# SAFETY DATA SHEET

**UFR UNIVERSAL FLUX REMOVER, AEROSOL**


## 1. Identification

<table>
<thead>
<tr>
<th>Product identifier</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product name</strong></td>
<td>UFR UNIVERSAL FLUX REMOVER, AEROSOL</td>
</tr>
<tr>
<td><strong>Product number</strong></td>
<td>MCC-UFR10A, MCC-UFR107, MCC-UFR10Y</td>
</tr>
</tbody>
</table>

**Recommended use of the chemical and restrictions on use**

**Application** Cleaning agent.

**Details of the supplier of the safety data sheet**

<table>
<thead>
<tr>
<th>Supplier</th>
<th>MicroCare Corporation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer</td>
<td>MICROCARE CORPORATION</td>
</tr>
<tr>
<td></td>
<td>595 John Downey Drive</td>
</tr>
<tr>
<td></td>
<td>New Britain, CT 06051</td>
</tr>
<tr>
<td></td>
<td>United States of America</td>
</tr>
<tr>
<td></td>
<td>CAGE: OATV9</td>
</tr>
<tr>
<td></td>
<td>Tel: +1 860-827-0626</td>
</tr>
<tr>
<td></td>
<td>Fax: +1 860-827-8105</td>
</tr>
<tr>
<td></td>
<td><a href="mailto:techsupport@microcare.com">techsupport@microcare.com</a></td>
</tr>
</tbody>
</table>

**Emergency telephone number**

**Emergency telephone** CHEMTREC (800) 424-9300

## 2. Hazard(s) identification

**Classification of the substance or mixture**

<table>
<thead>
<tr>
<th>Physical hazards</th>
<th>Not Classified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health hazards</td>
<td>Rep. 2 - H361 STOT SE 1 - H370</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>Not Classified</td>
</tr>
</tbody>
</table>

**Human health**

Prolonged or repeated contact with skin may cause irritation, redness and dermatitis. Mild dermatitis, allergic skin rash.

**Environmental**

The product contains a substance which is harmful to aquatic organisms and which may cause long-term adverse effects in the aquatic environment.

**Physicochemical**

Vapors are heavier than air and may travel along the floor and accumulate in the bottom of containers. Not considered to be a significant hazard due to the small quantities used. Gas or vapor displaces oxygen available for breathing (asphyxiant).
UFR UNIVERSAL FLUX REMOVER, AEROSOL

Signal word: Danger

Hazard statements:
H361 Suspected of damaging fertility or the unborn child.
H370 Causes damage to organs.

Precautionary statements:
P210 Keep away from heat, sparks, open flames and hot surfaces. No smoking.
P251 Pressurized container: Do not pierce or burn, even after use
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P261 Avoid breathing vapor/ spray.
P314 Get medical advice/ attention if you feel unwell.
P302+P352 If on skin: Wash with plenty of water.
P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.
P501 Dispose of contents/ container in accordance with national regulations.

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

Contains:
ETHANOL

Other hazards:
This product does not contain any substances classified as PBT or vPvB.

3. Composition/Information on ingredients

Mixtures

Trans-1-chloro-3,3,3-trifluoropropene
CAS number: 102687-65-0
Classification
Press. Gas, Liquefied - H280

TRANS-1,3,3,3- TETRAFLUOROPROP-1-ENE
CAS number: 29118-24-9
Classification
Press. Gas, Liquefied - H280

ETHANOL
CAS number: 64-17-5
Classification
Flam. Liq. 2 - H225
Eye Irrit. 2A - H319
Repr. 2 - H361
STOT SE 1 - H370
STOT SE 3 - H335

The full text for all hazard statements is displayed in Section 16.
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Composition comments
The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of CFR 1900.1200 TSCA: The ingredients of this product are on the TSCA Inventory.

