

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Vertrel™ SMT specialty fluid

Version 12.0      Revision Date: 05/23/2024      SDS Number: 1327136-00049      Date of last issue: 12/19/2023  
Date of first issue: 02/27/2017

### SECTION 1. IDENTIFICATION

Product name : Vertrel™ SMT specialty fluid

Product code : D10260122

SDS-Identcode : 130000000633

#### Manufacturer or supplier's details

Company name of supplier : The Chemours Company FC, LLC

Address : 1007 Market Street  
Wilmington, DE 19801 United States of America (USA)

Telephone : 1-844-773-CHEM (outside the U.S. 1-302-773-1000)

Emergency telephone : Medical emergency: 1-866-595-1473 (outside the U.S. 1-302-773-2000) ; Transport emergency: +1-800-424-9300 (outside the U.S. +1-703-527-3887)

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

Recommended use : Cleaning agent

Restrictions on use : For professional and industrial installation and use only.

### SECTION 2. HAZARDS IDENTIFICATION

#### GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Eye irritation : Category 2B

Specific target organ toxicity - single exposure : Category 2 (optic nerve, Central nervous system)

Specific target organ toxicity - single exposure : Category 3

#### GHS label elements

Hazard pictograms :

Signal Word : Warning

Hazard Statements : H320 Causes eye irritation.  
H336 May cause drowsiness or dizziness.  
H371 May cause damage to organs (optic nerve, Central nerv-

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Date of first issue: 02/27/2017

ous system).

Precautionary Statements : **Prevention:**  
P260 Do not breathe mist or vapors.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.

**Response:**  
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a doctor if you feel unwell.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P308 + P311 IF exposed or concerned: Call a doctor.  
P337 + P313 If eye irritation persists: Get medical attention.

**Storage:**  
P405 Store locked up.

**Disposal:**  
P501 Dispose of contents and container to an approved waste disposal plant.

### Other hazards

Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing. Misuse or intentional inhalation abuse may cause death without warning symptoms, due to cardiac effects.  
Rapid evaporation of the product may cause frostbite.  
In use, may form flammable/explosive vapor-air mixture.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

### Components

Chemical name	CAS-No.	Concentration (% w/w)
1,1,1,2,2,3,4,5,5,5-Decafluoropentane	138495-42-8	>= 50 - < 70
Trans-Dichloroethylene	156-60-5	>= 30 - < 50
Methanol	67-56-1	>= 3 - < 5

Actual concentration is withheld as a trade secret

## SECTION 4. FIRST AID MEASURES

General advice : In the case of accident or if you feel unwell, seek medical advice immediately.  
When symptoms persist or in all cases of doubt seek medical advice.

If inhaled : If inhaled, remove to fresh air.

# SAFETY DATA SHEET

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Version 12.0      Revision Date: 05/23/2024      SDS Number: 1327136-00049      Date of last issue: 12/19/2023  
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---

- Get medical attention.
- In case of skin contact : In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.
- In case of eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lens, if worn. Get medical attention.
- If swallowed : If swallowed, DO NOT induce vomiting. Get medical attention. Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person.
- Most important symptoms and effects, both acute and delayed : May cause cardiac arrhythmia. Skin contact may provoke the following symptoms:  
Dermatitis  
Discomfort  
Pain  
Redness  
Rash  
Itching  
Swelling of tissue  
Eye damage  
Eye contact may provoke the following symptoms  
Irritation  
Pain  
tearing  
Swelling of tissue  
Redness  
Impairment of vision  
Discomfort  
Inhalation may provoke the following symptoms:  
Eye damage  
Effects of breathing high concentrations of vapor may include:  
Tiredness  
Drowsiness  
central nervous system effects  
Convulsions  
Adverse effects from repeated inhalation may include  
central nervous system effects  
Ingestion may provoke the following symptoms:  
Lack of coordination  
narcosis  
Eye damage  
Aspiration may cause pulmonary edema and pneumonitis.  
Causes eye irritation.  
May cause drowsiness or dizziness.  
May cause damage to organs.

