Richard-Allan Scientific

Material Safety Data Sheet
According to 91/155 EEC

Printing date 02.11.2005 Reviewed on 22.01.2003

1 Identification of substance:

· **Product details:**

· **Trade name:** **Cytocool II**

· **Article number:** 8323

· **Application of the substance / the preparation** refrigerating agent spray

· **Manufacturer/Supplier:**
MICROM INTERNATIONAL GmbH
Robert-Bosch-Str. 49
D-69190 Walldorf

· **Informing department:** Product management

· **Emergency information:**
Giftinformationszentrale Mainz
Tel.: 0049 (0)6131 - 19240
Fax : 0049 (0)6131 - 232468

2 Composition/Data on components:

· **Chemical characterization:**

· **CAS No. Designation:**
811-97-2 Tetrafluorethan

· **Identification number(s):**

· **EINECS Number:** 212-377-0

3 Hazards identification

· **Hazard designation:** void

· **Information pertaining to particular dangers for man and environment**
Warning! Pressurized container.
Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use.
Keep out of the reach of children

4 First aid measures

· **General information** No special measures required.

· **After inhalation** Take affected persons into the open air and position comfortably

· **After skin contact** Instantly wash with water and soap and rinse thoroughly.

· **After eye contact** Rinse opened eye for several minutes under running water. Then consult doctor.

· **After swallowing** Seek immediate medical advice.

· **Information for doctor** No particular measures are known - treat according to symptoms.

5 Fire fighting measures

· **Suitable extinguishing agents** Not applicable

· **Protective equipment:** No special measures required.

6 Accidental release measures

· **Person-related safety precautions:** Ensure adequate ventilation

· **Measures for environmental protection:** No special measures required.

· **Measures for cleaning/collecting:** Absorb liquid components with liquid-binding material.

· **Additional information:** No dangerous materials are released.

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* 7 Handling and storage

· **Handling**
· **Information for safe handling:** No special measures required.
· **Information about protection against explosions and fires:** No special measures required.

· **Storage**
· **Requirements to be met by storerooms and containers:**
Observe official regulations on storing packagings with pressurized containers.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:** TRGS 300 must be observed.

* 8 Exposure controls and personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **Components with limit values that require monitoring at the workplace:**	
811-97-2 Tetrafluorethan (50-100%)	
OES (Great Britain)	Long-term value: 4240 mg/m³, 1000 ppm

· **Additional information:** The lists that were valid during the compilation were used as basis.

· **Personal protective equipment**
· **General protective and hygienic measures**
The usual precautionary measures should be adhered to general rules for handling chemicals.
· **Breathing equipment:** Short term filter device:
· **Recommended filter device for short term use:**

Filter AX

· **Protection of hands:**

Plastic gloves

· **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 trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**
PVC gloves
· **As protection from splashes gloves made of the following materials are suitable:** PVC gloves
· **Not suitable are gloves made of the following materials:** Strong gloves
· **Eye protection:**

Safety glasses

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

9 Physical and chemical properties:

· **General Information**	
Form:	Aerosol

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Colour:	Colourless
Odour:	Ether-like
· **Change in condition**	
Melting point/Melting range:	-101°C
Boiling point/Boiling range:	-26°C
· **Flash point:**	Not applicable, as aerosol
· **Danger of explosion:**	Product is not explosive.
· **Vapour pressure at 20°C:**	5716 hPa
· **Density at 20°C**	1.226 g/cm³ (DIN 51757)
· **Solubility in / Miscibility with**	
Water at 20°C:	1.93 g/l
Organic solvents:	0.0 %

10 Stability and reactivity

· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Dangerous reactions** No dangerous reactions known
· **Dangerous products of decomposition:** No dangerous decomposition products known

11 Toxicological information

· **Acute toxicity:**
· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** No irritant effect.
· **Sensitization:** No sensitizing effect known.
· **Additional toxicological information:**
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.
The material is not subject to classification according to EC lists in the last version.

12 Ecological information:

· **Ecotoxical effects:** Not determined
· **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.
Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.

13 Disposal considerations

· **Product:**
· **Recommendation** Smaller quantities can be disposed with household waste.

· **European waste catalogue**	
14 00 00	WASTE ORGANIC SOLVENTS, REFRIGERANTS AND PROPELLANTS (except 07 and 08)
14 06 00	waste organic solvents, refrigerants and foam/aerosol propellants
14 06 02	other halogenated solvents and solvent mixtures

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· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.

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14 Transport information

· **Land transport ADR/RID (cross-border)**

· **ADR/RID-GGVS/E Class:** 2
· **UN-Number:** 3159
· **Label** 2.2
· **Designation of goods:** 3159 1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134A)

· **Maritime transport IMDG:**

· **IMDG Class:** 2
· **UN Number:** 3159
· **Label** 2.2
· **EMS Number:** F-C,S-V
· **Marine pollutant:** No
· **Correct technical name:** 1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134A)

· **Air transport ICAO-TI and IATA-DGR:**

· **ICAO/IATA Class:** 2
· **UN/ID Number:** 3159
· **Label** 2.2
· **Correct technical name:** 1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134A)

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15 Regulatory information

· **Designation according to EC guidelines:**
Observe the normal safety regulations when handling chemicals
The material is not subject to classification according to EC lists and other sources of literature known to us.
The product is not subject to identification regulations under EC Directives and the Ordinance on Hazardous Materials (GefStoffV).

· **Safety phrases:**
3 Keep in a cool place.

· **Special designation of certain preparations:**
Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use.
Keep out of the reach of children

· **National regulations**

· **Technical instructions (air):**
· **VOC EU %** 0.00 %

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· **VOC CH %** 0.00 %

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

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16 Other information:

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.
Changes made since last issue dated 10.11.2002 at the following points: *

· **Department issuing data specification sheet:**
IGG-AD Ingenieurbüro für Gefahrstoff- und Gefahrgutberatung
Bismarckstraße 10
D-68623 Lampertheim
Fax: 0049-(0)6206-58422 http://www.igg-ad.de
· **Contact:** Dr. U. Prinz