

## Technical data sheet HFE-7200 Mixture

### **Product name:** Ethyl Perfluorobutyl/isobutyl Ether

*Note: Ethyl Perfluoroisobutyl Ether is the major composition with slight percentage of Ethyl perfluorobutyl ether. They are two inseparable isomers with essentially identical properties. These are (CF<sub>3</sub>)<sub>2</sub>CF<sub>2</sub>OC<sub>2</sub>H<sub>5</sub> (CAS Nr. 163702-06-5) and CF<sub>3</sub>CF<sub>2</sub>CF<sub>2</sub>CF<sub>2</sub>OC<sub>2</sub>H<sub>5</sub> (CAS Nr. 163702-05-4).*

**Synonym:** HFE-7200; heat transfer fluid

**CAS number:** 163702-06-5

**Chemical formula:** (CF<sub>3</sub>)<sub>2</sub>CF<sub>2</sub>OC<sub>2</sub>H<sub>5</sub>

**CAS number.:** 163702-05-4

**Chemical formula:** CF<sub>3</sub>CF<sub>2</sub>CF<sub>2</sub>CF<sub>2</sub>OC<sub>2</sub>H<sub>5</sub>

### Introduction

This product is a clear, colorless, and largely odorless liquid that can be used in a wide variety of applications, including heat transfer, coating electronic components, electronic testing, and cleaning applications. This product is non-flammable, thermally stable, non-ozone-depleting, and has a very low global warming potential. It does not contribute to the formation of photochemical smog. It is recommended as a replacement for perfluoropolyethers (PFPE), perfluorocarbons (PFCs), hydrochlorofluorocarbons (HCFCs), and hydrofluorocarbons (HFCs).

HFE-7200 contains fluorine; sale and use is for professional, commercial users only!  
Not intended for personal use!  
HFE-7200 is a PFAS material.

## Typical physical properties

Appearance	Clear and colorless liquid
Molecular weight	264g/mol
Boiling point	76°C
Freezing point	-138°C
Density	1,43 g/ml.
Surface energy	13,6 mN/m
Solubility of solvent in water	<20 ppmw
Solubility of water in solvent	92 ppmw
Vapor pressure	109 mmHg
Viscosity	0,41 cSt
Viscosity	0,61 mPa.S
Specific heat	1220 j/Kg*K
Heat of vaporization @ boiling point	119 kJ/kg
Thermal conductivity	0,068 W/m. K
Isolation	>32 kV
Dielectric constant	7,3 @ 1MHz
Resistance	4,07*10 <sup>8</sup> Ω*cm

## Environment properties

ODP	0
GWP	59
Athmospheric lifetime	0,77 years
Flame point	none

## Typical Applications

- Specialty solvents
- Heat and cold transfer agents
- Cleaning processes
- Carriers for lubricants
- Spot-free drying
- Replacement for many environmentally harmful materials

## Heat Transfer

This product is ideal as a heat transfer fluid for the demanding requirements of semiconductor manufacturing. It is designed to offer a balance between performance and beneficial environmental and occupational safety properties.

In heat transfer applications, it offers:

- Excellent dielectric properties
- Non-flammable
- Wide fluid range
- Low global warming potential (GWP)
- Good material compatibility
- Zero ozone depletion potential (ODP)
- Low toxicity

For heat transfer applications, its favorable environmental, health, and safety properties make it a long-term sustainable solution, helping to improve reliability, address environmental concerns, and reduce total cost of ownership.

## Solvent Properties

Data compiled based on published information and not for the preparation of specifications. It is an excellent replacement for CFCs, PFCs, HCFCs, and HFCs in many solvent applications. It has proven useful in solvent cleaning applications – both in its pure form and in mixtures with organic solvents and/or other partially halogenated fluoroethers, fluorocarbons, and other fluorinated solvents.

## Material Compatibility

It is compatible with most metals and rigid polymers, such as:

### **Metals**

Stainless steel  
Nickel  
Copper  
Aluminum  
Brass  
Molybdenum  
Tungsten

### **Plastics**

Polycarbonate  
PMMA  
ABS  
Polypropylen  
Polyethylene  
Acryl  
Polyester  
Epoxid  
PET

### **Elastomers**

EPDM  
Natural rubber  
Butyl rubber  
EPR  
NBR

## Safety and Handling

It is nonflammable and does not exhibit flammability characteristics under normal operating and storage conditions. This fluid is highly resistant to thermal breakdown and hydrolysis in storage and during use. Recommended handling procedures are provided in the pertinent Material Safety Data Sheet.

For material and process questions please consult:

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