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according to the OSHA Hazard Communication Standard



## Vertrel™ SMT specialty fluid

Version	Revision Date:	SDS Number:	Date of last issue: 12/19/2023
12.0	05/23/2024	1327136-00049	Date of first issue: 02/27/2017

Protection of first-aiders : First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).

Notes to physician : 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. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Water spray  
Alcohol-resistant foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical

Unsuitable extinguishing media : None known.

Specific hazards during fire fighting : Vapors may form explosive mixtures with air.  
Exposure to combustion products may be a hazard to health.

Hazardous combustion products : Hydrogen fluoride  
carbonyl fluoride  
Carbon oxides  
Chlorine compounds

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
Use water spray to cool unopened containers.  
Remove undamaged containers from fire area if it is safe to do so.  
Evacuate area.

Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.  
Use personal protective equipment.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.  
Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

Environmental precautions : Avoid release to the environment.  
Prevent further leakage or spillage if safe to do so.  
Prevent spreading over a wide area (e.g., by containment or oil barriers).  
Retain and dispose of contaminated wash water.  
Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for : Soak up with inert absorbent material.

# SAFETY DATA SHEET

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Version	Revision Date:	SDS Number:	Date of last issue: 12/19/2023
12.0	05/23/2024	1327136-00049	Date of first issue: 02/27/2017

---

containment and cleaning up      For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent.

Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.

Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

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### SECTION 7. HANDLING AND STORAGE

- Technical measures                   : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
- Local/Total ventilation           : If sufficient ventilation is unavailable, use with local exhaust ventilation.  
If advised by assessment of the local exposure potential, use only in an area equipped with explosion-proof exhaust ventilation.
- Advice on safe handling           : Do not get on skin or clothing.  
Do not breathe mist or vapors.  
Do not swallow.  
Do not get in eyes.  
Wash skin thoroughly after handling.  
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment  
Keep away from heat and sources of ignition.  
Take precautionary measures against static discharges.  
Do not eat, drink or smoke when using this product.  
Take care to prevent spills, waste and minimize release to the environment.
- Conditions for safe storage       : Do not expose drums to direct heat or temperature above 46°C (115°F) to avoid pressurizing and possibly distorting the drums.  
Material should not be dispensed by pouring from pail/drum shipping 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.  
Keep in properly labeled containers.  
Store locked up.  
Keep in a cool, well-ventilated place.  
Store in accordance with the particular national regulations.
- Materials to avoid                   : No special restrictions on storage with other products.

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Vertrel™ SMT specialty fluid

Version 12.0      Revision Date: 05/23/2024      SDS Number: 1327136-00049      Date of last issue: 12/19/2023  
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Recommended storage temperature : < 115 °F / < 46 °C

Further information on storage stability : The product has an indefinite shelf life when stored properly.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
1,1,1,2,2,3,4,5,5,5-Decafluoropentane	138495-42-8	TWA	225 ppm 2,320 mg/m <sup>3</sup>	WEEL
		STEL	700 ppm 7,217 mg/m <sup>3</sup>	WEEL
Trans-Dichloroethylene	156-60-5	TWA	200 ppm	ACGIH
Methanol	67-56-1	TWA	200 ppm	ACGIH
		STEL	250 ppm	ACGIH
		ST	250 ppm 325 mg/m <sup>3</sup>	NIOSH REL
		TWA	200 ppm 260 mg/m <sup>3</sup>	NIOSH REL
		TWA	200 ppm 260 mg/m <sup>3</sup>	OSHA Z-1

#### Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Methanol	67-56-1	Methanol	Urine	End of shift (As soon as possible after exposure ceases)	15 mg/l	ACGIH BEI

**Engineering measures** : Minimize workplace exposure concentrations.  
If sufficient ventilation is unavailable, use with local exhaust ventilation.  
If advised by assessment of the local exposure potential, use only in an area equipped with explosion-proof exhaust ventilation.

#### Personal protective equipment

**Respiratory protection** : General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn.

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Vertrel™ SMT specialty fluid

Version 12.0      Revision Date: 05/23/2024      SDS Number: 1327136-00049      Date of last issue: 12/19/2023  
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---

Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

### Hand protection

Material : Viton®  
Glove thickness : 0.7 mm  
Wearing time : 120 min

Remarks : Choose gloves to protect hands against chemicals depending on the concentration specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday. Breakthrough time is not determined for the product. Change gloves often!

