

FC23-08

Perfluoro-2-Butyltetrahydrofuran

Revised 16-April-2017

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product name	Perfluoro-2-butyltetrahydrofuran
Catalog number	FC23-08
Brand	Fluoryx Labs
CAS number	335-36-4

Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Identified uses	Laboratory chemicals. Solvent.
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Details of the Supplier of the Safety Data Sheet

Company	Fluoryx Labs 3650 Research Way, #22 Carson City, NV 89706 USA +1 (510) 329-9149 (Telephone) +1 (510) 686-8799 (Fax) www.fluoryx.com
Emergency Call (ChemTel)	+01-813-248-0585 (International) +1-800-255-3924 (USA)

2. HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

GHS classification in accordance with 29 CFR 1910 (OSHA HCS)

Aquatic Hazard (Long-Term) [Category 4], H413

GHS Label Elements, Including Precautionary Statements

Pictogram	None
Signal Word	None
Hazard statement(s) H413	May cause long lasting harmful effects to aquatic life.
Precautionary statement(s) P261 P264 P271 P280	Avoid breathing dust/fume/gas/mist/vapors/spray. Wash skin thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/eye protection/face protection.
P302 + P352 P304 + P340	IF ON SKIN: Wash with plenty of soap and water. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several

P501

minutes.

Dispose of contents/container to an approved waste disposal plant.

Hazards Not Otherwise Classified (HNOC) or Not Covered by GHS - none**3. COMPOSITION AND INFORMATION ON INGREDIENTS****Synonyms**

2-Nonafluorobutyl-heptafluorotetrahydrofuran;
 Perfluoro-(2-perfluoro-n-butyl)tetrahydrofuran;
 Hexadecafluoro-2-butyltetrahydrofuran;
 2,2,3,3,4,4,5-heptafluorotetrahydro-5-(nonafluorobutyl)furan;
 Fluorinert FC 75 (3M trademark);
 Furan, 2,2,3,3,4,4,5-heptafluorotetrahydro-5-(1,1,2,2,3,3,4,4,4-nonafluorobutyl)-

Formula	C ₈ H ₁₆ O
Molecular Weight	416.06 g/mol
CAS Number	335-36-4
EC Number	206-389-5

Hazardous Components

Component	Classification	Concentration
Perfluoro-2-butyltetrahydrofuran	Ac. Haz. (Long Term) 4; H413	≤100%

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES**Description of First Aid Measures**

General advice	Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
If inhaled	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact	Wash off with soap and plenty of water. Consult a physician.
In case of eye contact	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing for 15 minutes. Consult a doctor.
If swallowed	Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most Important Symptoms and Effects, Both Acute and Delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Indications of Any Immediate Medical Attention No data available.**5. FIREFIGHTING MEASURES**

Suitable Extinguishing Media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide
Special Hazards Arising from the Substance	Hazardous decomposition products formed under fire conditions - carbon oxides and hydrogen fluoride.

Advice for Firefighters

Wear self contained breathing apparatus for fire fighting.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental Precautions

Do not let product enter drains.

Methods for Cleaning Up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Avoid contact with skin and eyes. Avoid formation of mist or respirable particles. Provide appropriate exhaust ventilation at places where mist or vapors are formed. Normal measures for preventive fire protection. Keep away from open flames and heated surfaces above 200 °C (392 °F).

Conditions for Safe Storage

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Specific End Use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with Workplace Control Parameters Contains no substances with occupational exposure limit values.

Engineering Controls

Do not aerosolize or spray. Prevent leaks in high-pressure systems that could create fine mists.

Personal Protective Equipment

Eye/face protection

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body protection

Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of Environmental Exposure

Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES**Appearance**

Form	Liquid, clear
Color	Colorless

Safety Data

pH	No data available
Melting point/freezing point	-88 °C
Boiling point	98-101 °C @ 1 atmosphere pressure
Flash point	> 101°C (closed cup)
Ignition temperature	No data available
Auto-ignition temperature	No data available
Lower explosion limit	Not an explosion hazard
Upper explosion limit	Not an explosion hazard
Thermal decomposition temperature	> 200 °C
Vapor pressure	31 mm Hg @ 25 °C
Density	1.77 g/mL @ 25 °C
Water solubility	Negligible
Partition coefficient (<i>n</i> -octanol/water)	No data available
Relative vapor density (air = 1)	14.3
Odor	No data available
Odor threshold	No data available
Evaporation rate	No data available
Viscosity	0.80 cSt @ 25 °C
Oxidizing properties	No data available

