SAFETY DATA SHEET
Tergo™ High Performance Flux Remover - Boil

1. Identification

Product identifier

Product name
Tergo™ High Performance Flux Remover - Boil

Product number
M2S-TFRHPEUP

Synonyms; trade names
MCC-TFRHPEUP

Recommended use of the chemical and restrictions on use

Application
Cleaning agent.

Uses advised against
No specific uses advised against are identified.

Details of the supplier of the safety data sheet

Supplier
MICROCARE CORPORATION

Manufacturer
MICROCARE CORPORATION
595 John Downey Drive
New Britain, CT 06051
United States of America
CAGE: OATV9
Tel: +1 800 638 0125, +1 860-827-0626
Fax: +1 860-893-1930
techsupport@microcare.com

Emergency telephone number

Emergency telephone
CHEMTREC 1-800-424-9300 (within the U.S.)
+1 703-741-5970 (from anywhere in the world)

2. Hazard(s) identification

Classification of the substance or mixture

OSHA Regulatory Status
This Product is Hazardous under the OSHA Hazard Communication Standard.

Physical hazards
Not Classified

Health hazards
Skin Irrit. 2 - H315 Eye Irrit. 2A - H319 Repr. 1B - H360

Environmental hazards
Aquatic Chronic 3 - H412

Human health
See Section 11 for additional information on health hazards. May be slightly irritating to eyes. Splashes in the eyes may cause redness and irritation. Prolonged or repeated contact with skin may cause irritation, redness and dermatitis.

Physicochemical
Vapors are heavier than air and may travel along the floor and accumulate in the bottom of containers.
Tergo™ High Performance Flux Remover - Boil

Pictogram

![Danger symbol]

Signal word
Danger

Hazard statements
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H360 May damage fertility or the unborn child.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P302+P352 If on skin: Wash with plenty of water.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332+P313 If skin irritation occurs: Get medical advice/ attention.
P337+P313 If eye irritation persists: Get medical advice/ attention.

Supplemental label information
Safety data sheet available on request. For use in industrial installations only.

Contains
METHANOL

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Trans-1,2-Dichloroethylene</th>
<th>30-60%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number: 156-60-5</td>
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**Classification**
Flam. Liq. 2 - H225
Acute Tox. 4 - H332
Aquatic Chronic 3 - H412

<table>
<thead>
<tr>
<th>Methyl Nonfluorobutyl Ether</th>
<th>10-30%</th>
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<tbody>
<tr>
<td>CAS number: 163702-07-6</td>
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**Classification**
Not Classified

<table>
<thead>
<tr>
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**Classification**
Not Classified

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**Classification**
Flam. Liq. 2 - H225
# Tergo™ High Performance Flux Remover - Boil

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<thead>
<tr>
<th>ETHANOL</th>
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<tbody>
<tr>
<td>CAS number: 64-17-5</td>
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<tr>
<td>Classification</td>
<td></td>
</tr>
<tr>
<td>Flam. Liq. 2 - H225</td>
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</table>

<table>
<thead>
<tr>
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<tbody>
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<td>CAS number: Proprietary</td>
<td></td>
</tr>
<tr>
<td>Classification</td>
<td></td>
</tr>
<tr>
<td>Skin Corr. 1C - H314</td>
<td></td>
</tr>
<tr>
<td>Eye Dam. 1 - H318</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>METHANOL</th>
<th>&lt;1%</th>
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<tr>
<td>CAS number: 67-56-1</td>
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<tr>
<td>Classification</td>
<td></td>
</tr>
<tr>
<td>Flam. Liq. 2 - H225</td>
<td></td>
</tr>
<tr>
<td>Acute Tox. 3 - H301</td>
<td></td>
</tr>
<tr>
<td>Acute Tox. 3 - H311</td>
<td></td>
</tr>
<tr>
<td>Acute Tox. 3 - H331</td>
<td></td>
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<tr>
<td>Eye Irrit. 2A - H319</td>
<td></td>
</tr>
<tr>
<td>Repr. 1B - H360</td>
<td></td>
</tr>
<tr>
<td>STOT SE 1 - H370</td>
<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>ISOBUTYL METHYL KETONE</th>
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<tr>
<td>Acute Tox. 4 - H332</td>
<td></td>
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<tr>
<td>Eye Irrit. 2A - H319</td>
<td></td>
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<tr>
<td>STOT SE 3 - H335</td>
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<table>
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<tr>
<td>Classification</td>
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<td></td>
</tr>
<tr>
<td>Eye Irrit. 2A - H319</td>
<td></td>
</tr>
<tr>
<td>STOT SE 3 - H336</td>
<td></td>
</tr>
</tbody>
</table>

The full text for all hazard statements is displayed in Section 16.

