# Safety Data Sheet

**FC04-N**

2-(Perfluoroalkyl)ethyl Alcohols (Mixture)

Revised 20-November-2016

## 1. PRODUCT AND COMPANY IDENTIFICATION

<table>
<thead>
<tr>
<th>Product Identifier</th>
<th>2-(Perfluoroalkyl)ethyl alcohols, mixture of chain lengths, C8-C14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catalog number</td>
<td>FC04-N</td>
</tr>
<tr>
<td>Brand</td>
<td>Fluoryx Labs</td>
</tr>
<tr>
<td>CAS number</td>
<td>68391-08-2</td>
</tr>
</tbody>
</table>

**Relevant Identified Uses of The Substance or Mixture and Uses Advised Against**

**Identified uses:** Laboratory chemicals. Manufacture of substances.

**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)

Not a hazardous substance

**GHS Label Elements, Including Precautionary Statements**

Not a hazardous substance

**Hazard statement(s)**

Not a hazardous substance

**Precautionary statement(s)**

Not a hazardous substance

## 3. COMPOSITION AND INFORMATION ON INGREDIENTS

**Synonyms**

- 1H,1H,2H,2H-Perfluoroalkyl alcohols;
- 1H,1H,2H,2H-Perfluoro-1-alkanols;
- 1H,1H,2H,2H-Perfluoroalkyl-1-ols;
- 1H,1H,2H,2H-Perfluoro-n-alkanols;
- 1H,1H,2H,2H-Perfluoroalkanols;
- 1,1,2,2-Tetrahydroperfluoro-1-alkanols;
Perfluoro-C8-14-alkylalcohols; Alcohols, C8-14, γ-ω-perfluoro; Zonyl BA-N™, Fluowet EA 812™

**Formula**
\[ F(CF_2)_xCH_2CH_2OH, \ x = 8, 10, 12, \ldots; >60\% \ x = 8 \]
\[ C_nH_4F_mO; \ n = 8,10,12; \ m = 2n-3 \]

**Molecular Weight**
~520 average

**CAS Number**
68391-08-2

**EC Number**
269-927-8

No components need to be disclosed according to the applicable regulations.

### 4. FIRST AID MEASURES

**If Inhaled**
If breathed in, move person into fresh air. If not breathing, give artificial respiration.

**In Case of Skin Contact**
Wash off with soap and plenty of water.

**In Case of Eye Contact**
Flush eyes with water as a precaution.

**If Swallowed**
Never give anything by mouth to an unconscious person. Rinse mouth with water.

**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. FIREFIGHTING MEASURES

**Suitable Extinguishing Media**
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special Protective Equipment for Firefighters**
Wear self-contained breathing apparatus for fire fighting.

**Hazardous Combustion Products**
Hazardous decomposition products formed under fire conditions - carbon oxides, hydrogen fluoride.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions**
Avoid dust formation. Avoid breathing vapors, mist, or gas.

**Environmental Precautions**
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

**Methods for Cleaning Up**
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

### 7. HANDLING AND STORAGE

**Precautions for Safe Handling**
Provide appropriate exhaust ventilation at places where dust is formed. Avoid formation of respirable particles. Normal measures for preventive fire protection.

**Conditions for Safe Storage**
Keep container tightly closed in a dry and well-ventilated place.

### 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION
Components with Workplace Control Parameters

AEL* (DuPont):  5 mg/m³, 8 hour TWA
15 mg/m³, 15 minute TWA

* AEL is DuPont’s Acceptable Exposure Limit. Where governmental imposed occupational exposure limits are lower than the AEL are in effect, such limits shall take precedence.

Appropriate Engineering Controls

General industrial hygiene practice.

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

Choose body protection in relation to its type, to the concentration and amount of dangerous substance, and to the specific workplace.

