

## Material Safety Data Sheet

### According to 91/155 EEC(2001/58 EC)

Printing date: 20.05.2005

Reviewed on: 20.05.2005

#### 1 Identification of substance:

- **Product details:**

- **Trade name:** VeriClean™ Flux Remover

**Aerosol:** MCC-DC1, MCC-DDC1, MCC-NDC1

**Bulk:** MCC-DC1G, MCC-DC1P, MCC-DC1D,

MCC-DDC1G, MCC-DDC1P, MCC-DDC1D,

MCC-NDC1G, MCC-NDC1P, MCC-NDC1D

- **Application of the substance / the preparation**

Used for defluxing circuit boards and light degreasing, especially for rework and repair applications

- **Supplier/Manufacturer:**

Micro Care Corporation  
595 John Downey Drive  
New Britain, CT 06051  
United States of America  
Tel.: +1-860-827-0626  
Fax: +1-860-827-8105

- **Information department:**

Tech support (Micro Care): Tel.: +1-860-827-0626  
Email: techsupport@microcare.com

- **Emergency information:** National Poisons Information Centre Tel.: +44 (0)870 6006266

#### 2 Composition/Data on components:

- **Chemical characterization**

- **Description:** Mixture of a glycol with methyl siloxane. The aerosol contains in addition tetrafluoroethane as propellant.

- **Dangerous components:**

CAS: 107-46-0 hexamethyldisiloxane	50-80%
EINECS: 203-492-7 F; R 11	

CAS: 107-98-2 1-methoxypropan-2-ol	2.5-15%
EINECS: 203-539-1 R 10	

CAS: 811-97-2 1,1,1,2-tetrafluoroethane	2.5-10%
EINECS: 212-377-0	

- **Additional information** Only the aerosol contains tetrafluoroethane (CAS: 811-79-2).

#### 3 Hazards identification

- **Hazard description:**



F Highly flammable

- **Information pertaining to particular dangers for man and environment:**

R 11 Highly flammable.

Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use.

100.0 % by mass of the contents are flammable

Keep out of the reach of children

- **Classification system:**

The classification was made according to the latest editions of the EU-lists, and expanded using company data and specialized literature.

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**MCC-NDC1G, MCC-NDC1P, MCC-NDC1D**

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#### Additional information:

1,1,1,2-Tetrafluoroethane belongs to the group of fluorinated/Partly fluorinated hydrocarbons, which have no ozone-depleting properties.

### 4 First aid measures

#### General information:

Immediately remove any clothing soiled by the product.  
 In case of irregular breathing or respiratory arrest provide artificial respiration.

#### After inhalation:

Supply fresh air and be sure to call for a doctor.  
 In case of unconsciousness, place patients on their side in a stable position for transportation.

#### After skin contact:

Immediately wash with water and soap and rinse thoroughly.

#### After eye contact:

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

#### After swallowing:

Do not induce vomiting; call for medical help immediately.

#### Information for doctor:

#### The following symptoms may occur:

Daze  
 Dizziness

### \* 5 Fire fighting measures

#### Suitable extinguishing agents:

CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.  
 Use fire fighting measures that suit the environment.

#### For safety reasons unsuitable extinguishing agents:

Direct jet water

#### Special hazards caused by the material, its products of combustion or resulting gases:

Dangerous decomposition product see chapter 10: stability and reactivity  
 Formation of toxic gases is possible during heating or in case of fire.

#### Protective equipment:

Wear self-contained respiratory protective device.

#### Additional information:

Heating leads to pressure increase entailing danger of bursting and explosion. Immediately cool neighbouring packages and containers with sprayed water and, if possible, remove them out of the danger zone  
 Collect contaminated fire fighting water separately. It must not enter the sewage system.  
 Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

### 6 Accidental release measures

#### Person-related safety precautions:



Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Do not smoke - keep ignition sources away

#### Measures for environmental protection:

Do not allow product to reach sewage system or any water course.

Do not allow to penetrate the ground/soil.

#### Measures for cleaning/collecting:

Ensure adequate ventilation.

Absorb liquid components with liquid-binding material.

Send for recovery or disposal in suitable receptacles.

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Dispose contaminated material as waste according to item 13.

## 7 Handling and storage

- **Handling**

- **Information for safe handling:**

Ensure good ventilation/exhaustion at the workplace.

