

## FC04-04

## 2-(Perfluorobutyl)ethyl Alcohol

Revised 19-November-2016

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**1. PRODUCT AND COMPANY IDENTIFICATION**


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**Product Identifier**

Product Name	2-(Perfluorobutyl)ethyl alcohol
Catalog Number	FC04-04
Brand	Fluoryx Labs
CAS Number	2043-47-2

**Relevant identified uses of the Substance or mixture and uses advised against**

Identified uses:	Laboratory chemicals. Manufacture of substances.
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**Details of the supplier of the safety data sheet**

Company	<b>Fluoryx Labs</b> 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:**

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

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**2. HAZARDS IDENTIFICATION**


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**Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Flammable liquids (Category 4), H227

**GHS Label elements, including precautionary statements**

Pictogram	None
Signal word	Warning

**Hazard statement(s)**

H227	Combustible liquid
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**Precautionary statement(s)**

P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P280	Wear protective gloves/eye protection/face protection.
P370 + P378	In case of fire: use dry sand, dry chemical or alcohol-resistant foam for extinction.
P403 + P235	Store in a well-ventilated place. Keep cool.
P501	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 COMPONENTS

<b>Synonyms</b>	1H,1H,2H,2H-Nonafluorohexan-1-ol; 1H,1H,2H,2H-Perfluorohexan-1-ol
<b>Formula</b>	C <sub>6</sub> H <sub>5</sub> F <sub>9</sub> O CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> OH
<b>Molecular weight</b>	264.09
<b>CAS number</b>	2043-47-2
<b>EC number</b>	218-050-9

#### Hazardous components

Material	Classification	Concentration
2-(Perfluorobutyl)ethyl alcohol	Flam. Liq. 4; H227	≤100%

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

### 4. FIRST AID MEASURES

<b>General advice</b>	Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
<b>If inhaled</b>	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
<b>In case of skin contact</b>	Wash off with soap and plenty of water. Consult a physician.
<b>In case of eye contact</b>	Flush eyes with water as a precaution.
<b>If swallowed</b>	Do NOT induce vomiting. 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

**Indication of any immediate medical attention and special treatment needed** - no data available

### 5. FIRE FIGHTING MEASURES

<b>Suitable extinguishing media</b>	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
<b>Special hazards arising from the substance</b>	Hazardous decomposition products formed under fire conditions - carbon oxides and hydrogen fluoride.
<b>Advice for firefighters</b>	Wear self-contained breathing apparatus for fire fighting.
<b>Further Information:</b>	Use water spray to cool unopened containers.

### 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Protection:</b>	Avoid breathing vapors, mist or gas. Remove all sources of ignition. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
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<b>Environmental Protection:</b>	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
<b>Spill Clean-Up:</b>	Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

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## 7. HANDLING AND STORAGE

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<b>Safe Handling:</b>	Avoid inhalation of vapor or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.
<b>Storage:</b>	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.

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## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

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<b>Components with workplace control parameters</b>	Contains no substances with occupational exposure limit values.
<b>Appropriate engineering controls</b>	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
<b>Personal protective equipment</b>	
<b>Eye/face protection</b>	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).
<b>Skin protection</b>	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.
<b>Body Protection</b>	Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
<b>Respiratory protection</b>	Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi- purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
<b>Control of environmental exposure</b>	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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**Appearance**

Form	Liquid
Color	Colorless
<b>Safety Data</b>	
pH	3 - 7
Melting Point/Freezing Point	-58 °C
Boiling Point	140 - 143°C @ 760 mm Hg
Flash Point	73 °C (closed cup)
Ignition Temperature	No data available
Auto-ignition Temperature	No data available
Lower Explosion Limit	No data available
Upper Explosion Limit	No data available
Thermal Decomposition Temperature	No data available
Vapor Pressure	No data available
Vapor Density	>1 (air = 1)
Density	1.59 g/mL @ 25 °C
Water Solubility	~ 1mg/L @ 25 °C
Partition Coefficient ( <i>n</i> -octanol/water)	Log Pow: 1.943
Relative Vapor Density (Air = 1)	> 1
Odor	No data available
Odor Threshold	No data available
Evaporation Rate	No data available
Oxidizing Properties	No data available
Viscosity	11.0 to 14.0 mPa·s @ 20 °C