**Composition comments**

TSCA: The ingredients of this product are on the TSCA Inventory. The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of CFR 1900.1200

**Composition**

# 4. First-aid measures
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Description of first aid measures

General information
Get medical attention if any discomfort continues. Show this Safety Data Sheet to the medical personnel.

Inhalation
Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Loosen tight clothing such as collar, tie or belt. Get medical attention if symptoms are severe or persist.

Ingestion
Rinse mouth thoroughly with water. Get medical advice/attention if you feel unwell. Do not induce vomiting unless under the direction of medical personnel.

Skin Contact
Rinse with water.

Eye contact
Rinse with water. Do not rub eye. Remove any contact lenses and open eyelids wide apart. Get medical attention if any discomfort continues.

Protection of first aiders
First aid personnel should wear appropriate protective equipment during any rescue.

Most important symptoms and effects, both acute and delayed

General information
The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation
No specific symptoms known.

Ingestion
May cause irritation.

Skin contact
Redness. Irritating to skin.

Eye contact
Irritating to eyes.

Indication of immediate medical attention and special treatment needed

Notes for the doctor
Treat symptomatically.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media
The product is not flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

Unsuitable extinguishing media
Do not use water jet as an extinguisher, as this will spread the fire.

Special hazards arising from the substance or mixture

Specific hazards
Containers can burst violently or explode when heated, due to excessive pressure build-up.

Hazardous combustion products
Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors.

Advice for firefighters

Protective actions during firefighting
Avoid breathing fire gases or vapors. Evacuate area. Keep upwind to avoid inhalation of gases, vapors, fumes and smoke. Ventilate closed spaces before entering them. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapors and protect men stopping the leak. Avoid discharge to the aquatic environment. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.
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6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions
Wear protective clothing as described in Section 8 of this safety data sheet. No action shall be taken without appropriate training or involving any personal risk. Do not touch or walk into spilled material.

Environmental precautions
Avoid discharge into drains or watercourses or onto the ground. Avoid discharge to the aquatic environment.

Methods and material for containment and cleaning up

Methods for cleaning up
Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Small Spillages: Collect spillage. Large Spillages: Absorb spillage with non-combustible, absorbent material. The contaminated absorbent may pose the same hazard as the spilled material. Collect and place in suitable waste disposal containers and seal securely. Label the containers containing waste and contaminated materials and remove from the area as soon as possible. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. Dangerous for the environment. Do not empty into drains. For waste disposal, see Section 13.

Reference to other sections
For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

7. Handling and storage

Precautions for safe handling

Usage precautions
Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Handle all packages and containers carefully to minimize spills. Keep container tightly sealed when not in use. Avoid the formation of mists. May damage fertility. May damage the unborn child. Pregnant or breastfeeding women should not work with this product if there is any risk of exposure. Avoid discharge to the aquatic environment. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers.

Advice on general occupational hygiene
Wash promptly if skin becomes contaminated. Take off contaminated clothing and wash before reuse. Wash contaminated clothing before reuse.

Conditions for safe storage, including any incompatibilities

Storage precautions
Store away from incompatible materials (see Section 10). Keep only in the original container. Keep container tightly closed, in a cool, well ventilated place. Keep containers upright. Protect containers from damage.

Storage class
Miscellaneous hazardous material storage.

Specific end uses(s)

Specific end use(s)
The identified uses for this product are detailed in Section 1.

