Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice (Safe Work Australia, December 2011)

SECTION 1: Identification

1.1. Product identifier
3M™ Novec™ Flux Remover

Product Identification Numbers
98-0212-4891-3 98-0212-4892-1 FF-9200-1186-4

1.2. Recommended use and restrictions on use

Recommended use
Flux Remover

For Industrial or Professional use only.

Restrictions on use
For Industrial Use only. Not intended for consumer sale or use. Not intended for use as a medical device or drug.

1.3. Supplier's details
Address: 3M Australia - Building A, 1 Rivett Road, North Ryde NSW 2113
Telephone: 136 136
E Mail: productinfo.au@mmm.com
Website: www.3m.com.au

1.4. Emergency telephone number
EMERGENCY: 1800 097 146 (Australia only)

SECTION 2: Hazard identification

This product is classified as a hazardous chemical according to the Model Work Health and Safety Regulations, 2011, in accordance with applicable State and Territory legislation.

Refer to Section 14 of this Safety Data Sheets for product Dangerous Goods Classification.

2.1. Classification of the substance or mixture
Non-flammable Aerosol: Category 3.
Serious Eye Damage/Irritation: Category 2.
Specific Target Organ Toxicity (single exposure): Category 3

2.2. Label elements
The label elements below were prepared in accordance with the Code of Practice on Preparation of Safety Data Sheets for Hazardous Chemicals (Safe Work Australia, December 2011). This information may be different from the actual product label.

Signal word
Warning

Symbols
Exclamation mark |

Pictograms

Hazard statements

H229	Pressurised container: may burst if heated.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.

Precautionary statements

Prevention:

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P251	Do not pierce or burn, even after use.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.

Response:

P304 + P340	IF INHALED: Remove person to fresh air and keep 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 CENTRE or doctor/physician if you feel unwell.
P337 + P313	IF eye irritation persists: Get medical advice/attention.

Storage:

P405	Store locked up.
P410 + P412	Protect from sunlight. Do not expose to temperatures exceeding 50ºC.

Disposal:

P501	Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

2.3. Other assigned/identified product hazards
3M Intentional misuse by deliberately concentrating and inhaling contents can be harmful or fatal.

2.4. Other hazards which do not result in classification
Harmful to aquatic life with long lasting effects.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	CAS Nbr	% by Weight
1,2-Trans-Dichloroethylene	156-60-5	55 - 70
Methyl nonafluoroisobutyl ether	163702-08-7	19.8 - 32.4
Methyl nonafluorobutyl ether	163702-07-6	3.6 - 16.2
Carbon Dioxide	124-38-9	1 - 5
Isopropanol	67-63-0	<= 3

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation
Remove person to fresh air. If you feel unwell, get medical attention.

Skin contact
Wash with soap and water. If you feel unwell, get medical attention.

Eye contact
Immediately flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. Get medical attention.

If swallowed
Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Central nervous system depression (headache, dizziness, drowsiness, incoordination, nausea, slurred speech, giddiness, and unconsciousness).

4.3. Indication of any immediate medical attention and special treatment required
Not applicable

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media
Use a fire fighting agent suitable for the surrounding fire.

5.2. Special hazards arising from the substance or mixture
Closed containers exposed to heat from fire may build pressure and explode.

5.3. Special protective actions for fire-fighters
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.

Hazchem Code: 2YE

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Evacuate area. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Ventilate the area with fresh air. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
If possible, seal leaking container. Place leaking containers in a well-ventilated area, preferably an operating exhaust hood, or if necessary outdoors on an impermeable surface until appropriate packaging for the leaking container or its contents is available. Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorised person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and Safety Data Sheet. Seal the container. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Avoid inhalation of thermal decomposition products. Store work clothes separately from other clothing, food and tobacco products. Do not pierce or burn, even after use. Avoid breathing dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid contact with oxidising agents (eg. chlorine, chromic acid etc.) No smoking: Smoking while using this product can result in contamination of the tobacco and/or smoke and lead to the formation of hazardous decomposition products.

