

ROBERT A. BILOTT
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January 3, 2018

BY EMAIL AND REGULAR U.S. MAIL

Alethea M. Huyser
Assistant Solicitor General
445 Minnesota Street
Suite 1100
St. Paul, Minnesota 55101-2128

Re: Perfluorochemicals in Minnesota

Dear Ms. Huyser:

We understand that you are one of the attorneys representing the State of Minnesota in connection with its ongoing investigation into the potential public health threat posed by perfluorochemicals (including PFOA and PFOS), including what has been known about the toxicity of and potential health effects associated with exposure to and disposal of perfluorochemicals in the environment. In connection with this current potential public health threat, the State of Minnesota requested our assistance in locating certain documents that might shed light on the history and timing of such information in Minnesota, given our involvement in litigation against E. I. du Pont de Nemours and Company ("DuPont") through which we gained access to certain potentially-relevant, historic records that might not otherwise be available to the State.

Thus, pursuant to the State's request for assistance in investigating and responding to this on-going, potential public health threat, we have attached several documents produced in litigation from the non-confidential business records of DuPont (as indicated by the "EID" document numbering prefix),¹ which might be responsive. We understand that the documents originated with The 3M Company and were sent to

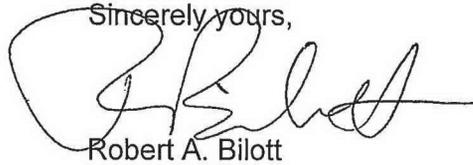
¹ One of the documents also has a document control number of "P1.8195," which reflects the fact that it is a non-confidential, plaintiff's trial exhibit that was used at a recent public trial against DuPont.



Alethea M. Huyser
January 3, 2018
Page 2

DuPont during the course of DuPont's long-term business relationship with 3M with respect to certain perfluorochemical issues and products.

Sincerely yours,

A handwritten signature in black ink, appearing to read "R. Bilott", written over the typed name "Robert A. Bilott". The signature is fluid and cursive, with a large initial "R" and a long horizontal stroke at the end.

Robert A. Bilott

Encls.

3M General Offices

3M Center
St. Paul, MN 55144-1000
64Z 733 1110
661

1710

MATERIAL SAFETY
DATA SHEET



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the intention of earning a profit thereon.

DIVISION: SPECIALTY CHEMICALS DIVISION

TRADE NAME:

FC-118 FLUORAD Brand Fluorochemical Surfactant

ID NUMBER/U.P.C.: 98-0211-4832-9 00-51135-02697-7 98-0211-4885-7 00-51135-02745-5
98-0211-8012-4 00-51135-10863-5 98-0211-8083-5 00-51135-10918-2
98-0211-8858-0 00-51135-10971-7

ISSUED: FEBRUARY 7, 1997
SUPERSEDES: AUGUST 23, 1996
DOCUMENT: 10-4221-7

C₇ F16 COONH₄

1. INGREDIENT	C.A.S. NO.	PERCENT
WATER	7732-18-5	80
AMMONIUM PERFLUOROCTANOATE	3825-26-1	18
AMMONIUM PERFLUROHEPTANOATE	6150-43-4	0.1
AMMONIUM PERFLUROHEXANOATE	21615-47-4	0
AMMONIUM PERFLUROPENTANOATE	68259-11-0	0.1

2. PHYSICAL DATA

BOILING POINT: 100 C
(Typical)
VAPOR PRESSURE: 18 mmHg
VAPOR DENSITY: 0.62 Air = 1
Calc @ 20C
Calc @ 20C
EVAPORATION RATE: < 1.0 Butyl Acetate = 1
SOLUBILITY IN WATER: complete
SP. GRAVITY: 1.12 Water = 1
PERCENT VOLATILE: 80 %
pH: ca. 5
VISCOSITY: N/D
MELTING POINT: N/A
APPEARANCE AND ODOR: Light colored liquid; slight odor.

3. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: > 100 C Setflash
FLAMMABLE LIMITS - LEL: N/A
FLAMMABLE LIMITS - UEL: N/A
AUTOIGNITION TEMPERATURE: N/A
EXTINGUISHING MEDIA:
Water, Carbon dioxide, Dry chemical, Foam
SPECIAL FIRE FIGHTING PROCEDURES:
Wear full protective clothing, including helmet, self-contained,

Abbreviations: N/D - Not Determined N/A - Not Applicable

EID599980

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MATERIAL SAFETY
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MSDS: FC-118 FLUORAD Brand Fluorochemical Surfactant
FEBRUARY 7, 1997

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3. FIRE AND EXPLOSION HAZARD DATA (continued)

positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

See Hazardous Decomposition section for products of combustion.

4. REACTIVITY DATA

STABILITY: Stable

INCOMPATIBILITY - MATERIALS TO AVOID:

Not Applicable

HAZARDOUS POLYMERIZATION: Will Not Occur

HAZARDOUS DECOMPOSITION PRODUCTS:

Carbon Monoxide and Carbon Dioxide, Oxides of Nitrogen, Hydrogen Fluoride, Ammonia.

5. ENVIRONMENTAL INFORMATION

SPILL RESPONSE:

Refer to other sections of this MSDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment. In the U.S.A., call (612) 733-1110 or (612) 733-6100 for 24-hour spill assistance. Contain spill. Cover with absorbent material. Collect spilled material.

For spills to ground: Collect contaminated soil. Pump contaminated water from puddles or stagnant storm sewers. Place collected waste in approved containers, and seal. For spills to ground or surface water: Notify appropriate authorities. Contact 3M to evaluate further needs.

RECOMMENDED DISPOSAL:

Incinerate in an industrial or commercial facility in the presence of a combustible material. Combustion products will include HF.

Pass contaminated water through anion exchange resin. If necessary, contact 3M for assistance.

