

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Commission Regulation (EU) 2020/878 - Switzerland

# SAFETY DATA SHEET

LFFR Lead Free Flux Remover Aerosol

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

### 1.1 Product identifier

**Product name** : LFFR Lead Free Flux Remover Aerosol  
**UFI** : SAJC-W96T-700N-C048  
**Product code** : 30005502.0400ML

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

#### Identified uses

Industrial cleaners.  
Industrial applications, Professional applications.

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

**e-mail address of person responsible for this SDS** : Europeanregulatory@macdermid.com

**Supplier** : Alpha Assembly Solutions Germany GmbH  
Elisabeth-Selbert-Straße  
40764  
Langenfeld  
Germany

**Information contact** : Tel. No.: +49 2173 8490 300  
salesEU@AlphaAssembly.com

### 1.4 Emergency telephone number

#### National advisory body/Poison Centre

**Telephone number** : Tox Info Suisse, Tel. 145

#### Supplier

**Telephone number** : Carechem24: +44 1235 239670 (across Europe)  
**Hours of operation** : 24/7

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**Product definition** : Mixture

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

## SECTION 2: Hazards identification

Aerosol 1, H222, H229  
Skin Irrit. 2, H315  
Eye Irrit. 2, H319  
Skin Sens. 1, H317  
STOT SE 3, H336  
Aquatic Acute 1, H400  
Aquatic Chronic 1, H410

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

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

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

### 2.2 Label elements

#### Hazard pictograms

:



#### Signal word

: Danger

#### Hazard statements

: H222, H229 - Extremely flammable aerosol. Pressurised container: may burst if heated.  
H315 - Causes skin irritation.  
H317 - May cause an allergic skin reaction.  
H319 - Causes serious eye irritation.  
H336 - May cause drowsiness or dizziness.  
H410 - Very toxic to aquatic life with long lasting effects.

#### Precautionary statements

##### Prevention

: P251 - Do not pierce or burn, even after use.

##### Response

: P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor.  
P331 - Do NOT induce vomiting.  
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P337 + P313 - If eye irritation persists: Get medical advice or attention.

##### Storage

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

##### Disposal

: P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

#### Hazardous ingredients

: cyclohexane  
propan-2-ol  
1-methoxypropan-2-ol  
(R)-p-mentha-1,8-diene

#### Supplemental label elements

: Not applicable.

#### Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

: Not applicable.

#### Special packaging requirements

### 2.3 Other hazards

#### Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

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

## SECTION 2: Hazards identification

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

## SECTION 3: Composition/information on ingredients

3.2 Mixtures : Mixture

| Product/ingredient name                                | Identifiers  | %         | Classification   | Specific Conc. Limits, M-factors and ATEs | Type    |
|--|--|-----------|--|---|---------|
| cyclohexane  | EC: 203-806-2<br>CAS: 110-82-7<br>Index: 601-017-00-1  | ≥25 - ≤50 | Flam. Liq. 2, H225<br>Skin Irrit. 2, H315<br>STOT SE 3, H336<br>Asp. Tox. 1, H304<br>Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410  | M [Acute] = 1<br>M [Chronic] = 1          | [1] [2] |
| propan-2-ol  | EC: 200-661-7<br>CAS: 67-63-0<br>Index: 603-117-00-0   | ≥10 - ≤25 | Flam. Liq. 2, H225<br>Eye Irrit. 2, H319<br>STOT SE 3, H336  | -   | [1] [2] |
| 1-methoxypropan-2-ol                                   | EC: 203-539-1<br>CAS: 107-98-2<br>Index: 603-064-00-3  | ≥10 - ≤25 | Flam. Liq. 3, H226<br>STOT SE 3, H336  | -   | [1] [2] |
| Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane | -  | ≤10       | Flam. Liq. 2, H225<br>STOT SE 3, H336<br>Asp. Tox. 1, H304<br>Aquatic Chronic 2, H411  | -   | [1]     |
| n-butyl acetate  | EC: 204-658-1<br>CAS: 123-86-4<br>Index: 607-025-00-1  | ≤5        | Flam. Liq. 3, H226<br>STOT SE 3, H336<br>EUH066  | EUH066: C ≥ 10%                           | [1] [2] |
| (R)-p-mentha-1,8-diene                                 | EC: 227-813-5<br>CAS: 5989-27-5<br>Index: 601-096-00-2 | ≤5        | Flam. Liq. 3, H226<br>Skin Irrit. 2, H315<br>Skin Sens. 1B, H317<br>Asp. Tox. 1, H304<br>Aquatic Acute 1, H400<br>Aquatic Chronic 3, H412  | M [Acute] = 1                             | [1] [2] |
| carbon dioxide   | REACH #: Annex IV<br>EC: 204-696-9<br>CAS: 124-38-9    | ≤5        | Press. Gas (Comp.), H280   | -   | [2]     |
| n-hexane   | EC: 203-777-6<br>CAS: 110-54-3<br>Index: 601-037-00-0  | <3        | Flam. Liq. 2, H225<br>Skin Irrit. 2, H315<br>Repr. 2, H361f<br>STOT SE 3, H336<br>STOT RE 2, H373<br>Asp. Tox. 1, H304<br>Aquatic Chronic 2, H411<br><b>See Section 16 for the full text of the H statements declared above.</b> | STOT RE 2, H373: C ≥ 5%                   | [1] [2] |

