



SAFETY DATA SHEET

CleanBlast™ HFE-based Cleaning Fluid

According to the Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013, as amended.

SECTION 1: identification of the hazardous chemical and of the supplier

Product identifier

Product name CleanBlast™ HFE-based Cleaning Fluid
Product number FCLP-SOL1, FCLP-SOL1-6, FCLP-SOL1-XL

Recommended use of the substance or mixture and restrictions on use

Identified uses Cleaning agent.

Details of the supplier of the safety data sheet

Supplier MICROCARE ASIA PTE LTD
 102E, Pasir Panjang Road,
 Citilink, #05-06,
 Singapore 118529
 Phone (65)6271.0182
 techsupport@microcare.sg

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 +65 3163 5349 (SINGAPORE)
 1-352-323-3500 (from anywhere in the world)

SECTION 2: Hazard identification

Classification of the substance or mixture

Classification

Physical hazards Not Classified
Health hazards Acute Tox. 4 - H332
Environmental hazards Aquatic Chronic 3 - H412

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 Vapours 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 vapour displaces oxygen available for breathing (asphyxiant).

CleanBlast™ HFE-based Cleaning Fluid

Label elements

Pictogram



Signal word

Warning

Hazard statements

H332 Harmful if inhaled.

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

P261 Avoid breathing vapour/ spray.

P271 Use only outdoors or in a wellventilated area.

P273 Avoid release to the environment.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P312 Call a POISON CENTER or doctor/ physician if you feel unwell.

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-1,2-DICHLOROETHYLENE

Other hazards

This product does not contain any substances classified as PBT or vPvB (persistent, bioaccumulative and toxic, or very persistent and very bioaccumulative).

SECTION 3: Composition and information of the ingredients of the hazardous chemical

Mixtures

trans-1,2-DICHLOROETHYLENE	66-70%
CAS number: 156-60-5	
Classification	
Flam. Liq. 2 - H225	
Acute Tox. 4 - H332	
Eye Irrit. 2 - H319	
STOT SE 3 - H336	
Aquatic Chronic 3 - H412	
ETHYL NONAFLUOROISOBUTYL ETHER	4-16%
CAS number: 163702-06-5	
Classification	
Not Classified	
ETHYL NONAFLUOROBUTYL ETHER	4-16%
CAS number: 163702-05-4	
Classification	
Not Classified	

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Methyl Nonafluoroisobutyl Ether	2-8%
CAS number: 163702-08-7	
Classification Not Classified	
Methyl Nonafluorobutyl Ether	2-8%
CAS number: 163702-07-6	
Classification Not Classified	
PROPAN-2-OL	1-3%
CAS number: 67-63-0	
Classification Flam. Liq. 2 - H225 Eye Irrit. 2 - H319 STOT SE 3 - H336	

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

Composition

SECTION 4: First-aid measures

Description of first aid measures

General information	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.
Inhalation	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.
Ingestion	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.
Skin contact	Remove contaminated clothing and rinse skin thoroughly with water.
Eye contact	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

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

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

Indication of any immediate medical attention and special treatment needed

Notes for the doctor No specific recommendations. If in doubt, get medical attention promptly.

SECTION 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

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

Advice for fire-fighters

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.

SECTION 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 vapours. 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

Reference to other sections For personal protection, see Section 8. For waste disposal, see section 13.

SECTION 7: Handling and storage

Precautions for safe handling

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

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Conditions for safe storage, including any incompatibilities

Storage precautions Store at room temperature.

Specific end use(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).

SECTION 8: Exposure controls and personal protection

Control parameters

Occupational exposure limits

PROPAN-2-OL

Eight-hour time-weighted average: PEL 400 ppm 983 mg/m³

Permissible exposure limit (PEL)

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.

Hygiene measures

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.

Respiratory protection

Vapours 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.

Thermal hazards

Toxic and corrosive gases or vapours.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Clear liquid.
Colour	Colourless.
Odour	Slight.
Odour threshold	No information available.
pH	No information available.

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Melting point	No information available.
Initial boiling point and range	45°C/113°F @ unspecified
Flash point	Does not flash
Evaporation rate	No information available.
Evaporation factor	No information available.
Flammability (solid, gas)	No information available.
Upper/lower flammability or explosive limits	Upper flammable/explosive limit: 14.5 %(V) Lower flammable/explosive limit: 5.9 %(V)
Other flammability	No information available.
Vapour pressure	48 kPa @ 25°C
Vapour density	2.26
Relative density	1.27 @ unspecified°C
Bulk density	No information available.
Solubility(ies)	Slightly soluble in water.
Partition coefficient	No information available.
Auto-ignition temperature	408°C/766.4°F
Decomposition temperature	No information available.
Viscosity	0.4 cP @ unspecified°C
Explosive properties	No information available.
Refractive index	No information available.
Particle size	No information available.
Molecular weight	No information available.
Volatility	100%
Saturation concentration	No information available.
Critical temperature	No information available.
Volatile organic compound	This product contains a maximum VOC content of 889 g/l.

SECTION 10: Stability and reactivity

Reactivity	There are no known reactivity hazards associated with this product.
Stability	Stable at normal ambient temperatures and when used as recommended.
Possibility of hazardous reactions	Will not polymerise.
Conditions to avoid	Keep away from heat, sparks and open flame. Thermal decomposition or combustion products may include the following substances: Toxic and corrosive gases or vapours.
Materials to avoid	Alkali metals. Alkaline earth metals. Powdered metal.