ENVIRONMENTAL DATA:

Data for product solids: Chemical Oxygen Demand (COD): Nil (0.000700g/g). Biochemical Oxygen Demand (BOD20): Nil; 96-Hr. LC50, Bluegill Sunfish (*Lepomis macrochirus*): 569 mg/L; 96-Hr. LC50, Fathead Minnow (*Pimephales promelas*): 766 mg/L; 48-Hr EC50, *Daphnia magna*: 632 mg/L; 14-Day EC50 (cell dry weight), Green Algae (*Selenastrum capricornutum*) 73 mg/L. Soil Adsorption Coefficient (Koc): 17, indicates very high mobility. (Study used a sandy loam soil).

REGULATORY INFORMATION:

Volatile Organic Compounds: N/A.

VOC Less H2O & Exempt Solvents: N/A.

Abbreviations: N/D - Not Determined N/A - Not Applicable.

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MATERIAL SAFETY
DATA SHEET

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MSDS: FC-118 FLUORAD Brand Fluorochemical Surfactant
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5. ENVIRONMENTAL INFORMATION (continued)

Since regulations vary, consult applicable regulations or authorities before disposal. U.S. EPA Hazardous Waste Number = None (Not U.S. EPA Hazardous).

The components of this product are in compliance with the chemical registration requirements of TSCA, EINECS, CDSL and AICS.

EPCRA HAZARD CLASS:

FIRE HAZARD: No PRESSURE: No REACTIVITY: No ACUTE: Yes CHRONIC: Yes

6. SUGGESTED FIRST AID

EYE CONTACT:

Immediately flush eyes with large amounts of water for at least 15 minutes. Get immediate medical attention.

SKIN CONTACT:

Immediately wash skin with soap and large amounts of water. Remove contaminated clothing. If signs/symptoms occur, call a physician. Wash contaminated clothing before reuse and dispose of contaminated shoes.

INHALATION:

If signs/symptoms occur, remove person to fresh air. If signs/symptoms continue, call a physician.

IF SWALLOWED:

Do not induce vomiting. Drink two glasses of water. Call a physician.

7. PRECAUTIONARY INFORMATION

EYE PROTECTION:

Avoid eye contact. Wear vented goggles.

SKIN PROTECTION:

Avoid skin contact. Wear appropriate gloves when handling this material. A pair of gloves made from the following material(s) are recommended: butyl rubber. Use one or more of the following personal protection items as necessary to prevent skin contact: head covering, coveralls. Protective garments (other than gloves) should be made of either of the following materials: polyethylene/polyvinylidene chloride (Saranex)

Coverall made of Tyvek(r). Wear rubber boots when cleaning up spills.

VENTILATION PROTECTION:

Use with appropriate local exhaust ventilation. Provide sufficient ventilation to maintain emissions below recommended exposure limits. If exhaust ventilation is not adequate, use appropriate respiratory protection.

RESPIRATORY PROTECTION:

Avoid breathing of vapors, mists or spray. Avoid breathing of

Abbreviations: N/D - Not Determined N/A - Not Applicable

EID599982

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MATERIAL SAFETY
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7. PRECAUTIONARY INFORMATION (continued)

airborne material. Select one of the following NIOSH approved respirators based on airborne concentration of contaminants and in accordance with OSHA regulations: full-face high-efficiency filter respirator, full-face supplied air respirator.

PREVENTION OF ACCIDENTAL INGESTION:

Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. Wash hands after handling and before eating.

RECOMMENDED STORAGE:

Do not store containers on their sides. Store at room temperature. Keep container closed when not in use.

FIRE AND EXPLOSION AVOIDANCE:

Keep container tightly closed. No smoking while handling this material.

OTHER PRECAUTIONARY INFORMATION:

HMS HAZARD RATINGS: HEALTH: 2 FLAMMABILITY: 1 REACTIVITY: 0
PERSONAL PROTECTION: X (See precautions, section 7.)

INGREDIENTS	EXPOSURE LIMITS		TYPE	AUTH	SKIN*
	VALUE	UNIT			
WATER	NONE	NONE	NONE	NONE	
AMMONIUM PERFLUOROOCTANOATE	0.01	mg/m ³	TWA	ACGIH	Y
AMMONIUM PERFLUOROHEPTANOATE	0.1	mg/m ³	TWA	3M	Y
AMMONIUM PERFLUOROHEXANOATE	0.1	mg/m ³	TWA	3M	Y
AMMONIUM PERFLUOROPENTANOATE	0.1	mg/m ³	TWA	3M	Y

* SKIN NOTATION: Listed substances indicated with "Y" under SKIN refer to the potential contribution to the overall exposure by the cutaneous route including mucous membrane and eye, either by airborne or, more particularly, by direct contact with the substance. Vehicles can alter skin absorption.

SOURCE OF EXPOSURE LIMIT DATA:

- ACGIH: American Conference of Governmental Industrial Hygienists
- AIHA: American Industrial Hygiene Assoc. Workplace Environmental Exposure Level
- 3M: 3M Medical Department Guideline
- NONE: None Established

8. HEALTH HAZARD DATA

EYE CONTACT:

No toxicity data for the solution. Ammonium perfluoroalkyl carboxylate can be irritating to the eye and may cause eye injury from airborne exposure.

SKIN CONTACT:

May be absorbed through the skin and persist in the body for an

Abbreviations: N/D - Not Determined N/A - Not Applicable

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MATERIAL SAFETY
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MSDS: FC-118 FLUORAD Brand Fluorochemical Surfactant
FEBRUARY 7, 1997

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B. HEALTH HAZARD DATA (continued)

extended time.

No toxicity data for the solution. Ammonium perfluoroalkyl carboxylate is slightly toxic when absorbed through the skin; it is non-irritating to the skin.

INHALATION:

May be absorbed by inhalation and persist in the body for an extended time.

No toxicity data for the solution. Ammonium perfluoroalkyl carboxylate may cause respiratory system irritation from inhalation; can be considered moderately toxic by inhalation on a single exposure; a median lethal concentration for a 4-hour exposure in the albino rat is 980 milligrams per cubic meter. Repeated inhalation exposure produced liver changes and elevated blood organofluoride levels in rats.

IF SWALLOWED:

Ingestion is not a likely route of exposure to this product.

No toxicity data for the solution Ammonium perfluoroalkyl carboxylate is considered moderately toxic from a single oral exposure; acute oral LD50 (rat) is 540 mg. per kg. of body weight.

