



## SAFETY DATA SHEET

### FRC GENERAL PURPOSE FLUX REMOVER - FLUX REMOVER C, AEROSOL

According to Appendix D, OSHA Hazard Communication Standard 29 CFR §1910.1200

#### 1. Identification

##### Product identifier

**Product name** FRC GENERAL PURPOSE FLUX REMOVER - FLUX REMOVER C, AEROSOL

**Product number** MCC-FRC, MCC-FRC101, MCC-FRC105, MCC-FRC10Y

**Synonyms; trade names** "FRC-Flux Remover C, Electronics Defluxer/Cleaner"

##### 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 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 (U.S.A. and CANADA)  
1-352-323-3500 (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.

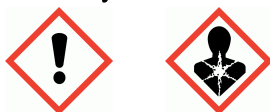
**Physical hazards** Not Classified

**Health hazards** Eye Irrit. 2A - H319 STOT SE 1 - H370 STOT SE 3 - H336

**Environmental hazards** Aquatic Chronic 3 - H412

##### Label elements

##### Hazard symbols



**Signal word** Danger

## FRC GENERAL PURPOSE FLUX REMOVER - FLUX REMOVER C, AEROSOL

<b>Hazard statements</b>	H319 Causes serious eye irritation. H370 Causes damage to organs . H336 May cause drowsiness or dizziness. H412 Harmful to aquatic life with long lasting effects.
<b>Precautionary statements</b>	P210 Keep away from heat, sparks, open flames and hot surfaces. No smoking. P211 Do not spray on an open flame or other ignition source. P251 Pressurized container: Do not pierce or burn, even after use P261 Avoid breathing spray. P302+P352 If on skin: Wash with plenty of water. P314 Get medical advice/ attention if you feel unwell. 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.
<b>Supplemental label information</b>	EUH210 Safety data sheet available on request. RCH001a For use in industrial installations only.
<b>Contains</b>	trans-1,2-DICHLOROETHYLENE, METHANOL

### 3. Composition/information on ingredients

#### Mixtures

<b>trans-1,2-DICHLOROETHYLENE</b> CAS number: 156-60-5	<b>10-30%</b>
<b>Classification</b> Flam. Liq. 2 - H225 Acute Tox. 4 - H332 Eye Irrit. 2A - H319 STOT SE 3 - H336 Aquatic Chronic 3 - H412	
<b>1,1,1,2,2,3,4,5,5,5-decafluoropentane</b> CAS number: 138495-42-8	<b>10-30%</b>
<b>Classification</b> Aquatic Chronic 3 - H412	
<b>1,1,1,3,3-PENTAFLUOROBUTANE</b> CAS number: 406-58-6	<b>10-30%</b>
<b>Classification</b> Flam. Liq. 2 - H225	
<b>HFC-134a Tetrafluoroethane</b> CAS number: 811-97-2	<b>10-30%</b>
<b>Classification</b> Press. Gas, Liquefied - H280 Simple Asphyxiant - USH03	

## FRC GENERAL PURPOSE FLUX REMOVER - FLUX REMOVER C, AEROSOL

<b>METHANOL</b>	<b>1-5%</b>
CAS number: 67-56-1	
<b>Classification</b>	
Flam. Liq. 2 - H225	
Acute Tox. 3 - H301	
Acute Tox. 3 - H311	
Acute Tox. 3 - H331	
STOT SE 1 - H370	

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

##### Description of first aid measures

<b>General information</b>	Get medical attention if any discomfort continues. Show this Safety Data Sheet to the medical personnel.
<b>Inhalation</b>	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Get medical attention. Place unconscious person on their side in the recovery position and ensure breathing can take place.
<b>Ingestion</b>	Rinse mouth thoroughly with water. Give a few small glasses of water or milk to drink. Stop if the affected person feels sick as vomiting may be dangerous. Never give anything by mouth to an unconscious person. Place unconscious person on their side in the recovery position and ensure breathing can take place. Keep affected person under observation. Get medical attention if symptoms are severe or persist.
<b>Skin Contact</b>	Rinse with water.
<b>Eye contact</b>	Remove any contact lenses and open eyelids wide apart. Rinse with water. Get medical attention if any discomfort continues.
<b>Protection of first aiders</b>	First aid personnel should wear appropriate protective equipment during any rescue.