Keep away from heat and direct sunlight.

Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).

- **Information about protection against explosions and fires:**



Keep ignition sources away - Do not smoke.

Protect against electrostatic charges

Emergency cooling must be available in case of nearby fire.

Flammable gas-air mixtures may be formed in empty receptacles (not valid for the aerosol).

For aerosols you have additionally pay attention to:

Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C, i.e. electric lights. Do not pierce or burn, even after use.

Do not spray on a naked flame or any incandescent material.

- **Storage**

- **Requirements to be met by storerooms and receptacles:**

Store cool and dry in a well ventilated area.

Store away from open flames, sources of heat or sparks.

Pay attention to special rules for the storage of flammable liquids.

For aerosols you have additionally pay attention to:

Observe official regulations on storing packagings with pressurized containers.

- **Information about storage in one common storage facility:**

Store away from foodstuffs.

Store away from feed.

Do not store together with oxidizing and acidic materials.

Follow regulations for flammable liquids.

- **Further information about storage conditions:** Keep receptacle tightly sealed.

- **Storage class**

3A Flammable Liquids

2B pressurized gas containers

## \* 8 Exposure controls and personal protection

- **Additional information about design of technical systems:**

Install appropriate mechanical ventilation.

Keep away from open flames and other ignition sources.

Protect against electrostatic charges.

- **Components with limit values that require monitoring at the workplace:**

**811-97-2 1,1,1,2-tetrafluorethane**

OES (Great Britain) Long-term value: 4240 mg/m<sup>3</sup>, 1000 ppm

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**107-98-2 1-methoxypropan-2-ol**

OES (Great Britain) Short-term value: 560 mg/m<sup>3</sup>, 150 ppm  
 Long-term value: 375 mg/m<sup>3</sup>, 100 ppm  
 New, IOELV, Sk

TLV (European Union) Short-term value: 568 mg/m<sup>3</sup>, 150 ppm  
 Long-term value: 375 mg/m<sup>3</sup>, 100 ppm  
 Skin

• **Additional information:** The lists that were valid during the creation were used as basis.

• **Personal protective equipment**• **General protective and hygienic measures:**

Wash hands before breaks and at the end of work.  
 Immediately remove all soiled and contaminated clothing  
 Do not inhale gases / fumes / aerosols.

• **Breathing equipment:**

Not necessary if room is well-ventilated.

Short term filter device:

Filter A

• **Protection of hands:**

At longer contact: protective gloves

To avoid skin problems reduce the wearing of gloves to the required minimum.

Check the permeability prior to each renewed use of the glove.

• **Material of gloves:**

The selection of suitable depends upon the material, and also upon the quality of the gloves. The degree of protection will vary from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

• **Penetration time of glove material:**

The exact break-through time has to be found out by the manufacturer of the protective gloves and has to be observed.

• **Eye protection:** Safety glasses• **Body protection:** Protective work clothing.

## 9 Physical and chemical properties:

• **General Information**

**Form:** Liquid  
 Aerosol  
**Colour:** Colourless  
 Clear  
**Odour:** Ether-like

• **Change in condition:**

**Melting point/Melting range:** undetermined

**Boiling point/Boiling range:** 98°C

• **Flash point:** -4°C (TCC)

• **Ignition temperature:** 365°C

• **Self igniting:** Product is not self-igniting.

• **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

• **Explosion limits:**

**Lower:** 1.25 Vol %

**Upper:** 18.6 Vol %

• **Vapour pressure at 25°C:** 44.6 mmHg

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- **Density at 25°C:** 0.77 g/cm<sup>3</sup>
- **Solubility in / Miscibility with Water:** Insoluble
- **Viscosity: dynamic at 20°C:** 0.8 cSt.

