

Material Safety Data Sheet

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1. Identification of the substance/mixture and of the company/undertaking

Product name: FC-135 FLUORAD BRAND FLUOROCHEMICAL SURFACTANT

Product code: 10052740

Supplier: Carestream Health, Inc., 150 Verona Street, Rochester, New York, 14608

For Emergency Health Information call, (800) 424-9300

For other information contact 800-328-2910.

Synonyms: None.

2. Hazards identification

CONTAINS: Fluoroalkyl quaternary ammonium iodides (not applicable), Isopropanol (67-63-0), Methyl iodide (74-88-4)

WARNING!

FLAMMABLE LIQUID AND VAPOR

HARMFUL IF INHALED, ABSORBED THROUGH SKIN, OR SWALLOWED

CAUSES EYE IRRITATION

HIGH VAPOR CONCENTRATIONS MAY CAUSE DROWSINESS AND IRRITATION OF THE EYES OR RESPIRATORY TRACT

CAN CAUSE CNS EFFECTS

POSSIBLE CANCER HAZARD - MAY CAUSE CANCER BASED ON ANIMAL DATA

PROLONGED OR REPEATED SKIN CONTACT MAY CAUSE DRYING, CRACKING, OR IRRITATION

HMIS II Hazard Ratings:

Health - 2*, Flammability - 3, Reactivity (Stability) - 0

NFPA Hazard Ratings:

Health - 3, Flammability - 3, Instability - 0

NOTE: HMIS II and NFPA hazard indexes involve data review and interpretation that may vary among companies. They are intended only for rapid, general identification of the magnitude of the potential hazards. An asterisk (*), in the HMIS II health field, designates potential chronic or target organ hazards. To adequately address safe handling, ALL information in this MSDS must be considered.

3. Composition/information on ingredients

| Weight % | Components (CAS-No.) |
|----------|---|
| 40 - 44 | Fluoroalkyl quaternary ammonium iodide (C8) (1652-63-7) |
| 33 | Isopropanol (67-63-0) |

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| | |
|---------|--|
| 17 | Water (7732-18-5) |
| 1 - 5 | Flouroalkyl quaternary ammonium iodide (C6) (68957-58-4) |
| 1 - 4 | Flouroalkyl quaternary ammonium iodide (C7) (67584-58-1) |
| 1 - 4 | Flouroalkyl quaternary ammonium iodide (C4) (67939-95-1) |
| 0.1 - 2 | Flouroalkyl quaternary ammonium iodide (C5) (68957-57-3) |
| 0.1 | Methyl iodide (74-88-4) |

4. First aid measures

Inhalation: If inhaled, move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Eyes: Rinse immediately with plenty of water for at least 15 minutes. Get medical attention.

Skin: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if symptoms occur. Wash contaminated clothing before re-use. Destroy or thoroughly clean contaminated shoes.

Ingestion: Only induce vomiting at the instruction of medical personnel. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

5. Fire-fighting measures

Extinguishing Media: water spray, carbon dioxide (CO₂), dry chemical, alcohol-resistant foam.

Special Fire-Fighting Procedures: Wear self-contained breathing apparatus and protective clothing. Fire or excessive heat may produce hazardous decomposition products. Use water spray to cool unopened containers. Water may be ineffective.

Hazardous Combustion Products: Carbon oxides, nitrogen oxides (NO_x) (see also Hazardous Decomposition Products section).

Unusual Fire and Explosion Hazards: Flammable. Material contains a flammable solvent that may accumulate in the container headspace. Vapours may form explosive mixtures with air. Vapours are heavier than air and may spread along floors. Prevent buildup of vapours or gases to explosive concentrations.

6. Accidental release measures

Methods for cleaning up: Remove all sources of ignition. Absorb spill with inert material, then place in a chemical waste container. Clean surface thoroughly to remove residual contamination.

For Large Spills: Use water spray to disperse vapours and dilute spill to a nonflammable mixture. Prevent runoff from entering drains, sewers, or streams.

7. Handling and storage

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Personal precautions: Avoid breathing mist or vapour at concentrations greater than the exposure limits. Avoid contact with eyes, skin, and clothing. Ensure adequate ventilation. Wash thoroughly after handling.