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

<b>General information</b>	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
<b>Inhalation</b>	A single exposure may cause the following adverse effects: Pain or irritation. Intoxication. Narcotic effect. Muscle weakness. Nausea, vomiting.
<b>Ingestion</b>	Due to the physical nature of this product, it is unlikely that ingestion will occur.
<b>Skin contact</b>	A single exposure may cause the following adverse effects: Pain.
<b>Eye contact</b>	May be slightly irritating to eyes. May cause discomfort.

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

**Notes for the doctor** Treat symptomatically.

#### 5. Fire-fighting measures

## FRC GENERAL PURPOSE FLUX REMOVER - FLUX REMOVER C, AEROSOL

### 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

**Flammability Class** The product is not flammable.

**Specific hazards** Containers can burst violently or explode when heated, due to excessive pressure build-up. Bursting aerosol containers may be propelled from a fire at high speed. If aerosol cans are ruptured, care should be taken due to the rapid escape of the pressurized contents and propellant.

**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.

**Special protective equipment for firefighters** Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Standard Firefighter's clothing including helmets, protective boots and gloves will provide a basic level of protection for chemical incidents.

## 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. Evacuate area. Risk of explosion.

### Environmental precautions

**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. Eliminate all ignition sources if safe to do so. No smoking, sparks, flames or other sources of ignition near spillage. Under normal conditions of handling and storage, spillages from aerosol containers are unlikely. If aerosol cans are ruptured, care should be taken due to the rapid escape of the pressurized contents and propellant. Small Spillages: Wipe up with an absorbent cloth and dispose of waste safely. Large Spillages: If the product is soluble in water, dilute the spillage with water and mop it up. Alternatively, or if it is not water-soluble, absorb the spillage with an inert, dry material and place it in a suitable waste disposal container. 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.

## FRC GENERAL PURPOSE FLUX REMOVER - FLUX REMOVER C, AEROSOL

**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. Avoid exposing aerosol containers to high temperatures or direct sunlight. Avoid discharge to the aquatic environment. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Spray will evaporate and cool rapidly and may cause frostbite or cold burns if in contact with skin. Avoid contact with eyes. Avoid inhalation of vapors and spray/mists.

**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. Protect from sunlight. Do not store near heat sources or expose to high temperatures. Do not expose to temperatures exceeding 50°C/122°F.

**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).

### 8. Exposure controls/Personal protection

#### Control parameters

#### Occupational exposure limits

##### **trans-1,2-DICHLOROETHYLENE**

Long-term exposure limit (8-hour TWA): ACGIH 200 ppm 793 mg/m<sup>3</sup>

##### **1,1,1,2,2,3,4,5,5,5-decafluoropentane**

No information available that would effect occupational exposure limit values.

##### **1,1,1,3,3-PENTAFLUOROBUTANE**

Long-term exposure limit (8-hour TWA): SUP 1000 ppm

##### **HFC-134a Tetrafluoroethane**

Long-term exposure limit (8-hour TWA): OES 4240 mg/m<sup>3</sup>

##### **METHANOL**

Long-term exposure limit (8-hour TWA): ACGIH 200 ppm 262 mg/m<sup>3</sup>

Short-term exposure limit (15-minute): ACGIH 250 ppm 328 mg/m<sup>3</sup>

Sk

Long-term exposure limit (8-hour TWA): OSHA 200 ppm 260 mg/m<sup>3</sup>

ACGIH = American Conference of Governmental Industrial Hygienists.

Sk = Danger of cutaneous absorption.

OSHA = Occupational Safety and Health Administration.

