



## SAFETY DATA SHEET

### CleanBlast™ HFE-based Cleaning Fluid

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

#### 1. Identification

##### Product identifier

**Product name** CleanBlast™ HFE-based Cleaning Fluid

**Product number** FCLP-SOL-1, FCLP-SOL-6

##### Recommended use of the chemical and restrictions on use

**Application** Cleaning agent.

##### Details of the supplier of the safety data sheet

**Supplier** MicroCare Corporation

**Manufacturer** MICROCARE CORPORATION  
595 John Downey Drive  
New Britain, CT 06051  
United States of America  
CAGE: OATV9  
Tel: +1 860-827-0626  
Fax: +1 860-827-8105  
techsupport@microcare.com

##### Emergency telephone number

**Emergency telephone** CHEMTREC (800) 424-9300

#### 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 3 - H335

**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** Vapors 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 vapor displaces oxygen available for breathing (asphyxiant).

##### Label elements

## CleanBlast™ HFE-based Cleaning Fluid

### Pictogram



### Signal word

Warning

### Hazard statements

H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.

### Precautionary statements

P261 Avoid breathing vapor/ spray.  
P264 Wash contaminated skin thoroughly after handling.  
P271 Use only outdoors or in a well-ventilated area.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P312 Call a poison center/ doctor if you feel unwell.  
P337+P313 If eye irritation persists: Get medical advice/ attention.  
P501 Dispose of contents/ container in accordance with national regulations.

### Supplemental label information

Safety data sheet available on request. For use in industrial installations only.

### Contains

trans-DICHLOROETHYLENE

### Other hazards

This product does not contain any substances classified as PBT or vPvB.

### 3. Composition/information on ingredients

#### Mixtures

<b>trans-DICHLOROETHYLENE</b>	<b>60-100%</b>
CAS number: 156-60-5	
<b>Classification</b>	
Flam. Liq. 2 - H225	
Acute Tox. 4 - H302	
Acute Tox. 4 - H332	
Asp. Tox. 1 - H304	
Not relevant.	
<b>ETHYL NONAFLUOROBUTYL ETHER</b>	<b>10-30%</b>
CAS number: 163702-05-4	
<b>Classification</b>	
Not Classified	
<b>ETHYL NONAFLUOROISOBUTYL ETHER</b>	<b>10-30%</b>
CAS number: 163702-06-5	
<b>Classification</b>	
Not Classified	

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<b>Methyl Nonafluorobutyl Ether</b>	<b>5-10%</b>
CAS number: 163702-07-6	
<b>Classification</b> Not Classified	
<b>Methyl Nonafluoroisobutyl Ether</b>	<b>5-10%</b>
CAS number: 163702-08-7	
<b>Classification</b> Not Classified	
<b>PROPAN-2-OL</b>	<b>1-5%</b>
CAS number: 67-63-0	
<b>Classification</b> Flam. Liq. 2 - H225 Eye Irrit. 2A - H319 STOT SE 3 - H335	

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

**Composition comments**      The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of CFR 1900.1200 TSCA: The ingredients of this product are on the TSCA Inventory.

### Composition

#### 4. First-aid measures

##### Description of first aid measures

<b>General information</b>	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.
<b>Inhalation</b>	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.
<b>Ingestion</b>	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.
<b>Skin Contact</b>	Remove contaminated clothing and rinse skin thoroughly with water.
<b>Eye contact</b>	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

<b>General information</b>	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
<b>Inhalation</b>	Vapors may cause headache, fatigue, dizziness and nausea.

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<b>Ingestion</b>	May cause nausea, headache, dizziness and intoxication. May cause stomach pain or vomiting.
<b>Skin contact</b>	Prolonged or repeated contact with skin may cause irritation, redness and dermatitis.
<b>Eye contact</b>	Irritation and redness, followed by blurred vision.

### Indication of 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.

### Special hazards arising from the substance or mixture

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

**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 vapors. Aerosol containers can explode when heated, due to excessive pressure build-up.

### Advice for firefighters

**Protective actions during firefighting** Move containers from fire area if it can be done without risk.

**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 vapors. 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

**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** For personal protection, see Section 8. For waste disposal, see section 13.

## 7. Handling and storage

### Precautions for safe handling

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**Usage precautions** Provide adequate ventilation. Avoid inhalation of vapors/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 vapors. Keep out of the reach of children.

