Material Safety Data Sheet

FC04-04
2-(Perfluorobutyl) Ethyl Alcohol

Revised 12-August-2009

1. PRODUCT AND COMPANY IDENTIFICATION

Material Identification:

Product name:	FC04-04
Chemical name:	2-(Perfluorobutyl) ethyl alcohol *1H,1H,2H,2H*-Nonafluorohexan-1-ol
Chemical formula:	$CF_3CF_2CF_2CF_2CH_2CH_2OH$ $C_6H_5F_9O$

Company Identification:

Distributor:	**Fuxin Hengtong Fluorine Chemicals Co., Ltd**
Emergency call:	+86-418-2558700EINECS #CAS #

2. COMPOSITION AND INFORMATION ON COMPONENTS

Material	Molecular Weight	Weight Percent	EINECS #	CAS #
2-(Perfluorobutyl) ethyl alcohol	264.09	> 98 %	218-050-9	2043-47-2

3. HAZARDS IDENTIFICATION

Emergency Overview:

Potential Effects of Exposure:

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

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.

Carcinogenicity Information: None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

4. FIRST AID MEASURES

Potential Effects Of Exposure:

Inhalation: If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a physician.

Skin contact: Flush skin with water after contact. Wash contaminated clothing before reuse.

Eye contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

Ingestion: If swallowed, do not induce vomiting. Immediately give 2 glasses of water. Never give anything by mouth to an unconscious person. Call a physician.

Note to Physicians: Activated charcoal mixture may be administered. To prepare activated charcoal mixture, suspend 50 grams activated charcoal in 400 mL water and mix thoroughly. Administer 5 mL/kg, or 350 mL for an average adult.

5. FIRE FIGHTING MEASURES

Flammable Properties

Flash point: 69 to 70 °C
Method: PMCC

Extinguishing Media: Use fire-fighting measures which suit the environment and take into account other materials which may be involved. In general, water-based extinguishers should not be used for fires involving organic materials. Use carbon dioxide or dry powder.

Protective Equipment: Wear self-contained breathing apparatus and protective clothing.

Hazardous Products of

Combustion May Include:	Carbon dioxide, carbon monoxide, hydrogen fluoride, toxic gases or particles may be formed during combustion. These products may cause severe eye, nose, throat, and lung irritation or toxic effects.
Fire Fighting Instructions:	Evacuate personnel to a safe area. Wear self-contained breathing apparatus. Avoid breathing decomposition products.

6. ACCIDENTAL RELEASE MEASURES

Personal Protection:	Wear protective equipment including rubber gloves, and eye protection. Evacuate personnel to safe areas.
Environmental Protection:	Take precautions to ensure product does not contaminate the ground or enter the drainage system. Collection
Spill Clean-Up:	Mix with vermiculite or proprietary absorbent material and transfer to sealed containers for disposal. Flush spill area with water.

7. HANDLING AND STORAGE

Safe Handling:	Avoid contact with eyes and skin. Avoid contact with clothing. Avoid formation of respirable particles. Do not breathe vapors or spray mist. Wash hands immediately after handling the product. Advice on protection against fire and explosion: do not spray on a naked flame or any other incandescent material.
Storage:	Store in tightly sealed containers in a cool, well-ventilated place. Do not store or consume food, drink, or tobacco in areas where they may come in contact. Keep container tightly closed. Keep away from open flames and heated surfaces above 200 °C.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering Controls:	Keep container tightly closed. Use only with adequate ventilation. Vent heated extruder or dryer fumes outside work area. Do not aerosolize. In spray applications, use airless type pressure spray equipment at less than 60 psi, and exhaust ducts, drip pans, or other design features to minimize worker exposure to mists and overspray. Keep away from open flames and heated surfaces above 200 °C.

Personal Protective Equipment:

Eye/face protection:	Wear safety glasses or coverall chemical splash goggles.

Respirators: Where there is potential for airborne exposures wear NIOSH approved respiratory protection.

Protective clothing: Where there is potential for skin contact have available and wear as appropriate impervious gloves, apron, pants, and jacket.

9. PHYSICAL AND CHEMICAL PROPERTIES

Molecular Weight	264.09 g/mol
pH	3 to 7
Boiling Point	65 °C @ 20 mm Hg
Melting Point	-58 °C
Viscosity	11.0 to 14.0 mPa•s @ 20 °C
Vapor Density	> 1 (air = 1)
Saturated Vapor Conc.	N/A
Specific Gravity/Density	1.590 g/mL @ 25 °C
Refractive Index	1.3129 @ 25 °C
Flash Point	69.5 °C (closed cup)
Form	Liquid
Color	Clear
Water Solubility	~ 1mg/L @ 25 °C

10. STABILITY AND REACTIVITY

Chemical Stability: Stable at normal temperatures and storage conditions.

Incompatibility with Other Materials: None reasonably foreseeable.

Decomposition: Hazardous decomposition products including carbon dioxide, carbon monoxide, hydrogen fluoride, toxic gases or particles may be formed during combustion. These products may cause severe eye, nose, throat, and lung irritation or toxic effects.

Polymerization: Polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

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.

12. ECOLOGICAL INFORMATION

No data available.

General: Take care to prevent chemicals from entering the ground, water courses or drainage systems.

13. DISPOSAL CONSIDERATIONS

Waste Disposal:

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

14. TRANSPORTATION INFORMATION

Mode	DOT/IMDG/IATA
UN Number	None. Non-hazardous for transport.
Class (Subsidiary)	None. Non-hazardous for transport.
Proper Shipping Name	None. Non-hazardous for transport.
Hazard Label (Subsidiary)	None. Non-hazardous for transport.
Packing Group	None. Non-hazardous for transport.
Shipping Hazard Label	None. Non-hazardous for transport.

15. REGULATORY INFORMATION

U.S. Federal Regulations:

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute	Yes
Chronic	No
Fire	No
Reactivity	No
Pressure	No

In compliance with TSCA Inventory requirements.

16. OTHER INFORMATION

NPCA-HMIS Rating

Health: 2
Flammability: 1
Reactivity: 1

Legal Disclaimer:

For R&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 MSDS