SAFETY DATA SHEET
UFR UNIVERSAL FLUX REMOVER, AEROSOL

According to WHMIS 2015, in compliance with the Hazardous Product Act (HPA, as amended) and the requirements of the Hazardous Product Regulations (HPR)

1. Identification

Product identifier

Product name UFR UNIVERSAL FLUX REMOVER, AEROSOL

Product number MCC-UFR10A, MCC-UFR10Y

Recommended use of the chemical and restrictions on use

Restriction on use Cleaning agent.

Details of the supplier of the safety data sheet

Supplier
MICROCARE LLC
Tel: +1 860-827-0626

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

Emergency telephone number

Emergency telephone
INFOTRAC 1-800-535-5053 (CANADA and U.S.A.)
1-352-323-3500 (from anywhere in the world)

2. Hazard identification

Classification of the substance or mixture

WHMIS Regulatory Status This product has been classified according to the hazard criteria of the Hazardous Product Regulations and the SDS contains all required information.

Physical hazards Not Classified

Health hazards Repr. 1A - H360

Environmental hazards Not Classified

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 Vapours 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 vapour displaces oxygen available for breathing (asphyxiant).

Label elements

UFR UNIVERSAL FLUX REMOVER, AEROSOL

Hazard pictograms

Signal word	Danger
Hazard statements	H360 May damage fertility or the unborn child.
Precautionary statements	P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P211 Do not spray on an open flame or other ignition source. P251 Do not pierce or burn, even after use. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. P501 Dispose of contents/ container in accordance with local regulations.
Supplemental label information	EUH210 Safety data sheet available on request. RCH001a For use in industrial installations only.
Contains	METHANOL

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 **60-100%**

CAS number: 102687-65-0

Classification
Press. Gas, Liquefied - H280

TRANS-1,3,3,3-TETRAFLUOROPROP-1-ENE **10-30%**

CAS number: 29118-24-9

Classification
Press. Gas, Liquefied - H280

ETHANOL **1-5%**

CAS number: 64-17-5

Classification
Flam. Liq. 2 - H225

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METHANOL	0.1-1% Trade secret
CAS number: 67-56-1	

Classification
Flam. Liq. 2 - H225
Acute Tox. 3 - H301
Acute Tox. 3 - H311
Acute Tox. 3 - H331
Eye Irrit. 2A - H319
Repr. 1A - H360
STOT SE 1 - H370

ISOBUTYL METHYL KETONE	<0.1% Trade secret
CAS number: 108-10-1	

Classification
Flam. Liq. 2 - H225
Acute Tox. 4 - H332
Eye Irrit. 2 - H319
STOT SE 3 - H335

ETHYL ACETATE	<0.1% Trade secret
CAS number: 141-78-6	

Classification
Flam. Liq. 2 - H225
Eye Irrit. 2 - H319
STOT SE 3 - H336

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

Composition comments The data shown are in accordance with the latest EC Directives.

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.

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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. Vapours are heavier than air and may travel along the floor and accumulate in the bottom of containers. Gas or vapour displaces oxygen available for breathing (asphyxiant). Une inhalation prolongée ou excessive peut irriter les voies respiratoires.

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 any 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.

Specific hazards arising from the hazardous product

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 vapours. 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 vapours. 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. Bursting aerosol containers may be propelled from a fire at high speed.

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 vapours. 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

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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

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 vapours/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 vapours. 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 use(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).

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

ETHANOL

Short-term exposure limit (15-minute): ACGIH 1000 ppm 1880 mg/m³
A3

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

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

ETHYL ACETATE

Long-term exposure limit (8-hour TWA): ACGIH 400 ppm 1440 mg/m³

ACGIH = American Conference of Governmental Industrial Hygienists.
A3 = Confirmed Animal Carcinogen with Unknown Relevance to Humans.
Sk = Danger of cutaneous absorption.

trans-1-Chloro-3,3,3-trifluoropropene (CAS: 102687-65-0)

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

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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. Vapours 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
Colour	Clear liquid. Colourless.
Odour	Slight.
Odour threshold	No information available.
pH	Not applicable.
Melting point	Not applicable.
Initial boiling point and range	19°C/66°F @ 101.3 kPa
Flash point	Not applicable. The product is not flammable.
Evaporation rate	Not determined.
Evaporation factor	No information available.
Upper/lower flammability or explosive limits	Not applicable.
Other flammability	No information available.
Vapour pressure	1.91 kPa @ 20°C
Vapour density	>1
Relative density	1.24
Bulk density	No information available.

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Solubility(ies)	Slightly soluble in water.
Partition coefficient	No information available.
Auto-ignition temperature	No information available.
Decomposition Temperature	No information available.
Viscosity	No information available.
Global Warming Potential (GWP)	
Surface tension	
Refractive index	No information available.
Particle size	No information available.
Molecular weight	No information available.
Volatility	100%
Saturation concentration	No information available.
Critical temperature	No information available.
Volatile organic compound	This product contains a maximum VOC content of 59 g/litre.
Heat of vaporization (at boiling point), cal/g (Btu/lb)	

10. Stability and reactivity

Reactivity	There are no known reactivity hazards associated with this product.
Stability	Stable at normal ambient temperatures and when used as recommended.
Possibility of hazardous reactions	Will not polymerize.
Conditions to avoid	Keep away from heat, sparks and open flame. Thermal decomposition or combustion products may include the following substances: Toxic and corrosive gases or vapours.
Materials to avoid	Alkali metals. Alkaline earth metals.
Hazardous decomposition products	Heating may generate the following products: Toxic and corrosive gases or vapours. 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.