### Conditions for safe storage, including any incompatibilities

**Storage precautions** Store at room temperature.

### Specific end uses(s)

**Specific end use(s)** The identified uses for this product are detailed in Section 1.2.

**Reference to other sections.** Store away from incompatible materials (see Section 10).

## 8. Exposure Controls/personal protection

### Control parameters

#### Occupational exposure limits

##### **trans-DICHLOROETHYLENE**

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

##### **Methyl Nonafluorobutyl Ether**

Long-term exposure limit (8-hour TWA): 750 ppm

##### **Methyl Nonafluoroisobutyl Ether**

Long-term exposure limit (8-hour TWA): 750 ppm

##### **PROPAN-2-OL**

Long-term exposure limit (8-hour TWA): OSHA 400 ppm 980 mg/m<sup>3</sup>

Long-term exposure limit (8-hour TWA): ACGIH 200 ppm 492 mg/m<sup>3</sup>

Short-term exposure limit (15-minute): ACGIH 400 ppm 984 mg/m<sup>3</sup>

A4

ACGIH = American Conference of Governmental Industrial Hygienists.

OSHA = Occupational Safety and Health Administration.

A4 = Not Classifiable as a Human Carcinogen.

### **Additional Occupational Exposure Limits**

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

### 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.

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<b>Hygiene measures</b>	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.
<b>Respiratory protection</b>	Vapors 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.
<b>Thermal hazards</b>	Toxic and corrosive gases or vapors.

### 9. Physical and Chemical Properties

#### Information on basic physical and chemical properties

<b>Appearance</b>	Clear liquid.
<b>Color</b>	Colorless.
<b>Odor</b>	Slight.
<b>Odor threshold</b>	No information available.
<b>pH</b>	No information available.
<b>Melting point</b>	No information available.
<b>Initial boiling point and range</b>	45°C/113°F @ unspecified
<b>Flash point</b>	Does not flash
<b>Evaporation rate</b>	No information available.
<b>Evaporation factor</b>	No information available.
<b>Flammability (solid, gas)</b>	No information available.
<b>Upper/lower flammability or explosive limits</b>	Upper flammable/explosive limit: 14.5 %(V) Lower flammable/explosive limit: 5.9 %(V)
<b>Other flammability</b>	No information available.
<b>Vapor pressure</b>	48 kPa @ 25°C
<b>Vapor density</b>	2.26
<b>Relative density</b>	1.27 @ unspecified°C
<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>	408°C/766.4°F
<b>Decomposition Temperature</b>	No information available.
<b>Viscosity</b>	0.4 cP @ unspecified°C
<b>Explosive properties</b>	No information available.
<b>Refractive index</b>	No information available.
<b>Particle size</b>	Not relevant.
<b>Molecular weight</b>	No information available.
<b>Volatility</b>	100%

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<b>Saturation concentration</b>	No information available.
<b>Critical temperature</b>	No information available.
<b>Volatile organic compound</b>	This product contains a maximum VOC content of 889 g/l.
<b>Flammability</b>	The product is not flammable.

### 10. Stability and reactivity

<b>Reactivity</b>	There are no known reactivity hazards associated with this product.
<b>Stability</b>	Stable at normal ambient temperatures and when used as recommended.
<b>Possibility of hazardous reactions</b>	Will not polymerize.
<b>Conditions to avoid</b>	Keep away from heat, sparks and open flame. Thermal decomposition or combustion products may include the following substances: Toxic and corrosive gases or vapors.
<b>Materials to avoid</b>	Alkali metals. Alkaline earth metals. Powdered metal.
<b>Hazardous decomposition products</b>	Heating may generate the following products: Toxic and corrosive gases or vapors. Halogenated hydrocarbons. Hydrogen fluoride (HF). Carbon dioxide (CO <sub>2</sub> ). 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 - inhalation

**ATE inhalation (vapours mg/l)**    36,515.15

<b>Inhalation</b>	Vapors may irritate throat/respiratory system. A single exposure may cause the following adverse effects: Coughing. Difficulty in breathing.
<b>Ingestion</b>	May cause stomach pain or vomiting. May cause nausea, headache, dizziness and intoxication.
<b>Skin Contact</b>	Product has a defatting effect on skin. May cause allergic contact eczema.
<b>Eye contact</b>	May cause temporary eye irritation.
<b>Medical Symptoms</b>	Gas or vapor in high concentrations may irritate the respiratory system. Symptoms following overexposure may include the following: Headache. Fatigue. Nausea, vomiting.