7.2. Conditions for safe storage including any incompatibilities
Store in a well-ventilated place. Keep container tightly closed. Protect from sunlight. Do not expose to temperatures exceeding 50ºC/122ºF. Store away from heat. Store away from strong bases. Store away from oxidising agents.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits
If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	CAS Nbr	Agency	Limit type	Additional comments
Carbon Dioxide	124-38-9	ACGIH	TWA:5000 ppm;STEL:30000 ppm	
Carbon Dioxide	124-38-9	Australia OELs	TWA(8 hours): 9000 mg/m3 (5000 ppm); STEL(15 minutes): 54000 mg/m3 (30000 ppm)	
1,2-Trans-Dichloroethylene	156-60-5	ACGIH	TWA:200 ppm	
Methyl nonafluorobutyl ether	163702-07-6	AIHA	TWA:750 ppm	
Methyl nonafluoroisobutyl ether	163702-08-7	AIHA	TWA:750 ppm	
Isopropanol	67-63-0	ACGIH	TWA:200 ppm;STEL:400 ppm	A4: Not class. as human carcin
Isopropanol	67-63-0	Australia OELs	TWA(8 hours):983 mg/m3(400 ppm);STEL(15 minutes):1230 mg/m3(500 ppm)	

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
Australia OELs : Australia. Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment

CMRG : Chemical Manufacturer's Recommended Guidelines
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling
Sen: Sensitiser
Sk: Absorption through the skin may be a significant source of exposure.

8.2. Exposure controls

8.2.1. Engineering controls
Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapours/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:
Full face shield.
Indirect vented goggles.

Select and use eye protection in accordance with AS/NZS 1336. Eye protection should comply with the performance specifications of AS/NZS 1337.

Skin/hand protection
No chemical protective gloves are required.

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
Half facepiece or full facepiece air-purifying respirator suitable for organic vapours
Organic vapour respirators may have short service life.

For questions about suitability for a specific application, consult with your respirator manufacturer.
Select and use respirators according to AS/NZS 1715. Respirators should comply with AS/NZS 1716 performance specifications. For information about respirators, call 3M on 1800 024 464.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Specific Physical Form:	Aerosol
Colour	Colorless
Odour	Slight Odour
Odour threshold	*No data available.*
pH	*No data available.*
Melting point/Freezing point	*Not applicable.*
Boiling point/Initial boiling point/Boiling range	42.5 ºC
Flash point	No flash point
Evaporation rate	*No data available.*
Flammability (solid, gas)	Not applicable.
Flammable Limits(LEL)	5.9 % volume

Flammable Limits(UEL)	14.5 % volume
Vapour pressure	41,423.1 Pa
Vapor Density and/or Relative Vapor Density	2.3 [*Ref Std:*AIR=1]
Density	1.3 g/ml
Relative density	1.3 [*Ref Std:*WATER=1]
Water solubility	28 ppm
Solubility- non-water	*No data available.*
Partition coefficient: n-octanol/water	*No data available.*
Autoignition temperature	408 ºC
Decomposition temperature	*No data available.*
Viscosity/Kinematic Viscosity	0.0004 Pa-s
Volatile organic compounds (VOC)	*No data available.*
Percent volatile	*No data available.*
VOC less H2O & exempt solvents	*No data available.*
Molecular weight	*Not applicable.*

SECTION 10: Stability and reactivity

10.1 Reactivity
This material may be reactive with certain agents under certain conditions - see the remaining headings in this section

10.2 Chemical stability
Stable.

10.3. Conditions to avoid
Heat.

10.4. Possibility of hazardous reactions
Hazardous polymerisation will not occur.

10.5 Incompatible materials
Strong bases.
Strong oxidising agents.

10.6 Hazardous decomposition products

Substance	**Condition**
Hydrogen Chloride	At elevated temperatures.
Hydrogen Fluoride	At elevated temperatures.
Perfluoroisobutylene (PFIB).	At elevated temperatures.