**Ingredient comments** WEL = Workplace Exposure Limits ACGIH = US Standard.

# FRC GENERAL PURPOSE FLUX REMOVER - FLUX REMOVER C, AEROSOL

## METHANOL (CAS: 67-56-1)

Biological limit values 15 mg/l

### Exposure controls

#### Protective equipment



#### 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

Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses.

#### Hand protection

No specific hand protection recommended. Avoid contact with skin.

#### Other skin and body protection

Wear appropriate clothing to prevent repeated or prolonged 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

Appearance	Clear liquid. Aerosol.
Color	Colorless.
Odor	Slight. Ether.
Odor threshold	No information available.
pH	No information available.
Melting point	No information available.
Initial boiling point and range	37°C/99°F @ 101.3 kPa
Flash point	The product is not flammable.
Evaporation rate	No information available.
Evaporation factor	No information available.
Flammability (solid, gas)	Not applicable.

## FRC GENERAL PURPOSE FLUX REMOVER - FLUX REMOVER C, AEROSOL

<b>Upper/lower flammability or explosive limits</b>	Lower flammable/explosive limit: 7.5 %(V) Upper flammable/explosive limit: 9.0 %(V)
<b>Other flammability</b>	The product is not flammable. Aerosol ignition distance: none at 0.0 cm
<b>Vapor pressure</b>	65 kPa @ 25°C
<b>Vapor density</b>	4.0
<b>Relative density</b>	1.31
<b>Bulk density</b>	No information available.
<b>Solubility(ies)</b>	Slightly soluble in water.
<b>Partition coefficient</b>	No information available.
<b>Auto-ignition temperature</b>	No information available.
<b>Decomposition Temperature</b>	No information available.
<b>Viscosity</b>	No information available.
<b>Explosive properties</b>	No information available.
<b>Comments</b>	Aerosol.
<b>Global Warming Potential (GWP)</b>	
<b>Surface tension</b>	
<b>Refractive index</b>	No information available.
<b>Particle size</b>	Not applicable.
<b>Molecular weight</b>	Not applicable.
<b>Volatility</b>	100%
<b>Saturation concentration</b>	No information available.
<b>Critical temperature</b>	No information available.
<b>Volatile organic compound</b>	No information available.
<b>Heat of vaporization (at boiling point), cal/g (Btu/lb)</b>	

### 10. Stability and reactivity

<b>Reactivity</b>	See the other subsections of this section for further details.
<b>Stability</b>	Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.
<b>Possibility of hazardous reactions</b>	No potentially hazardous reactions known.
<b>Conditions to avoid</b>	Avoid exposing aerosol containers to high temperatures or direct sunlight. Pressurised container: may burst if heated
<b>Materials to avoid</b>	No specific material or group of materials is likely to react with the product to produce a hazardous situation.

## FRC GENERAL PURPOSE FLUX REMOVER - FLUX REMOVER C, AEROSOL

**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

##### Acute toxicity - oral

**Notes (oral LD<sub>50</sub>)** Based on available data the classification criteria are not met.

**ATE oral (mg/kg)** 2,500.0

##### Acute toxicity - dermal

**Notes (dermal LD<sub>50</sub>)** Based on available data the classification criteria are not met.

**ATE dermal (mg/kg)** 7,500.0

##### Acute toxicity - inhalation

**Notes (inhalation LC<sub>50</sub>)** Based on available data the classification criteria are not met.

**ATE inhalation (vapours mg/l)** 25.78

**ATE inhalation (dusts/mists mg/l)** 12.5

##### 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.

**Reproductive toxicity - development**

Based on available data the classification criteria are not met.