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

## SECTION 3: Composition/information on ingredients

### Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

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

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

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

#### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness
- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing  
nausea or vomiting  
headache  
drowsiness/fatigue  
dizziness/vertigo  
unconsciousness
- Skin contact** : Adverse symptoms may include the following:  
irritation  
redness
- Ingestion** : No specific data.

## SECTION 4: First aid measures

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

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

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

- Hazards from the substance or mixture** : Extremely flammable aerosol. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Gas may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back, causing fire or explosion. Bursting aerosol containers may be propelled from a fire at high speed. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous combustion products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide

### 5.3 Advice for firefighters

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
- Additional information** : Not tested

## SECTION 6: Accidental release measures

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

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. In the case of aerosols being ruptured, care should be taken due to the rapid escape of the pressurised contents and propellant. If a large number of containers are ruptured, treat as a bulk material spillage according to the instructions in the clean-up section. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

### 6.2 Environmental precautions

- : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

## SECTION 6: Accidental release measures

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

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product.

- 6.4 Reference to other sections** : See Section 1 for emergency contact information.  
See Section 8 for information on appropriate personal protective equipment.  
See Section 13 for additional waste treatment information.

## SECTION 7: Handling and storage

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

### 7.1 Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Pressurised container: protect from sunlight and do not expose to temperature exceeding 50°C. Do not pierce or burn, even after use. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing gas. Avoid breathing vapour or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

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

Store in accordance with local regulations. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

### 7.3 Specific end use(s)

- Recommendations** : No specific measures identified.
- Industrial sector specific solutions** : No specific measures identified.

## SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

### 8.1 Control parameters

#### Occupational exposure limits

| Product/ingredient name | Exposure limit values   |
|-------------------------|---|
| cyclohexane             | <b>SUVA (Switzerland, 1/2023).</b><br>TWA: 200 ppm 8 hours.<br>TWA: 700 mg/m <sup>3</sup> 8 hours.<br>STEL: 800 ppm 15 minutes.<br>STEL: 2800 mg/m <sup>3</sup> 15 minutes.                       |
| propan-2-ol             | <b>SUVA (Switzerland, 3/2022).</b><br>STEL: 1000 mg/m <sup>3</sup> 15 minutes.<br>STEL: 400 ppm 15 minutes.<br>TWA: 500 mg/m <sup>3</sup> 8 hours.<br>TWA: 200 ppm 8 hours.                       |
| 1-methoxypropan-2-ol    | <b>SUVA (Switzerland, 3/2022).</b><br>TWA: 100 ppm 8 hours.<br>TWA: 360 mg/m <sup>3</sup> 8 hours.<br>STEL: 200 ppm 15 minutes.<br>STEL: 720 mg/m <sup>3</sup> 15 minutes.                        |
| n-butyl acetate         | <b>SUVA (Switzerland, 3/2022).</b><br>TWA: 50 ppm 8 hours.<br>TWA: 240 mg/m <sup>3</sup> 8 hours.<br>STEL: 150 ppm 15 minutes.<br>STEL: 720 mg/m <sup>3</sup> 15 minutes.                         |
| (R)-p-mentha-1,8-diene  | <b>SUVA (Switzerland, 3/2022). Skin sensitiser.</b><br>STEL: 14 ppm 15 minutes.<br>STEL: 80 mg/m <sup>3</sup> 15 minutes.<br>TWA: 7 ppm 8 hours.<br>TWA: 40 mg/m <sup>3</sup> 8 hours.            |
| carbon dioxide          | <b>SUVA (Switzerland, 1/2023).</b><br>TWA: 5000 ppm 8 hours.<br>TWA: 9000 mg/m <sup>3</sup> 8 hours.  |
| n-hexane                | <b>SUVA (Switzerland, 1/2023). Absorbed through skin.</b><br>TWA: 50 ppm 8 hours.<br>TWA: 180 mg/m <sup>3</sup> 8 hours.<br>STEL: 400 ppm 15 minutes.<br>STEL: 1440 mg/m <sup>3</sup> 15 minutes. |