Reference to other sections
Store away from incompatible materials (see Section 10).
Control parameters

Occupational exposure limits

trans-1,2-DICHLOROETHYLENE
Long-term exposure limit (8-hour TWA): ACGIH 200 ppm 793 mg/m³

Methyl Nonfluorobutyl Ether
Long-term exposure limit (8-hour TWA): 750 ppm

Methyl Nonfluoroisobutyl Ether
Long-term exposure limit (8-hour TWA): 750 ppm

1,1,1,3,3-PENTAFLUOROBUTANE
Long-term exposure limit (8-hour TWA): SUP 1000 ppm

ETHANOL
Short-term exposure limit (15-minute): ACGIH 1000 ppm 1880 mg/m³
A3
Long-term exposure limit (8-hour TWA): OSHA 1000 ppm 1900 mg/m³

METHANOL
Long-term exposure limit (8-hour TWA): ACGIH 200 ppm 262 mg/m³
Short-term exposure limit (15-minute): ACGIH 250 ppm 328 mg/m³
Sk
Long-term exposure limit (8-hour TWA): OSHA 200 ppm 260 mg/m³

ISOBUTYL METHYL KETONE
Long-term exposure limit (8-hour TWA): ACGIH 20 ppm 82 mg/m³
Short-term exposure limit (15-minute): ACGIH 75 ppm 307 mg/m³
A3
Long-term exposure limit (8-hour TWA): OSHA 100 ppm 410 mg/m³

ETHYL ACETATE
Long-term exposure limit (8-hour TWA): ACGIH 400 ppm 1440 mg/m³
Long-term exposure limit (8-hour TWA): OSHA 400 ppm 1400 mg/m³
ACGIH = American Conference of Governmental Industrial Hygienists.
A3 = Confirmed Animal Carcinogen with Unknown Relevance to Humans.
OSHA = Occupational Safety and Health Administration.
Sk = Danger of cutaneous absorption.

Additional Occupational Exposure Limits

Ingredient comments

ACGIH = US Standard. WEL = Workplace Exposure Limits

ETHANOL (CAS: 64-17-5)

Ingredient comments

WEL = Workplace Exposure Limits

METHANOL (CAS: 67-56-1)

Biological limit values

15 mg/l

Exposure controls

Protective equipment

6/19
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**Appropriate engineering controls**
Provide adequate general and local exhaust ventilation. Ensure the ventilation system is regularly maintained and tested. Good general ventilation should be adequate to control worker exposure to airborne contaminants. Observe any occupational exposure limits for the product or ingredients.

**Eye/face protection**
Wear tight-fitting, chemical splash goggles or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

**Hand protection**
Wear protective gloves. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with OSHA 1910.138 and be demonstrated to be impervious to the chemical and resist degradation. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.

**Other skin and body protection**
Wear appropriate clothing to prevent any possibility of skin contact.

**Hygiene measures**
Wash after use and before eating, smoking and using the toilet. Do not eat, drink or smoke when using this product.

**Respiratory protection**
Ensure all respiratory protective equipment is suitable for its intended use and is NIOSH approved. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with OSHA 1910.134. Full face mask respirators with replaceable filter cartridges should comply with OSHA 1910.134. Half mask and quarter mask respirators with replaceable filter cartridges should comply with OSHA 1910.134.

**Environmental exposure controls**
Keep container tightly sealed when not in use. 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.

### 9. Physical and chemical properties

#### Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td>Clear liquid</td>
</tr>
<tr>
<td><strong>Color</strong></td>
<td>Water-white</td>
</tr>
<tr>
<td><strong>Odor</strong></td>
<td>Slight. Ether</td>
</tr>
<tr>
<td><strong>Odor threshold</strong></td>
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</tr>
<tr>
<td><strong>pH</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>Melting point</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>The product is not flammable. Tag Closed Cup (ASTM D 56)</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>Evaporation factor</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>Other flammability</strong></td>
<td>No information available</td>
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<tr>
<td><strong>Bulk density</strong></td>
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<tr>
<td><strong>Solubility(ies)</strong></td>
<td>Slightly soluble in water</td>
</tr>
<tr>
<td><strong>Partition coefficient</strong></td>
<td>No information available</td>
</tr>
</tbody>
</table>
Tergo™ High Performance Flux Remover - Boil

Auto-ignition temperature  No information available.
Decomposition Temperature  No information available.
Viscosity  No information available.
Explosive properties  No information available.
Explosive under the influence of a flame  Not considered to be explosive.
Refractive index  No information available.
Particle size  No information available.
Molecular weight  No information available.
Saturation concentration  No information available.
Critical temperature  No information available.
Volatile organic compound  No information available.
Flammability  The product is not flammable.

10. Stability and reactivity

Reactivity  See the other subsections of this section for further details.
Stability  Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.
Possibility of hazardous reactions  No potentially hazardous reactions known.
Conditions to avoid  There are no known conditions that are likely to result in a hazardous situation.
Materials to avoid  No specific material or group of materials is likely to react with the product to produce a hazardous situation.
Hazardous decomposition products  Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors.