##### Specific target organ toxicity - single exposure

**STOT - single exposure** STOT SE 2 - H371 May cause 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.



## FRC GENERAL PURPOSE FLUX REMOVER - FLUX REMOVER C, AEROSOL

<b>General information</b>	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
<b>Inhalation</b>	A single exposure may cause the following adverse effects: Pain or irritation. Intoxication. Narcotic effect. Muscle weakness. Nausea, vomiting.
<b>Ingestion</b>	Due to the physical nature of this product, it is unlikely that ingestion will occur.
<b>Skin Contact</b>	A single exposure may cause the following adverse effects: Pain.
<b>Eye contact</b>	May be slightly irritating to eyes. May cause discomfort.
<b>Route of exposure</b>	Ingestion Inhalation Skin and/or eye contact
<b>Target Organs</b>	No specific target organs known.

### Toxicological information on ingredients.

#### trans-1,2-DICHLOROETHYLENE

<b>Other health effects</b>	There is no evidence that the product can cause cancer.
<b><u>Acute toxicity - oral</u></b>	
<b>Acute toxicity oral (LD<sub>50</sub> mg/kg)</b>	7,902.0
<b>Species</b>	Rat
<b>ATE oral (mg/kg)</b>	7,902.0
<b><u>Acute toxicity - dermal</u></b>	
<b>Acute toxicity dermal (LD<sub>50</sub> mg/kg)</b>	5,000.0
<b>Species</b>	Rat
<b>ATE dermal (mg/kg)</b>	5,000.0
<b><u>Acute toxicity - inhalation</u></b>	
<b>ATE inhalation (vapours mg/l)</b>	11.0
<b><u>Skin corrosion/irritation</u></b>	
<b>Skin corrosion/irritation</b>	Prolonged and frequent contact may cause redness and irritation.
<b>Animal data</b>	Slightly irritating. Rabbit
<b><u>Serious eye damage/irritation</u></b>	
<b>Serious eye damage/irritation</b>	Supplier's information. Rabbit 500 mg 24 hours Causes mild skin irritation.
<b><u>Respiratory sensitization</u></b>	
<b>Respiratory sensitization</b>	No specific test data are available.
<b><u>Skin sensitization</u></b>	
<b>Skin sensitization</b>	No specific test data are available.
<b><u>Germ cell mutagenicity</u></b>	
<b>Genotoxicity - in vitro</b>	This substance has no evidence of mutagenic properties.
<b>Genotoxicity - in vivo</b>	This substance has no evidence of mutagenic properties.