**Recommended monitoring procedures** : Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

#### DNELs/DMELs

## SECTION 8: Exposure controls/personal protection

| Product/ingredient name | Type            | Exposure              | Value                   | Population           | Effects            |          |
|-------------------------|-----------------|-----------------------|-------------------------|----------------------|--------------------|----------|
| cyclohexane             | DNEL            | Long term Oral        | 59.4 mg/kg bw/day       | General population   | Systemic           |          |
|                         | DNEL            | Long term Inhalation  | 206 mg/m <sup>3</sup>   | General population   | Local              |          |
|                         | DNEL            | Long term Inhalation  | 206 mg/m <sup>3</sup>   | General population   | Systemic           |          |
|                         | DNEL            | Short term Inhalation | 412 mg/m <sup>3</sup>   | General population   | Local              |          |
|                         | DNEL            | Short term Inhalation | 412 mg/m <sup>3</sup>   | General population   | Systemic           |          |
|                         | DNEL            | Long term Inhalation  | 700 mg/m <sup>3</sup>   | Workers              | Local              |          |
|                         | DNEL            | Long term Inhalation  | 700 mg/m <sup>3</sup>   | Workers              | Systemic           |          |
|                         | DNEL            | Long term Dermal      | 1186 mg/kg bw/day       | General population   | Systemic           |          |
|                         | DNEL            | Short term Inhalation | 1400 mg/m <sup>3</sup>  | Workers              | Local              |          |
|                         | DNEL            | Short term Inhalation | 1400 mg/m <sup>3</sup>  | Workers              | Systemic           |          |
|                         | DNEL            | Long term Dermal      | 2016 mg/kg bw/day       | Workers              | Systemic           |          |
|                         | propan-2-ol     | DNEL                  | Long term Oral          | 26 mg/kg bw/day      | General population | Systemic |
|                         |                 | DNEL                  | Long term Inhalation    | 89 mg/m <sup>3</sup> | General population | Systemic |
| DNEL                    |                 | Long term Dermal      | 319 mg/kg bw/day        | General population   | Systemic           |          |
| DNEL                    |                 | Long term Inhalation  | 500 mg/m <sup>3</sup>   | Workers              | Systemic           |          |
| DNEL                    |                 | Long term Dermal      | 888 mg/kg bw/day        | Workers              | Systemic           |          |
| 1-methoxypropan-2-ol    | DNEL            | Long term Oral        | 33 mg/kg bw/day         | General population   | Systemic           |          |
|                         | DNEL            | Long term Inhalation  | 43.9 mg/m <sup>3</sup>  | General population   | Systemic           |          |
|                         | DNEL            | Long term Dermal      | 78 mg/kg bw/day         | General population   | Systemic           |          |
|                         | DNEL            | Long term Dermal      | 183 mg/kg bw/day        | Workers              | Systemic           |          |
|                         | DNEL            | Long term Inhalation  | 369 mg/m <sup>3</sup>   | Workers              | Systemic           |          |
|                         | DNEL            | Short term Inhalation | 553.5 mg/m <sup>3</sup> | Workers              | Local              |          |
|                         | DNEL            | Short term Inhalation | 553.5 mg/m <sup>3</sup> | Workers              | Systemic           |          |
|                         | n-butyl acetate | DNEL                  | Short term Oral         | 2 mg/kg bw/day       | General population | Systemic |
| DNEL                    |                 | Long term Oral        | 2 mg/kg bw/day          | General population   | Systemic           |          |
| DNEL                    |                 | Long term Dermal      | 3.4 mg/kg bw/day        | General population   | Systemic           |          |
| DNEL                    |                 | Short term Dermal     | 6 mg/kg bw/day          | General population   | Systemic           |          |
| DNEL                    |                 | Long term Dermal      | 7 mg/kg bw/day          | Workers              | Systemic           |          |
| DNEL                    |                 | Short term Dermal     | 11 mg/kg bw/day         | Workers              | Systemic           |          |
| DNEL                    |                 | Long term Inhalation  | 12 mg/m <sup>3</sup>    | General population   | Systemic           |          |