11. Toxicological information

Information on toxicological effects

Other health effects  There is no evidence that the product can cause cancer.
Acute toxicity - oral
Notes (oral LD₅₀)  Based on available data the classification criteria are not met.
ATE oral (mg/kg)  69,204.15
Acute toxicity - dermal
Notes (dermal LD₅₀)  Based on available data the classification criteria are not met.
ATE dermal (mg/kg)  207,612.46
Acute toxicity - inhalation
Notes (inhalation LC₅₀)  Based on available data the classification criteria are not met.
ATE inhalation (vapours mg/l)  27.07
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ATE inhalation (dusts/mists mg/l) 346.02

Skin corrosion/irritation
Animal data Irritating.

Serious eye damage/irritation Causes serious eye irritation.

Respiratory sensitization Based on available data the classification criteria are not met.

Skin sensitization Based on available data the classification criteria are not met.

Germ cell mutagenicity Based on available data the classification criteria are not met.

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

IARC carcinogenicity Contains a substance/a group of substances which may cause cancer. IARC Group 1 Carcinogenic to humans.

Reproductive toxicity
Reproductive toxicity - fertility May damage fertility.

Reproductive toxicity - development May damage the unborn child.

Specific target organ toxicity - single exposure STOT - single exposure Not classified as a specific target organ toxicant after a single exposure.

Specific target organ toxicity - repeated exposure STOT - repeated exposure Not classified as a specific target organ toxicant after repeated exposure.

Aspiration hazard Based on available data the classification criteria are not met.

General information Avoid contact during pregnancy/while nursing. May damage fertility. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation No specific symptoms known.

Ingestion May cause irritation.

Skin Contact Redness. Irritating to skin.

Eye contact Irritating to eyes.

Route of exposure Ingestion Inhalation Skin and/or eye contact

Target Organs No specific target organs known.

Medical Symptoms Product has a defatting effect on skin. May cause allergic contact eczema. In case of overexposure, organic solvents may depress the central nervous system causing dizziness and intoxication, and at very high concentrations unconsciousness and death.

Toxicological information on ingredients.

trans-1,2-DICHLOROETHYLENE
### Tergo™ High Performance Flux Remover - Boil

**Other health effects**

There is no evidence that the product can cause cancer.

**Acute toxicity - Inhalation**

<table>
<thead>
<tr>
<th>Substance</th>
<th>ATE inhalation (vapours mg/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Nonafluorobutyl Ether</td>
<td>11.0</td>
</tr>
</tbody>
</table>

**Acute toxicity - Oral**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Acute toxicity oral (LD₅₀ mg/kg)</th>
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</thead>
<tbody>
<tr>
<td>Methyl Nonafluorobutyl Ether</td>
<td>5,000.0</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>Species</th>
<th>ATE oral (mg/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Nonafluorobutyl Ether</td>
<td>Rat</td>
<td>5,000.0</td>
</tr>
</tbody>
</table>

### Methyl Nonafluoroisobutyl Ether

**Acute toxicity - Inhalation**

<table>
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<tr>
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<th>ATE inhalation (vapours mg/l)</th>
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<tbody>
<tr>
<td>Methyl Nonafluoroisobutyl Ether</td>
<td>1,000.0</td>
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</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>Species</th>
<th>ATE inhalation (vapours mg/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Nonafluoroisobutyl Ether</td>
<td>Rat</td>
<td>1,000.0</td>
</tr>
</tbody>
</table>

### 1,1,1,3,3-Pentafluorobutane

**Acute toxicity - Oral**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Acute toxicity oral (LD₅₀ mg/kg)</th>
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<tbody>
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<table>
<thead>
<tr>
<th>Substance</th>
<th>Species</th>
<th>ATE oral (mg/kg)</th>
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</thead>
<tbody>
<tr>
<td>1,1,1,3,3-Pentafluorobutane</td>
<td>Rat</td>
<td>2,000.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>Species</th>
<th>ATE inhalation (vapours mg/l)</th>
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<tr>
<td>1,1,1,3,3-Pentafluorobutane</td>
<td>Rat</td>
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</tbody>
</table>
Tergo™ High Performance Flux Remover - Boil

Species
Rat

ATE inhalation (vapours mg/l)
100,000.0

Specific target organ toxicity - single exposure

STOT - single exposure
LOAEL 75100 ppm, Inhalation,

Specific target organ toxicity - repeated exposure

STOT - repeated exposure
NOAEC 6 mg/l, Inhalation, Rat

Target organs
Liver Kidneys

ETHANOL

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ vapours mg/l)
20,000.0

ATE inhalation (vapours mg/l)
20,000.0

Carcinogenicity

IARC carcinogenicity
IARC Group 1 Carcinogenic to humans.