## FRC GENERAL PURPOSE FLUX REMOVER - FLUX REMOVER C, AEROSOL

### Carcinogenicity

**Carcinogenicity** No specific test data are available.

### Specific target organ toxicity - single exposure

**STOT - single exposure** NOAEL Not available.

### Specific target organ toxicity - repeated exposure

**STOT - repeated exposure** NOAEL 16 mg/l, 90 days

**Target organs** Endocrine system Liver Kidneys Bladder Respiratory tract

### 1,1,1,2,2,3,4,5,5,5-decafluoropentane

### Acute toxicity - oral

**Acute toxicity oral (LD<sub>50</sub> mg/kg)** 5,000.0

**Species** Rat

**ATE oral (mg/kg)** 5,000.0

### Acute toxicity - dermal

**Acute toxicity dermal (LD<sub>50</sub> mg/kg)** 5,000.0

**Species** Rat

**ATE dermal (mg/kg)** 5,000.0

### Acute toxicity - inhalation

**Acute toxicity inhalation (LC<sub>50</sub> vapours mg/l)** 114.0

**Species** Rat

**ATE inhalation (vapours mg/l)** 114.0

### Skin corrosion/irritation

**Animal data** Not irritating. Rabbit

**Human skin model test** Data lacking.

**Extreme pH** Not applicable. Not corrosive to skin.

### Serious eye damage/irritation

**Serious eye damage/irritation** Not irritating. Rabbit

### Respiratory sensitization

**Respiratory sensitization** Data lacking.

### Skin sensitization

**Skin sensitization** Not sensitizing. - Guinea pig: Not sensitizing.

### Germ cell mutagenicity

**Genotoxicity - in vitro** This substance has no evidence of mutagenic properties.

## FRC GENERAL PURPOSE FLUX REMOVER - FLUX REMOVER C, AEROSOL

<b>Genotoxicity - in vivo</b>	This substance has no evidence of mutagenic properties.
<b><u>Carcinogenicity</u></b>	
<b>Carcinogenicity</b>	Does not contain any substances known to be carcinogenic.
<b>IARC carcinogenicity</b>	Not listed.
<b>NTP carcinogenicity</b>	Not listed.
<b>OSHA Carcinogenicity</b>	Not listed.
<b><u>Reproductive toxicity</u></b>	
<b>Reproductive toxicity - fertility</b>	No evidence of reproductive toxicity in animal studies.
<b>Skin Contact</b>	Skin irritation should not occur when used as recommended. May cause defatting of the skin but is not an irritant.
<b>Eye contact</b>	May cause eye irritation.
<b>Acute and chronic health hazards</b>	There is no evidence that the product can cause cancer.

### 1,1,1,3,3-PENTAFLUOROBUTANE

<b><u>Acute toxicity - oral</u></b>	
<b>Acute toxicity oral (LD<sub>50</sub> mg/kg)</b>	2,000.0
<b>Species</b>	Rat
<b>ATE oral (mg/kg)</b>	2,000.0
<b><u>Acute toxicity - inhalation</u></b>	
<b>Acute toxicity inhalation (LC<sub>50</sub> vapours mg/l)</b>	100,000.0
<b>Species</b>	Rat
<b>ATE inhalation (vapours mg/l)</b>	100,000.0
<b><u>Specific target organ toxicity - single exposure</u></b>	
<b>STOT - single exposure</b>	LOAEL 75100 ppm, Inhalation,
<b><u>Specific target organ toxicity - repeated exposure</u></b>	
<b>STOT - repeated exposure</b>	NOAEC 6 mg/l, Inhalation, Rat
<b>Target organs</b>	Liver Kidneys

### HFC-134a Tetrafluoroethane

<b>Other health effects</b>	There is no evidence that the product can cause cancer.
<b><u>Acute toxicity - inhalation</u></b>	
<b>Acute toxicity inhalation (LC<sub>50</sub> gases ppmV)</b>	567,000.0

## FRC GENERAL PURPOSE FLUX REMOVER - FLUX REMOVER C, AEROSOL

<b>Species</b>	Rat
<b>ATE inhalation (gases ppm)</b>	567,000.0
<b>Inhalation</b>	Vapors irritate the respiratory system. May cause coughing and difficulties in breathing.
<b>Ingestion</b>	May cause stomach pain or vomiting. May cause nausea, headache, dizziness and intoxication.
<b>Skin Contact</b>	May cause allergic contact eczema. Contact with liquid form may cause frostbite.
<b>Eye contact</b>	May cause temporary eye irritation.

### METHANOL

#### Acute toxicity - oral

<b>Notes (oral LD<sub>50</sub>)</b>	Acute Tox. 3 - H301 Toxic if swallowed.
<b>ATE oral (mg/kg)</b>	100.0

#### Acute toxicity - dermal

<b>Notes (dermal LD<sub>50</sub>)</b>	Acute Tox. 3 - H311 Toxic in contact with skin.
<b>ATE dermal (mg/kg)</b>	300.0

#### Acute toxicity - inhalation

<b>Notes (inhalation LC<sub>50</sub>)</b>	Acute Tox. 3 - H331 Toxic if inhaled.
<b>ATE inhalation (vapours mg/l)</b>	3.0
<b>ATE inhalation (dusts/mists mg/l)</b>	0.5

#### Skin corrosion/irritation

<b>Animal data</b>	Based on available data the classification criteria are not met.
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#### Serious eye damage/irritation

<b>Serious eye damage/irritation</b>	Based on available data the classification criteria are not met.
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#### Respiratory sensitization

<b>Respiratory sensitization</b>	Based on available data the classification criteria are not met.
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#### Skin sensitization