Acute toxicity - oral

ATE oral (mg/kg)	50,384.18

Acute toxicity - dermal

ATE dermal (mg/kg)	151,152.54

Acute toxicity - inhalation

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ATE inhalation (vapours mg/l)	1,511.53
ATE inhalation (dusts/mists mg/l)	251.92

Inhalation	Vapours 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 vapour in high concentrations may irritate the respiratory system. Symptoms following overexposure may include the following: Headache. Fatigue. Nausea, vomiting.

Toxicological information on ingredients

trans-1-Chloro-3,3,3-trifluoropropene

Acute toxicity - oral

Notes (oral LD_{50})	No information available.

Acute toxicity - dermal

Notes (dermal LD_{50})	No information required.

Acute toxicity - inhalation

Acute toxicity inhalation (LC_{50} gases ppmV)	120,000.0
Species	Rat
ATE inhalation (gases ppmV)	120,000.0

Inhalation	Vapours 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 vapour 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

Acute toxicity inhalation (LC_{50} vapours mg/l)	965.0
Species	Rat

UFR UNIVERSAL FLUX REMOVER, AEROSOL

ATE inhalation (vapours mg/l)	965.0

ETHANOL

Acute toxicity - inhalation

Acute toxicity inhalation (LC_{50} vapours mg/l)	20,000.0
ATE inhalation (vapours mg/l)	20,000.0

METHANOL

Acute toxicity - oral

Notes (oral LD_{50})	Acute Tox. 3 - H301 Toxic if swallowed.
ATE oral (mg/kg)	100.0

Acute toxicity - dermal

Notes (dermal LD_{50})	Acute Tox. 3 - H311 Toxic in contact with skin.
ATE dermal (mg/kg)	300.0

Acute toxicity - inhalation

Notes (inhalation LC_{50})	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

Serious eye damage/irritation	Based on available data the classification criteria are not met.

Respiratory sensitization

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

Skin sensitization

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

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.

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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

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

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.

METHANOL

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

Ecological information on ingredients

trans-1-Chloro-3,3,3-trifluoropropene

Acute aquatic toxicity

Acute toxicity - fish , : , Oncorhynchus mykiss (Rainbow trout)
LC_{50}, 96 hours: 38 mg/l mg/l, Fish

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Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: 82 mg/l, Freshwater invertebrates
Acute toxicity - aquatic plants	EC_{50}, 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 aquatic toxicity

Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: >160 mg/l, Daphnia magna

ETHANOL

Acute aquatic toxicity

Acute toxicity - fish	LC_{50}, 96 hours: >10,000 mg/l, Fish
Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: 7,800 mg/l, Daphnia magna
Acute toxicity - aquatic plants	, 96 hours: 1000 mg/l, Freshwater algae

METHANOL

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

Acute aquatic toxicity

Acute toxicity - fish	LC_{50}, 96 hours: >100 mg/l, Pimephales promelas (Fat-head Minnow)
Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: >10000 mg/l, Daphnia magna

Persistence and degradability

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.

METHANOL

Persistence and degradability	The degradability of the product is not known.

UFR UNIVERSAL FLUX REMOVER, AEROSOL

Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient No information available.

Ecological information on ingredients

trans-1-Chloro-3,3,3-trifluoropropene

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient Kow: 2.09

ETHANOL

Bioaccumulative potential Bioaccumulation is unlikely.

Partition coefficient No information available.

METHANOL

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient : -0.77

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.

ETHANOL

Mobility The product is soluble in water.

METHANOL

Mobility 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.

METHANOL

Other adverse effects None known.

13. Disposal considerations

Waste treatment methods

UFR UNIVERSAL FLUX REMOVER, AEROSOL

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)	1950
UN No. (IMDG)	1950
UN No. (ICAO)	1950
UN No. (DOT)	UN1950

UN proper shipping name

Proper shipping name (TDG)	AEROSOLS
Proper shipping name (IMDG)	AEROSOLS
Proper shipping name (ICAO)	AEROSOLS
Proper shipping name (DOT)	AEROSOLS

Transport hazard class(es)

DOT class	2.2
DOT hazard label	2.2
TDG class	2.2
TDG label(s)	2.2
IMDG class	2.2
ICAO class/division	2.2

Transport labels

DOT transport label

Packing group

TDG packing group	None
IMDG packing group	None
ICAO packing group	None
DOT packing group	None

Environmental hazards

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Environmentally hazardous substance/marine pollutant
No.

Special precautions for user

EmS	F-D, S-U
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

15. Regulatory information

Guidance	Workplace Exposure Limits EH40. Introduction to Local Exhaust Ventilation HS(G)37.

Inventories

Canada – DSL/NDSL

ETHANOL
DSL

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

trans-1-Chloro-3,3,3-trifluoropropene
DSL

US - TSCA
Yes

16. Other information

Revision comments	NOTE: Lines within the margin indicate significant changes from the previous revision.
Revision date	2021-06-01
Revision	43
Supersedes date	2021-05-21
SDS number	AEROSOL - UFR10A
SDS status	Approved.
Hazard statements in full	H225 Highly flammable liquid and vapour. H280 Contains gas under pressure; may explode if heated. H301 Toxic if swallowed. H311 Toxic in contact with skin. 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 .

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.