If the product is exposed to extreme conditions of heat from misuse or equipment failure, toxic decomposition products that include hydrogen fluoride and perfluoroisobutylene can occur.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labelling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1 Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation
Respiratory tract irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. May cause additional health effects (see below).

Skin contact
Contact with the skin during product use is not expected to result in significant irritation.

Eye contact
Severe eye irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired vision.

Ingestion
Gastrointestinal irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhoea. May cause additional health effects (see below).

Additional Health Effects:

Single exposure may cause target organ effects:
Central nervous system (CNS) depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

Toxicological Data
If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Inhalation-Vapour(4 hr)		No data available; calculated ATE >50 mg/l
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
1,2-Trans-Dichloroethylene	Dermal	Rabbit	LD50 > 5,000 mg/kg
1,2-Trans-Dichloroethylene	Inhalation-Vapour (4 hours)	Rat	LC50 95.6 mg/l
1,2-Trans-Dichloroethylene	Ingestion	Rat	LD50 7,902 mg/kg
Methyl nonafluoroisobutyl ether	Dermal		LD50 estimated to be > 5,000 mg/kg
Methyl nonafluoroisobutyl ether	Inhalation-Vapour (4 hours)	Rat	LC50 > 1,000 mg/l
Methyl nonafluoroisobutyl ether	Ingestion	Rat	LD50 > 5,000 mg/kg
Methyl nonafluorobutyl ether	Dermal		LD50 estimated to be > 5,000 mg/kg
Methyl nonafluorobutyl ether	Inhalation-Vapour (4 hours)	Rat	LC50 > 1,000 mg/l
Methyl nonafluorobutyl ether	Ingestion	Rat	LD50 > 5,000 mg/kg
Carbon Dioxide	Inhalation-Gas (4 hours)	Rat	LC50 > 53,000 ppm
Isopropanol	Dermal	Rabbit	LD50 12,870 mg/kg
Isopropanol	Inhalation-Vapour (4 hours)	Rat	LC50 72.6 mg/l
Isopropanol	Ingestion	Rat	LD50 4,710 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value

1,2-Trans-Dichloroethylene	Rabbit	Minimal irritation
Methyl nonafluoroisobutyl ether	Rabbit	No significant irritation
Methyl nonafluorobutyl ether	Rabbit	No significant irritation
Isopropanol	Multiple animal species	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
1,2-Trans-Dichloroethylene	Rabbit	Moderate irritant
Methyl nonafluoroisobutyl ether	Rabbit	No significant irritation
Methyl nonafluorobutyl ether	Rabbit	No significant irritation
Isopropanol	Rabbit	Severe irritant

Skin Sensitisation

Name	Species	Value
Methyl nonafluoroisobutyl ether	Guinea pig	Not classified
Methyl nonafluorobutyl ether	Guinea pig	Not classified
Isopropanol	Guinea pig	Not classified

Respiratory Sensitisation

For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

Name	Route	Value
1,2-Trans-Dichloroethylene	In Vitro	Not mutagenic
1,2-Trans-Dichloroethylene	In vivo	Not mutagenic
Methyl nonafluoroisobutyl ether	In Vitro	Not mutagenic
Methyl nonafluoroisobutyl ether	In vivo	Not mutagenic
Methyl nonafluorobutyl ether	In Vitro	Not mutagenic
Methyl nonafluorobutyl ether	In vivo	Not mutagenic
Isopropanol	In Vitro	Not mutagenic
Isopropanol	In vivo	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Isopropanol	Inhalation	Rat	Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
1,2-Trans-Dichloroethylene	Inhalation	Not classified for development	Rat	NOAEL 24 mg/l	during organogenesis
Methyl nonafluoroisobutyl ether	Inhalation	Not classified for female reproduction	Rat	NOAEL 129 mg/l	1 generation
Methyl nonafluoroisobutyl ether	Inhalation	Not classified for male reproduction	Rat	NOAEL 129 mg/l	1 generation
Methyl nonafluoroisobutyl ether	Inhalation	Not classified for development	Rat	NOAEL 307 mg/l	during gestation
Methyl nonafluorobutyl ether	Inhalation	Not classified for female reproduction	Rat	NOAEL 129 mg/l	1 generation

