① PNEC sediment, freshwater |
| Reaktionsmasse von Tris(2-chlorpropyl)Phosphat und Tris(2-chlor-1-methylethyl)Phosphat und Phosphorsäure, bis(2-Chlor-1-Methylethyl)2-Chlorpropylester und Phosphorsäure, 2-Chlor-1-Methylethyl-bis(2-Chlorpropyl)Ester, Tris(2-Chlor-1-Methylethyl)Phosphat CAS No.: 1244733-77-4 | 1.34 mg/kg | ① PNEC sediment, marine water |
| Reaktionsmasse von Tris(2-chlorpropyl)Phosphat und Tris(2-chlor-1-methylethyl)Phosphat und Phosphorsäure, bis(2-Chlor-1-Methylethyl)2-Chlorpropylester und Phosphorsäure, 2-Chlor-1-Methylethyl-bis(2-Chlorpropyl)Ester, Tris(2-Chlor-1-Methylethyl)Phosphat CAS No.: 1244733-77-4 | 1.7 mg/kg | ① PNEC soil |
| dimethyl ether CAS No.: 115-10-6 | 0.681 mg/kg bw/day | ① PNEC sediment, freshwater |
| dimethyl ether CAS No.: 115-10-6 | 0.069 mg/kg bw/day | ① PNEC sediment, marine water |
| dimethyl ether CAS No.: 115-10-6 | 0.045 mg/kg bw/day | ① PNEC soil |

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8.2. Exposure controls

8.2.1. Appropriate engineering controls

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof machinery, apparatus, ventilation facilities, tools etc. Take precautionary measures against static discharges.

8.2.2. Personal protection equipment

Eye/face protection:

Eye glasses with side protection DIN EN 166

Skin protection:

Tested protective gloves must be worn EN ISO 374 Suitable material: Polyethylene In the case of wanting to use the gloves again, clean them before taking off and air them well.

Respiratory protection:

Concentration air > Exposure limit value Filter type:A

Other protection measures:

When using do not eat, drink, smoke, sniff. Wash hands before breaks and after work.

8.2.3. Environmental exposure controls

No data available

8.3. Additional information

No data available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state: Aerosol

Colour: blue

Odour: not determined

Safety relevant basis data

| parameter | | at °C | Method | Remark |
|--|-------------------------|-------|--------|--------------------|
| pH | <i>not determined</i> | | | |
| Melting point | <i>not determined</i> | | | |
| Freezing point | <i>not determined</i> | | | |
| Initial boiling point and boiling range | <i>not determined</i> | | | |
| Decomposition temperature | <i>not determined</i> | | | |
| Flash point | <i>not determined</i> | | | |
| Evaporation rate | <i>not determined</i> | | | |
| Auto-ignition temperature | <i>not determined</i> | | | |
| Upper/lower flammability or explosive limits | <i>not determined</i> | | | |
| Vapour pressure | <i>not determined</i> | | | |
| Vapour density | <i>not determined</i> | | | |
| Density | ≈ 950 kg/m ³ | 20 °C | | |
| Bulk density | <i>not determined</i> | | | |
| Water solubility | | | | insoluble in:water |
| Partition coefficient: n-octanol/water | <i>not determined</i> | | | |
| Dynamic viscosity | <i>not determined</i> | | | |
| Kinematic viscosity | <i>not determined</i> | | | |

9.2. Other information

Volatile organic compounds: 19,79-20,56 %

SECTION 10: Stability and reactivity

10.1. Reactivity

Pressurised container: May burst if heated. Extremely flammable aerosol. The vapour of the product is heavier than air and may accumulate below ground level, in pits, channels and basements in higher concentration. Ignition

10.2. Chemical stability

The product is chemically stable under recommended conditions of storage, use and temperature.

10.3. Possibility of hazardous reactions

Can polymerize when the temperature rises

10.4. Conditions to avoid

Do not expose to temperatures exceeding 50 °C/122 °F. Use explosion-proof machinery, apparatus, ventilation facilities, tools etc. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharges.

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10.5. Incompatible materials

Strong alkali Strong acid Amines

10.6. Hazardous decomposition products

In case of fire: Gases/vapours, toxic Phosphorus oxide Nitrogen oxides (NOx) Hydrogen cyanide (hydrocyanic acid)
 Carbon monoxide Carbon dioxide (CO2) Hydrogen chloride (HCl)

SECTION 11: Toxicological information

11.1. Information on toxicological effects

| CAS No. | Substance name | Toxicological information |
|-----------|---|--|
| 9016-87-9 | Diphenylmethandiisocyanat, Isomere und Homologe | LD₅₀ oral: >10,000 mg/kg (Ratte) OECD Guideline 401 LD₅₀ dermal: >9,400 mg/kg (Ratte) |

Acute inhalation toxicity:

Harmful if inhaled.