### 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used and stored according to specifications.  
Keep away from heat and direct sunlight.
- **Materials to be avoided:**  
Strong oxidants  
Strong acids  
Aldehydes  
Acetyl chloride  
Halogens  
Halogen compounds
- **Dangerous reactions:**  
Danger of receptacles bursting because of high vapour pressure if heated  
Flammable vapour-air mixtures may develop if stored in large receptacles above room temperature  
Used empty containers may contain product gases which form explosive mixtures with air
- **Dangerous products of decomposition:**  
In the case of fire or at high temperatures the formation of the following decomposition products is possible.  
Carbon monoxide and carbon dioxide  
Hydrogen fluoride  
Fluorocarbons  
Possibly traces of:  
Formaldehyde

### 11 Toxicological information

- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**
  - 107-98-2 1-methoxypropan-2-ol**
  - Oral LD50 5000 mg/kg (rat)
  - Dermal LD50 13500 mg/kg (rabbit)
  - Inhalative LC50/4 h 6 mg/L (rat)
  - 107-46-0 hexamethyldisiloxane**
  - Dermal LD50 16000 mg/kg (rabbit)
- **Primary irritant effect:**
- **on the skin:** Continuing or repeated contact with the skin may cause skin disease.
- **on the eye:** Light irritation possible
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
In addition to local irritant manifestations, there is a narcotic effect when inhaling high concentrations, with the danger of central respiratory arrest.  
Inhalation of concentrated vapours as well as oral intake will lead to anaesthesia-like conditions and headache, dizziness, etc.

### 12 Ecological information

- **Ecotoxicological effects:**
- **Aquatic toxicity:** Presently there are no ecotoxicological values available.

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· **General notes:**

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.  
 According to appendix 4 of VwVwS dated 17.05.1999 (German regulation)  
 Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.  
 Danger to drinking water is possible if large quantities leak into the ground or into water course.

### 13 Disposal considerations

- **Product:**
- **Recommendation:**



Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Disposal according to instructions of local authorities.

- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

### 14 Transport information

- **Land transport ADR/RID (cross-border)**
- **ADR/RID class:** 2 5F Gases      Bulk: 3 (F1)
- **Danger code (Kemler):** Aerosol: -      bulk: 33
- **UN-Number:** Aerosol: 1950      bulk: 1993
- **Packaging group:** -      bulk: II
- **Label:** Aerosol: 2      bulk: 3
- **Description of goods:** Aerosol: Aerosols  
bulk: Flammable Liquid, n.o.s., hexamethyldisiloxane, 1-methoxy-2-propanol
- **Maritime transport IMDG:**
- **IMDG Class:** Aerosol: 2      bulk: 3
- **UN Number:** Aerosol: 1950      bulk: 1993
- **Label:** Aerosol: 2.1      bulk: 3
- **Packaging group:** Aerosol: -      bulk: II
- **EMS Number:** F-D,S-U      F-E, S-E
- **Marine pollutant:** -
- **Proper shipping name:** Aerosol: Aerosols  
bulk: Flammable Liquid, n.o.s., hexamethyldisiloxane, 1-Methoxy-2-Propanol
- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** Aerosol: 2.1      bulk: 3
- **UN/ID Number:** Aerosol: 1950      bulk: 1993
- **Packaging group:** Aerosol: -      bulk: II
- **Proper shipping name:** Aerosol: Aerosols, flammable, n.o.s  
bulk: Flammable Liquid, n.o.s., hexamethyldisiloxane, 1-Methoxy-2-propanol

### \*15 Regulations

- **Markings according to EC guidelines:**  
The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials

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**MCC-NDC1G, MCC-NDC1P, MCC-NDC1D**

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· **Code letter and hazard designation of product:**



F Highly flammable

· **Risk phrases:**

11 Highly flammable.

· **Safety phrases:**

- 9 Keep container in a well-ventilated place.
- 16 Keep away from sources of ignition - No smoking.
- 24 Avoid contact with skin.
- 51 Use only in well-ventilated areas.
- 60 This material and its container must be disposed of as hazardous waste.

· **Special labelling of certain preparations:**

Only valid for the aerosol:

Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use.

100.0 % by mass of the contents are flammable

Keep out of the reach of children

· **National regulations**

· **Information about limitation of use:** Restrictions on juvenile employment must be observed.

· **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

### 16 Other information:

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Reasons for amendments:**

TLV

General revision

· **Relevant R-phrases:**

10 Flammable.

11 Highly flammable.

· **Department issuing MSDS:**

KFT-Chemieservice Marienstr. 3 D-64347 Griesheim

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· **Contact:** Angelika Torges

· **\* Data compared to the previous version altered.**

Changes have been made to chapters marked with a \*, as compared to the previous version.