## SECTION 8: Exposure controls/personal protection

|                        |      |                       |                        |                    |          |
|------------------------|------|-----------------------|------------------------|--------------------|----------|
| (R)-p-mentha-1,8-diene | DNEL | Long term Inhalation  | 35.7 mg/m <sup>3</sup> | General population | Local    |
|                        | DNEL | Long term Inhalation  | 48 mg/m <sup>3</sup>   | Workers            | Systemic |
|                        | DNEL | Short term Inhalation | 300 mg/m <sup>3</sup>  | General population | Local    |
|                        | DNEL | Short term Inhalation | 300 mg/m <sup>3</sup>  | General population | Systemic |
|                        | DNEL | Long term Inhalation  | 300 mg/m <sup>3</sup>  | Workers            | Local    |
|                        | DNEL | Short term Inhalation | 600 mg/m <sup>3</sup>  | Workers            | Local    |
|                        | DNEL | Short term Inhalation | 600 mg/m <sup>3</sup>  | Workers            | Systemic |
|                        | DNEL | Long term Oral        | 4.8 mg/kg bw/day       | General population | Systemic |
|                        | DNEL | Long term Dermal      | 4.8 mg/kg bw/day       | General population | Systemic |
|                        | DNEL | Long term Dermal      | 9.5 mg/kg bw/day       | Workers            | Systemic |
| n-hexane               | DNEL | Long term Inhalation  | 16.6 mg/m <sup>3</sup> | General population | Systemic |
|                        | DNEL | Long term Inhalation  | 66.7 mg/m <sup>3</sup> | Workers            | Systemic |
|                        | DNEL | Long term Oral        | 4 mg/kg bw/day         | General population | Systemic |
|                        | DNEL | Long term Dermal      | 5.3 mg/kg bw/day       | General population | Systemic |
|                        | DNEL | Long term Dermal      | 11 mg/kg bw/day        | Workers            | Systemic |
|                        | DNEL | Long term Inhalation  | 16 mg/m <sup>3</sup>   | General population | Systemic |
|                        | DNEL | Long term Inhalation  | 75 mg/m <sup>3</sup>   | Workers            | Systemic |

### PNECs

| Product/ingredient name | Compartment Detail     | Value         | Method Detail            |
|-------------------------|------------------------|---------------|--------------------------|
| propan-2-ol             | Fresh water            | 140.9 mg/l    | Sensitivity Distribution |
|                         | Marine water           | 140.9 mg/l    | Sensitivity Distribution |
|                         | Sewage Treatment Plant | 2251 mg/l     | -                        |
|                         | Fresh water sediment   | 552 mg/kg dwt | Equilibrium Partitioning |
|                         | Marine water sediment  | 552 mg/kg dwt | Equilibrium Partitioning |
|                         | Soil                   | 28 mg/kg dwt  | Equilibrium Partitioning |
|                         | Secondary Poisoning    | 160 mg/kg     | -                        |

## 8.2 Exposure controls

### Appropriate engineering controls

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

### Individual protection measures

#### Hygiene measures

: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

## SECTION 8: Exposure controls/personal protection

- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If inhalation hazards exist, a full-face respirator may be required instead.  
If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: Chemical splash goggles. Use eye protection according to EN 166.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.  
Wear suitable gloves tested to EN374.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves. Refer to European Standard EN 1149 for further information on material and design requirements and test methods.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.  
In case of inadequate ventilation wear respiratory protection: multi-gas/vapour filter (organic vapour filter (Type A)) Use respiratory protection according to EN 529.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

## SECTION 9: Physical and chemical properties

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

### 9.1 Information on basic physical and chemical properties

#### Appearance

- Physical state** : Liquid. [Aerosol]
- Colour** : Colourless.
- Odour** : Fruity.
- Odour threshold** : There are no data available on the mixture itself.
- Melting point/freezing point** : There are no data available on the mixture itself.
- Initial boiling point and boiling range** : >80°C (>176°F)
- Flammability** : Extremely flammable in the presence of the following materials or conditions: open flames, sparks and static discharge.
- Lower and upper explosion limit** : There are no data available on the mixture itself.
- Flash point** : Closed cup: 0°C (32°F)
- Auto-ignition temperature** : Not available.