Skin corrosion/irritation:

Causes skin irritation.

Serious eye damage/irritation:

Causes serious eye irritation.

Respiratory or skin sensitisation:

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

Carcinogenicity:

Suspected of causing cancer.

STOT-single exposure:

May cause respiratory irritation.

STOT-repeated exposure:

May cause damage to organs through prolonged or repeated exposure.

Additional information:

No data available

SECTION 12: Ecological information

12.1. Toxicity

| CAS No. | Substance name | Toxicological information |
|------------------|--|--|
| 9016-87-9 | Diphenylmethandiisocyanat, Isomere und Homologe | LC₅₀: >1,000 mg/l (Danio rerio) OECD Guideline 203 (Fish Acute Toxicity Test) |
| 124473 3-77-4 | Reaktionsmasse von Tris(2-chlorpropyl)Phosphat und Tris(2-chlor-1-methylethyl)Phosphat und Phosphorsäure, bis(2-Chlor-1-Methylethyl)2-Chlorpropylester und Phosphorsäure, 2-Chlor-1-Methylethyl-bis(2-Chlorpropyl)Ester, Tris(2-Chlor-1-Methylethyl)Phosphat | LC₅₀: =56.2 mg/l 4 d (fish, brachydanio rerio) Süßwasser LC₅₀: =131 mg/l 2 d (crustaceans, Daphnia magna) Süßwasser ErC₅₀: =82 mg/l 3 d (Algae/water plant, Pseudokirchneriella subcapitata) OECD 201 NOEC: =32 mg/l 21 d (crustaceans, Daphnia magna) OECD 202 EC₅₀: =784 mg/l (Belebtschlamm) ISO 8192 LOEC: =99 mg/l (Ratte) |
| 74-98-6 | propane | LC₅₀: 24 mg/l 4 d (fish, Pisces) EC₅₀: 7 mg/l 2 d (crustaceans, Daphnia magna) IC₅₀: 8 mg/l 3 d (Algae/water plant, Algae) EC₅₀: 10 mg/l (Belebtschlamm) |
| 115-10-6 | dimethyl ether | LC₅₀: 1,000 mg/l 4 d (fish, Pisces) LC₅₀: 4,400 mg/l 2 d (crustaceans, Daphnia magna) |

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12.2. Persistence and degradability

| CAS No. | Substance name | Biodegradation | Remark |
|-----------|---|----------------|--|
| 9016-87-9 | Diphenylmethandiisocyanat, Isomere und Homologe | Yes, slowly | OECD 302C: < 60 % |
| 115-10-6 | dimethyl ether | Yes, slowly | OECD 301A: DOC Die- Away Test 5 % 28 d; Halbwertszeit Boden 2/15/QSAR) Tage[e] |

12.3. Bioaccumulative potential

| CAS No. | Substance name | Log K _{ow} | Bioconcentration factor (BCF) |
|------------------|--|---------------------|--------------------------------|
| 9016-87-9 | Diphenylmethandiisocyanat, Isomere und Homologe | | 1 Species: pisces |
| 124473 3-77-4 | Reaktionsmasse von Tris(2-chlorpropyl)Phosphat und Tris(2-chlor-1-methylethyl)Phosphat und Phosphorsäure, bis(2-Chlor-1-Methylethyl)2-Chlorpropylester und Phosphorsäure, 2-Chlor-1-Methylethyl-bis(2-Chlorpropyl)Ester, Tris(2-Chlor-1-Methylethyl)Phosphat | = 2.68 | = 7.4 Species: Cyprinus carpio |

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

| CAS No. | Substance name | Results of PBT and vPvB assessment |
|------------------|--|------------------------------------|
| 9016-87-9 | Diphenylmethandiisocyanat, Isomere und Homologe | vPvB-substance. |
| 124473 3-77-4 | Reaktionsmasse von Tris(2-chlorpropyl)Phosphat und Tris(2-chlor-1-methylethyl)Phosphat und Phosphorsäure, bis(2-Chlor-1-Methylethyl)2-Chlorpropylester und Phosphorsäure, 2-Chlor-1-Methylethyl-bis(2-Chlorpropyl)Ester, Tris(2-Chlor-1-Methylethyl)Phosphat | — |
| 74-98-6 | propane | — |
| 75-28-5 | isobutane | — |
| 115-10-6 | dimethyl ether | — |

12.6. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Hazardous waste according to Directive 2008/98/EC (waste framework directive).

13.1.1. Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV

Waste code product:

| | |
|------------|---|
| 16 05 04 * | Gases in pressure containers (including halons) containing hazardous substances |
| 08 05 01 * | Waste isocyanates |

*: Evidence for disposal must be provided.

