Datasheet FK-649

Product name: 1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone; Dodecafluoro-2-methylpentan-3-one;

Synonyms: FK-649; heat transfer fluid; heat transfer medium

CAS-NR.: 756-13-8

Molecular formula.: $C_6F_{12}O$

Introduction

This product is a clear, colorless liquid designed for heat transfer.
It 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.

On this basis, it is a useful instrument for fulfilling commitments to reduce greenhouse gas emissions.

The low boiling point, wide liquid range and low viscosity of this product make it ideal for electronics cooling (single or dual phase)
It effectively mitigates the aggressiveness of solvents and is useful in reducing the flammability of mixtures. The chemical and thermal stability of this product makes it well suited for use as a reaction medium.

FK-649 contains fluorine; for sale and use by professional, commercial users only!
Not intended for private use!
FK-649 is a PFAS material.

Typical physical properties

Appearance	Clear, colorless liquid
Boiling point	49°C
Pour Point	-108°C
Critical Temperature	169°C
Critical Pressure	1,88 Mpa
Vapor Pressure	40 kPa
Liquid density	1,6 g/ml. (25°C)
Absolute Viscosity	0,64 cP
Dielectric strength (2,5mm)	>40kV
Surface Tension	10,5 mN/m
Kinematic Viscosity (25°C)	0,4 cSt (25°C)
Specific Heat	1.013 J/g*K
Heat of Vaporization	88 kJ/kg
Coefficient of Expansion	$0{,}0018K^{-1}$
Thermal Conductivity	0,059 W/m.K
Dielectric constant at 1kHz	1.8
Resistivity	$>1*10^{15}$ Ω*mm

Environmental properties

Ozone depletion potential (ODP)	0
Global warming potential (GWP)	1
Atmospheric service life	0,014 years
Flash point	none
Flammability range in the air	none
Labeling	Not a hazardous substance
Hazardousness	Non-toxic to humans in typical use

Heat Transfer

FK-649 Engineered is an effective heat transfer fluid with a boiling point of 49ºC. It is mainly used in heat transfer applications where non-flammability or environmental factors play a role.

In heat transfer applications it offers:

- excellent dielectric properties
- non-flammable
- wide temperature 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 characteristics make it a long-term sustainable solution that helps improve reliability, address environmental concerns and reduce total cost of ownership.

Areas of application

Organic Rankine cycle
- Diesel engines
- Power generators
- Geothermal applications
- Solar applications

Electronics cooling (single-phase or two-phase)
- Power electronics such as IGBTs or inverters
- Transformers and other devices (SF6 replacement)

Cooling of computers/data centers

Safety and handling

Be sure to read and follow the precautions and instructions for use contained on the product label and safety data sheet before using this product. It is non-flammable and has a high resistance to thermal degradation and hydrolysis during storage and use. Recommended handling procedures are given in the safety data sheet.

If you have any questions about the material and its processing, please contact:

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