CANCER:

WARNING: Contains a chemical which can cause cancer. (3825-26-1) (1983 and 1993 studies conducted jointly by 3M and DuPont).

MUTAGENICITY:

Ammonium perfluoroalkyl carboxylate was not mutagenic in invitro mutagenicity assays. Did not cause cell transformation in a mammalian cell transformation assay.

REPRODUCTIVE/DEVELOPMENTAL TOXINS:

Ammonium perfluoroalkyl carboxylate was not teratogenic in rabbits by oral administration and was not teratogenic to rats by gavage and inhalation exposures.

SECTION CHANGE DATES

HEALTH HAZD. DATA SECTION CHANGED SINCE AUGUST 23, 1996 ISSUE

Abbreviations: N/D - Not Determined N/A - Not Applicable.

EID599984

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MSDS: FC-118 FLUORAD Brand Fluorochemical Surfactant
FEBRUARY 7, 1997

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SECTION CHANGE DATES

Abbreviations: N/D - Not Determined N/A - Not Applicable

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 DATA SHEET 3M Center
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DIVISION: SPECIALTY CHEMICALS DIVISION

TRADE NAME:

FC-118 FLUORAD Brand Fluorochemical Surfactant

ID NUMBER/U.P.C.:

98-0211-4832-9 00-51135-02697-7 98-0211-4885-7 00-51135-02745-5

98-0211-8012-4 00-51135-10863-5 98-0211-8083-5 00-51135-10918-2

98-0211-8858-0 00-51135-10971-7

ISSUED: February 19, 1997

SUPERSEDES: February 07, 1997

DOCUMENT: 10-4221-7

1. INGREDIENT	C.R.S. NO.	PERCENT
WATER.....	7732-18-5	80
AMMONIUM PERFLUOROCTANOATE.....	3825-26-1	18 - 21
AMMONIUM PERFLUROHEPTANOATE.....	6130-45-4	0.1 - 1.0
AMMONIUM PERFLUROHEXANOATE.....	21615-47-4	0 - 0.1
AMMONIUM PERFLUROPENTANOATE.....	68259-11-0	0.1 - 1.0

2. PHYSICAL DATA

BOILING POINT:..... 100 C
 (Typical)
 VAPOR PRESSURE:..... 18 mmHg
 Calc @ 20C
 VAPOR DENSITY:..... 0.62 Air=1
 Calc @ 20C
 EVAPORATION RATE:..... < 1.0 BuOAc=1
 SOLUBILITY IN WATER:..... complete
 SPECIFIC GRAVITY:..... 1.12 Water=1
 PERCENT VOLATILE:..... 80 %
 pH:..... ca. 5
 VISCOSITY:..... N/D
 MELTING POINT:..... N/A

Abbreviations: N/D - Not Determined N/A - Not Applicable CR - Approximately

EID008492

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MSDS: FC-118 FLUORAD Brand Fluorochemical Surfactant
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2. PHYSICAL DATA (continued)

APPEARANCE AND ODOR:
Light colored liquid; slight odor.

3. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:..... > 100 C Setaflash
FLAMMABLE LIMITS - LEL:..... N/A
FLAMMABLE LIMITS - UEL:..... N/A
AUTOIGNITION TEMPERATURE:..... N/A

EXTINGUISHING MEDIA:
Water, Carbon dioxide, Dry chemical, Foam

SPECIAL FIRE FIGHTING PROCEDURES:
Wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

UNUSUAL FIRE AND EXPLOSION HAZARDS:
See Hazardous Decomposition section for products of combustion.

4. REACTIVITY DATA

STABILITY: Stable

INCOMPATIBILITY - MATERIALS/CONDITIONS TO AVOID:
Not applicable

HAZARDOUS POLYMERIZATION: Hazardous polymerization will not occur.

HAZARDOUS DECOMPOSITION PRODUCTS:
Carbon Monoxide and Carbon Dioxide, Oxides of Nitrogen, Hydrogen Fluoride, Ammonia.

5. ENVIRONMENTAL INFORMATION

SPILL RESPONSE:
Refer to other sections of this MSDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment. In the U.S.A., call (612) 733-1110 or (612) 733-6100 for 24-hour spill assistance. Contain spill. Cover with absorbent material. Collect spilled material.

EID008493

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

MSDS: FC-118 FLUORAD Brand Fluorochemical Surfactant
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5. ENVIRONMENTAL INFORMATION (continued)

For spills to ground: Collect contaminated soil. Pump contaminated water from puddles or stagnant storm sewers. Place collected waste in approved containers, and seal. For spills to ground or surface water: Notify appropriate authorities. Contact 3M to evaluate further needs.

RECOMMENDED DISPOSAL:

Incinerate in an industrial or commercial facility in the presence of a combustible material. Combustion products will include HF.

Pass contaminated water through anion exchange resin. If necessary, contact 3M for assistance.

ENVIRONMENTAL DATA:

Data for product solids: Chemical Oxygen Demand (COD): Nil (0.00700g/g). Biochemical Oxygen Demand (BOD20): Nil; 96-Hr. LC50, Bluegill Sunfish (*Lepomis macrochirus*): 569 mg/L; 96-Hr. LC50, Fathead Minnow (*Pimephales promelas*): 766 mg/L; 48-Hr EC50, *Daphnia magna*: 632 mg/L; 14-Day EC50 (cell dry weight), Green Algae (*Selenastrum capricornutum*) 73 mg/L. Soil Adsorption Coefficient (Koc): 17, indicates very high mobility. (Study used a sandy loam soil).

REGULATORY INFORMATION:

Volatile Organic Compounds: N/A.
VOC Less H₂O & Exempt Solvents: N/A.

Since regulations vary, consult applicable regulations or authorities before disposal. U.S. EPA Hazardous Waste Number - None (Not U.S. EPA Hazardous).

The components of this product are in compliance with the chemical registration requirements of TSCA, EINECS, CDL and RICS.