#### Toxicological information on ingredients.

#### trans-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>	1,235.0
<b>Species</b>	Rat

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ATE oral (mg/kg)	500.0
<u>Acute toxicity - dermal</u>	
Acute toxicity dermal (LD <sub>50</sub> mg/kg)	5,000.0
Species	Rabbit
ATE dermal (mg/kg)	5,000.0
<u>Acute toxicity - inhalation</u>	
Acute toxicity inhalation (LC <sub>50</sub> vapours mg/l)	24,100.0
Species	Rat
ATE inhalation (vapours mg/l)	11.0

### Methyl Nonafluorobutyl Ether

<b>Other health effects</b>	There is no evidence that the product can cause cancer.
<u>Acute toxicity - oral</u>	
Acute toxicity oral (LD <sub>50</sub> mg/kg)	5,000.0
Species	Rat
ATE oral (mg/kg)	5,000.0
<u>Acute toxicity - inhalation</u>	
Acute toxicity inhalation (LC <sub>50</sub> vapours mg/l)	1,000.0
Species	Rat
ATE inhalation (vapours mg/l)	1,000.0

### Methyl Nonafluoroisobutyl Ether

<u>Acute toxicity - oral</u>	
Acute toxicity oral (LD <sub>50</sub> mg/kg)	5,000.0
Species	Rat
<u>Acute toxicity - inhalation</u>	
Acute toxicity inhalation (LC <sub>50</sub> vapours mg/l)	1,000.0
Species	Rat
ATE inhalation (vapours mg/l)	1,000.0

### PROPAN-2-OL

Acute toxicity - oral



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<b>Acute toxicity oral (LD<sub>50</sub> mg/kg)</b>	5,800.0
<b>Species</b>	Rat
<b>ATE oral (mg/kg)</b>	5,800.0
<b><u>Acute toxicity - dermal</u></b>	
<b>Acute toxicity dermal (LD<sub>50</sub> mg/kg)</b>	13,000.0
<b>Species</b>	Rabbit
<b>ATE dermal (mg/kg)</b>	13,000.0
<b><u>Acute toxicity - inhalation</u></b>	
<b>Acute toxicity inhalation (LC<sub>50</sub> vapours mg/l)</b>	16,000.0
<b>Species</b>	Rat
<b>ATE inhalation (vapours mg/l)</b>	16,000.0
<b><u>Carcinogenicity</u></b>	
<b>IARC carcinogenicity</b>	IARC Group 3 Not classifiable as to its carcinogenicity to humans.
<b>NTP carcinogenicity</b>	Not listed.
<b>OSHA Carcinogenicity</b>	Not listed.

### 12. Ecological Information

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

#### Ecological information on ingredients.

##### trans-DICHLOROETHYLENE

**Ecotoxicity** Low acute toxicity to aquatic organisms.

##### Methyl Nonafluorobutyl Ether

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

##### Methyl Nonafluoroisobutyl Ether

**Ecotoxicity** The product is not expected to be toxic to aquatic organisms.

#### Toxicity

**Toxicity** No data available.

#### Ecological information on ingredients.

##### trans-DICHLOROETHYLENE

**Acute toxicity - fish** LC<sub>50</sub>, 96 hours: 1350 mg/l, Fish

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

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### Methyl Nonafluorobutyl Ether

