Safety Data Sheet

FC05-03

Hexafluoroisopropyl Acrylate

Revised 16-November-2016

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name	1,1,1,3,3,3-Hexafluoroisopropyl acrylate
Catalog Number	FC05-03
Brand	Fluoryx Labs
CAS no.	2160-89-6

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

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

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

Flammable liquids (Category 2), H225
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
Acute aquatic toxicity (Category 2), H401
Chronic aquatic toxicity (Category 2), H411
For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word: Danger

Hazard statement(s)

H225	Highly flammable liquid and vapor.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P210	Keep away from heat/sparks/open flames/hot surfaces - no smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing dust/fume/gas/mist/vapors/ spray.
P264	Wash skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/ face protection.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340	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.
P312	Call a POISON CENTER or doctor/ physician if you feel unwell.
P321	Specific treatment (see supplemental first aid instructions on this label).
P332 + P313	If skin irritation occurs: Get medical advice/attention.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P362	Take off contaminated clothing and wash before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P391	Collect spillage.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P403 + P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/ container to an approved waste disposal plant.

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms

2-Propenoic acid, 2,2,2-trifluoro-1-(trifluoromethyl)ethyl ester;
2,2,2-Trifluoro-1-(trifluoromethyl)ethyl acrylate;
Acrylic acid, 1,1,1,3,3,3-hexafluoroisopropyl ester;
Acrylic acid, 1,1,1,3,3,3-hexafluoropropan-2-yl ester;
1,1,1,3,3,3-Hexafluoroisopropyl acrylate;
1,1,1,3,3,3-Hexafluoro-2-propanol acrylate;
1,1,1,3,3,3-Hexafluoropropane-2-ol acrylate;
1,1,1,3,3,3-Hexafluoropropan-2-yl acrylate;

1,1,1,3,3,3-Hexafluoroprop-2-yl prop-2-enoate;
1H-1-(Trifluoromethyl)trifluoroethyl acrylate;
2H-Hexafluoroprop-2-yl acrylate;
HFIP-A;
Hexafluoro-2-propyl acrylate;
Hexafluoroisopropyl acrylate;
2-(Acryloyloxy)-1,1,1,3,3,3-hexafluoropropane

Formula $CH_2=CHC(O)OCH(CF_3)_2$
$C_6H_4F_6O_2$

Molecular weight 222.09 g/mol

CAS No. 2160-89-6

EC No. 218-479-1

Hazardous components

Component	Classification	Concentration
1,1,1,3,3,3-Hexafluoroisopropyl acrylate	Flam. Liq. 2; Skin Irrit. 2; Eye Irrit. 2A; STOT SE 3; Aquatic Acute 2; Aquatic Chronic 2; H225, H315, H319, H335, H411	≤100%

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

4. 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 If breathed in, move person into fresh air. 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 thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed 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

Suitable extinguishing media For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Special hazards arising from the substance or mixture Carbon oxides, hydrogen fluoride

Advice for firefighters Wear self-contained breathing apparatus for fire

fighting if necessary.

Further information Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
For personal protection see section 8.

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 and materials for containment and cleaning up

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).

7. HANDLING AND STORAGE

Precautions for safe handling Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Use explosion-proof equipment. Keep away from sources of ignition - no smoking. Take measures to prevent the build up of electrostatic charge.

Storage Conditions: Keep container tightly closed in a dry and well-ventilated place. Containers that are opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage temperature: 2 - 8 °C

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection Face shield and safety glasses. 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. Flame retardant antistatic protective 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	Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose 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).
Control of environmental exposure	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point	84 °C @ 760 mm Hg
Melting Point	No data available
Flash Point	10 °C (50 °F) - closed cup
Ignition Temperature	No data available
Autoignition Temperature	No data available
Lower Explosion Limit	No data available
Upper Explosion Limit	No data available
Vapor Pressure	384 hPa (288 mm Hg) at 55 °C (131 °F)
Relative Vapor Density	>1 (air = 1)
Evaporation Rate	No data available
Density	1.330 g/mL @ 25 °C
Solubility in Water	Negligible
pH	No data available
Odor	Acrylic
Odor Threshold	No data available
Form	Clear liquid
Color	Colorless

10. STABILITY AND REACTIVITY

Stability: **Possibility of hazardous reactions**	Stable under recommended storage conditions. Vapors may form explosive mixture with air.
Conditions to Avoid:	Heat, flames, and sparks. Extremes in temperature and sunlight.
Materials to Avoid:	Strong oxidizing agents.
Hazardous Decomposition Products:	In combustion, emits toxic fumes including carbon monoxide, carbon dioxide, and hydrogen fluoride.
Hazardous Polymerization Reactions:	Unless inhibited, product can polymerize, raising temperature and pressure, possibly rupturing container. Check inhibitor content often adding to

bulk liquid if needed.

11. TOXICOLOGICAL INFORMATION

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
Teratogenicity	No data available

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
Additional Information	RTECS: Not available

12. ECOLOGICAL INFORMATION

Toxicity	No data available
Persistence and degradability	Not readily degradable
Bioaccumulative potential	No data available
Mobility in soil	No data available
PBT and vPvB assessment	No data available
Other adverse effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

Product:	Offer surplus to Fluoryx. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer non-recyclable solutions to a licensed disposal company. Contact

	a licensed professional waste disposal service to dispose of this material.
Disposal of Packaging:	Dispose of as unused product.

14. TRANSPORTATION INFORMATION

DOT (US)	UN number: 3272 Class: 3 Packing group: II Proper shipping name: Esters, n.o.s. Marine pollutant: No Poison Inhalation Hazard: No
IMDG	UN number: 3272 Class: 3 Packing group: II EMS-No: F-E, S-D Proper shipping name: ESTERS, N.O.S. (2,2,2-Trifluoro-1-(trifluoromethyl)ethyl acrylate) Marine pollutant: No
IATA	UN number: 3272 Class: 3 Packing group: II Proper shipping name: Esters, n.o.s. (2,2,2-Trifluoro-1-(trifluoromethyl)ethyl acrylate)

15. REGULATORY INFORMATION

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	Fire Hazard, Acute Health Hazard
Massachusetts Right To Know Components	No components are subject to the Massachusetts Right to Know Act.
Pennsylvania Right To Know Components	2,2,2-Trifluoro-1-(trifluoromethyl)ethyl acrylate CAS-No. 2160-89-6 Revision Date
New Jersey Right To Know Components	2,2,2-Trifluoro-1-(trifluoromethyl)ethyl acrylate CAS-No. 2160-89-6 Revision Date
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.

Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Eye Irrit.	Eye irritation
Flam. Liq.	Flammable liquids
H225	Highly flammable liquid and vapor.
H315	Causes skin irritation.

H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H401	Toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	
Flammability:	3
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	3
Reactivity Hazard:	0

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 SDS