<b>Skin sensitization</b>	Based on available data the classification criteria are not met.
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#### Germ cell mutagenicity

<b>Genotoxicity - in vitro</b>	Based on available data the classification criteria are not met.
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#### Carcinogenicity

<b>Carcinogenicity</b>	Based on available data the classification criteria are not met.
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<b>IARC carcinogenicity</b>	None of the ingredients are listed or exempt.
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#### Reproductive toxicity

## FRC GENERAL PURPOSE FLUX REMOVER - FLUX REMOVER C, AEROSOL

<b>Reproductive toxicity - fertility</b>	Based on available data the classification criteria are not met.
<b>Reproductive toxicity - development</b>	Based on available data the classification criteria are not met.
<b><u>Specific target organ toxicity - single exposure</u></b>	
<b>STOT - single exposure</b>	STOT SE 1 - H370 Causes damage to organs .
<b><u>Specific target organ toxicity - repeated exposure</u></b>	
<b>STOT - repeated exposure</b>	Not classified as a specific target organ toxicant after repeated exposure.
<b><u>Aspiration hazard</u></b>	
<b>Aspiration hazard</b>	Based on available data the classification criteria are not met.
<b><u>General information</u></b>	
<b>General information</b>	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
<b>Inhalation</b>	A single exposure may cause the following adverse effects: Drowsiness, dizziness, disorientation, vertigo. Unconsciousness. High concentrations may be fatal.
<b>Ingestion</b>	May cause stomach pain or vomiting. May cause severe internal injury.
<b>Skin Contact</b>	A single exposure may cause the following adverse effects: Pain.
<b>Eye contact</b>	No specific symptoms known.
<b>Route of exposure</b>	Ingestion Inhalation Skin and/or eye contact
<b>Target Organs</b>	No specific target organs known.

### 12. Ecological information

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

#### Ecological information on ingredients.

##### trans-1,2-DICHLOROETHYLENE

**Ecotoxicity** Harmful to aquatic life. May cause long lasting harmful effects to aquatic life.

##### 1,1,1,2,2,3,4,5,5,5-decafluoropentane

**Ecotoxicity** It is unlikely that the substance will dissolve in water in amounts big enough to have a toxic effect on fish and daphnies.