EPCRA HAZARD CLASS:

FIRE HAZARD: No PRESSURE: No REACTIVITY: No ACUTE: Yes CHRONIC: Yes

6. SUGGESTED FIRST AID

EYE CONTACT:

Immediately flush eyes with large amounts of water for at least 15 minutes. Get immediate medical attention.

SKIN CONTACT:

Immediately wash skin with soap and large amounts of water. Remove contaminated clothing. If signs/symptoms occur, call a physician. Wash contaminated clothing before reuse and dispose of contaminated shoes.

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

EID008494

MSDS: FC-118 FLUORAD Brand Fluorochemical Surfactant
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6. SUGGESTED FIRST AID (continued)

INHALATION:

If signs/symptoms occur, remove person to fresh air. If signs/symptoms continue, call a physician.

IF SWALLOWED:

Do not induce vomiting. Drink two glasses of water. Call a physician.

7. PRECAUTIONARY INFORMATION

EYE PROTECTION:

Avoid eye contact. Wear vented goggles.

SKIN PROTECTION:

Avoid skin contact. Wear appropriate gloves when handling this material. A pair of gloves made from the following material(s) are recommended: butyl rubber. Use one or more of the following personal protection items as necessary to prevent skin contact: head covering, coveralls. Protective garments (other than gloves) should be made of either of the following materials: polyethylene/polyvinylidene chloride (Saranex)

Coverall made of Tyvek(r). Wear rubber boots when cleaning up spills.

RECOMMENDED VENTILATION:

Use with appropriate local exhaust ventilation. Provide sufficient ventilation to maintain emissions below recommended exposure limits. If exhaust ventilation is not adequate, use appropriate respiratory protection.

RESPIRATORY PROTECTION:

Avoid breathing of vapors, mists or spray. Avoid breathing of airborne material. Select one of the following NIOSH approved respirators based on airborne concentration of contaminants and in accordance with OSHA regulations: full-face high-efficiency filter respirator, full-face supplied air respirator.

PREVENTION OF ACCIDENTAL INGESTION:

Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. Wash hands after handling and before eating.

RECOMMENDED STORAGE:

Do not store containers on their sides. Store at room temperature. Keep container closed when not in use.

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

EID008495

GW001403

7. PRECAUTIONARY INFORMATION (continued)

FIRE AND EXPLOSION AVOIDANCE:
Keep container tightly closed. Nonflammable.

OTHER PRECAUTIONARY INFORMATION:
No smoking: Smoking while using this product can result in contamination of the tobacco and/or smoke and lead to the formation of the hazardous decomposition products mentioned in section 4 of this MSDS.

HMS HAZARD RATINGS: HEALTH: 2 FLAMMABILITY: 1 REACTIVITY: 0
PERSONAL PROTECTION: X (See precautions, section 7.)

EXPOSURE LIMITS

INGREDIENT	VALUE	UNIT	TYPE	AUTH	SKIN*
WATER.....	NONE	NONE	NONE	NONE	
AMMONIUM PERFLUOROOCTANOATE.....	0.01	MG/M3	TWA	ACGIH	Y
AMMONIUM PERFLUOROHEPTANOATE.....	0.1	MG/M3	TWA	3M	Y
AMMONIUM PERFLUOROHEXANOATE.....	0.1	MG/M3	TWA	3M	Y
AMMONIUM PERFLUOROPENTANOATE.....	0.1	MG/M3	TWA	3M	Y

* SKIN NOTATION: Listed substances indicated with 'Y' under SKIN refer to the potential contribution to the overall exposure by the cutaneous route including mucous membrane and eye, either by airborne or, more particularly, by direct contact with the substance. Vehicles can alter skin absorption.

SOURCE OF EXPOSURE LIMIT DATA:
- ACGIH: American Conference of Governmental Industrial Hygienists
- 3M: 3M Recommended Exposure Guidelines
- NONE: None Established

8. HEALTH HAZARD DATA

EYE CONTACT:
No toxicity data for the solution. Ammonium perfluoroalkyl carboxylate can be irritating to the eye and may cause eye injury from airborne exposure.

SKIN CONTACT:
May be absorbed through the skin and persist in the body for an extended time.

No toxicity data for the solution. Ammonium perfluoroalkyl carboxylate is slightly toxic when absorbed through the skin; it is non-irritating to the skin.

EID008496

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

MSDS: FC-118 FLUORAD Brand Fluorochemical Surfactant
February 19, 1997 PAGE 6

8. HEALTH HAZARD DATA (continued)

INHALATION:

May be absorbed by inhalation and persist in the body for an extended time.

No toxicity data for the solution. Ammonium perfluoroalkyl carboxylate may cause respiratory system irritation from inhalation; can be considered moderately toxic by inhalation on a single exposure; a median lethal concentration for a 4-hour exposure in the albino rat is 980 milligrams per cubic meter. Repeated inhalation exposure produced liver changes and elevated blood organofluoride levels in rats.

IF SWALLOWED:

Ingestion is not a likely route of exposure to this product.

No toxicity data for the solution. Ammonium perfluoroalkyl carboxylate is considered moderately toxic from a single oral exposure; acute oral LD50 (rat) is 540 mg. per kg. of body weight.

CANCER:

WARNING: Contains a chemical which can cause cancer. (3825-26-1) (1983 and 1993 studies conducted jointly by 3M and DuPont).

MUTAGENICITY:

Ammonium perfluoroalkyl carboxylate was not mutagenic in *in vitro* mutagenicity assays. Did not cause cell transformation in a mammalian cell transformation assay.

REPRODUCTIVE/DEVELOPMENTAL TOXINS:

Ammonium perfluoroalkyl carboxylate was not teratogenic in rabbits by oral administration and was not teratogenic to rats by gavage and inhalation exposures.