Composition

4. First-aid measures

Description of first aid measures

General information
Never give anything by mouth to an unconscious person. Do not induce vomiting. Place unconscious person on the side in the recovery position and ensure breathing can take place. If breathing stops, provide artificial respiration. Consult a physician for specific advice.

Inhalation
Remove affected person from source of contamination. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Get medical attention.

Ingestion
Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Promptly get affected person to drink large volumes of water to dilute the swallowed chemical. Get medical attention.

Skin Contact
Remove contaminated clothing and rinse skin thoroughly with water.

Eye contact
Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Consult a physician for specific advice.

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. Get medical attention promptly if symptoms occur after washing.

Inhalation
Upper respiratory irritation. Vapors are heavier than air and may travel along the floor and accumulate in the bottom of containers. Gas or vapor displaces oxygen available for breathing (asphyxiant). Prolonged or excessive inhalation may cause respiratory tract irritation.

Ingestion
May cause stomach pain or vomiting. Diarrhea. May cause nausea, headache, dizziness and intoxication. Fumes from the stomach contents may be inhaled, resulting in the same symptoms as inhalation.

Skin contact
Skin irritation. This product is rapidly absorbed through the skin and may cause symptoms similar to those of ingestion.

Eye contact
Irritating to eyes. Symptoms following overexposure may include the following: Redness. Pain. May cause blurred vision and serious eye damage.

Indication of immediate medical attention and special treatment needed

Notes for the doctor
No specific recommendations. If in doubt, get medical attention promptly.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media
The product is not flammable. Use fire-extinguishing media suitable for the surrounding fire.

Special hazards arising from the substance or mixture

Specific hazards
Keep away from heat, sparks and open flame. Thermal decomposition or combustion products may include the following substances: Toxic and corrosive gases or vapors. Aerosol containers can explode when heated, due to excessive pressure build-up.
Hazardous combustion products

Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors. Oxides of carbon. Fire or high temperatures create: Carbonyl compounds. Mineral acids.

Advice for firefighters

Protective actions during firefighting

Move containers from fire area if it can be done without risk.

Special protective equipment for firefighters

Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions

Warn everybody of potential hazards and evacuate if necessary. Provide adequate ventilation. Avoid inhalation of vapors. Use approved respirator if air contamination is above an acceptable level.

Environmental precautions

Environmental precautions

Contain spillage with sand, earth or other suitable non-combustible material. Avoid release to the environment.

Methods and material for containment and cleaning up

Methods for cleaning up

Provide adequate ventilation. Contain spillage with sand, earth or other suitable non-combustible material. Avoid the spillage or runoff entering drains, sewers or watercourses. Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate. Eliminate all sources of ignition. No smoking, sparks, flames or other sources of ignition near spillage. Provide adequate ventilation. Absorb spillage with non-combustible, absorbent material. Collect and place in suitable waste disposal containers and seal securely.

Reference to other sections

For personal protection, see Section 8. For waste disposal, see section 13.

7. Handling and storage

Precautions for safe handling

Usage precautions

Provide adequate ventilation. Avoid inhalation of vapors/spray and contact with skin and eyes. Keep away from heat, sparks and open flame. Thermal decomposition or combustion products may include the following substances: Toxic and corrosive gases or vapors. Keep out of the reach of children.

Conditions for safe storage, including any incompatibilities

Storage precautions

Aerosol cans: Must not be exposed to direct sunlight or temperatures above 50°C.

Specific end uses(s)

Specific end use(s)
The identified uses for this product are detailed in Section 1.2.

Reference to other sections

Store away from incompatible materials (see Section 10).

8. Exposure Controls/personal protection

Control parameters

Occupational exposure limits

Trans-1-chloro-3,3,3-trifluoropropene

Long-term exposure limit (8-hour TWA): SUP 800 ppm

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

A3
OSHA = Occupational Safety and Health Administration.
ACGIH = American Conference of Governmental Industrial Hygienists.
A3 = Confirmed Animal Carcinogen with Unknown Relevance to Humans.

