



Vertrel™ MCA Plus specialty fluid

Version 3.0

Revision Date 03/15/2016

Ref. 130000000716

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Vertrel™ MCA Plus specialty fluid
Product Use : Cleaning agent, For professional users only.

Restrictions on use : Do not use product for anything outside of the above specified uses
Manufacturer/Supplier : The Chemours Company FC, LLC
1007 Market Street
Wilmington, DE 19899
United States of America

Product Information : 1-844-773-CHEM (outside the U.S. 1-302-773-1000)
Medical Emergency : 1-866-595-1473 (outside the U.S. 1-302-773-2000)
Transport Emergency : CHEMTREC: +1-800-424-9300 (outside the U.S. +1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION

Product hazard category
Serious eye damage/eye irritation Category 2B
Specific target organ toxicity - Category 3
single exposure



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Label content

Pictogram :



Signal word : Warning

Hazardous warnings : Causes eye irritation.
May cause respiratory irritation.
May cause drowsiness or dizziness.

Hazardous prevention measures : Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Call a POISON CENTER or doctor/ physician if you feel unwell.
If eye irritation persists: Get medical advice/ attention.
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Dispose of contents/ container to an approved waste disposal plant.

Other hazards

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Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing., Prolonged skin contact may defat the skin and produce dermatitis., May cause cardiac arrhythmia., Misuse or intentional inhalation abuse may lead to death without warning.

The following percentage of the mixture consists of ingredient(s) with unknown acute toxicity: 50 %

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.		
1,1,1,2,2,3,4,5,5,5-Decafluoropentane	138495-42-8	40 - 55 %
trans-Dichloroethylene	156-60-5	40 - 55 %
Cyclopentane	287-92-3	2 - 8 %

SECTION 4. FIRST AID MEASURES

- General advice : Never give anything by mouth to an unconscious person. Victim to lie down in the recovery position, cover and keep him warm. Give oxygen or artificial respiration if needed. When symptoms persist or in all cases of doubt seek medical advice.
- Inhalation : Remove from exposure, lie down. Move to fresh air. Keep patient warm and at rest. Artificial respiration and/or oxygen may be necessary. Consult a physician.



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- Skin contact : Take off all contaminated clothing immediately. Wash off with warm water.
- Eye contact : Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Get medical attention. Remove contact lenses, if present and easy to do. Continue rinsing.
- Ingestion : Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Drink 1 or 2 glasses of water. If vomiting occurs, have victim lean forward to reduce the risk of aspiration. Consult a physician.
- Most important symptoms/effects, acute and delayed : No applicable data available.
- Protection of first-aiders : If potential for exposure exists refer to Section 8 for specific personal protective equipment.
- Notes to physician : Do not give adrenaline or similar drugs. Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, that may be used in situations of emergency life support should be used with special caution.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Water spray, Water mist, Dry chemical, Carbon dioxide (CO2)
- Unsuitable extinguishing media : No applicable data available.
- Specific hazards : Fire or intense heat may cause violent rupture of packages. The product is not flammable. Vapours may form flammable mixture with air. Hazardous combustion products: Hydrogen fluoride Fluorinated hydrocarbons Carbonyl fluoride Carbon oxides Hydrogen chloride
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment. Wear neoprene gloves during cleaning up work after a fire. Exposure to decomposition products may be a hazard to health.



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Further information : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Evacuate personnel to safe areas. Cool containers/tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Safeguards (Personnel) : Evacuate personnel to safe areas. Ventilate area, especially low or enclosed places where heavy vapours might collect. In case of insufficient ventilation, wear suitable respiratory equipment. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Prevent further leakage or spillage. Prevent spreading over a wide area (e.g. by containment or oil barriers). Should not be released into the environment. Do not allow contact with soil, surface or ground water.

Spill Cleanup : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

Accidental Release Measures : No applicable data available.

SECTION 7. HANDLING AND STORAGE

Handling (Personnel) : Avoid contact with skin, eyes and clothing. Avoid breathing vapours or mist. Provide sufficient air exchange and/or exhaust in work rooms. For personal protection see section 8.
Handle in accordance with good industrial hygiene and safety practice. When using do not eat, drink or smoke. Do not breathe vapours or spray mist. Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Handling (Physical Aspects) : Material should not be dispensed by pouring from pail/drum shipping

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containers containing 5 gallons or more. The use of a drum pump is recommended for dispensing from pail/drum shipping containers with 5 gallons or more, except for smaller containers where adequate ventilation can be used to manage the exposure.

Dust explosion class : Not applicable

Storage : Protect from contamination. Drainage facilities should be constructed for containment of small spills. Keep container tightly closed in a dry and well-ventilated place. Store in original container. Avoid freezing temperatures. If stored below -10°C (14°F), mix prior to use.