SECTION CHANGE DATES

PRECAUTIONARY INFO. SECTION CHANGED SINCE February 07, 1997 ISSUE

EID008497

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

FW001405

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EID008498

GW001406

ROBERT A. BILOTT
859.547.4306
bilott@taftlaw.com

January 3, 2018

BY EMAIL AND REGULAR U.S. MAIL

Alethea M. Huyser
Assistant Solicitor General
445 Minnesota Street
Suite 1100
St. Paul, Minnesota 55101-2128

Re: Perfluorochemicals in Minnesota

Dear Ms. Huyser:

We understand that you are one of the attorneys representing the State of Minnesota in connection with its ongoing investigation into the potential public health threat posed by perfluorochemicals (including PFOA and PFOS), including what has been known about the toxicity of and potential health effects associated with exposure to and disposal of perfluorochemicals in the environment. In connection with this current potential public health threat, the State of Minnesota requested our assistance in locating certain documents that might shed light on the history and timing of such information in Minnesota, given our involvement in litigation against E. I. du Pont de Nemours and Company ("DuPont") through which we gained access to certain potentially-relevant, historic records that might not otherwise be available to the State.

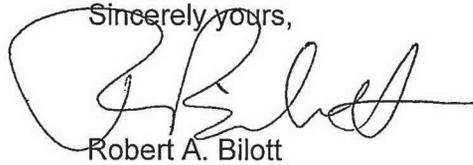
Thus, pursuant to the State's request for assistance in investigating and responding to this on-going, potential public health threat, we have attached several documents produced in litigation from the non-confidential business records of DuPont (as indicated by the "EID" document numbering prefix),¹ which might be responsive. We understand that the documents originated with The 3M Company and were sent to

¹ One of the documents also has a document control number of "P1.8195," which reflects the fact that it is a non-confidential, plaintiff's trial exhibit that was used at a recent public trial against DuPont.

Alethea M. Huyser
January 3, 2018
Page 2

DuPont during the course of DuPont's long-term business relationship with 3M with respect to certain perfluorochemical issues and products.

Sincerely yours,

A handwritten signature in black ink, appearing to read "R. Bilott", written over the typed name "Robert A. Bilott". The signature is fluid and cursive, with a large initial "R" and a long horizontal stroke at the end.

Robert A. Bilott

Encls.

3M General Offices

3M Center
St. Paul, MN 55144-1000
64Z 733 1110
661

1710

MATERIAL SAFETY
DATA SHEET



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the intention of earning a profit thereon.

DIVISION: SPECIALTY CHEMICALS DIVISION
TRADE NAME:
FC-118 FLUORAD Brand Fluorochemical Surfactant

ID NUMBER/U.P.C.: 98-0211-4832-9 00-51135-02697-7 98-0211-4885-7 00-51135-02745-5
98-0211-8012-4 00-51135-10863-5 98-0211-8083-5 00-51135-10918-2
98-0211-8858-0 00-51135-10971-7

ISSUED: FEBRUARY 7, 1997 C₇ F16 COONH₄
SUPERSEDES: AUGUST 23, 1996
DOCUMENT: 10-4221-7

1. INGREDIENT	C.A.S. NO.	PERCENT
WATER	7732-18-5	80
AMMONIUM PERFLUOROCTANOATE	3825-26-1	18
AMMONIUM PERFLUROHEPTANOATE	6150-43-4	0.1
AMMONIUM PERFLUROHEXANOATE	21615-47-4	0
AMMONIUM PERFLUROPENTANOATE	68259-11-0	0.1

2. PHYSICAL DATA

BOILING POINT: 100 C
(Typical)
VAPOR PRESSURE: 18 mmHg
VAPOR DENSITY: 0.62 Air = 1
Calc @ 20C
EVAPORATION RATE: < 1.0 Butyl Acetate = 1
Calc @ 20C
SOLUBILITY IN WATER: complete
SP. GRAVITY: 1.12 Water = 1
PERCENT VOLATILE: 80 %
pH: ca. 5
VISCOSITY: N/D
MELTING POINT: N/A
APPEARANCE AND ODOR: Light colored liquid; slight odor.

3. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: > 100 C Setflash
FLAMMABLE LIMITS - LEL: N/A
FLAMMABLE LIMITS - UEL: N/A
AUTOIGNITION TEMPERATURE: N/A
EXTINGUISHING MEDIA:
Water, Carbon dioxide, Dry chemical, Foam
SPECIAL FIRE FIGHTING PROCEDURES:
Wear full protective clothing, including helmet, self-contained,

Abbreviations: N/D - Not Determined N/A - Not Applicable

EID599980

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MATERIAL SAFETY
DATA SHEET

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MSDS: FC-118 FLUORAD Brand Fluorochemical Surfactant
FEBRUARY 7, 1997

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3. FIRE AND EXPLOSION HAZARD DATA (continued)

positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

See Hazardous Decomposition section for products of combustion.

4. REACTIVITY DATA

STABILITY: Stable

INCOMPATIBILITY - MATERIALS TO AVOID:

Not Applicable

HAZARDOUS POLYMERIZATION: Will Not Occur

HAZARDOUS DECOMPOSITION PRODUCTS:

Carbon Monoxide and Carbon Dioxide, Oxides of Nitrogen, Hydrogen Fluoride, Ammonia.

5. ENVIRONMENTAL INFORMATION

SPILL RESPONSE:

Refer to other sections of this MSDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment. In the U.S.A., call (612) 733-1110 or (612) 733-6100 for 24-hour spill assistance. Contain spill. Cover with absorbent material. Collect spilled material.

For spills to ground: Collect contaminated soil. Pump contaminated water from puddles or stagnant storm sewers. Place collected waste in approved containers, and seal. For spills to ground or surface water: Notify appropriate authorities. Contact 3M to evaluate further needs.

RECOMMENDED DISPOSAL:

Incinerate in an industrial or commercial facility in the presence of a combustible material. Combustion products will include HF.

Pass contaminated water through anion exchange resin. If necessary, contact 3M for assistance.

ENVIRONMENTAL DATA:

Data for product solids: Chemical Oxygen Demand (COD): Nil (0.000700g/g). Biochemical Oxygen Demand (BOD20): Nil; 96-Hr. LC50, Bluegill Sunfish (*Lepomis macrochirus*): 569 mg/L; 96-Hr. LC50, Fathead Minnow (*Pimephales promelas*): 766 mg/L; 48-Hr EC50, *Daphnia magna*: 632 mg/L; 14-Day EC50 (cell dry weight), Green Algae (*Selenastrum capricornutum*) 73 mg/L. Soil Adsorption Coefficient (Koc): 17, indicates very high mobility. (Study used a sandy loam soil).