Additional Occupational Exposure Limits


Trans-1-chloro-3,3,3-trifluoropropene (CAS: 102687-65-0)

Ingredient comments No exposure limits known for ingredient(s).

ETHANOL (CAS: 64-17-5)

Ingredient comments WEL = Workplace Exposure Limits

Exposure controls

Protective equipment

Appropriate engineering controls No specific ventilation requirements. This product must not be handled in a confined space without adequate ventilation.

Eye/face protection Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses.

Hand protection Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. It is recommended that gloves are made of the following material: Nitrile rubber. Polyvinyl alcohol (PVA). Viton rubber (fluoro rubber).

Other skin and body protection Wear suitable protective clothing as protection against splashing or contamination. Wear apron or protective clothing in case of contact.

Hygiene measures No specific hygiene procedures recommended but good personal hygiene practices should always be observed when working with chemical products. When using do not eat, drink or smoke.

Respiratory protection Considering the size of the packaging, the risk is regarded as minimal. Vapors are heavier than air and may travel along the floor and accumulate in the bottom of containers. In confined or poorly-ventilated spaces, a supplied-air respirator must be worn. Wear self-contained breathing apparatus with full facepiece.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance Aerosol. Liquid. Gas
Color Clear liquid. Colorless.
Odor Slight.
Odor threshold No information available.
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pH
Melting point
Initial boiling point and range
Flash point
Evaporation rate
Evaporation factor
Upper/lower flammability or explosive limits
Other flammability
Vapor pressure
Vapor density
Relative density
Bulk density
Solubility(ies)
Partition coefficient
Auto-ignition temperature
Decomposition Temperature
Viscosity
Refractive index
Particle size
Molecular weight
Vatility
Saturation concentration
Critical temperature
Volatile organic compound
Flammability

10. Stability and reactivity

Reactivity
Stability
Possibility of hazardous reactions
Conditions to avoid
Materials to avoid

There are no known reactivity hazards associated with this product.
Stable at normal ambient temperatures and when used as recommended.
Will not polymerize.
Keep away from heat, sparks and open flame. Thermal decomposition or combustion products may include the following substances: Toxic and corrosive gases or vapors.
Alkali metals. Alkaline earth metals.
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Hazardous decomposition products
Heating may generate the following products: Toxic and corrosive gases or vapors. Halogenated hydrocarbons. Hydrogen fluoride (HF). Carbon dioxide (CO2). Carbon monoxide (CO).

11. Toxicological information

Information on toxicological effects

Other health effects
There is no evidence that the product can cause cancer.

Inhalation
Vapors may irritate throat/respiratory system. A single exposure may cause the following adverse effects: Coughing. Difficulty in breathing.

Ingestion
May cause stomach pain or vomiting. May cause nausea, headache, dizziness and intoxication.

Skin Contact
Product has a defatting effect on skin. May cause allergic contact eczema.

Eye contact
May cause temporary eye irritation.

Medical Symptoms
Gas or vapor in high concentrations may irritate the respiratory system. Symptoms following overexposure may include the following: Headache. Fatigue. Nausea, vomiting.

Trans-1-chloro-3,3,3-trifluoropropene

Acute toxicity - oral
Notes (oral LD₅₀)
No information available.

Acute toxicity - dermal
Notes (dermal LD₅₀)
No information required.

Acute toxicity - inhalation

Acute toxicity Inhalation (LC₅₀ gases ppmV)
120,000.0
Species Rat
ATE inhalation (gases ppm)
120,000.0

Inhalation
Vapors may irritate throat/respiratory system. A single exposure may cause the following adverse effects: Coughing. Difficulty in breathing.

Ingestion
May cause stomach pain or vomiting. May cause nausea, headache, dizziness and intoxication.

Skin Contact
Product has a defatting effect on skin. May cause allergic contact eczema.

Eye contact
May cause temporary eye irritation.

Medical Symptoms
Gas or vapor in high concentrations may irritate the respiratory system. Symptoms following overexposure may include the following: Headache. Fatigue. Nausea, vomiting.

