

# 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:** IsoClean™ - Aerosol

MCC-BAC, MCC-DBAC, MCC-NBAC  
MCC-BACG, MCC-BACP, MCC-BACD,  
MCC-DBACG, MCC-DBACP, MCC-DBACD,  
MCC-NBACG, MCC-NBACP, MCC-NBACD  
MCC-BAC 16

· **Application of the substance / the preparation** Mild cleaner of ultra-pure isopropylalcohol for electronics

· **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:** Isopropyl alcohol (ultra-pur and anhydrous). The aerosol contains in addition tetrafluoroethane as propellant.

· **Dangerous components:**

CAS: 67-63-0	propan-2-ol	90-100%
EINECS: 200-661-7	Xi, F; R 11-36-67	

CAS: 811-97-2	1,1,1,2-tetrafluoroethane	0-20%
EINECS: 212-377-0		

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

### \* 3 Hazards identification

· **Hazard description:**



Xi Irritant  
 F Highly flammable

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

R 11 Highly flammable.

R 36 Irritating to eyes.

R 67 Vapours may cause drowsiness and dizziness.

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

90.0 % 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.

· **Additional information:**

See also item 15: Special label requirements for special mixtures.

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1,1,1,2-Tetrafluorethane 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.  
 If skin irritation continues, consult a doctor.

- **After eye contact:**

Rinse the eyes with open eyelids for 10 - 15 minutes with water.  
 Treatment by an ophthalmologist

- **After swallowing:**

Induce vomiting, if person is conscious. Seek medical help.  
 Drink plenty of water, but never give anything to an unconscious person.

- **Information for doctor:**

- **The following symptoms may occur:**

Headache  
 Gastric or intestinal disorders.  
 Vomiting

#### \* 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.

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- **Measures for cleaning/collecting:**

Ensure adequate ventilation.  
 Absorb liquid components with liquid-binding material.  
 Send for recovery or disposal in suitable receptacles.  
 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.

Pay attention to the national regulations concerning the storage of flammable liquids.

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**

2B pressurized gas containers

3A Flammable Liquids

## \* 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.

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

**67-63-0 propan-2-ol**

OES (Great Britain) Short-term value: 1250 mg/m<sup>3</sup>, 500 ppm  
 Long-term value: 999 mg/m<sup>3</sup>, 400 ppm

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

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

· **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.  
 Apply solvent resistant skin cream before beginning work.

· **Breathing equipment:**

Use suitable respiratory protective device in case of insufficient ventilation.

Short term filter device:

Filter A

· **Protection of hands:**

Neoprene gloves

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

Check protective gloves prior to each use for their proper condition.

· **Material of gloves:**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **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:** Tightly sealed goggles.

· **Body protection:** Protective work clothing.

## 9 Physical and chemical properties:

· **General Information**

**Form:** Aerosol  
**Colour:** Colourless  
 Clear  
**Odour:** Alcohol-like

· **Change in condition:**

**Melting point/Melting range:** undetermined

**Boiling point/Boiling range:** 77.6°C

· **Flash point:** 12°C (TCC)

· **Ignition temperature:** 425°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:** 2.0 Vol %

**Upper:** 12.7 Vol %

· **Vapour pressure at 20°C:** 39 mmHg

· **Density at 15°C:** 0.79 g/cm<sup>3</sup>

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- **Solubility in / Miscibility with**  
**Water:** Fully miscible

### 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  
 Additional decomposition products for the aerosol:  
 Hydrogen fluoride  
 Fluorocarbons

### 11 Toxicological information

- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**  
**67-63-0 propan-2-ol**  
 Oral LD50 4570 mg/kg (rat)  
 Dermal LD50 13400 mg/kg (rabbit)  
 Inhalative LC50/4 h 30 mg/L (rat)
- **Primary irritant effect:**
- **on the skin:**  
 Irritation to skin and mucous membrane possible.  
 Continuing or repeated contact with the skin may cause skin disease.
- **on the eye:** Irritating effect.
- **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

- **Ecotoxic effects:**
- **Aquatic toxicity:**  
**67-63-0 propan-2-ol**  
 LC50/96h 10400 mg/L (Pimephales promelas)
- **General notes:**  
 Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.

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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) Flammable liquids
- **Danger code (Kemler):** - Bulk: 33
- **UN-Number:** 1950 Bulk: 1219
- **Packaging group:** - Bulk: II
- **Label:** 2.1 Bulk: 3
- **Description of goods:** Aerosol: Aerosols  
bulk: isopropanol (isopropyl alcohol)
- **Maritime transport IMDG:**
- **IMDG Class:** 2 Bulk: 3
- **UN Number:** 1950 Bulk: 1219
- **Label:** 2.1 Bulk: 3
- **Packaging group:** - Bulk: II
- **EMS Number:** F-D,S-U F-E, S-D
- **Marine pollutant:** -
- **Proper shipping name:** AEROSOLS  
Bulk: Isopropanol (Isopropyl alcohol)
- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** 2.1 Bulk: 3
- **UN/ID Number:** 1950 Bulk: 1219
- **Label:** 2.1 Bulk: 3
- **Packaging group:** - Bulk: II
- **Proper shipping name:** AEROSOLS, flammable  
Bulk: Isopropyl alcohol

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



Xi Irritant  
 F Highly flammable

· **Risk phrases:**

11 Highly flammable.  
 36 Irritating to eyes.  
 67 Vapours may cause drowsiness and dizziness.

· **Safety phrases:**

3/7 Keep container tightly closed in a cool place.  
 16 Keep away from sources of ignition - No smoking.  
 24/25 Avoid contact with skin and eyes.  
 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
 33 Take precautionary measures against static discharges.  
 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.  
 90.0 % by mass of the contents are flammable  
 Keep out of the reach of children

· **National regulations**

· **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:** General revision

· **Relevant R-phrases:**

11 Highly flammable.  
 36 Irritating to eyes.  
 67 Vapours may cause drowsiness and dizziness.

· **Department issuing MSDS:**

KFT-Chemieservice Marienstr. 3 D-64347 Griesheim  
 Postfach 1451 D-64345 Griesheim  
 Tel.: +49-6155-823241 Fax: +49-6155-823246

· **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.