REGULATORY INFORMATION:

Volatile Organic Compounds: N/A.
VOC Less H2O & Exempt Solvents: N/A.

Abbreviations: N/D - Not Determined N/A - Not Applicable.

EID599981

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MATERIAL SAFETY
DATA SHEET

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MSDS: FC-118 FLUORAD Brand Fluorochemical Surfactant
FEBRUARY 7, 1997

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5. ENVIRONMENTAL INFORMATION (continued)

Since regulations vary, consult applicable regulations or authorities before disposal. U.S. EPA Hazardous Waste Number = None (Not U.S. EPA Hazardous).

The components of this product are in compliance with the chemical registration requirements of TSCA, EINECS, CDSL and AICS.

EPCRA HAZARD CLASS:

FIRE HAZARD: No PRESSURE: No REACTIVITY: No ACUTE: Yes CHRONIC: Yes

6. SUGGESTED FIRST AID

EYE CONTACT:

Immediately flush eyes with large amounts of water for at least 15 minutes. Get immediate medical attention.

SKIN CONTACT:

Immediately wash skin with soap and large amounts of water. Remove contaminated clothing. If signs/symptoms occur, call a physician. Wash contaminated clothing before reuse and dispose of contaminated shoes.

INHALATION:

If signs/symptoms occur, remove person to fresh air. If signs/symptoms continue, call a physician.

IF SWALLOWED:

Do not induce vomiting. Drink two glasses of water. Call a physician.

7. PRECAUTIONARY INFORMATION

EYE PROTECTION:

Avoid eye contact. Wear vented goggles.

SKIN PROTECTION:

Avoid skin contact. Wear appropriate gloves when handling this material. A pair of gloves made from the following material(s) are recommended: butyl rubber. Use one or more of the following personal protection items as necessary to prevent skin contact: head covering, coveralls. Protective garments (other than gloves) should be made of either of the following materials: polyethylene/polyvinylidene chloride (Saranex)

Coverall made of Tyvek(r). Wear rubber boots when cleaning up spills.

VENTILATION PROTECTION:

Use with appropriate local exhaust ventilation. Provide sufficient ventilation to maintain emissions below recommended exposure limits. If exhaust ventilation is not adequate, use appropriate respiratory protection.

RESPIRATORY PROTECTION:

Avoid breathing of vapors, mists or spray. Avoid breathing of

Abbreviations: N/D - Not Determined N/A - Not Applicable

EID599982

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MATERIAL SAFETY
DATA SHEET



MSDS: FC-118 FLUORAD Brand Fluorochemical Surfactant
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7. PRECAUTIONARY INFORMATION (continued)

airborne material. Select one of the following NIOSH approved respirators based on airborne concentration of contaminants and in accordance with OSHA regulations: full-face high-efficiency filter respirator, full-face supplied air respirator.

PREVENTION OF ACCIDENTAL INGESTION:
Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. Wash hands after handling and before eating.

RECOMMENDED STORAGE:
Do not store containers on their sides. Store at room temperature. Keep container closed when not in use.

FIRE AND EXPLOSION AVOIDANCE:
Keep container tightly closed. No smoking while handling this material.

OTHER PRECAUTIONARY INFORMATION:
HMIS HAZARD RATINGS: HEALTH: 2 FLAMMABILITY: 1 REACTIVITY: 0
PERSONAL PROTECTION: X (See precautions, section 7.)

INGREDIENTS	EXPOSURE LIMITS		TYPE	AUTH	SKIN*
	VALUE	UNIT			
WATER	NONE	NONE	NONE	NONE	
AMMONIUM PERFLUOROCTANOATE	0.01	mg/m ³	TWA	ACGIH	Y
AMMONIUM PERFLUOROHEPTANOATE	0.1	mg/m ³	TWA	3M	Y
AMMONIUM PERFLUOROHEXANOATE	0.1	mg/m ³	TWA	3M	Y
AMMONIUM PERFLUOROPENTANOATE	0.1	mg/m ³	TWA	3M	Y

* SKIN NOTATION: Listed substances indicated with "Y" under SKIN refer to the potential contribution to the overall exposure by the cutaneous route including mucous membrane and eye, either by airborne or, more particularly, by direct contact with the substance. Vehicles can alter skin absorption.

SOURCE OF EXPOSURE LIMIT DATA:
- ACGIH: American Conference of Governmental Industrial Hygienists
- AIHA: American Industrial Hygiene Assoc. Workplace Environmental Exposure Level
- 3M: 3M Medical Department Guideline
- NONE: None Established

8. HEALTH HAZARD DATA

EYE CONTACT:
No toxicity data for the solution. Ammonium perfluoroalkyl carboxylate can be irritating to the eye and may cause eye injury from airborne exposure.

SKIN CONTACT:
May be absorbed through the skin and persist in the body for an

Abbreviations: N/D - Not Determined N/A - Not Applicable

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MATERIAL SAFETY
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MSDS: FC-118 FLUORAD Brand Fluorochemical Surfactant
FEBRUARY 7, 1997

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B. HEALTH HAZARD DATA (continued)

extended time.

No toxicity data for the solution. Ammonium perfluoroalkyl carboxylate is slightly toxic when absorbed through the skin; it is non-irritating to the skin.

INHALATION:

May be absorbed by inhalation and persist in the body for an extended time.

No toxicity data for the solution. Ammonium perfluoroalkyl carboxylate may cause respiratory system irritation from inhalation; can be considered moderately toxic by inhalation on a single exposure; a median lethal concentration for a 4-hour exposure in the albino rat is 980 milligrams per cubic meter. Repeated inhalation exposure produced liver changes and elevated blood organofluoride levels in rats.

IF SWALLOWED:

Ingestion is not a likely route of exposure to this product.

No toxicity data for the solution Ammonium perfluoroalkyl carboxylate is considered moderately toxic from a single oral exposure; acute oral LD50 (rat) is 540 mg. per kg. of body weight.