Methyl nonafluorobutyl ether	Inhalation	Not classified for male reproduction	Rat	NOAEL 129 mg/l	1 generation
Methyl nonafluorobutyl ether	Inhalation	Not classified for development	Rat	NOAEL 307 mg/l	during gestation
Carbon Dioxide	Inhalation	Not classified for male reproduction	Mouse	LOAEL 350,000 ppm	not available
Carbon Dioxide	Inhalation	Not classified for development	Rat	LOAEL 60,000 ppm	24 hours
Isopropanol	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	2 generation
Isopropanol	Ingestion	Not classified for male reproduction	Rat	NOAEL 500 mg/kg/day	2 generation
Isopropanol	Ingestion	Not classified for development	Rat	NOAEL 400 mg/kg/day	during organogenesis
Isopropanol	Inhalation	Not classified for development	Rat	LOAEL 9 mg/l	during gestation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
1,2-Trans-Dichloroethylene	Inhalation	central nervous system depression	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
1,2-Trans-Dichloroethylene	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
1,2-Trans-Dichloroethylene	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Rat	LOAEL 4,500 mg/kg	not applicable
Methyl nonafluoroisobutyl ether	Inhalation	nervous system	Not classified	Dog	LOAEL 913 mg/l	10 minutes
Methyl nonafluoroisobutyl ether	Inhalation	cardiac sensitization	Not classified	Dog	NOAEL 913 mg/l	10 minutes
Methyl nonafluorobutyl ether	Inhalation	nervous system	Not classified	Dog	LOAEL 913 mg/l	10 minutes
Methyl nonafluorobutyl ether	Inhalation	cardiac sensitization	Not classified	Dog	NOAEL 913 mg/l	10 minutes
Isopropanol	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Isopropanol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Isopropanol	Inhalation	auditory system	Not classified	Guinea pig	NOAEL 13.4 mg/l	24 hours
Isopropanol	Ingestion	central nervous system	May cause drowsiness or	Human	NOAEL Not available	poisoning and/or abuse

		depression	dizziness			

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
1,2-Trans-Dichloroethylene	Inhalation	endocrine system | liver | kidney and/or bladder | respiratory system	Not classified	Rat	NOAEL 16 mg/l	90 days
1,2-Trans-Dichloroethylene	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 2,000 mg/kg/day	14 weeks
1,2-Trans-Dichloroethylene	Ingestion	blood | liver	Not classified	Rat	NOAEL 125 mg/kg/day	14 weeks
1,2-Trans-Dichloroethylene	Ingestion	heart | immune system | respiratory system	Not classified	Rat	NOAEL 2,000 mg/kg/day	14 weeks
Methyl nonafluoroisobutyl ether	Inhalation	liver	Not classified	Rat	NOAEL 155 mg/l	13 weeks
Methyl nonafluoroisobutyl ether	Inhalation	bone, teeth, nails, and/or hair	Not classified	Rat	NOAEL 129 mg/l	11 weeks
Methyl nonafluoroisobutyl ether	Inhalation	heart | skin | endocrine system | gastrointestinal tract | hematopoietic system | immune system | muscles | nervous system | eyes | kidney and/or bladder | respiratory system	Not classified	Rat	NOAEL 155 mg/l	13 weeks
Methyl nonafluoroisobutyl ether	Ingestion	endocrine system | liver | heart | hematopoietic system | immune system | nervous system | eyes | kidney and/or bladder | respiratory system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Methyl nonafluorobutyl ether	Inhalation	liver	Not classified	Rat	NOAEL 155 mg/l	13 weeks
Methyl nonafluorobutyl ether	Inhalation	bone, teeth, nails, and/or hair	Not classified	Rat	NOAEL 129 mg/l	11 weeks
Methyl nonafluorobutyl ether	Inhalation	heart | skin | endocrine system |	Not classified	Rat	NOAEL 155 mg/l	13 weeks