Eye protection : Wear the following personal protective equipment:  
Safety goggles

Skin and body protection : Wear the following personal protective equipment:  
If assessment demonstrates that there is a risk of explosive atmospheres or flash fires, use flame retardant antistatic protective clothing.

Hygiene measures : If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place.  
When using do not eat, drink or smoke.  
Wash contaminated clothing before re-use.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Color : colorless

Odor : ether-like

Odor Threshold : No data available

pH : No data available

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

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---

Initial boiling point and boiling range : 99 °F / 37 °C  
(1,013 hPa)

Flash point : Method: ASTM D 56  
does not flash

Evaporation rate : No data available

Flammability (solid, gas) : Not applicable

Flammability (liquids) : No data available

Upper explosion limit / Upper flammability limit : Upper flammability limit  
15 %(V)  
Method: ASTM E681

Lower explosion limit / Lower flammability limit : Lower flammability limit  
7.0 %(V)  
Method: ASTM E681

Vapor pressure : 220 hPa (32 °F / 0 °C)  
  
647.0 hPa (77 °F / 25 °C)  
  
1,522 hPa (122 °F / 50 °C)

Relative vapor density : 4.4

Density : 1.37 g/cm<sup>3</sup> (77 °F / 25 °C)  
  
1.42 g/cm<sup>3</sup> (32 °F / 0 °C)  
  
1.31 g/cm<sup>3</sup> (122 °F / 50 °C)

Solubility(ies)  
Water solubility : 3.4 g/l (77 °F / 25 °C)

Partition coefficient: n-octanol/water : Not applicable

Autoignition temperature : No data available

Decomposition temperature : No data available

Viscosity  
Viscosity, dynamic : 0.47 mPa.s (77 °F / 25 °C)  
  
Viscosity, kinematic : No data available

Explosive properties : In use may form flammable/explosive vapor-air mixture.



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Version 12.0      Revision Date: 05/23/2024      SDS Number: 1327136-00049      Date of last issue: 12/19/2023  
Date of first issue: 02/27/2017

---

Oxidizing properties : The substance or mixture is not classified as oxidizing.  
Particle characteristics  
Particle size : Not applicable

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### SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.  
Chemical stability : Stable under normal conditions.  
Possibility of hazardous reactions : Vapors may form flammable mixture with air  
In use may form flammable/explosive vapor-air mixture.  
Conditions to avoid : None known.  
Incompatible materials : None.  
Hazardous decomposition products : No hazardous decomposition products are known.

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### SECTION 11. TOXICOLOGICAL INFORMATION

#### Information on likely routes of exposure

Inhalation  
Skin contact  
Ingestion  
Eye contact

#### Acute toxicity

|| Not classified based on available information.

#### Product:

Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg  
Method: Calculation method  
Acute inhalation toxicity : Acute toxicity estimate: 75.08 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor  
Method: Calculation method  
Acute dermal toxicity : Acute toxicity estimate: > 5,000 mg/kg  
Method: Calculation method

#### Components:

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

|| Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
Method: OECD Test Guideline 401

# SAFETY DATA SHEET

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## Vertrel™ SMT specialty fluid

Version 12.0      Revision Date: 05/23/2024      SDS Number: 1327136-00049      Date of last issue: 12/19/2023  
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Acute inhalation toxicity : LC50 (Rat): 114.428 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor  
Method: OECD Test Guideline 403

No observed adverse effect concentration (Dog): 5000 ppm  
Test atmosphere: gas  
Method: Cardiac sensitization study

Lowest observed adverse effect concentration (Dog): > 5000 ppm  
Test atmosphere: gas  
Method: Cardiac sensitization study

Cardiac sensitisation threshold limit (Dog): > 51,544 mg/m<sup>3</sup>  
Test atmosphere: gas  
Method: Cardiac sensitization study

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg  
Method: OECD Test Guideline 402