## SECTION 9: Physical and chemical properties

- Decomposition temperature** : There are no data available on the mixture itself.  
**pH** : Not applicable.  
**Viscosity** : There are no data available on the mixture itself.  
**Solubility(ies)** :

| Media      | Result      |
|------------|-------------|
| cold water | Not soluble |

- Solubility in water** : There are no data available on the mixture itself.  
**Miscible with water** : No.  
**Partition coefficient: n-octanol/ water** : Not applicable.  
**Vapour pressure** : 11.5 kPa (86.25708 mm Hg)  
**Evaporation rate** : There are no data available on the mixture itself.  
**Relative density** : Not relevant/applicable due to nature of the product.  
**Density** : 0.802 g/cm<sup>3</sup> [20°C (68°F)]  
**Vapour density** : There are no data available on the mixture itself.  
**Explosive properties** : Not tested  
**Oxidising properties** : Not applicable No oxidising ingredients present.  
**Particle characteristics**  
**Median particle size** : Not applicable.

### 9.2 Other information

- SAPT** : Not relevant/applicable due to nature of the product.  
**Heat of combustion** : 24.44 kJ/g  
**VOC content** : 96.4 % (w/w)  
**Aerosol product**  
**Type of aerosol** : Spray

## SECTION 10: Stability and reactivity

- 10.1 Reactivity** : Reactive or incompatible with the following materials: oxidising materials and acids.  
**10.2 Chemical stability** : The product is stable.  
**10.3 Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.  
**10.4 Conditions to avoid** : Avoid all possible sources of ignition (spark or flame).  
**10.5 Incompatible materials** : No specific data.  
**10.6 Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

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

#### Acute toxicity

| Product/ingredient name | Result               | Species | Dose         | Exposure |
|-------------------------|----------------------|---------|--------------|----------|
| cyclohexane             | LD50 Oral            | Rat     | 6240 mg/kg   | -        |
| propan-2-ol             | LD50 Dermal          | Rabbit  | 12800 mg/kg  | -        |
|                         | LD50 Oral            | Rat     | 5000 mg/kg   | -        |
| 1-methoxypropan-2-ol    | LD50 Dermal          | Rabbit  | 13 g/kg      | -        |
|                         | LD50 Oral            | Rat     | 6600 mg/kg   | -        |
| n-butyl acetate         | LC50 Inhalation Gas. | Rat     | 390 ppm      | 4 hours  |
|                         | LD50 Dermal          | Rabbit  | >17600 mg/kg | -        |
|                         | LD50 Oral            | Rat     | 10768 mg/kg  | -        |
| (R)-p-mentha-1,8-diene  | LD50 Dermal          | Rabbit  | >5000 mg/kg  | -        |
|                         | LD50 Oral            | Rat     | 4400 mg/kg   | -        |
| n-hexane                | LC50 Inhalation Gas. | Rat     | 48000 ppm    | 4 hours  |
|                         | LD50 Oral            | Rat     | 15840 mg/kg  | -        |

**Conclusion/Summary** : Not tested

#### Acute toxicity estimates

| Product/ingredient name | Oral (mg/kg) | Dermal (mg/kg) | Inhalation (gases) (ppm) | Inhalation (vapours) (mg/l) | Inhalation (dusts and mists) (mg/l) |
|-------------------------|--------------|----------------|--------------------------|-----------------------------|-------------------------------------|
| cyclohexane             | 6240         | N/A            | N/A                      | N/A                         | N/A                                 |
| propan-2-ol             | 5000         | 12800          | N/A                      | N/A                         | N/A                                 |
| 1-methoxypropan-2-ol    | 6600         | 13000          | N/A                      | N/A                         | N/A                                 |
| n-butyl acetate         | 10768        | N/A            | N/A                      | N/A                         | N/A                                 |
| (R)-p-mentha-1,8-diene  | 4400         | N/A            | N/A                      | N/A                         | N/A                                 |
| n-hexane                | 15840        | N/A            | 48000                    | N/A                         | N/A                                 |