		gastrointestinal tract | hematopoietic system | immune system | muscles | nervous system | eyes | kidney and/or bladder | respiratory system				
Methyl nonafluorobutyl ether	Ingestion	endocrine system | liver | heart | hematopoietic system | immune system | nervous system | eyes | kidney and/or bladder | respiratory system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Carbon Dioxide	Inhalation	heart | bone, teeth, nails, and/or hair | liver | nervous system | kidney and/or bladder | respiratory system	Not classified	Rat	LOAEL 60,000 ppm	166 days
Isopropanol	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 12.3 mg/l	24 months
Isopropanol	Inhalation	nervous system	Not classified	Rat	NOAEL 12 mg/l	13 weeks
Isopropanol	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 400 mg/kg/day	12 weeks

Aspiration Hazard
For the component/components, either no data are currently available or the data are not sufficient for classification.

Exposure Levels
Refer Section **8.1 Control Parameters** of this Safety Data Sheet.

Interactive Effects
Not determined.

SECTION 12: Ecological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. Additional information leading to material classification in Section 2 is available upon request. In addition, environmental fate and effects data on ingredients may not be reflected in this section because an ingredient is present below the threshold for labelling, an ingredient is not expected to be available for exposure, or the data is considered not relevant to the material as a whole.

12.1. Toxicity

Acute aquatic hazard:
GHS Acute 3: Harmful to aquatic life.

Chronic aquatic hazard:

GHS Chronic 3: Harmful to aquatic life with long lasting effects.

No product test data available.

Material	CAS Number	Organism	Type	Exposure	Test endpoint	Test result
1,2-Trans-Dichloroethylene	156-60-5	Bluegill	Estimated	96 hours	LC50	135 mg/l
1,2-Trans-Dichloroethylene	156-60-5	Green algae	Experimental	48 hours	EC50	36.36 mg/l
1,2-Trans-Dichloroethylene	156-60-5	Water flea	Experimental	48 hours	LC50	220 mg/l
1,2-Trans-Dichloroethylene	156-60-5	Anaerobic sludge	Experimental	96 hours	IC50	48 mg/l
Methyl nonafluoroisobutyl ether	163702-08-7	Fathead minnow	Endpoint not reached	96 hours	LC50	>100 mg/l
Methyl nonafluoroisobutyl ether	163702-08-7	Green algae	Estimated	72 hours	EC50	>100 mg/l
Methyl nonafluoroisobutyl ether	163702-08-7	Water flea	Estimated	48 hours	EC50	>100 mg/l
Methyl nonafluoroisobutyl ether	163702-08-7	Green algae	Estimated	72 hours	NOEC	100 mg/l
Methyl nonafluorobutyl ether	163702-07-6	Fathead minnow	Endpoint not reached	96 hours	LC50	>100 mg/l
Methyl nonafluorobutyl ether	163702-07-6	Green algae	Estimated	72 hours	EC50	>100 mg/l
Methyl nonafluorobutyl ether	163702-07-6	Water flea	Estimated	48 hours	EC50	>100 mg/l
Methyl nonafluorobutyl ether	163702-07-6	Green algae	Estimated	72 hours	NOEC	100 mg/l
Carbon Dioxide	124-38-9	Fish	Experimental	96 hours	LC50	112.2 mg/l
Carbon Dioxide	124-38-9	Atlantic Salmon	Experimental	43 days	NOEC	26 mg/l
Isopropanol	67-63-0	Bacteria	Experimental	16 hours	LOEC	1,050 mg/l
Isopropanol	67-63-0	Green algae	Experimental	72 hours	EC50	>1,000 mg/l
Isopropanol	67-63-0	Invertebrate	Experimental	24 hours	LC50	>10,000 mg/l
Isopropanol	67-63-0	Medaka	Experimental	96 hours	LC50	>100 mg/l
Isopropanol	67-63-0	Water flea	Experimental	48 hours	EC50	>1,000 mg/l
Isopropanol	67-63-0	Green algae	Experimental	72 hours	NOEC	1,000 mg/l
Isopropanol	67-63-0	Water flea	Experimental	21 days	NOEC	100 mg/l