**Toxicity** Not considered toxic to fish.

### Methyl Nonafluoroisobutyl Ether

**Toxicity** Not considered toxic to fish.

### PROPAN-2-OL

**Acute toxicity - fish** LC<sub>50</sub>, 96 hours: 9,640 mg/l, Fish

**Acute toxicity - aquatic invertebrates** EC<sub>50</sub>, 48 hours: 5102 mg/l, Daphnia magna

**Acute toxicity - aquatic plants** IC<sub>50</sub>, 72 hours: >2,000 mg/l, Algae

### Persistence and degradability

**Persistence and degradability** There are no data on the degradability of this product.

### Ecological information on ingredients.

#### trans-DICHLOROETHYLENE

**Persistence and degradability** No data available.

#### Methyl Nonafluorobutyl Ether

**Persistence and degradability** No data available.

#### Methyl Nonafluoroisobutyl Ether

**Persistence and degradability** The product is not expected to be biodegradable.

### Bioaccumulative potential

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

**Partition coefficient** No information available.

### Ecological information on ingredients.

#### trans-DICHLOROETHYLENE

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

#### Methyl Nonafluorobutyl Ether

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

#### Methyl Nonafluoroisobutyl Ether

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

### Mobility in soil

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

### Ecological information on ingredients.

#### trans-DICHLOROETHYLENE

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

#### Methyl Nonafluorobutyl Ether

**Mobility** Not applicable.

#### Methyl Nonafluoroisobutyl Ether

**Mobility** Not applicable.

### Results of PBT and vPvB assessment

**Results of PBT and vPvB assessment** This product does not contain any substances classified as PBT or vPvB.

### Other adverse effects

**Other adverse effects** The product contains a substance which has a photochemical ozone creation potential.

## 13. Disposal considerations

### Waste treatment methods

**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

**General** Not regulated.

### UN Number

No information required.

### UN proper shipping name

**Proper shipping name (TDG)** NOT HAZARDOUS LIQUID CLEANING COMPOUND

**Proper shipping name (DOT)** NOT HAZARDOUS LIQUID CLEANING COMPOUND

### Transport hazard class(es)

#### Packing group

**TDG Packing Group** N/A

**IMDG packing group** N/A

**ICAO packing group** N/A

**DOT packing group** N/A

### Environmental hazards

## CleanBlast™ HFE-based Cleaning Fluid

### Environmentally Hazardous Substance

No.

### Special precautions for user

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

### 15. Regulatory information

#### International Regulations

##### US Federal Regulations

##### SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities

Not listed.

##### CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)

*trans-DICHLOROETHYLENE*

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

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

Not listed.

##### SARA 313 Emission Reporting

Not listed.

##### CAA Accidental Release Prevention

Not listed.

##### SARA (311/312) Hazard Categories

Acute  
Chronic

##### OSHA Highly Hazardous Chemicals

Not listed.

#### US State Regulations

##### California Proposition 65 Carcinogens and Reproductive Toxins

Not listed.

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

*PROPAN-2-OL*

Present.

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

Not listed.

##### California Directors List of Hazardous Substances

*PROPAN-2-OL*

Present.

*trans-DICHLOROETHYLENE*

Present.

##### Massachusetts "Right To Know" List

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*PROPAN-2-OL*

Present.

*trans-DICHLOROETHYLENE*

Present.

### Rhode Island "Right To Know" List

*PROPAN-2-OL*

### Minnesota "Right To Know" List

*PROPAN-2-OL*

Present.

### New Jersey "Right To Know" List

*PROPAN-2-OL*

Present.

### Pennsylvania "Right To Know" List

*PROPAN-2-OL*

Present.

*trans-DICHLOROETHYLENE*

Present.

## 16. Other information

<b>Revision comments</b>	NOTE: Lines within the margin indicate significant changes from the previous revision.
<b>Revision date</b>	9/20/2016
<b>Revision</b>	29
<b>Supersedes date</b>	8/29/2016
<b>SDS No.</b>	BULK - FCLP-SOL-1
<b>SDS status</b>	Approved.
<b>Hazard statements in full</b>	H225 Highly flammable liquid and vapor. H304 May be fatal if swallowed and enters airways. H319 Causes serious eye irritation. H332 Harmful if inhaled. H335 May cause respiratory irritation.
<b>NFPA - health hazard</b>	Irritation, minor residual injury. (1)
<b>NFPA - flammability hazard</b>	Will not burn. (0)
<b>NFPA - instability hazard</b>	Unstable if heated. (1)
<b>NFPA - special hazard</b>	N/A
<b>ACA HMIS Health rating.</b>	Slight Hazard. (1)
<b>ACA HMIS Flammability rating.</b>	Will not burn. (0)
<b>ACA HMIS Physical hazard rating.</b>	Unstable if heated. (1)

## CleanBlast™ HFE-based Cleaning Fluid

**ACA HMIS Personal  
protection rating.**

A

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.