#### Irritation/Corrosion

| Product/ingredient name | Result                   | Species | Score | Exposure        | Observation |
|-------------------------|--------------------------|---------|-------|-----------------|-------------|
| propan-2-ol             | Eyes - Moderate irritant | Rabbit  | -     | 10 mg           | -           |
|                         | Eyes - Moderate irritant | Rabbit  | -     | 24 hours 100 mg | -           |
|                         | Eyes - Severe irritant   | Rabbit  | -     | 100 mg          | -           |
|                         | Skin - Mild irritant     | Rabbit  | -     | 500 mg          | -           |
| 1-methoxypropan-2-ol    | Eyes - Mild irritant     | Rabbit  | -     | 24 hours 500 mg | -           |
|                         | Skin - Mild irritant     | Rabbit  | -     | 500 mg          | -           |
| n-butyl acetate         | Eyes - Moderate irritant | Rabbit  | -     | 100 mg          | -           |
|                         | Skin - Moderate irritant | Rabbit  | -     | 24 hours 500 mg | -           |
| (R)-p-mentha-1,8-diene  | Skin - Mild irritant     | Rabbit  | -     | 24 hours 10 %   | -           |
| n-hexane                | Eyes - Mild irritant     | Rabbit  | -     | 10 mg           | -           |

#### Conclusion/Summary

**Skin** : Not tested

**Eyes** : Not tested

**Respiratory** : Not tested

#### Sensitisation

#### Conclusion/Summary

**Skin** : Not tested

**Respiratory** : Not tested

#### Mutagenicity

**Conclusion/Summary** : Not tested

## SECTION 11: Toxicological information

### Carcinogenicity

**Conclusion/Summary** : Not tested

### Reproductive toxicity

**Conclusion/Summary** : Not tested

### Teratogenicity

**Conclusion/Summary** : Not tested

### Specific target organ toxicity (single exposure)

| Product/ingredient name                                | Category   | Route of exposure | Target organs    |
|--|------------|-------------------|------------------|
| cyclohexane  | Category 3 | -                 | Narcotic effects |
| propan-2-ol  | Category 3 | -                 | Narcotic effects |
| 1-methoxypropan-2-ol                                   | Category 3 | -                 | Narcotic effects |
| Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane | Category 3 | -                 | Narcotic effects |
| n-butyl acetate  | Category 3 | -                 | Narcotic effects |
| n-hexane   | Category 3 | -                 | Narcotic effects |

### Specific target organ toxicity (repeated exposure)

| Product/ingredient name | Category   | Route of exposure | Target organs |
|-------------------------|------------|-------------------|---------------|
| n-hexane                | Category 2 | -                 | -             |

### Aspiration hazard

| Product/ingredient name                                | Result                         |
|--|--------------------------------|
| cyclohexane  | ASPIRATION HAZARD - Category 1 |
| Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane | ASPIRATION HAZARD - Category 1 |
| (R)-p-mentha-1,8-diene                                 | ASPIRATION HAZARD - Category 1 |
| n-hexane   | ASPIRATION HAZARD - Category 1 |

**Information on likely routes of exposure** : Not tested

### Potential acute health effects

**Eye contact** : Causes serious eye irritation.

**Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

**Skin contact** : Causes skin irritation. May cause an allergic skin reaction.

**Ingestion** : Can cause central nervous system (CNS) depression.

### Symptoms related to the physical, chemical and toxicological characteristics

**Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness

**Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing  
nausea or vomiting  
headache  
drowsiness/fatigue  
dizziness/vertigo  
unconsciousness

**Skin contact** : Adverse symptoms may include the following:  
irritation  
redness

**Ingestion** : No specific data.

## SECTION 11: Toxicological information

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

#### Short term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Long term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Potential chronic health effects

Not available.

**Conclusion/Summary** : Not available.

**General** : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

**Carcinogenicity** : No known significant effects or critical hazards.

**Mutagenicity** : No known significant effects or critical hazards.

**Reproductive toxicity** : No known significant effects or critical hazards.

### 11.2 Information on other hazards

#### 11.2.1 Endocrine disrupting properties

Not available.

#### 11.2.2 Other information

No known significant effects or critical hazards.