### Trans-Dichloroethylene:

Acute oral toxicity : LD50 (Rat): 7,902 mg/kg  
Method: OECD Test Guideline 420

Acute inhalation toxicity : LC50 (Rat): 95.5 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor  
Method: OECD Test Guideline 403

Lowest observed adverse effect concentration (Dog): 250000 ppm  
Test atmosphere: gas

Cardiac sensitisation threshold limit (Dog): 991,309 mg/m<sup>3</sup>  
Test atmosphere: gas

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg  
Method: OECD Test Guideline 402

### Methanol:

Acute oral toxicity : Acute toxicity estimate (Humans): 300 mg/kg  
Method: Expert judgment

Acute inhalation toxicity : Acute toxicity estimate: 3 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor  
Method: Expert judgment  
Remarks: Based on national or regional regulation.

Acute dermal toxicity : Acute toxicity estimate: 300 mg/kg  
Method: Expert judgment

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Vertrel™ SMT specialty fluid

Version 12.0      Revision Date: 05/23/2024      SDS Number: 1327136-00049      Date of last issue: 12/19/2023  
Date of first issue: 02/27/2017

---

||      Remarks: Based on national or regional regulation.

### **Skin corrosion/irritation**

|| Not classified based on available information.

#### **Components:**

##### **1,1,1,2,2,3,4,5,5,5-Decafluoropentane:**

|| Species : Rabbit  
|| Method : OECD Test Guideline 404  
|| Result : No skin irritation

##### **Trans-Dichloroethylene:**

|| Species : Rabbit  
|| Method : OECD Test Guideline 404  
|| Result : Mild skin irritation

##### **Methanol:**

|| Species : Rabbit  
|| Result : No skin irritation

### **Serious eye damage/eye irritation**

|| Causes eye irritation.

#### **Components:**

##### **1,1,1,2,2,3,4,5,5,5-Decafluoropentane:**

|| Species : Rabbit  
|| Result : No eye irritation  
|| Method : OECD Test Guideline 405

##### **Trans-Dichloroethylene:**

|| Species : Rabbit  
|| Result : Irritation to eyes, reversing within 7 days  
|| Method : OECD Test Guideline 405

##### **Methanol:**

|| Species : Rabbit  
|| Result : No eye irritation

### **Respiratory or skin sensitization**

#### **Skin sensitization**

|| Not classified based on available information.

#### **Respiratory sensitization**

|| Not classified based on available information.

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Vertrel™ SMT specialty fluid

Version 12.0      Revision Date: 05/23/2024      SDS Number: 1327136-00049      Date of last issue: 12/19/2023  
Date of first issue: 02/27/2017

### Components:

#### **1,1,1,2,2,3,4,5,5,5-Decafluoropentane:**

Test Type	: Buehler Test
Routes of exposure	: Skin contact
Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: negative

#### **Methanol:**

Test Type	: Maximization Test
Routes of exposure	: Skin contact
Species	: Guinea pig
Result	: negative

### **Germ cell mutagenicity**

Not classified based on available information.

### Components:

#### **1,1,1,2,2,3,4,5,5,5-Decafluoropentane:**

Genotoxicity in vitro	: Test Type: Bacterial reverse mutation assay (AMES) Method: OECD Test Guideline 471 Result: negative
	: Test Type: In vitro mammalian cell gene mutation test Method: OECD Test Guideline 476 Result: negative
	: Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Rat Application Route: inhalation (vapor) Method: OECD Test Guideline 474 Result: negative
Germ cell mutagenicity - Assessment	: Weight of evidence does not support classification as a germ cell mutagen.

#### **Trans-Dichloroethylene:**

Genotoxicity in vitro	: Test Type: Bacterial reverse mutation assay (AMES) Method: OECD Test Guideline 471 Result: negative
	: Test Type: In vitro mammalian cell gene mutation test Method: OECD Test Guideline 476 Result: negative
	: Test Type: Chromosome aberration test in vitro Method: OECD Test Guideline 473 Result: negative

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Vertrel™ SMT specialty fluid

Version 12.0      Revision Date: 05/23/2024      SDS Number: 1327136-00049      Date of last issue: 12/19/2023  
Date of first issue: 02/27/2017

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Mouse  
Application Route: Ingestion  
Method: OECD Test Guideline 474  
Result: negative

Germ cell mutagenicity - Assessment : Weight of evidence does not support classification as a germ cell mutagen.