Storage period : No applicable data available.

Storage temperature : < 52 °C (< 126 °F)

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls : Use sufficient ventilation to keep employee exposure below recommended limits.

Personal protective equipment

Respiratory protection : For rescue and maintenance work in storage tanks use self-contained breathing apparatus. Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

Hand protection : Material: Solvent-resistant gloves

Eye protection : Safety glasses with side-shields Additionally wear a face shield where the possibility exists for face contact due to splashing, spraying or airborne contact with this material.

Skin and body protection : Protective suit

Exposure Guidelines
Exposure Limit Values



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1,1,1,2,2,3,4,5,5,5-Decafluoropentane
No applicable data available.

trans-Dichloroethylene					
Permissible exposure limit:	(OSHA)	200 ppm	790 mg/m ³		8 hr. TWA
TLV	(ACGIH)	200 ppm	TWA		
Cyclopentane					
TLV	(ACGIH)	600 ppm	TWA		

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state : liquid
Form : liquid
Color : colourless

Odor : ether-like

Odor threshold : No applicable data available.

pH : neutral

Melting point/freezing point : Melting point/range
< -50.0 °C (< -58.0 °F)

Boiling point/boiling range : Boiling point/boiling range
38.0 °C (100.4 °F) at 1,013 hPa

Flash point : closed cup
Method: ASTM D 93
does not flash

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No flash point was obtained, but the product may release flammable vapour.

Evaporation rate	: No applicable data available.
Flammability (solid, gas)	: No applicable data available.
Upper explosion limit	: 11.0 vol%
Lower explosion limit	: 6.0 vol%
Vapor pressure	: 614.0 hPa at 25 °C (77 °F)
Vapor density	: 4.7
Density	: 1.33 g/cm ³ at 25 °C (77 °F)
Specific gravity (Relative density)	: No applicable data available.
Water solubility	: at 25 °C (77 °F) slightly soluble
Solubility(ies)	: No applicable data available.
Partition coefficient: n-octanol/water	: No applicable data available.
Auto-ignition temperature	: No applicable data available.
Decomposition temperature	: No applicable data available.
Viscosity, kinematic	: No applicable data available.
Viscosity, dynamic	: 0.49 mPa.s at 25 °C (77 °F)

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Stable at normal ambient temperature and pressure.



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Chemical stability	:	The product is chemically stable. No decomposition if stored and applied as directed.
Possibility of hazardous reactions	:	No applicable data available.
Conditions to avoid	:	Avoid open flames and high temperatures.
Incompatible materials	:	Alkali metals Alkaline earth metals, Powdered metals, Powdered metal salts, Nitrogen oxides (NOx), Acids, bases and strong oxidizing agents, Oxygen
Hazardous decomposition products	:	Hazardous decomposition products formed under fire conditions.: Fluorinated hydrocarbons, Hydrogen fluoride, Carbon dioxide (CO ₂), Carbon monoxide, Hydrogen chloride gas, Carbonyl fluoride

SECTION 11. TOXICOLOGICAL INFORMATION

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Further information	:	Aspiration may cause pulmonary oedema and pneumonitis.
1,1,1,2,2,3,4,5,5,5-Decafluoropentane		
Inhalation 4 h LC50	:	114 mg/l , Rat Central nervous system effects Convulsions
Dermal LD50	:	> 5,000 mg/kg , Rabbit
Oral LD50	:	> 5,000 mg/kg , Rat
Skin irritation	:	No skin irritation, Rabbit
Eye irritation	:	No eye irritation, Rabbit
Skin sensitization	:	Did not cause sensitisation on laboratory animals., Guinea pig
Repeated dose toxicity	:	Inhalation Rat - No toxicologically significant effects were found.
Mutagenicity	:	Tests on bacterial or mammalian cell cultures did not show mutagenic

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effects.
Animal testing did not show any mutagenic effects.

Reproductive toxicity : No toxicity to reproduction
Animal testing showed no reproductive toxicity.

Teratogenicity : Animal testing showed no developmental toxicity.

trans-Dichloroethylene

Inhalation 4 h LC50 : 95.4 mg/l , Rat
Target Organs: Central nervous system

Dermal LD50 : > 5,000 mg/kg , Rabbit

Oral LD50 : 7,902 mg/kg , Rat
Target Organs: Central nervous system
Central nervous system effects
Respiratory effects

Skin irritation : Mild skin irritation, Rabbit

Eye irritation : Irritation to eyes, reversing within 7 days, Rabbit

Repeated dose toxicity : Inhalation
Rat
- 90 d
gas
NOAEL: 4000, Method: OECD Test Guideline 413
No toxicologically significant effects were found.

Mutagenicity : Animal testing did not show any mutagenic effects.
Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

Teratogenicity : Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.