10. STABILITY AND REACTIVITY

Reactivity	No data available
Chemical Stability	Stable in sealed containers.
Possibility of Hazardous Reactions:	No data available.
Conditions to Avoid	Keep away from open flames and heated surfaces above 200 °C (392 °F).
Incompatible Materials	Avoid strong oxidizing agents.
Hazardous Decomposition Products	Decomposition temperature > 200 °C. Hazardous decomposition products formed under fire conditions - carbon oxides and hydrogen fluoride.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity	
Oral LD50	No data available
Inhalation LC50	No data available
Dermal LD50	No data available
Other information on acute toxicity	No data available
Skin Corrosion/Irritation	No data available
Serious Eye Damage/Eye Irritation	No data available

Respiratory or Skin Sensitization	No data available
Germ Cell Mutagenicity	No data available
Carcinogenicity	IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH. NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive Toxicity	No data available
Specific Target Organ Toxicity (Globally Harmonized System)	
Single exposure	Inhalation – may cause respiratory irritation
Repeated exposure	No data available
Aspiration Hazard	No data available
Signs and Symptoms of Exposure	To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Synergistic Effects	No data available
Additional Information	RTECS: none

12. ECOLOGICAL INFORMATION

Toxicity	
Fish	96h LC50:>20 mg/L (Oryzias latipes)
Persistence and Degradability	0 % (by BOD), 0 % (by GC)
Bioaccumulative Potential	348-979 (conc. 200 ug/L), 3030-11600 (conc. 20 ug/L)
Mobility in Soil	No data available
PBT and vPvB Assessment	No data available
Other adverse effects	No data available

13. DISPOSAL CONSIDERATIONS

Product	Offer non-recyclable solutions to a licensed disposal company or contact Fluoryx to return unused product.
Contaminated Packaging	Dispose of as unused product.

14. TRANSPORTATION INFORMATION

DOT (US)	Not dangerous goods
IMDG	Not dangerous goods
IATA	Not dangerous goods

15. REGULATORY INFORMATION

TSCA Status	On the inventory.
DSL Status	Not listed on the Canadian NDSL list.
SARA 302 Components	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Components	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
SARA 311/312 Hazards	No SARA hazards.
Massachusetts Right to Know Components	No components are subject to the Massachusetts Right to Know Act.
Pennsylvania Right to Know Components	No components are subject to the Pennsylvania Right to Know Act.
New Jersey Right to Know Components	No components are subject to the New Jersey Right to Know Act.
California Prop. 65 Components	This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full Text of H-Statements Referred to Under Sections 2 and 3.

Ac. Haz. (Long Term) 4 H413	Aquatic Hazard (Long-Term) [Category 4] May cause long lasting harmful effects to aquatic life.
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HMIS Rating

Health hazard	0
Flammability	0
Physical hazards	0

NFPA Rating

Health hazard	0
Fire	0
Reactivity hazard	0

International Inventories

All of the components in the product are on the following Inventory lists:

TSCA (United States), NDSL (Canada), Europe (EINECS, ENCS), Australia (AICS), South Korea (KECL), China (IECSC), Japan (ENC), Philippines (PICCS)

- TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
- DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
- EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
- ENCS - Japan Existing and New Chemical Substances
- IECSC - China Inventory of Existing Chemical Substances
- KECL - Korean Existing and Evaluated Chemical Substances
- PICCS - Philippines Inventory of Chemicals and Chemical Substances

Further Information

Not for drug, household, or other uses. The previous information is based upon our current knowledge and experience of our product and is not exhaustive. It applies to the product as defined by the specifications. In case of combinations or

mixtures, one must confirm that no new hazards are likely to exist. In any case, the user is not exempt from observing all legal, administrative and regulatory procedures relating to the product, personal hygiene, and integrity of the work environment. Unless noted to the contrary, the technical information applies only to pure product.

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End of SDS