Prevention of Fire and Explosion: Keep away from open flames, hot surfaces and sources of ignition. Ensure adequate ventilation. Keep from contact with oxidizing materials. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of flammable liquids.

Storage: Store in cool place. Keep containers tightly closed in a cool, well-ventilated place. Keep away from incompatible substances (see Incompatibility section.)

8. Exposure controls / personal protection

Occupational exposure controls

| Chemical Name | Regulatory List | Value Type | Value |
|---------------|-----------------|---|-------------------------------|
| Isopropanol | ACGIH | Time Weighted Average (TWA): | 200 ppm |
| | ACGIH | Short Term Exposure Limit (STEL): | 400 ppm |
| | OSHA Z1 | PEL: | 400 ppm 980 mg/m ³ |
| Methyl iodide | ACGIH | Time Weighted Average (TWA): | 2 ppm |
| | ACGIH | Skin designation: | |
| | | <i>Remarks: Can be absorbed through the skin.</i> | |
| | OSHA Z1 | PEL: | 5 ppm 28 mg/m ³ |
| | OSHA Z1 | Skin designation: | |
| | | <i>Remarks: Can be absorbed through the skin.</i> | |

Ventilation: Good general ventilation should be used. Ventilation should be sufficient so that applicable occupational exposure limits are not exceeded. Ventilation rates should be matched to conditions. Supplementary local exhaust ventilation, closed systems, or respiratory protection may be needed in special circumstances.

Respiratory protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits, an approved respirator must be worn. Respirator type: full face air-supplied. If respirators are used, a program should be instituted to assure compliance with OSHA Standard 29 CFR 1910.134.

Eye protection: Wear safety glasses with side shields (or goggles).

Skin and body protection: Wear impervious gloves and protective clothing appropriate for the risk of exposure.

Recommended Decontamination Facilities: Safety shower, eye wash, washing facilities as appropriate to condition of use.

9. Physical and Chemical Properties

Physical form: liquid

Colour: light amber

Odour: No data available

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Specific gravity: 1.18

Vapour pressure (at 20.0 °C (68.0 °F)) : 24 mbar (18.0 mm Hg)

Vapor density (air = 1): ca. 1.2

Volatile fraction by weight: 15 - 20 %

Boiling point/range: 82.0 °C (179.6 °F)

Water solubility: complete

pH: 3 - 5

Flash point: 20.0 °C (68.0 °F) (Setaflash closed cup)

10. Stability and reactivity

Stability: Stable.

No exotherm to 400 °C by DTA.

Incompatibility: Strong oxidizing agents, strong bases, sodium hypochlorite (bleach). Contact with sodium hypochlorite (bleach) may form chloramine (toxic gas).

Hazardous decomposition products: hydrogen fluoride, hydrogen iodide, ammonia, chloramine.

Hazardous Polymerization: Hazardous polymerization does not occur.

11. Toxicological information

Effects of Exposure

General advice:

Contains: Isopropanol. Prolonged exposure to high vapour concentrations of isopropyl alcohol may cause irritation of the eyes, nose, and throat and narcosis.

Contains: Methyl iodide. Possible cancer hazard. May cause cancer based on animal data.

Inhalation: Harmful if inhaled. High vapour concentrations may cause irritation.

Eyes: Causes eye irritation. High vapour concentrations may cause irritation.

Skin: Harmful if absorbed through skin. Prolonged or repeated contact may cause drying, cracking, or irritation.

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Ingestion: Harmful if swallowed. May cause irritation of the gastrointestinal tract. Ingestion of large amounts of isopropyl alcohol may cause headache, dizziness, incoordination, vomiting, confusion, stupor, kidney injury coma and death.

Data for Isopropanol:

Acute Toxicity Data:

- Oral LD50 (rat): 5,800 mg/kg
- Inhalation LC50 (rat): 12,000 ppm / 8 h
- Dermal LD50: 16.4 mL/kg
- Skin irritation: slight
- Skin irritation: No skin irritation (repeated skin application)
- Eye irritation: slight to moderate

12. Ecological information

The following properties are ESTIMATED from the components of the preparations.