### Methanol:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative

Test Type: In vitro mammalian cell gene mutation test  
Result: negative

Test Type: in vitro micronucleus test  
Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Mouse  
Application Route: Intraperitoneal injection  
Result: negative

### Carcinogenicity

Not classified based on available information.

### Components:

#### Methanol:

Species : Monkey  
Application Route : inhalation (vapor)  
Exposure time : 7 Months  
Result : negative

**IARC** No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA** No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**NTP** No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

### Reproductive toxicity

Not classified based on available information.

### Components:

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

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Vertrel™ SMT specialty fluid

Version 12.0      Revision Date: 05/23/2024      SDS Number: 1327136-00049      Date of last issue: 12/19/2023  
Date of first issue: 02/27/2017

- Effects on fertility : Test Type: One-generation reproduction toxicity study  
Species: Rat  
Application Route: inhalation (vapor)  
Method: OECD Test Guideline 415  
Result: negative
- Effects on fetal development : Test Type: Prenatal development toxicity study (teratogenicity)  
Species: Rat  
Application Route: inhalation (vapor)  
Method: OECD Test Guideline 414  
Result: negative
- Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity

### **Trans-Dichloroethylene:**

- Effects on fetal development : Test Type: Embryo-fetal development  
Species: Rat  
Application Route: Inhalation  
Method: OECD Test Guideline 414  
Result: negative

### **Methanol:**

- Effects on fertility : Test Type: One-generation reproduction toxicity study  
Species: Monkey  
Application Route: inhalation (vapor)  
Result: negative
- Effects on fetal development : Test Type: Reproduction/Developmental toxicity screening test  
Species: Monkey  
Application Route: inhalation (vapor)  
Result: negative

### **STOT-single exposure**

- May cause drowsiness or dizziness.
- May cause damage to organs (optic nerve, Central nervous system).

### **Components:**

#### **1,1,1,2,2,3,4,5,5,5-Decafluoropentane:**

- Routes of exposure : Ingestion
- Assessment : No significant health effects observed in animals at concentrations of 2000 mg/kg bw or less
- Routes of exposure : Skin contact
- Assessment : No significant health effects observed in animals at concentrations of 2000 mg/kg bw or less
- Routes of exposure : inhalation (vapor)
- Assessment : No significant health effects observed in animals at concentrations of 20 mg/l/4h or less

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



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Version 12.0      Revision Date: 05/23/2024      SDS Number: 1327136-00049      Date of last issue: 12/19/2023  
Date of first issue: 02/27/2017

---

### Trans-Dichloroethylene:

|| Assessment : May cause drowsiness or dizziness.

### Methanol:

|| Target Organs : optic nerve, Central nervous system  
|| Assessment : Causes damage to organs.

### STOT-repeated exposure

|| Not classified based on available information.

### Components:

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

|| Routes of exposure : inhalation (vapor)  
|| Assessment : No significant health effects observed in animals at concentrations of 1 mg/l/6h/d or less.

#### Trans-Dichloroethylene:

|| Routes of exposure : Inhalation  
|| Assessment : No significant health effects observed in animals at concentrations of 250 ppmV/6h/d or less.

|| Routes of exposure : Ingestion  
|| Assessment : No significant health effects observed in animals at concentrations of 100 mg/kg bw or less.

### Repeated dose toxicity

### Components:

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

|| Species : Rat, male and female  
|| NOAEL : 15.463 mg/l  
|| LOAEL : 20.618 mg/l  
|| Application Route : inhalation (vapor)  
|| Exposure time : 90 Days  
|| Method : OECD Test Guideline 413

#### Trans-Dichloroethylene:

|| Species : Rat, male and female  
|| NOAEL : 4000 ppm  
|| LOAEL : > 4000 ppm  
|| Application Route : Inhalation  
|| Exposure time : 90 Days  
|| Method : OECD Test Guideline 413

|| Species : Rat, male and female  
|| NOAEL : 3,210 mg/kg  
|| LOAEL : > 3,210 mg/kg

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Vertrel™ SMT specialty fluid

Version 12.0      Revision Date: 05/23/2024      SDS Number: 1327136-00049      Date of last issue: 12/19/2023  
Date of first issue: 02/27/2017

Application Route : Ingestion  
Exposure time : 98 Days  
Method : OECD Test Guideline 408

### Aspiration toxicity

Not classified based on available information.