##### 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<sub>50</sub>, 96 hours: 135 mg/l, Fish

## FRC GENERAL PURPOSE FLUX REMOVER - FLUX REMOVER C, AEROSOL

**Acute toxicity - aquatic invertebrates** EC<sub>50</sub>, 48 hours: 220 mg/l, Daphnia magna

**Acute toxicity - aquatic plants** LC<sub>50</sub>, 72 hours: 36.36 mg/l, Pseudokirchneriella subcapitata

### Chronic aquatic toxicity

**Chronic toxicity - fish early life stage** NOEC, 48 hours: 110,000 mg/l, Daphnia magna

### 1,1,1,2,2,3,4,5,5,5-decafluoropentane

### Acute aquatic toxicity

**Acute toxicity - fish** LC<sub>50</sub>, 96 hours: 13.9 mg/l, Oncorhynchus mykiss (Rainbow trout)

**Acute toxicity - aquatic invertebrates** LC<sub>50</sub>, 48 hours: 11.7 mg/l, Daphnia magna

**Acute toxicity - aquatic plants** EC<sub>50</sub>, 72 hours: >120 mg/l, Algae

### HFC-134a Tetrafluoroethane

### Acute aquatic toxicity

**Acute toxicity - fish** LC<sub>50</sub>, 96 hours: 450 mg/l, Fish

**Acute toxicity - aquatic invertebrates** EC<sub>50</sub>, 48 hours: 980 mg/l, Daphnia magna

### METHANOL

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

### Acute aquatic toxicity

**Acute toxicity - fish** LC<sub>50</sub>, 96 hours: >100 mg/l, Pimephales promelas (Fat-head Minnow)

**Acute toxicity - aquatic invertebrates** EC<sub>50</sub>, 48 hours: >10000 mg/l, Daphnia magna

### Persistence and degradability

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

### Ecological information on ingredients.

### trans-1,2-DICHLOROETHYLENE

**Biodegradation** Not readily biodegradable.  
Method: OECD Test Guideline 301D

### METHANOL

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

### Bioaccumulative potential

**Bio-Accumulative Potential** No data available on bioaccumulation.

**Partition coefficient** No information available.

## FRC GENERAL PURPOSE FLUX REMOVER - FLUX REMOVER C, AEROSOL

### Ecological information on ingredients.

#### trans-1,2-DICHLOROETHYLENE

**Bio-Accumulative Potential** Bioaccumulation is unlikely to be significant because of the low water-solubility of this product.

**Partition coefficient** log Pow: 2.06

#### 1,1,1,2,2,3,4,5,5,5-decafluoropentane

**Bio-Accumulative Potential** Bioaccumulation is unlikely to be significant because of the low water-solubility of this product.

**Partition coefficient** Pow: 2.7

#### HFC-134a Tetrafluoroethane

**Partition coefficient** Pow: 1.06

#### METHANOL

**Bio-Accumulative Potential** No data available on bioaccumulation.

**Partition coefficient** : -0.77

### Mobility in soil

**Mobility** The product contains volatile organic compounds (VOCs) which will evaporate easily from all surfaces.

### Ecological information on ingredients.

#### trans-1,2-DICHLOROETHYLENE

**Mobility** The product has poor water-solubility.

#### METHANOL

**Mobility** No data available.

### Other adverse effects

**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.

## FRC GENERAL PURPOSE FLUX REMOVER - FLUX REMOVER C, AEROSOL

**Disposal methods** Do not empty into drains. Empty containers must not be punctured or incinerated because of the risk of an explosion. 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.

### 14. Transport information

#### UN Number

UN No. (IMDG) 1950

UN No. (ICAO) 1950

#### UN proper shipping name

Proper shipping name (TDG) 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) LIMITED QUANTITY

#### Transport hazard class(es)

IMDG Class 2.2 LIMITED QUANTITY

ICAO class/division 2.2 LIMITED QUANTITY

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable. No information required.

### 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:

*trans*-1,2-DICHLOROETHYLENE

Final CERCLA RQ: 1000(454) pounds (Kilograms)

METHANOL

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

##### **SARA Extremely Hazardous Substances EPCRA Reportable Quantities**

None of the ingredients are listed or exempt.

##### **SARA 313 Emission Reporting**

The following ingredients are listed or exempt:

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.



## FRC GENERAL PURPOSE FLUX REMOVER - FLUX REMOVER C, AEROSOL

### 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



WARNING: This product can expose you to chemicals including Methanol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

#### *METHANOL*

Developmental toxin.

#### California Air Toxics "Hot Spots" (A-I)

The following ingredients are listed or exempt:

#### *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:

#### *trans-1,2-DICHLOROETHYLENE*

#### *METHANOL*

#### Massachusetts "Right To Know" List

The following ingredients are listed or exempt:

#### *trans-1,2-DICHLOROETHYLENE*

#### *METHANOL*

#### Rhode Island "Right To Know" List

The following ingredients are listed or exempt:

#### *METHANOL*

#### Minnesota "Right To Know" List

The following ingredients are listed or exempt:

#### *HFC-134a Tetrafluoroethane*

#### *METHANOL*

#### New Jersey "Right To Know" List

The following ingredients are listed or exempt:

#### *METHANOL*

#### Pennsylvania "Right To Know" List

The following ingredients are listed or exempt:

## FRC GENERAL PURPOSE FLUX REMOVER - FLUX REMOVER C, AEROSOL

*trans-1,2-DICHLOROETHYLENE*

METHANOL

### Inventories

#### Canada - DSL/NDSL

*trans-1,2-DICHLOROETHYLENE*

DSL

*1,1,1,3,3-PENTAFLUOROBUTANE*

DSL

*HFC-134a Tetrafluoroethane*

DSL

METHANOL

DSL

#### US - TSCA

All the ingredients are listed or exempt.