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Hazardous decomposition products Heating may generate the following products: Toxic and corrosive gases or vapours. Halogenated hydrocarbons. Hydrogen fluoride (HF). Carbon dioxide (CO₂). Carbon monoxide (CO).

SECTION 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) 16.67

Inhalation Vapours may irritate throat/respiratory system. A single exposure may cause the following adverse effects: Coughing. Difficulty in breathing.

Ingestion May cause stomach pain or vomiting. May cause nausea, headache, dizziness and intoxication.

Skin contact Product has a defatting effect on skin. May cause allergic contact eczema.

Eye contact May cause temporary eye irritation.

Medical symptoms Gas or vapour in high concentrations may irritate the respiratory system. Symptoms following overexposure may include the following: Headache. Fatigue. Nausea, vomiting.

Toxicological information on ingredients

trans-1,2-DICHLOROETHYLENE

Other health effects There is no evidence that the product can cause cancer.

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 7,902.0

Species Rat

ATE oral (mg/kg) 7,902.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 5,000.0

Species Rat

ATE dermal (mg/kg) 5,000.0

Acute toxicity - inhalation

ATE inhalation (vapours mg/l) 11.0

Skin corrosion/irritation

Skin corrosion/irritation Prolonged and frequent contact may cause redness and irritation.

Animal data Slightly irritating. Rabbit

Serious eye damage/irritation

Serious eye damage/irritation Supplier's information. Rabbit 500 mg 24 hours Causes mild skin irritation.

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Respiratory sensitization

Respiratory sensitization No specific test data are available.

Skin sensitization

Skin sensitization No specific test data are available.

Germ cell mutagenicity

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

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

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

Methyl Nonafluoroisobutyl Ether

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 5,000.0

Species Rat

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ vapours mg/l) 1,000.0

Species Rat

ATE inhalation (vapours mg/l) 1,000.0

Methyl Nonafluorobutyl Ether

Other health effects There is no evidence that the product can cause cancer.

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 5,000.0

Species Rat

ATE oral (mg/kg) 5,000.0

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ vapours mg/l) 1,000.0

Species Rat

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ATE inhalation (vapours
mg/l) 1,000.0

PROPAN-2-OL

Carcinogenicity

IARC carcinogenicity IARC Group 3 Not classifiable as to its carcinogenicity to humans.

NTP carcinogenicity Not listed.

SECTION 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.

Methyl Nonafluoroisobutyl Ether

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

Methyl Nonafluorobutyl Ether

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

Toxicity No data available.

Ecological information on ingredients

trans-1,2-DICHLOROETHYLENE

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: 135 mg/l, Fish

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 220 mg/l, Daphnia magna

Acute toxicity - aquatic plants LC₅₀, 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

Methyl Nonafluoroisobutyl Ether

Toxicity Not considered toxic to fish.

Methyl Nonafluorobutyl Ether

Toxicity Not considered toxic to fish.

PROPAN-2-OL

Acute aquatic toxicity

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Acute toxicity - fish	LC ₅₀ , 96 hours: 9,640 mg/l, Fish
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: 5102 mg/l, Daphnia magna
Acute toxicity - aquatic plants	IC ₅₀ , 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-1,2-DICHLOROETHYLENE

Biodegradation	Not readily biodegradable. Method: OECD Test Guideline 301D
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Methyl Nonafluoroisobutyl Ether

Persistence and degradability	The product is not expected to be biodegradable.
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Methyl Nonafluorobutyl Ether

Persistence and degradability	No data available.
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Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient No information available.

Ecological information on ingredients

trans-1,2-DICHLOROETHYLENE

Bioaccumulative potential	Bioaccumulation is unlikely to be significant because of the low water-solubility of this product.
Partition coefficient	log Pow: 2.06

Methyl Nonafluoroisobutyl Ether

Bioaccumulative potential No data available on bioaccumulation.

Methyl Nonafluorobutyl Ether

Bioaccumulative potential No data available on bioaccumulation.

PROPAN-2-OL

Partition coefficient : 0.05

Mobility in soil

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

Ecological information on ingredients

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trans-1,2-DICHLOROETHYLENE

Mobility The product has poor water-solubility.

Methyl Nonafluoroisobutyl Ether

Mobility Not applicable.

Methyl Nonafluorobutyl Ether

Mobility Not applicable.

Other adverse effects

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

SECTION 13: Disposal information

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.

SECTION 14: Transportation information

General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, Road/Rail).

UN number

Not applicable.

UN proper shipping name

Not applicable.

Transport hazard class(es)

No transport warning sign required.

Packing group

Not applicable.

Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

Special precautions for user

Not applicable.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the substance or mixture

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Inventories

US - TSCA

Yes

US - TSCA 12(b) Export Notification

The following ingredients are listed:

Methyl Nonafluoroisobutyl Ether

Present.

Methyl Nonafluorobutyl Ether

Present.

SECTION 16: Other information

Revision comments	NOTE: Lines within the margin indicate significant changes from the previous revision.
Revision date	3/1/2022
Revision	46
Supersedes date	19/5/2021
SDS number	BULK - FCLP-SOL1
SDS status	Approved.
Hazard statements in full	H225 Highly flammable liquid and vapour. H319 Causes serious eye irritation. H332 Harmful if inhaled. H336 May cause drowsiness or dizziness. H412 Harmful to aquatic life with long lasting effects.

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.