METHANOL

Acute toxicity - oral

Notes (oral LD₅₀)
Acute Tox. 3 - H301 Toxic if swallowed.

ATE oral (mg/kg)
100.0

Acute toxicity - dermal

Notes (dermal LD₅₀)
Acute Tox. 3 - H311 Toxic in contact with skin.

ATE dermal (mg/kg)
300.0

Acute toxicity - inhalation

Notes (inhalation LC₅₀)
Acute Tox. 3 - H331 Toxic if inhaled.

ATE inhalation (vapours mg/l)
3.0

ATE inhalation (dusts/mists mg/l)
0.5

Skin corrosion/irritation

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

Serious eye damage/irritation

Based on available data the classification criteria are not met.

Respiratory sensitization

Based on available data the classification criteria are not met.
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Germ cell mutagenicity
Genotoxicity - In vitro  Based on available data the classification criteria are not met.

Carcinogenicity

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

IARC carcinogenicity  None of the ingredients are listed or exempt.

Reproductive toxicity

Reproductive toxicity - fertility  Based on available data the classification criteria are not met.

Reproductive toxicity - development  Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure
STOT - single exposure  STOT SE 1 - H370 Causes damage to organs.

Specific target organ toxicity - repeated exposure
STOT - repeated exposure  Not classified as a specific target organ toxicant after repeated exposure.

Aspiration hazard
Aspiration hazard  Based on available data the classification criteria are not met.

General information  The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation  A single exposure may cause the following adverse effects: Drowsiness, dizziness, disorientation, vertigo. Unconsciousness. High concentrations may be fatal.

Ingestion  May cause stomach pain or vomiting. May cause severe internal injury.

Skin Contact  A single exposure may cause the following adverse effects: Pain.

Eye contact  No specific symptoms known.

Route of exposure  Ingestion Inhalation Skin and/or eye contact

Target Organs  No specific target organs known.

ISOBUTYL METHYL KETONE

Acute toxicity - inhalation
ATE inhalation (vapours mg/l)  11.0

ATE inhalation (dusts/mists mg/l)  1.5

Carcinogenicity

IARC carcinogenicity  IARC Group 2B Possibly carcinogenic to humans.

12. Ecological information

Ecotoxicity  There are no data on the ecotoxicity of this product.

Ecological information on ingredients.
Tergo™ High Performance Flux Remover - Boil

**trans-1,2-DICHLOROETHYLENE**

**Ecotoxicity**

Low acute toxicity to aquatic organisms.

**Methyl Nonafluorobutyl Ether**

**Ecotoxicity**

There are no data on the ecotoxicity of this product.

**Methyl Nonafluoroisobutyl Ether**

**Ecotoxicity**

The product is not expected to be toxic to aquatic organisms.

**METHANOL**

**Ecotoxicity**

Not regarded as dangerous for the environment. However, large or frequent spills may have hazardous effects on the environment.

**Toxicity**

Aquatic Chronic 3 - H412 Harmful to aquatic life with long lasting effects.

**Ecological information on ingredients.**

**trans-1,2-DICHLOROETHYLENE**

**Acute aquatic toxicity**

- **Acute toxicity - fish**
  
  \[ LC_{50}, 96 \text{ hours}: 1350 \text{ mg/l}, \text{ Fish} \]

- **Acute toxicity - aquatic invertebrates**
  
  \[ EC_{50}, 48 \text{ hours}: 220 \text{ mg/l}, \text{ Daphnia magna} \]

**Methyl Nonafluorobutyl Ether**

**Toxicity**

Not considered toxic to fish.

**Methyl Nonafluoroisobutyl Ether**

**Toxicity**

Not considered toxic to fish.