### Components:

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

No aspiration toxicity classification

## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Components:

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

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 13 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 10.6 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Selenastrum capricornutum (green algae)): > 120 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

NOEC (Scenedesmus capricornutum (fresh water algae)): 120 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 1.72 mg/l  
Exposure time: 21 d  
Method: OECD Test Guideline 211

##### Trans-Dichloroethylene:

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 135 mg/l  
Exposure time: 96 h  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 220 mg/l  
Exposure time: 48 h  
Method: EPA-660/3-75-009

Toxicity to algae/aquatic plants : EbC50 (Pseudokirchneriella subcapitata (green algae)): 36.36 mg/l  
Exposure time: 48 h



# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Vertrel™ SMT specialty fluid

Version 12.0      Revision Date: 05/23/2024      SDS Number: 1327136-00049      Date of last issue: 12/19/2023  
Date of first issue: 02/27/2017

||| Method: OECD Test Guideline 201

### Methanol:

||| Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 15,400 mg/l  
Exposure time: 96 h

||| Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 10,000 mg/l  
Exposure time: 48 h  
Method: DIN 38412

||| Toxicity to algae/aquatic plants : ErC50 (Raphidocelis subcapitata (freshwater green alga)): 22,000 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 201

||| Toxicity to microorganisms : EC50 (activated sludge): > 1,000 mg/l  
Exposure time: 3 h  
Test substance: Neutralized product  
Method: OECD Test Guideline 209

### Persistence and degradability

#### Components:

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

||| Biodegradability : Result: Not readily biodegradable.  
Method: OECD Test Guideline 301D

##### Trans-Dichloroethylene:

||| Biodegradability : Result: not rapidly degradable  
Method: OECD Test Guideline 301D

##### Methanol:

||| Biodegradability : Result: Readily biodegradable.  
Biodegradation: 95 %  
Exposure time: 20 d

### Bioaccumulative potential

#### Components:

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

||| Bioaccumulation : Remarks: Bioaccumulation is unlikely.

||| Partition coefficient: n-octanol/water : log Pow: 2.4 (75 °F / 24 °C)

##### Trans-Dichloroethylene:

||| Partition coefficient: n-octanol/water : log Pow: 2.06

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Vertrel™ SMT specialty fluid

Version 12.0      Revision Date: 05/23/2024      SDS Number: 1327136-00049      Date of last issue: 12/19/2023  
Date of first issue: 02/27/2017

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### Methanol:

Bioaccumulation : Species: Leuciscus idus (Golden orfe)  
Bioconcentration factor (BCF): < 10

Partition coefficient: n-octanol/water : log Pow: -0.77

### Mobility in soil

No data available

### Other adverse effects

No data available

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## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

Waste from residues : Dispose of in accordance with local regulations.  
Do not dispose of waste into sewer.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.  
If not otherwise specified: Dispose of as unused product.

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## SECTION 14. TRANSPORT INFORMATION

### International Regulations

#### UNRTDG

Not regulated as a dangerous good

#### IATA-DGR

Not regulated as a dangerous good

#### IMDG-Code

Not regulated as a dangerous good

### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

### Domestic regulation

#### 49 CFR

UN/ID/NA number : UN 3082

Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.  
(Trans-Dichloroethylene)

Class : 9

Packing group : III

Labels : CLASS 9

ERG Code : 171

Marine pollutant : no

Remarks : THE ABOVE INFORMATION ONLY APPLIES TO PACKAGE SIZES WHERE THE HAZARDOUS SUBSTANCE MEETS

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# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Vertrel™ SMT specialty fluid

Version 12.0      Revision Date: 05/23/2024      SDS Number: 1327136-00049      Date of last issue: 12/19/2023  
Date of first issue: 02/27/2017

THE REPORTABLE QUANTITY.

### Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

## SECTION 15. REGULATORY INFORMATION

### CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Trans-Dichloroethylene	156-60-5	1000	2334
Methanol	67-56-1	5000	125137

### SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

### SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : Specific target organ toxicity (single or repeated exposure)  
Serious eye damage or eye irritation

**SARA 313** : The following components are subject to reporting levels established by SARA Title III, Section 313:

Methanol                      67-56-1                      >= 1 - < 5 %

### US State Regulations

#### Pennsylvania Right To Know

1,1,1,2,2,3,4,5,5,5-Decafluoropentane	138495-42-8
Trans-Dichloroethylene	156-60-5
Methanol	67-56-1
1,2-Butylene oxide	106-88-7

#### California Prop. 65

WARNING: This product can expose you to chemicals including Nitromethane, which is/are known to the State of California to cause cancer, and Methanol, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

#### California List of Hazardous Substances

Trans-Dichloroethylene	156-60-5
Methanol	67-56-1

#### California Permissible Exposure Limits for Chemical Contaminants

Methanol	67-56-1
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### International Regulations

Montreal Protocol : 1,1,1,2,2,3,4,5,5,5-

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Vertrel™ SMT specialty fluid

Version 12.0      Revision Date: 05/23/2024      SDS Number: 1327136-00049      Date of last issue: 12/19/2023  
Date of first issue: 02/27/2017

Decafluoropentane

### Additional regulatory information

1,1,1,2,2,3,4,5,5,5-  
Decafluoropentane      138495-42-8

The United States Environmental Protection Agency (USEPA) has established a Significant New Use Rule (SNUR) for one of the components in this product.

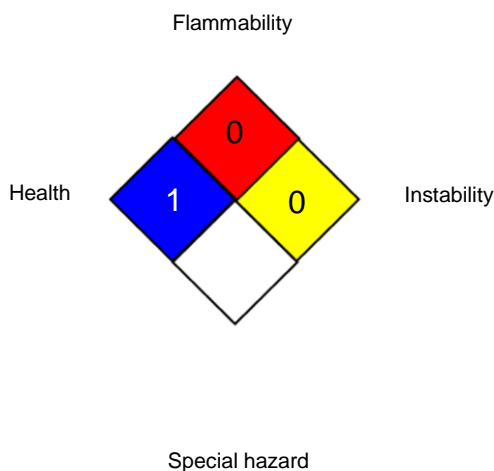
See 40 CFR § 721.5645

This material contains one or more substances which requires export notification under TSCA Section 12(b) and 40 CFR Part 707 Subpart D:

## SECTION 16. OTHER INFORMATION

### Further information

#### NFPA 704:



#### HMIS® IV:

HEALTH	/	3
FLAMMABILITY		0
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "\*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

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Before use read Chemours safety information.

For further information contact the local Chemours office or nominated distributors.

### Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)  
ACGIH BEI : ACGIH - Biological Exposure Indices (BEI)  
NIOSH REL : USA. NIOSH Recommended Exposure Limits  
OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants  
WEEL : Workplace Environmental Exposure Levels (WEEL)  
ACGIH / TWA : 8-hour, time-weighted average  
ACGIH / STEL : Short-term exposure limit  
NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Vertrel™ SMT specialty fluid

Version	Revision Date:	SDS Number:	Date of last issue: 12/19/2023
12.0	05/23/2024	1327136-00049	Date of first issue: 02/27/2017

---

workday during a 40-hour workweek

NIOSH REL / ST : STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday

OSHA Z-1 / TWA : 8-hour time weighted average

WEEL / STEL : Short term exposure limit

WEEL / TWA : 8-hr TWA

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Material Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

Revision Date : 05/23/2024

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Vertrel™ SMT specialty fluid

Version	Revision Date:	SDS Number:	Date of last issue: 12/19/2023
12.0	05/23/2024	1327136-00049	Date of first issue: 02/27/2017

---

to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

US / Z8