*1,1,1,2,2,3,4,5,5,5-decafluoropentane*

Present.

1,1,1,2,2,3,4,5,5,5-DECAFLUOROPENTANE (CAS# 138495-42-8) is controlled by TSCA Section 5, Significant New Use Rule

(SNUR; 40 CFR 721.5645) The approved uses are: precision and general cleaning, carrier fluid, displacement drying, printed circuit board cleaning, particulate removal and film cleaning, process medium, heat transfer fluid (dielectric and non-dielectric), and test fluid. Processors and users of this substance must also comply with the applicable general SNUR requirements set forth in 40 CFR 721 subpart A, including export notification requirements if applicable (40 CFR 721.20), and the applicable record keeping requirements set forth at 40 CFR 721.125.

1,1,1,2,2,3,4,5,5,5-Decafluoropentane 138495-42-8

The United States Environmental Protection Agency (USEPA) has established a Significant New Use Rule (SNUR) for one of the components in this product. This material contains one or more substances which requires export notification under TSCA Section 12(b) and 40 CFR Part 707 Subpart D:

*trans-1,2-DICHLOROETHYLENE*

Present.

*1,1,1,3,3-PENTAFLUOROBUTANE*

Present.

*HFC-134a Tetrafluoroethane*

Present.

METHANOL

Present.

#### US - TSCA 12(b) Export Notification

The following ingredients are listed or exempt:

*1,1,1,2,2,3,4,5,5,5-decafluoropentane*

*trans-1,2-DICHLOROETHYLENE*

### 16. Other information

## FRC GENERAL PURPOSE FLUX REMOVER - FLUX REMOVER C, AEROSOL

<b>Abbreviations and acronyms used in the safety data sheet</b>	<p>TDG: The transport of dangerous goods act</p> <p>IATA: International air transport association.</p> <p>ICAO: Technical instructions for the safe transport of dangerous goods by air.</p> <p>IMDG: International maritime dangerous goods.</p> <p>CAS: Chemical abstracts service.</p> <p>ATE: Acute toxicity estimate.</p> <p>LC<sub>50</sub>: Lethal concentration to 50 % of a test population.</p> <p>LD<sub>50</sub>: Lethal dose to 50% of a test population (median lethal dose).</p> <p>EC<sub>50</sub>: 50% of maximal effective concentration.</p> <p>PBT: Persistent, bioaccumulative and toxic substance.</p> <p>vPvB: Very persistent and very bioaccumulative.</p>
<b>Classification abbreviations and acronyms</b>	<p>Aerosol = Aerosol</p> <p>STOT SE = Specific target organ toxicity-single exposure</p> <p>Aquatic Chronic = Hazardous to the aquatic environment (chronic)</p>
<b>Training advice</b>	<p>Only trained personnel should use this material.</p>
<b>Revision date</b>	6/1/2021
<b>Revision</b>	77
<b>Supersedes date</b>	5/21/2021
<b>SDS No.</b>	AEROSOL - FRC
<b>SDS status</b>	Approved.
<b>Hazard statements in full</b>	<p>H225 Highly flammable liquid and vapor.</p> <p>H280 Contains gas under pressure; may explode if heated.</p> <p>H301 Toxic if swallowed.</p> <p>H311 Toxic in contact with skin.</p> <p>H319 Causes serious eye irritation.</p> <p>H331 Toxic if inhaled.</p> <p>H332 Harmful if inhaled.</p> <p>H336 May cause drowsiness or dizziness.</p> <p>H370 Causes damage to organs .</p> <p>H412 Harmful to aquatic life with long lasting effects.</p> <p>USH03 May displace oxygen and cause rapid suffocation</p>

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.