TRANS-1,3,3,3-TETRAFLUOROPROP-1-ENE

Acute toxicity - inhalation

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Acute toxicity inhalation (LC₅₀ vapours mg/l) 207,000.0
Species Rat
ATE inhalation (vapours mg/l) 207,000.0

ETHANOL

Acute toxicity - oral
Acute toxicity oral (LD₅₀ mg/kg) 7,060.0
Species Rat
ATE oral (mg/kg) 7,060.0

Acute toxicity - inhalation
Acute toxicity inhalation (LC₅₀ vapours mg/l) 20,000.0
Species Rat
ATE inhalation (vapours mg/l) 20,000.0

Carcinogenicity
IARC carcinogenicity IARC Group 1 Carcinogenic to humans.

12. Ecological Information

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

Ecological information on ingredients.

Trans-1-chloro-3,3,3-trifluoropropene

Ecotoxicity
The product contains a substance which is toxic to aquatic organisms and which may cause long-term adverse effects in the aquatic environment.

Toxicity

Ecological information on ingredients.

Trans-1-chloro-3,3,3-trifluoropropene

Acute toxicity - fish, Onchorhynchus mykiss (Rainbow trout)
LC₅₀, 96 hours: 38 mg/l, Fish

Acute toxicity - aquatic invertebrates
EC₅₀, 48 hours: 82 mg/l, Freshwater invertebrates

Acute toxicity - aquatic plants
EC₅₀, 72 hours: 106.7 mg/l, Freshwater algae
NOEC, 72 hours: 115 mg/l, Freshwater algae

TRANS-1,3,3,3-TETRAFLUOROPROP-1-ENE

Acute toxicity - aquatic invertebrates
EC₅₀, 48 hours: >160 mg/l, Daphnia magna
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ETHANOL

Acute toxicity - fish LC₅₀, 96 hours: >10,000 mg/l, Fish
Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 7,800 mg/l, Daphnia magna
Acute toxicity - aquatic plants, 96 hours: 1000 mg/l, Freshwater algae

Persistence and degradability
There are no data on the degradability of this product.

Ecological information on ingredients.

Trans-1-chloro-3,3,3-trifluoropropene
Persistence and degradability
The product is not readily biodegradable.

TRANS-1,3,3,3-TETRAFLUOROPROP-1-ENE
Persistence and degradability
The product is not readily biodegradable.

ETHANOL
Persistence and degradability
The product is expected to be biodegradable.

Bioaccumulative potential
Bio-Accumulative Potential No data available on bioaccumulation.
Partition coefficient No information available.

Ecological information on ingredients.

Trans-1-chloro-3,3,3-trifluoropropene
Bio-Accumulative Potential No data available on bioaccumulation.
Partition coefficient Kow: 2.09

ETHANOL
Bio-Accumulative Potential Bioaccumulation is unlikely.
Partition coefficient No information available.

Mobility in soil
Mobility The product contains volatile substances which may spread in the atmosphere.

Ecological information on ingredients.

Trans-1-chloro-3,3,3-trifluoropropene
Mobility No data available.
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Mobility

The product is soluble in water.

Results of PBT and vPvB assessment

Results of PBT and vPvB assessment

This product does not contain any substances classified as PBT or vPvB.

Ecological information on ingredients.

Trans-1-chloro-3,3,3-trifluoropropene

Results of PBT and vPvB assessment

This product does not contain any substances classified as PBT or vPvB. No data available.

Other adverse effects

Other adverse effects

The product contains a substance which has a photochemical ozone creation potential.

Ecological information on ingredients.

Trans-1-chloro-3,3,3-trifluoropropene

Other adverse effects

None known.

13. Disposal considerations

Waste treatment methods

General information

Waste should be treated as controlled waste. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

Disposal methods

Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. Empty containers must not be punctured or incinerated because of the risk of an explosion. Aerosol containers can explode when heated, due to excessive pressure build-up. Reuse or recycle products wherever possible.