## SECTION 12: Ecological information

### 12.1 Toxicity

| Product/ingredient name    | Result                               | Species   | Exposure |
|----------------------------|--------------------------------------|---|----------|
| cyclohexane<br>propan-2-ol | Acute LC50 4530 µg/l Fresh water     | Fish - <i>Pimephales promelas</i>   | 96 hours |
|                            | Acute EC50 7550 mg/l Fresh water     | Daphnia - <i>Daphnia magna</i> - Neonate                                      | 48 hours |
| n-butyl acetate            | Acute LC50 1400000 µg/l Marine water | Crustaceans - <i>Crangon crangon</i>  | 48 hours |
|                            | Acute LC50 4200 mg/l Fresh water     | Fish - <i>Rasbora heteromorpha</i>  | 96 hours |
|                            | Acute LC50 32 mg/l Marine water      | Crustaceans - <i>Artemia salina</i>   | 48 hours |
|                            | Acute LC50 18000 µg/l Fresh water    | Fish - <i>Pimephales promelas</i>   | 96 hours |
| (R)-p-mentha-1,8-diene     | Acute EC50 421 µg/l Fresh water      | Daphnia - <i>Daphnia magna</i>  | 48 hours |
|                            | Acute EC50 688 µg/l Fresh water      | Fish - <i>Pimephales promelas</i> - Juvenile (Fledgling, Hatchling, Weanling) | 96 hours |
|                            | Acute LC50 2500 µg/l Fresh water     | Fish - <i>Pimephales promelas</i>   | 96 hours |

**Conclusion/Summary** : Ecological testing has not been conducted on this product.

### 12.2 Persistence and degradability

**Conclusion/Summary** : Not available.

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|-------------------------|-------------------|------------|------------------|
| propan-2-ol             | -                 | -          | Readily          |
| 1-methoxypropan-2-ol    | -                 | -          | Readily          |

### 12.3 Bioaccumulative potential

## SECTION 12: Ecological information

| Product/ingredient name | LogP <sub>ow</sub> | BCF     | Potential |
|-------------------------|--------------------|---------|-----------|
| cyclohexane             | 3.44               | 167     | Low       |
| propan-2-ol             | -0.16 to 0.05      | -       | Low       |
| 1-methoxypropan-2-ol    | <1                 | -       | Low       |
| n-butyl acetate         | 2.3                | -       | Low       |
| (R)-p-mentha-1,8-diene  | 4.38               | -       | High      |
| carbon dioxide          | 0.83               | -       | Low       |
| n-hexane                | 4                  | 501.187 | High      |

### 12.4 Mobility in soil

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

**Mobility** : Non-dispersive/ insoluble in water.

### 12.5 Results of PBT and vPvB assessment

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

### 12.6 Endocrine disrupting properties

Not available.

### 12.7 Other adverse effects

No known significant effects or critical hazards.

## SECTION 13: Disposal considerations

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

### 13.1 Waste treatment methods

#### Product

**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

**Hazardous waste** : The classification of the product may meet the criteria for a hazardous waste.

#### Packaging






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

**Special precautions** : This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

## SECTION 14: Transport information

|                                     | ADR/RID  | IMDG     | IATA                |
|-------------------------------------|----------|----------|---------------------|
| <b>14.1 UN number or ID number</b>  | UN1950   | UN1950   | UN1950              |
| <b>14.2 UN proper shipping name</b> | AEROSOLS | AEROSOLS | Aerosols, flammable |
|                                     |          |          |                     |

## SECTION 14: Transport information

|  |  |  |  |
|--|--|--|--|
| <b>14.3 Transport hazard class(es)</b> | 2<br>  | 2.1<br>  | 2.1<br> |
| <b>14.4 Packing group</b>              | -  | -  | -  |
| <b>14.5 Environmental hazards</b>      | Yes.   | Yes.   | Yes. The environmentally hazardous substance mark is not required.                         |

### Additional information

- ADR/RID** : The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.  
**Tunnel code (D)**
- IMDG** : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.  
**Emergency schedules F-D, S-U**  
**IMDG Code Segregation group** None identified.
- IATA** : The environmentally hazardous substance mark may appear if required by other transportation regulations.

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

**14.7 Maritime transport in bulk according to IMO instruments** : Not applicable - not transported in bulk

## SECTION 15: Regulatory information

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

#### Annex XIV - List of substances subject to authorisation

##### Annex XIV

None of the components are listed.

