

Specification

13.01.2022

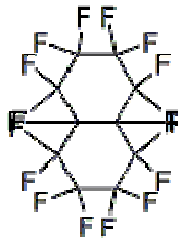
Code No: IS03353

CAS No: 306-94-5

EINECS No: 206-192-4

Chemical Name: **Perfluorodecalin (PFD, Perflunafene)**

Structure:



Molecular Formula: $C_{10}F_{18}$
Molecular Weight: 462.08

Product Properties:

Appearance	free from visible contaminations including water
Odor	odourless
Perfluorodecalin content by GLC Trans and Cis $C_{10}F_{18}$ (area %)	95 % min.
High boiling Perfluorocarbons by GLC (area %)	0.5 % max.
Low boiling Perfluorocarbons by GLC (area %)	5.0 % max.
Fluoride	2 $\mu\text{g/ml}$ max.
Substances reducing Potassium Permanganate	to pass standard test
Acidity	0.02 $\mu\text{. Equiv/ml}$ max.
Water	20 $\mu\text{g/ml}$ max.
Process solvents	0.001 % v/v max.
Non volatile residue	20 $\mu\text{g/ml}$ max.
Hydrogen (C-H), 1mm path length	0.015 AU max. volume

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Storage Conditions: Container must be stored in a cool dry place with the Closure tightly fastened.

Applications:

Due to its property to sorb O₂ from the air, retain and carry it, Perfluorodecalin is widely used as a cosmetic ingredient in ointments, creams, gels and liquids for personal care (first of all, anti-aging / anti-wrinkle skin care products, facial moisturizers / treatment, sunscreens).

Perfluorodecalin finds medical applications in artificial blood substitutes, eye surgery / ophthalmology, burn treatment and wound healing, organ storage, liquid ventilation, drug delivery.

Perfluorodecalin can be also used as a heat-transfer and dielectric. Of all the perfluorocarbons, perfluorodecalin has probably seen the most interest in medical applications. Most applications utilize its ability to dissolve large amounts of oxygen (100 ml of perfluorodecalin at 25°C will dissolve 49 ml of oxygen at STP^[2]).

Perfluorodecalin was an ingredient in Fluosol, an artificial blood product developed by Green Cross Corporation in the 1980s. It is also being studied for use in liquid breathing. Perfluorodecalin can be applied topically, to provide extra oxygen to a specific location, to accelerate wound healing. Organs and tissues can be stored for longer in oxygenated perfluorodecalin; the "two-layer method" uses perfluorodecalin and UW solution to preserve tissue for pancreas transplants.