12.2. Persistence and degradability

Material	CAS Number	Test type	Duration	Study Type	Test result	Protocol
1,2-Trans-Dichloroethylene	156-60-5	Experimental Biodegradation	28 days	Percent degraded	8 %BOD/ThOD	OECD 301D - Closed bottle test
1,2-Trans-Dichloroethylene	156-60-5	Experimental Photolysis		Photolytic half-life (in air)	13 days (t 1/2)	
Methyl nonafluoroisobutyl ether	163702-08-7	Estimated Biodegradation	28 days	BOD	22 %BOD/ThOD	OECD 301D - Closed bottle test
Methyl nonafluorobutyl ether	163702-07-6	Estimated Biodegradation	28 days	BOD	22 %BOD/ThOD	OECD 301D - Closed bottle test
Carbon Dioxide	124-38-9	Data not	N/A	N/A	N/A	N/A

		available-insufficient				
Isopropanol	67-63-0	Experimental Biodegradation	14 days	BOD	86 %BOD/ThOD	OECD 301C - MITI test (I)

12.3 : Bioaccumulative potential

Material	CAS Number	Test type	Duration	Study Type	Test result	Protocol
1,2-Trans-Dichloroethylene	156-60-5	Experimental Bioconcentration		Log Kow	2.06	
Methyl nonafluoroisobutyl ether	163702-08-7	Estimated Bioconcentration		Log Kow	4.0	
Methyl nonafluorobutyl ether	163702-07-6	Estimated Bioconcentration		Log Kow	4.0	
Carbon Dioxide	124-38-9	Experimental Bioconcentration		Log Kow	0.83	
Isopropanol	67-63-0	Experimental Bioconcentration		Log Kow	0.05	

12.4. Mobility in soil
Please contact manufacturer for more details

12.5 Other adverse effects
No information available.

SECTION 13: Disposal considerations

13.1. Disposal methods
Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Facility must be capable of handling aerosol cans. Combustion products will include halogen acid (HCl/HF/HBr). Facility must be capable of handling halogenated materials.

SECTION 14: Transport Information

Australian Dangerous Goods Code (ADG) - Road/Rail Transport
UN No.: UN1950
Proper shipping name: AEROSOLS
Class/Division: 2.2
Sub Risk: Not applicable.
Packing Group: Not applicable.
Special Instructions: Limited quantity may apply
Hazchem Code: 2YE
IERG: 49

International Air Transport Association (IATA) - Air Transport
UN No.: UN1950
Proper shipping name: AEROSOLS , (AEROSOLS, NON-FLAMMABLE)
Class/Division: 2.2
Sub Risk: Not applicable.
Packing Group: Not applicable.

International Maritime Dangerous Goods Code (IMDG)- Marine Transport

UN No.: UN1950
Proper shipping name: AEROSOLS
Class/Division: 2.2
Sub Risk: Not applicable.
Packing Group: Not applicable.
Marine Pollutant: Not applicable.
Special Instructions: Limited quantity may apply

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Australian Inventory Status:
The chemical components contained within this product are listed on the Australian Inventory of Chemical Substances and are in compliance with the requirements of the Industrial Chemicals (Notification and Assessment) Act 1989 as amended.

Poison Schedule: This product is intended for Industrial or Professional Use only and therefore is not packaged and labelled in accordance with the requirements of the Standard for the Uniform Scheduling of Medicines and Poisons.

SECTION 16: Other information

Revision information:
Initial issue.

DISCLAIMER: The information on this Safety Data Sheet is based on our experience and is correct to the best of our knowledge at the date of publication, but we do not accept any liability for any loss, damage or injury resulting from its use (except as required by law). The information may not be valid for any use not referred to in this Safety Data Sheet or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own test to satisfy themselves as to the suitability of the product for their own intended applications.
Greenguard ® is a United States based program. The 'Low VOC' reference related to United States Federal and State regulations exemptions for some solvents.

3M Australia SDSs are available at www.3m.com.au