##### Substances of very high concern

None of the components are listed.

**Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles** : Not applicable.

#### Other EU regulations

**Industrial emissions (integrated pollution prevention and control) - Air** : Not listed

**Industrial emissions (integrated pollution prevention and control) - Water** : Not listed

#### Ozone depleting substances (1005/2009/EU)

## SECTION 15: Regulatory information

Not listed.

**Aerosol dispensers** :

3



Extremely flammable

### Seveso Directive - Reporting thresholds

#### Danger criteria

| Category  | Notification and MAPP threshold | Safety report threshold  |
|-----------|---------------------------------|--------------------------|
| P3b<br>E1 | 5000 tonne<br>100 tonne         | 50000 tonne<br>200 tonne |

### National regulations

| Product/ingredient name | List name                                      | Name on list   | Classification | Notes |
|-------------------------|--|----------------|----------------|-------|
| n-hexane                | Switzerland<br>Occupational<br>Exposure Limits | n-Hexan; Hexan | Dev. R2D       | -     |

**OVOC content** : VOC (w/w): 89.9%

**15.2 Chemical safety assessment** : Chemical Safety Assessments for all substances in this product are either Complete or Not applicable.

## SECTION 16: Other information

✔ Indicates information that has changed from previously issued version.

### Abbreviations and acronyms

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

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

| Classification  | Justification   |
|---|---|
| Aerosol 1, H222, H229<br>Skin Irrit. 2, H315<br>Eye Irrit. 2, H319<br>Skin Sens. 1, H317<br>STOT SE 3, H336<br>Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410 | On basis of test data<br>Calculation method<br>Calculation method<br>Calculation method<br>Calculation method<br>Calculation method<br>Calculation method |

### Full text of abbreviated H statements

## SECTION 16: Other information

|            |  |
|------------|--|
| H222, H229 | Extremely flammable aerosol. Pressurised container: may burst if heated. |
| H225       | Highly flammable liquid and vapour.                                      |
| H226       | Flammable liquid and vapour.   |
| H280       | Contains gas under pressure; may explode if heated.                      |
| H304       | May be fatal if swallowed and enters airways.                            |
| H315       | Causes skin irritation.  |
| H317       | May cause an allergic skin reaction.                                     |
| H319       | Causes serious eye irritation.   |
| H336       | May cause drowsiness or dizziness.                                       |
| H361f      | Suspected of damaging fertility.   |
| H373       | May cause damage to organs through prolonged or repeated exposure.       |
| H400       | Very toxic to aquatic life.  |
| H410       | Very toxic to aquatic life with long lasting effects.                    |
| H411       | Toxic to aquatic life with long lasting effects.                         |
| H412       | Harmful to aquatic life with long lasting effects.                       |
| EUH066     | Repeated exposure may cause skin dryness or cracking.                    |

### [Full text of classifications \[CLP/GHS\]](#)

|                    |   |
|--------------------|---|
| Aerosol 1          | AEROSOLS - Category 1   |
| Aquatic Acute 1    | SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1                  |
| Aquatic Chronic 1  | LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1                 |
| Aquatic Chronic 2  | LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2                 |
| Aquatic Chronic 3  | LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3                 |
| Asp. Tox. 1        | ASPIRATION HAZARD - Category 1                                  |
| Eye Irrit. 2       | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2                  |
| Flam. Liq. 2       | FLAMMABLE LIQUIDS - Category 2                                  |
| Flam. Liq. 3       | FLAMMABLE LIQUIDS - Category 3                                  |
| Press. Gas (Comp.) | GASES UNDER PRESSURE - Compressed gas                           |
| Repr. 2            | REPRODUCTIVE TOXICITY - Category 2                              |
| Skin Irrit. 2      | SKIN CORROSION/IRRITATION - Category 2                          |
| Skin Sens. 1       | SKIN SENSITISATION - Category 1                                 |
| Skin Sens. 1B      | SKIN SENSITISATION - Category 1B                                |
| STOT RE 2          | SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2 |
| STOT SE 3          | SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3   |

**Date of printing** : 16 February 2026

**Date of issue/ Date of revision** : 16 February 2026

**Date of previous issue** : No previous validation

**Version** : 1

### [Notice to reader](#)

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

MacDermid Alpha SDS CLP Europe

4.13.4.2