CANCER:

WARNING: Contains a chemical which can cause cancer. (3825-26-1) (1983 and 1993 studies conducted jointly by 3M and DuPont).

MUTAGENICITY:

Ammonium perfluoroalkyl carboxylate was not mutagenic in invitro mutagenicity assays. Did not cause cell transformation in a mammalian cell transformation assay.

REPRODUCTIVE/DEVELOPMENTAL TOXINS:

Ammonium perfluoroalkyl carboxylate was not teratogenic in rabbits by oral administration and was not teratogenic to rats by gavage and inhalation exposures.

SECTION CHANGE DATES

HEALTH HAZD. DATA SECTION CHANGED SINCE AUGUST 23, 1996 ISSUE

Abbreviations: N/D - Not Determined N/A - Not Applicable.

EID599984

STATE_07543964

1471.0022

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MSDS: FC-118 FLUORAD Brand Fluorochemical Surfactant
FEBRUARY 7, 1997

PAGE: 6 of 6

SECTION CHANGE DATES

Abbreviations: N/D - Not Determined N/A - Not Applicable

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EID599985

STATE_07543965

1471.0023

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DIVISION: SPECIALTY CHEMICALS DIVISION

TRADE NAME:

FC-118 FLUORAD Brand Fluorochemical Surfactant

ID NUMBER/U.P.C.:

98-0211-4832-9 00-51135-02697-7 98-0211-4885-7 00-51135-02745-5

98-0211-8012-4 00-51135-10863-5 98-0211-8083-5 00-51135-10918-2

98-0211-8858-0 00-51135-10971-7

ISSUED: February 19, 1997

SUPERSEDES: February 07, 1997

DOCUMENT: 10-4221-7

1. INGREDIENT	C.R.S. NO.	PERCENT
WATER.....	7732-18-5	80
AMMONIUM PERFLUOROCTANOATE.....	3825-26-1	18 - 21
AMMONIUM PERFLUROHEPTANOATE.....	6130-45-4	0.1 - 1.0
AMMONIUM PERFLUROHEXANOATE.....	21615-47-4	0 - 0.1
AMMONIUM PERFLUROPENTANOATE.....	68259-11-0	0.1 - 1.0

2. PHYSICAL DATA

BOILING POINT:..... 100 C
 (Typical)
 VAPOR PRESSURE:..... 18 mmHg
 Calc @ 20C
 VAPOR DENSITY:..... 0.62 Air=1
 Calc @ 20C
 EVAPORATION RATE:..... < 1.0 BuOAc=1
 SOLUBILITY IN WATER:..... complete
 SPECIFIC GRAVITY:..... 1.12 Water=1
 PERCENT VOLATILE:..... 80 %
 pH:..... ca. 5
 VISCOSITY:..... N/D
 MELTING POINT:..... N/A

Abbreviations: N/D - Not Determined N/A - Not Applicable CR - Approximately

EID008492

U1400

MSDS: FC-118 FLUORAD Brand Fluorochemical Surfactant
February 19, 1997 PAGE 2

2. PHYSICAL DATA (continued)

APPEARANCE AND ODOR:
Light colored liquid; slight odor.

3. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:..... > 100 C Setaflash
FLAMMABLE LIMITS - LEL:..... N/A
FLAMMABLE LIMITS - UEL:..... N/A
AUTOIGNITION TEMPERATURE:..... N/A

EXTINGUISHING MEDIA:
Water, Carbon dioxide, Dry chemical, Foam

SPECIAL FIRE FIGHTING PROCEDURES:
Wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

UNUSUAL FIRE AND EXPLOSION HAZARDS:
See Hazardous Decomposition section for products of combustion.

4. REACTIVITY DATA

STABILITY: Stable

INCOMPATIBILITY - MATERIALS/CONDITIONS TO AVOID:
Not applicable

HAZARDOUS POLYMERIZATION: Hazardous polymerization will not occur.

HAZARDOUS DECOMPOSITION PRODUCTS:
Carbon Monoxide and Carbon Dioxide, Oxides of Nitrogen, Hydrogen Fluoride, Ammonia.

5. ENVIRONMENTAL INFORMATION

SPILL RESPONSE:
Refer to other sections of this MSDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment. In the U.S.A., call (612) 733-1118 or (612) 733-6108 for 24-hour spill assistance. Contain spill. Cover with absorbent material. Collect spilled material.

EID008493

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

MSDS: FC-118 FLUORAD Brand Fluorochemical Surfactant
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5. ENVIRONMENTAL INFORMATION (continued)

For spills to ground: Collect contaminated soil. Pump contaminated water from puddles or stagnant storm sewers. Place collected waste in approved containers, and seal. For spills to ground or surface water: Notify appropriate authorities. Contact 3M to evaluate further needs.

RECOMMENDED DISPOSAL:

Incinerate in an industrial or commercial facility in the presence of a combustible material. Combustion products will include HF.

Pass contaminated water through anion exchange resin. If necessary, contact 3M for assistance.

ENVIRONMENTAL DATA:

Data for product solids: Chemical Oxygen Demand (COD): Nil (0.00700g/g). Biochemical Oxygen Demand (BOD20): Nil; 96-Hr. LC50, Bluegill Sunfish (*Lepomis macrochirus*): 569 mg/L; 96-Hr. LC50, Fathead Minnow (*Pimephales promelas*): 766 mg/L; 48-Hr EC50, *Daphnia magna*: 632 mg/L; 14-Day EC50 (cell dry weight), Green Algae (*Selenastrum capricornutum*) 73 mg/L. Soil Adsorption Coefficient (Koc): 17, indicates very high mobility. (Study used a sandy loam soil).

REGULATORY INFORMATION:

Volatile Organic Compounds: N/A.
UDC Less H2O & Exempt Solvents: N/A.

Since regulations vary, consult applicable regulations or authorities before disposal. U.S. EPA Hazardous Waste Number - None (Not U.S. EPA Hazardous).

The components of this product are in compliance with the chemical registration requirements of TSCA, EINECS, CDL and RICS.