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## 10. STABILITY AND REACTIVITY

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<b>Reactivity</b>	No data available
<b>Chemical stability</b>	Stable under recommended storage conditions.
<b>Possibility of hazardous reactions</b>	Polymerization will not occur. No other data available.
<b>Conditions to avoid</b>	Heat, flames, sparks.
<b>Incompatible materials</b>	Strong oxidizing agents.
<b>Hazardous decomposition products</b>	Hazardous decomposition products formed under fire conditions - carbon oxides, hydrogen fluoride.

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## 11. TOXICOLOGICAL INFORMATION

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<b>Acute toxicity</b>	
Oral LD50	No data available
Inhalation LC50	No data available
Dermal LD50	No data available
Other information on acute toxicity	No data available
<b>Skin corrosion/irritation</b>	No data available
<b>Serious eye damage/eye irritation</b>	No data available
<b>Respiratory or skin sensitization</b>	No data available
<b>Germ cell mutagenicity</b>	No data available
<b>Carcinogenicity</b>	
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

**Teratogenicity**

No data available

**Animal Data:**

The product has been reported as a slight skin irritant in animals. In a Bacterial Reverse Mutation Test with an Independent Repeat Assay as reported by DuPont, the product did not cause a positive response in the presence and absence of Aroclor-induced rat liver S9.

**Specific target organ toxicity - single exposure (Globally Harmonized System)**

No data available

**Specific target organ toxicity - repeated exposure (Globally Harmonized System)**

No data available

**Aspiration hazard**

No data available

**Signs and Symptoms of Exposure:**

No data available

**Synergistic effects**

No data available

**Additional Information**

RTECS: Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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**12. ECOLOGICAL INFORMATION**

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**Toxicity**

No data available

**Persistence and Degradability**

Does not readily degrade.

**Bioaccumulative Potential**

No data available

**Mobility in Soil**

No data available

**PBT and vPvB Assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**Other adverse effects**

No data available

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**13. DISPOSAL CONSIDERATIONS**

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**Product**

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Offer non-recyclable solutions to a licensed disposal company. Contact Fluoryx to return unused product.

**Contaminated packaging**

Dispose of as unused product.

**14. TRANSPORTATION INFORMATION**

<b>DOT (US)</b>	NA-Number: 1993 Class: NONE Packing group: III Proper shipping name: Combustible liquid, n.o.s. (3,3,4,4,5,5,6,6,6-Nonafluorohexanol) Marine pollutant: No Poison Inhalation Hazard: No
<b>IMDG</b>	Not dangerous goods
<b>IATA</b>	Not dangerous goods

**15. REGULATORY INFORMATION**

<b>TSCA Status</b>	Listed
<b>DSL Status</b>	All components of this product are on the Canadian DSL list.
<b>SARA 302 Components</b>	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
<b>SARA 313 Components</b>	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.
<b>SARA 311/312 Hazards</b>	Fire hazard
<b>Massachusetts Right To Know Components</b>	No components are subject to the Massachusetts Right to Know Act.
<b>Pennsylvania Right To Know Components</b>	3,3,4,4,5,5,6,6,6-Nonafluorohexanol CAS-No. 2043-47-2 Revision Date
<b>New Jersey Right To Know Components</b>	3,3,4,4,5,5,6,6,6-Nonafluorohexanol CAS-No. 2043-47-2 Revision Date
<b>California Prop. 65 Components</b>	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.**

Flam. Liq. H227	Flammable liquid Combustible liquid
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**HMIS Classification**

Health Hazard:	0
Flammability:	2
Physical hazards:	0

**NFPA Rating**

Health Hazard:	0
Fire:	2
Reactivity Hazard:	0

**Further information**

For R&amp;D use only. 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