**ETHANOL**

**Acute aquatic toxicity**

- **Acute toxicity - fish**
  
  \[ LC_{50}, 96 \text{ hours}: >10,000 \text{ mg/l}, \text{ Fish} \]

- **Acute toxicity - aquatic invertebrates**
  
  \[ EC_{50}, 48 \text{ hours}: 7,800 \text{ mg/l}, \text{ Daphnia magna} \]

- **Acute toxicity - aquatic plants**
  
  \[ , 96 \text{ hours}: 1000 \text{ mg/l}, \text{ Freshwater algae} \]

**METHANOL**

**Toxicity**

Based on available data the classification criteria are not met.

**Acute aquatic toxicity**

- **Acute toxicity - fish**
  
  \[ LC_{50}, 96 \text{ hours}: >100 \text{ mg/l}, \text{ Pimephales promelas (Fat-head Minnow)} \]

- **Acute toxicity - aquatic invertebrates**
  
  \[ EC_{50}, 48 \text{ hours}: >10000 \text{ mg/l}, \text{ Daphnia magna} \]
**Tergo™ High Performance Flux Remover - Boil**

**Persistence and degradability**

The degradability of the product is not known.

**Ecological information on ingredients.**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Persistence and degradability</th>
<th>Bio-Accumulative Potential</th>
<th>Partition coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Nonafluorobutyl Ether</td>
<td>No data available.</td>
<td>No data available on bioaccumulation.</td>
<td>No information available.</td>
</tr>
<tr>
<td>Methyl Nonfluoroisobutyl Ether</td>
<td>The product is not expected to be biodegradable.</td>
<td>No data available on bioaccumulation.</td>
<td>No information available.</td>
</tr>
<tr>
<td>ETHANOL</td>
<td>The product is expected to be biodegradable.</td>
<td>Bioaccumulation is unlikely.</td>
<td>No information available.</td>
</tr>
<tr>
<td>METHANOL</td>
<td>The degradability of the product is not known.</td>
<td>No data available on bioaccumulation.</td>
<td>No information available.</td>
</tr>
</tbody>
</table>

**Bioaccumulative potential**

<table>
<thead>
<tr>
<th>Bio-Accumulative Potential</th>
<th>Partition coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>trans-1,2-DICHLOROETHYLENE</td>
<td></td>
</tr>
<tr>
<td>Bio-Accumulative Potential</td>
<td>Bioaccumulation is unlikely to be significant because of the low water-solubility of this product.</td>
</tr>
<tr>
<td>Methyl Nonafluorobutyl Ether</td>
<td>No data available on bioaccumulation.</td>
</tr>
<tr>
<td>Methyl Nonfluoroisobutyl Ether</td>
<td>No data available on bioaccumulation.</td>
</tr>
<tr>
<td>ETHANOL</td>
<td>Bioaccumulation is unlikely.</td>
</tr>
<tr>
<td>METHANOL</td>
<td>No data available on bioaccumulation.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mobility in soil</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\text{Partition coefficient} = -0.77$</td>
</tr>
</tbody>
</table>
Tergo™ High Performance Flux Remover - Boil

Mobility
No data available.

Ecological information on ingredients.

**trans-1,2-DICHLOROETHYLENE**
Mobility
The product has poor water-solubility.

**Methyl Nonafluorobutyl Ether**
Mobility
Not applicable.

**Methyl Nonafluoroisobutyl Ether**
Mobility
Not applicable.

**ETHANOL**
Mobility
The product is soluble in water.

**METHANOL**
Mobility
No data available.

Other adverse effects
None known.

Ecological information on ingredients.

**METHANOL**
Other adverse effects
None known.

13. Disposal considerations

Waste treatment methods

General information
The generation of waste should be minimized or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.

Disposal methods
Do not empty into drains. Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labeled with their contents. Incineration or landfill should only be considered when recycling is not feasible.

Waste class
No information available.

14. Transport information

General
The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, DOT).

UN Number

UN No. (International) Not applicable.
Tergo™ High Performance Flux Remover - Boil

UN No. (DOT) Not applicable.
UN proper shipping name
Proper shipping name Not applicable.
(Internal)
Proper shipping name (DOT) Not applicable.
Transport hazard class(es)
Transport Labels No transport warning sign required.
DOT transport labels No transport warning sign required.
Packing group
Packing group (International) Not applicable.
DOT packing group Not applicable.
Environmental hazards
Environmentally Hazardous Substance No.
Special precautions for user Not applicable.
DOT reportable quantity Not applicable.
DOT TIH Zone Not applicable.
Transport in bulk according to Non applicable.
Annex II of MARPOL 73/78 and the IBC Code

15. Regulatory information

US Federal Regulations
SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities None of the ingredients are listed or exempt.

CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA) The following ingredients are listed or exempt:

**ISOBUTYL METHYL KETONE**
Final CERCLA RQ: 5000(2270) pounds (Kilograms)

**ETHYL ACETATE**
Final CERCLA RQ: 5000(2270) pounds (Kilograms)

**METHANOL**
Final CERCLA RQ: 5000(2270) pounds (Kilograms)

**trans-1,2-DICHLOROETHYLENE**
Final CERCLA RQ: 1000(454) pounds (Kilograms)

**SARA Extremely Hazardous Substances EPCRA Reportable Quantities**
None of the ingredients are listed or exempt.
Tergo™ High Performance Flux Remover - Boil

SARA 313 Emission Reporting
The following ingredients are listed or exempt:

ISOButyl METHYL KETONE
1.0 %

METHANOL
1.0 %

CAA Accidental Release Prevention
None of the ingredients are listed or exempt.

FDA - Essential Chemical
None of the ingredients are listed or exempt.

FDA - Precursor Chemical
None of the ingredients are listed or exempt.

SARA (311/312) Hazard Categories
None of the ingredients are listed or exempt.

OSHA Highly Hazardous Chemicals
None of the ingredients are listed or exempt.

US State Regulations

California Proposition 65 Carcinogens and Reproductive Toxins
The following ingredients are listed or exempt:

ISOButyl METHYL KETONE
Carcinogen and developmental toxin.

METHANOL
Developmental toxin.

California Air Toxics "Hot Spots" (A-I)
The following ingredients are listed or exempt:

ISOButyl METHYL KETONE
METHANOL

California Air Toxics "Hot Spots" (A-II)
None of the ingredients are listed or exempt.

California Directors List of Hazardous Substances
The following ingredients are listed or exempt:

ISOButyl METHYL KETONE
ETHYL ACETATE
METHANOL
ETHANOL
trans-1,2-DICHLOROETHYLENE

Massachusetts "Right To Know" List
The following ingredients are listed or exempt:

ISOButyl METHYL KETONE
ETHYL ACETATE
METHANOL
Tergo™ High Performance Flux Remover - Boil

ETHANOL
trans-1,2-DICHLOROETHYLENE

Rhode Island "Right To Know" List
The following ingredients are listed or exempt:
- ISOBUTYL METHYL KETONE
- ETHYL ACETATE
- METHANOL
- ETHANOL

Minnesota "Right To Know" List
The following ingredients are listed or exempt:
- ISOBUTYL METHYL KETONE
- ETHYL ACETATE
- METHANOL
- ETHANOL

New Jersey "Right To Know" List
The following ingredients are listed or exempt:
- ISOBUTYL METHYL KETONE
- ETHYL ACETATE
- METHANOL
- ETHANOL

Pennsylvania "Right To Know" List
The following ingredients are listed or exempt:
- ISOBUTYL METHYL KETONE
- ETHYL ACETATE
- METHANOL
- ETHANOL
- trans-1,2-DICHLOROETHYLENE

Inventories
- Canada - DSL/NDSL
  DSL
- US - TSCA
  All the ingredients are listed or exempt. Present.
- US - TSCA 12(b) Export Notification
  The following ingredients are listed or exempt:
  - Methyl Nonfluorobutyl Ether
    Present.
  - Methyl Nonfluoroisobutyl Ether
    Present.

16. Other information
Tergo™ High Performance Flux Remover - Boil

Classification abbreviations and acronyms
Eye Irrit. = Eye irritation
Repr. = Reproductive toxicity
Skin Irrit. = Skin irritation
Aquatic Chronic = Hazardous to the aquatic environment (chronic)

Training advice
Only trained personnel should use this material.

Revision comments
NOTE: Lines within the margin indicate significant changes from the previous revision.

Revision date
9/26/2018

Revision
44

Supersedes date
9/26/2018

SDS No.
BULK - TFRHPEU

SDS status
Approved.

Hazard statements in full
H225 Highly flammable liquid and vapor.
H301 Toxic if swallowed.
H311 Toxic in contact with skin.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H360 May damage fertility or the unborn child.
H370 Causes damage to organs.
H412 Harmful to aquatic life with long lasting effects.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.