EPCRA HAZARD CLASS:

FIRE HAZARD: No PRESSURE: No REACTIVITY: No ACUTE: Yes CHRONIC: Yes

6. SUGGESTED FIRST AID

EYE CONTACT:

Immediately flush eyes with large amounts of water for at least 15 minutes. Get immediate medical attention.

SKIN CONTACT:

Immediately wash skin with soap and large amounts of water. Remove contaminated clothing. If signs/symptoms occur, call a physician. Wash contaminated clothing before reuse and dispose of contaminated shoes.

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

EID008494

MSDS: FC-118 FLUORAD Brand Fluorochemical Surfactant
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6. SUGGESTED FIRST AID (continued)

INHALATION:

If signs/symptoms occur, remove person to fresh air. If signs/symptoms continue, call a physician.

IF SWALLOWED:

Do not induce vomiting. Drink two glasses of water. Call a physician.

7. PRECAUTIONARY INFORMATION

EYE PROTECTION:

Avoid eye contact. Wear vented goggles.

SKIN PROTECTION:

Avoid skin contact. Wear appropriate gloves when handling this material. A pair of gloves made from the following material(s) are recommended: butyl rubber. Use one or more of the following personal protection items as necessary to prevent skin contact: head covering, coveralls. Protective garments (other than gloves) should be made of either of the following materials: polyethylene/polyvinylidene chloride (Saranex)

Coverall made of Tyvek(r). Wear rubber boots when cleaning up spills.

RECOMMENDED VENTILATION:

Use with appropriate local exhaust ventilation. Provide sufficient ventilation to maintain emissions below recommended exposure limits. If exhaust ventilation is not adequate, use appropriate respiratory protection.

RESPIRATORY PROTECTION:

Avoid breathing of vapors, mists or spray. Avoid breathing of airborne material. Select one of the following NIOSH approved respirators based on airborne concentration of contaminants and in accordance with OSHA regulations: full-face high-efficiency filter respirator, full-face supplied air respirator.

PREVENTION OF ACCIDENTAL INGESTION:

Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. Wash hands after handling and before eating.

RECOMMENDED STORAGE:

Do not store containers on their sides. Store at room temperature. Keep container closed when not in use.

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

EID008495

GW001403

MSDS: FC-118 FLUORAD Brand Fluorochemical Surfactant
February 19, 1997 PAGE 5

7. PRECAUTIONARY INFORMATION (continued)

FIRE AND EXPLOSION AVOIDANCE:
Keep container tightly closed. Nonflammable.

OTHER PRECAUTIONARY INFORMATION:
No smoking: Smoking while using this product can result in contamination of the tobacco and/or smoke and lead to the formation of the hazardous decomposition products mentioned in section 4 of this MSDS.

HMS HAZARD RATINGS: HEALTH: 2 FLAMMABILITY: 1 REACTIVITY: 0
PERSONAL PROTECTION: X (See precautions, section 7.)

EXPOSURE LIMITS

INGREDIENT	VALUE	UNIT	TYPE	AUTH	SKIN*
WATER.....	NONE	NONE	NONE	NONE	
AMMONIUM PERFLUOROOCTANOATE.....	0.01	MG/M3	TWA	ACGIH	Y
AMMONIUM PERFLUOROHEPTANOATE.....	0.1	MG/M3	TWA	3M	Y
AMMONIUM PERFLUOROHEXANOATE.....	0.1	MG/M3	TWA	3M	Y
AMMONIUM PERFLUOROPENTANOATE.....	0.1	MG/M3	TWA	3M	Y

* SKIN NOTATION: Listed substances indicated with 'Y' under SKIN refer to the potential contribution to the overall exposure by the cutaneous route including mucous membrane and eye, either by airborne or, more particularly, by direct contact with the substance. Vehicles can alter skin absorption.

SOURCE OF EXPOSURE LIMIT DATA:
- ACGIH: American Conference of Governmental Industrial Hygienists
- 3M: 3M Recommended Exposure Guidelines
- NONE: None Established

8. HEALTH HAZARD DATA

EYE CONTACT:
No toxicity data for the solution. Ammonium perfluoroalkyl carboxylate can be irritating to the eye and may cause eye injury from airborne exposure.

SKIN CONTACT:
May be absorbed through the skin and persist in the body for an extended time.

No toxicity data for the solution. Ammonium perfluoroalkyl carboxylate is slightly toxic when absorbed through the skin; it is non-irritating to the skin.

EID008496

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

MSDS: FC-118 FLUORAD Brand Fluorochemical Surfactant
February 19, 1997 PAGE 6

8. HEALTH HAZARD DATA (continued)

INHALATION:

May be absorbed by inhalation and persist in the body for an extended time.

No toxicity data for the solution. Ammonium perfluoroalkyl carboxylate may cause respiratory system irritation from inhalation; can be considered moderately toxic by inhalation on a single exposure; a median lethal concentration for a 4-hour exposure in the albino rat is 980 milligrams per cubic meter. Repeated inhalation exposure produced liver changes and elevated blood organofluoride levels in rats.

IF SWALLOWED:

Ingestion is not a likely route of exposure to this product.

No toxicity data for the solution. Ammonium perfluoroalkyl carboxylate is considered moderately toxic from a single oral exposure; acute oral LD50 (rat) is 540 mg. per kg. of body weight.

CANCER:

WARNING: Contains a chemical which can cause cancer. (3825-26-1) (1983 and 1993 studies conducted jointly by 3M and DuPont).

MUTAGENICITY:

Ammonium perfluoroalkyl carboxylate was not mutagenic in *in vitro* mutagenicity assays. Did not cause cell transformation in a mammalian cell transformation assay.

REPRODUCTIVE/DEVELOPMENTAL TOXINS:

Ammonium perfluoroalkyl carboxylate was not teratogenic in rabbits by oral administration and was not teratogenic to rats by gavage and inhalation exposures.

SECTION CHANGE DATES

PRECAUTIONARY INFO. SECTION CHANGED SINCE February 07, 1997 ISSUE

EID008497

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

FW001405

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EID008498

GW001406