Cyclopentane

Inhalation 4 h LC50 : > 25.3 mg/l , Rat

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Oral LD50	:	> 5,000 mg/kg , Rat
Skin irritation	:	Mild skin irritation, Rabbit Information given is based on data obtained from similar substances.
Eye irritation	:	Mild eye irritation, Rabbit Information given is based on data obtained from similar substances.
Skin sensitization	:	Does not cause skin sensitisation., Guinea pig Information given is based on data obtained from similar substances.
Repeated dose toxicity	:	Inhalation Rat - vapour NOAEL: 30 mg/lMethod: OECD Test Guideline 413 No toxicologically significant effects were found.
Mutagenicity	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects. Animal testing did not show any mutagenic effects. Information given is based on data obtained from similar substances.
Reproductive toxicity	:	No toxicity to reproduction Animal testing showed no reproductive toxicity. Information given is based on data obtained from similar substances.
Teratogenicity	:	Animal testing showed no developmental toxicity. Information given is based on data obtained from similar substances.

Carcinogenicity

The carcinogenicity classifications for this product and/or its ingredients have been determined according to HazCom 2012, Appendix A.6. The classifications may differ from those listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or those found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition).

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

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SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity

1,1,1,2,2,3,4,5,5,5-Decafluoropentane

96 h LC50	:	Oncorhynchus mykiss (rainbow trout) 13.9 mg/l
96 h LC50	:	Pimephales promelas (fathead minnow) 27.2 mg/l
96 h LC50	:	Danio rerio (zebra fish) 13 mg/l
72 h EC50	:	Pseudokirchneriella subcapitata (green algae) > 120 mg/l
48 h LC50	:	Daphnia magna (Water flea) 11.7 mg/l
21 d	:	NOEC Daphnia magna (Water flea) 1.72 mg/l

trans-Dichloroethylene

96 h LC50	:	Lepomis macrochirus (Bluegill sunfish) 135 mg/l
72 h EC50	:	Pseudokirchneriella subcapitata (green algae) 36.36 mg/l
48 h EC50	:	Daphnia magna (Water flea) 220 mg/l

Cyclopentane

96 h LC50	:	Oncorhynchus mykiss (rainbow trout) 4.26 mg/l OECD Test Guideline 203 Information given is based on data obtained from similar substances.
72 h EC50	:	Scenedesmus capricornutum (fresh water algae) 10.7 mg/l OECD Test Guideline 201 Information given is based on data obtained from similar substances.
48 h EC50	:	Daphnia magna (Water flea) 2.3 mg/l OECD Test Guideline 202 Information given is based on data obtained from similar substances.

Environmental Fate

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Biodegradability : According to the results of tests of biodegradability this product is not readily biodegradable.

1,1,1,2,2,3,4,5,5,5-Decafluoropentane
Bioaccumulation : Bioaccumulation is unlikely.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal methods - Product : Can be used after re-conditioning. If recycling is not practicable, dispose of in compliance with local regulations. The product should not be allowed to enter drains, water courses or the soil.

Contaminated packaging : If recycling is not practicable, dispose of in compliance with local regulations.

SECTION 14. TRANSPORT INFORMATION

Not classified as dangerous in the meaning of transport regulations.
DOT only - when shipped in packages with > 2230 lbs., use: UN3082, Environmentally Hazardous Substance, Liquid, N.O.S. (Dichloroethylene), 9, PGIII RQ (Dichloroethylene)

SECTION 15. REGULATORY INFORMATION

TSCA : 1,1,1,2,2,3,4,5,5,5-DECAFLUOROPENTANE (CAS# 138495-42-8) is controlled by TSCA Section 5, Significant New Use Rule (SNUR; 40 CFR 721.5645) The approved uses are: precision and general cleaning, carrier fluid, displacement drying, printed circuit board cleaning, particulate removal and film

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cleaning, process medium, heat transfer fluid (dielectric and non-dielectric), and test fluid. Processors and users of this substance must also comply with the applicable general SNUR requirements set forth in 40 CFR 721 subpart A, including export notification requirements if applicable (40 CFR 721.20), and the applicable record keeping requirements set forth at 40 CFR 721.125.

SARA 313 Regulated Chemical(s)	: trans-Dichloroethylene
PA Right to Know Regulated Chemical(s)	: Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): trans-Dichloroethylene, Cyclopentane
NJ Right to Know Regulated Chemical(s)	: Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens or teratogens): trans-Dichloroethylene, Cyclopentane
CERCLA Reportable Quantity	: 2229 lbs Based on the percentage composition of this chemical in the product.: trans-Dichloroethylene
California Prop. 65	: Chemicals known to the State of California to cause cancer, birth defects or any other harm: none known

SECTION 16. OTHER INFORMATION

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