

FC12-T4Pentane

1-(Perfluorobutyl)pentane

Revised 22-November-2016

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product name	1-(Perfluorobutyl)pentane
Catalog number	FC12-T4Pentane
Brand	Fluoryx Labs
CAS number	1190430-21-7

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

Identified uses	Laboratory chemicals. Synthesis of substances.
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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
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Emergency Call (ChemTel)

+01-813-248-0585 (International)
+1-800-255-3924 (USA)

2. HAZARDS INFORMATION

Classification of the substance or mixture

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

- Acute toxicity (category 4), H302+312+332
- Eye irritant (category 2), H319
- Skin irritant (category 2), H315
- Specific target organ toxicity – single exposure (Category 3), respiratory system, H335

GHS Label elements, including precautionary statements

Pictogram	GHS07: Exclamation mark
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Signal word:	Warning
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Hazard statement(s)	Harmful if swallowed, in contact with skin or if inhaled.
H302+312+332	Causes skin irritation.
H315	Causes serious eye irritation.
H319	May cause respiratory irritation.
H335	

Precautionary statement(s)	
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P264	P261 Avoid breathing
P271	dust/fume/gas/mist/vapors/spray.
P280	Wash skin thoroughly after handling.
	Use only outdoors or in a well-ventilated area.
P302 + P352	Wear protective gloves/eye protection/face protection.
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 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	Call a POISON CENTER or doctor/ physician if you feel unwell.
P312	If skin irritation occurs: Get medical advice/ attention.
P332 + P313	If eye irritation persists: Get medical advice/ attention.
P337 + P313	Take off contaminated clothing and wash before reuse.
P362	Store in a well-ventilated place. Keep container tightly closed.
P403 + P233	Dispose of contents/container to an approved waste disposal plant.
P501	

Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Synonyms	1,1,1,2,2,3,3,4,4-Nonafluorononane; 1-(Perfluorobut-1-yl)pentane; F4H5; Nonane, 1,1,1,2,2,3,3,4,4-nonafluoro-
Chemical formula:	C ₉ H ₁₁ F ₉ CF ₃ CF ₂ CF ₂ CF ₂ CH ₂ CH ₂ CH ₂ CH ₂ CH ₃
Molecular Weight	290.17 g/mol
CAS Number	1190430-21-7
EC Number	None

Hazardous Components

Component	Classification	Concentration
1-(Perfluorobutyl)hexane	Ac. Tox. 4; STOT SE 3; Skin Irrit. 2; Eye Irrit. 2A; H302+312+332, H335, H315, H319	≤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.

If swallowed

Remove contact lenses, if present and easy to do. Continue rinsing for 15 minutes. Consult a doctor.

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

Extinguishing Media

Suitable extinguishing media

"Alcohol" foam, dry chemical, or carbon dioxide. Cool all affected containers with flooding quantities of water.

Special hazards arising from the substance

Emits toxic fumes: carbon oxides and hydrogen fluoride (HF).

Advice for firefighters

Wear self-contained breathing apparatus for firefighting. Wear protective clothing to prevent contact with skin and eyes.

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 Measures

Ensure there is sufficient ventilation of the area.

Personal Protective Equipment

Eye/face protection

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and

Skin protection

approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

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	Neutral
Melting point/freezing point	No data available
Boiling point	115 °C at 760 mm Hg (measured)
Flash point	No data available
Ignition temperature	No data available
Auto-ignition temperature	No data available
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor pressure	No data available
Density	1.29 g/mL @ 20 °C (measured)
Water solubility	Negligible
Partition coefficient (<i>n</i> -octanol/water)	No data available
Relative vapor density (air = 1)	> 1
Odor	No data available
Odor threshold	No data available
Evaporation rate	No data available
Viscosity	1.05 mPa @ 25 °C (literature)
Oxidizing properties	No data available
Surface tension	17.4 mN/m (literature)

10. STABILITY AND REACTIVITY

Reactivity	No data available
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Chemical Stability	Stable under recommended storage conditions.
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 and strong bases.
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	Predicted Acute Toxicity (category 4)
Skin Corrosion/Irritation	Not corrosive. Predicted to be irritating.
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: Not available.

12. ECOLOGICAL INFORMATION

Toxicity	No data available
Persistence and Degradability	Persistent chemical (predicted).
Bioaccumulative Potential	No data available

Mobility in Soil	No data available
PBT and vPvB Assessment	This substance is not identified as a PBT substance.
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	Not on the inventory.
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	Acute health hazard.
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. Tox.	Acute toxicity
STOT SE	Specific target organ toxicity - single exposure.
Skin Irrit.	Skin irritation.
Eye Irrit.	Eye irritation.
H302+312+332	Harmful if swallowed, in contact with skin or if inhaled.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May causes respiratory irritation.

HMIS Rating

Health hazard	2
Flammability	0
Physical hazards	0

NFPA Rating

Health hazard	3
Fire	0
Reactivity hazard	0

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