Waste code packaging:

| | |
|------------|--|
| 15 01 10 * | packaging containing residues of or contaminated by dangerous substances |
|------------|--|

*: Evidence for disposal must be provided.

Waste treatment options

Appropriate disposal / Product:

Consult the appropriate local waste disposal expert about waste disposal.





13.2. Additional information

No data available

SECTION 14: Transport information

| Land transport (ADR/RID) | Inland waterway craft (ADN) | Sea transport (IMDG) | Air transport (ICAO-TI / IATA-DGR) |
|--------------------------|-----------------------------|----------------------|------------------------------------|
| 14.1. UN-No. | | | |
| UN 1950 | UN 1950 | UN 1950 | UN 1950 |

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| Land transport (ADR/RID) | Inland waterway craft (ADN) | Sea transport (IMDG) | Air transport (ICAO-TI / IATA-DGR) |
|--|---|---|--|
| 14.2. UN proper shipping name | | | |
| AEROSOLS | AEROSOLS | AEROSOLS | AEROSOLS |
| 14.3. Transport hazard class(es) | | | |
|  2.1 |  2.1 |  2.1 |  2.1 |
| 14.4. Packing group | | | |
| No data available | | | |
| 14.5. Environmental hazards | | | |
| No data available | | | |
| 14.6. Special precautions for user | | | |
| Special provisions: 190,327,344,625 Limited quantity (LQ): 1 L, The Limited Quantity specifies the inner packaging size. Packages may not exceed 30 kg gross mass. Excepted Quantities (EQ): Hazard identification number (Kemler No.): Classification code: 5F Remark: | Special provisions: 190,327,344,625 Limited quantity (LQ): 1 L, The Limited Quantity specifies the inner packaging size. Packages may not exceed 30 kg gross mass. Excepted Quantities (EQ): Classification code: 5F Remark: | Special provisions: 63,190,277,327,344,381,959 Limited quantity (LQ): 1 L, The Limited Quantity specifies the inner packaging size. Packages may not exceed 30 kg gross mass. Excepted Quantities (EQ): EmS-No.: Remark: | Special provisions: A145,A167,A802 Limited quantity (LQ): 1 L, The Limited Quantity specifies the inner packaging size. Packages may not exceed 30 kg gross mass. Excepted Quantities (EQ): Remark: |
| 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code | | | |
| not relevant | | | |

SECTION 15: Regulatory information

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

15.1.1. EU legislation

Authorisations:

is subject to the restrictions in Annex XVII of Regulation (EC) No. 1907/2006

15.1.2. National regulations

[DE] National regulations

Restrictions of occupation

Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Technische Anleitung Luft (TA-Luft)

Klasse 1:

5.2.5;l

Water hazard class

WGK:

1 - schwach wassergefährdend

Technische Regeln für Gefahrstoffe

TRGS 905

15.2. Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

15.3. Additional information

No data available

SECTION 16: Other information

16.1. Indication of changes

No data available

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16.2. Abbreviations and acronyms

For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).

16.3. Key literature references and sources for data

No data available

16.4. Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

Classification according to Regulation (EC) No 1272/2008 [CLP]:

| Hazard classes and hazard categories | Hazard statements | Classification procedure |
|--|---|--------------------------|
| Aerosols (<i>Aerosol 1</i>) | H222; H229: Extremely flammable aerosol.; Pressurised container: May burst if heated. | |
| Skin corrosion/irritation (<i>Skin Irrit. 2</i>) | H315: Causes skin irritation. | |
| Respiratory or skin sensitisation (<i>Skin Sens. 1</i>) | H317: May cause an allergic skin reaction. | |
| Serious eye damage/eye irritation (<i>Eye Irrit. 2</i>) | H319: Causes serious eye irritation. | |
| Acute toxicity (inhalative) (<i>Acute Tox. 4</i>) | H332: Harmful if inhaled. | |
| Respiratory or skin sensitisation (<i>Resp. Sens. 1</i>) | H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled. | |
| STOT-single exposure (<i>STOT SE 3</i>) | H335: May cause respiratory irritation. | |
| Carcinogenicity (<i>Carc. 2</i>) | H351: Suspected of causing cancer. | |
| STOT-repeated exposure (<i>STOT RE 2</i>) | H373: May cause damage to organs through prolonged or repeated exposure. (Inhalation) | |

16.5. Relevant R-, H- and EUH-phrases (Number and full text)

| Hazard statements | |
|-------------------|--|
| H220 | Extremely flammable gas. |
| H280 | Contains gas under pressure; may explode if heated. |
| 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. |
| H340 | May cause genetic defects. |
| H350 | May cause cancer. |
| H351 | Suspected of causing cancer. |
| H373 | May cause damage to organs through prolonged or repeated exposure. (...) |

16.6. Training advice

Regular employee training is required by law when working with hazardous substances.

16.7. Additional information

No data available