Respiratory protection

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. 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 Waxy to slushy
Color White to pale tan

Safety Data

pH 5 - 7 @ 20 °C
Melting Point/Freezing Point 63-71 °C
Boiling Point 145-245 °C @ 760 mm Hg
Flash Point > 110 °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
Density 1.7 g/mL @ 20 °C
Water Solubility Negligible
Partition Coefficient (n-octanol/water) No data available
Relative Vapor Density (Air = 1) > 1
Odor Wax-like
Odor Threshold No data available
### 10. STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Reactivity</th>
<th>No data available</th>
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<tbody>
<tr>
<td>Chemical Stability</td>
<td>Stable under recommended storage conditions.</td>
</tr>
<tr>
<td>Possibility of Hazardous Reactions</td>
<td>Polymerization will not occur. No other data available.</td>
</tr>
<tr>
<td>Conditions to Avoid</td>
<td>Keep away from open flames and heated surfaces above 300 °C.</td>
</tr>
<tr>
<td>Incompatible Materials</td>
<td>Strong oxidizing agents.</td>
</tr>
<tr>
<td>Hazardous Decomposition Products</td>
<td>Hazardous decomposition products formed under fire conditions - carbon oxides, hydrogen fluoride, and carbonyl fluoride.</td>
</tr>
</tbody>
</table>

### 11. TOXICOLOGICAL INFORMATION

#### Acute Toxicity
- **Oral LD50**
- **Inhalation LC50**
- **Dermal LD50**
- **Other information on acute toxicity**
- **Oral ALD**: 11,000 mg/kg in rats
- **4 hour LC50**: 35.3 mg/l in rats
- **No data available**

#### Skin Corrosion/Irritation
- Not corrosive

#### Serious Eye Damage/Eye Irritation
- No data available.

#### Respiratory or Skin Sensitization
- The effects in animals exposed by inhalation to single high doses include irregular breathing, salivation, and discharge from the eyes and nose.
- Not a skin sensitizer in animals.

#### Germ Cell Mutagenicity
- Negative in the Bacterial Reverse Mutation Test with an independent repeat assay. An In Vitro mammalian chromosome aberration test using human peripheral lymphocytes was negative.

#### 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

#### Teratogenicity
- No data available

#### Specific Target Organ Toxicity (Globally Harmonized System)
- **Single exposure**
- No data available
Repeated exposure: No data available

Aspiration Hazard: No data available

Signs and Symptoms of Exposure:

General: Based on animal experiments, gross overexposure may cause abnormal liver or kidney function as detected by laboratory tests.

Inhalation: Inhalation of spray or mist may cause nasal, throat, or lung irritation. Inhalation of large amounts of respirable particles may be toxic to the lungs. Symptoms may be modest initially, followed in hours by severe shortness of breath requiring prompt medical attention.

Skin contact: May cause skin irritation with discomfort or rash. Data to evaluate the skin permeation hazard of this compound are insufficient. There are no reports of human sensitization.

Eye contact: May cause eye irritation with discomfort, tearing, or blurring of vision.

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.

12. ECOLOGICAL INFORMATION

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: No data available

Other Adverse Effects: No data available

13. DISPOSAL CONSIDERATIONS

Product: 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

DOT (US): Not dangerous goods

IMDG: Not dangerous goods

IATA: Not dangerous goods

15. REGULATORY INFORMATION

TSCA Status: On the inventory.

DSL Status: This product contains the following components listed on the Canadian NDSL list: Alcohols, C8-14, γ-u-perfluoro CAS-No. 68391-08-2
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 Law.

New Jersey Right to Know Components

No components are subject to the New Jersey Right To Know Law.

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

HMIS Classification

<table>
<thead>
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<tbody>
<tr>
<td>Health hazard</td>
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<tr>
<td>Flammability</td>
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<tr>
<td>Physical hazards</td>
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NFPA Rating

<table>
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<tbody>
<tr>
<td>Health hazard</td>
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<tr>
<td>Fire</td>
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<tr>
<td>Reactivity hazard</td>
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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