Potential Toxicity:

| | |
|--------------------|---------|
| Fish LC50: | 60 mg/l |
| COD (approximate): | 1.3 g/g |
| BOD (approximate): | 0.5 g/g |

This product contains one or more organic fluorochemicals that have the potential to resist degradation and persist in the environment.

13. Disposal considerations

Discharge, treatment, or disposal is subject to national, state, provincial, or municipal laws. Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

The information given below is provided to assist in documentation. It may supplement the information on the package. The package in your possession may carry a different version of the label depending on the date of manufacture. Depending on inner packaging quantities and packaging instructions, it may be subject to specific regulatory exceptions. Please consult the product packaging for further details.

| | | |
|----------------|-----------------------|----------------------|
| US DOT: | UN Number: | UN1219 |
| | Proper shipping name: | Isopropanol Solution |
| | Class: | 3 |
| | Packaging group: | II |
| IMDG: | UN Number: | UN1219 |
| | Proper shipping name: | ISOPROPANOL SOLUTION |
| | Class: | 3 |

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Packaging group: II

IATA: UN Number: UN1219
Proper shipping name: ISOPROPANOL SOLUTION
Class: 3
Packaging group: II

For more transportation information, go to: <http://ship.carestreamhealth.com>.

15. Regulatory information

U.S. California Prop. 65: Methyl iodide (Carcinogenic.)

Carcinogenicity Classification (components present at 0.1% or more):

International Agency for Research on Cancer (IARC): Isopropanol: 3 (Classification not possible from current data.), Methyl iodide: 3 (Classification not possible from current data.)
American Conference of Governmental Industrial Hygienists (ACGIH): Isopropanol: Group A4 (Not classifiable as a human carcinogen.)
U.S. National Toxicology Program (NTP): none
U.S. Occupational Safety and Health Administration (OSHA): none

Chemical(s) subject to the reporting requirements of U.S. Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372:
Isopropanol, Methyl iodide

16. Other information

US/Canadian Label Statements:

CONTAINS: Fluoroalkyl quaternary ammonium iodides (not applicable), Isopropanol (67-63-0), Methyl iodide (74-88-4)

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HARMFUL IF INHALED, ABSORBED THROUGH SKIN, OR SWALLOWED
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HIGH VAPOR CONCENTRATIONS MAY CAUSE DROWSINESS AND IRRITATION OF THE EYES OR RESPIRATORY TRACT
CAN CAUSE CNS EFFECTS
POSSIBLE CANCER HAZARD - MAY CAUSE CANCER BASED ON ANIMAL DATA
PROLONGED OR REPEATED SKIN CONTACT MAY CAUSE DRYING, CRACKING, OR IRRITATION

Avoid breathing mist or vapour.
Avoid contact with eyes, skin, and clothing.
Keep away from open flames, hot surfaces and sources of ignition.
Store in cool place.
Keep container tightly closed.
Ensure adequate ventilation.
Wash thoroughly after handling.
Residual vapours may explode on ignition; do not cut, drill, grind, or weld on or near this container.

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FIRST AID: If swallowed, only induce vomiting as directed by medical personnel. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. If inhaled, move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. In case of contact, immediately flush eyes and skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if symptoms occur. Wash contaminated clothing before re-use. Destroy or thoroughly clean contaminated shoes.

Keep out of reach of children.

Do not handle or use until safety precautions in Material Safety Data Sheet (MSDS) have been read and understood.

Additional hazard precautions for containers greater than 1 gallon of liquid or 5 pounds of solid:

Since emptied containers retain product residue, follow label warnings even after container is emptied.

IN CASE OF FIRE: Use water spray, carbon dioxide (CO₂), dry chemical, alcohol-resistant foam. Use water spray to cool unopened containers.

IN CASE OF SPILL: Absorb spill with inert material, then place in a chemical waste container. Remove all sources of ignition. Use water spray to disperse vapours and dilute spill to a nonflammable mixture. Prevent runoff from entering drains, sewers, or streams.

The information contained herein is furnished without warranty of any kind. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers and the protection of the environment. The information relating to the working solution is for guidance purposes only, and is based on correct mixing and use of the product according to instructions.

R-2, S-2, F-3, C-0 CARC