14. Transport information

UN Number

UN No. (TDG) UN1950
UN No. (IMDG) UN1950
UN No. (ICAO) UN1950
UN No. (DOT) UN1950

UN proper shipping name

Proper shipping name (TDG) UN1950 AEROSOLS, NON-FLAMMABLE, 2.2, LIMITED QUANTITY
Proper shipping name (IMDG) UN1950 AEROSOLS, NON-FLAMMABLE, 2.2, LIMITED QUANTITY
Proper shipping name (ICAO) UN1950 AEROSOLS, NON-FLAMMABLE, 2.2, LIMITED QUANTITY
Proper shipping name (DOT) UN1950 AEROSOLS, NON-FLAMMABLE, 2.2, LIMITED QUANTITY

Transport hazard class(es)

TDG class 2.2
TDG label(s) 2
IMDG Class 2.2
ICAO class/division 2.2
UFR UNIVERSAL FLUX REMOVER, AEROSOL

ICAO subsidiary risk
N/A

Transport labels

Packing group

TDG Packing Group
N/A

IMDG packing group
N/A

ICAO packing group
N/A

DOT packing group
N/A

Environmental hazards
Environmentally Hazardous Substance
No.

Special precautions for user

Transport in bulk according to
Not relevant.
Annex II of MARPOL 73/78 and the IBC Code

15. Regulatory information

International Regulations

US Federal Regulations

SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities
Not listed.

CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)
Not listed.

SARA Extremely Hazardous Substances EPCRA Reportable Quantities
Not listed.

SARA 313 Emission Reporting
Not listed.

CAA Accidental Release Prevention
Not listed.

SARA (311/312) Hazard Categories
Acute
Pressure

OSHA Highly Hazardous Chemicals
Not listed.

US State Regulations

California Proposition 65 Carcinogens and Reproductive Toxins
Not listed.
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California Air Toxics "Hot Spots" (A-I)
Not listed.

California Air Toxics "Hot Spots" (A-II)
Not listed.

California Directors List of Hazardous Substances
ETHANOL
Present.

Massachusetts "Right To Know" List
ETHANOL
Present.

Rhode Island "Right To Know" List
ETHANOL
Present.

Minnesota "Right To Know" List
ETHANOL
Present.

New Jersey "Right To Know" List
ETHANOL
Present.

Pennsylvania "Right To Know" List
ETHANOL
Present.

Inventories
Canada - DSL/NDSL
TRANS-1,3,3,3-TETRAFLUOROPROP-1-ENE
DSL
Trans-1-chloro-3,3,3-trifluoropropene
DSL
ETHANOL
DSL

US - TSCA
Yes
TRANS-1,3,3,3-TETRAFLUOROPROP-1-ENE
Present.
Trans-1-chloro-3,3,3-trifluoropropene
Present.
ETHANOL
Present.

16. Other information
NOTE: Lines within the margin indicate significant changes from the previous revision.

Revision comments
Revision date 11/29/2016
Revision 21
Supersedes date 11/28/2016
SDS No. AEROSOL - UFR
SDS status Approved.

Hazard statements in full
H225 Highly flammable liquid and vapor.
H280 Contains gas under pressure; may explode if heated.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H361 Suspected of damaging fertility or the unborn child.
H370 Causes damage to organs.
H370 Causes damage to organs (Central nervous system, Eyes).

NFPA - health hazard Temporary incapacitation, injury. (2)
NFPA - flammability hazard Burns only if pre-heated. (1)
NFPA - instability hazard Normally stable. (0)
NFPA - special hazard N/A
ACA HMIS Health rating. Moderate Hazard. (2)
ACA HMIS Flammability rating. Burns only if pre-heated. (1)
ACA HMIS Physical hazard rating. Normally stable. (0)
ACA HMIS Personal protection rating. N/A.

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.