



Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the REACH Regulation (EC) 1907/2006 and its modifications.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

3M™ Novec™ Contact Cleaner

Product Identification Numbers

FF-9200-1180-7 FQ-1000-7921-6

7000077014 7000079231

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses

Contact Cleaner

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. Details of the supplier of the safety data sheet

Address: 3M United Kingdom PLC, 3M Centre, Cain Road, Bracknell, Berkshire, RG12 8HT.

Telephone: +44 (0)1344 858 000

E Mail: tox.uk@mmm.com

Website: www.3M.com/uk

1.4. Emergency telephone number

+44 (0)1344 858 000

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

CLP REGULATION (EC) No 1272/2008

CLASSIFICATION:

Aerosol, Category 3 - Aerosol 3; H229

For full text of H phrases, see Section 16.

2.2. Label elements**CLP REGULATION (EC) No 1272/2008****SIGNAL WORD**

WARNING.

HAZARD STATEMENTS:

H229 Pressurised container. may burst if heated.

PRECAUTIONARY STATEMENTS**Prevention:**

P210A Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P251 Do not pierce or burn, even after use.

Storage:

P410 + P412 Protect from sunlight. Do not expose to temperatures exceeding 50C/122F.

Notes on labelling

Updated per Regulation (EC) No. 648/2004 on detergents.

2.3. Other hazards

None known.

SECTION 3: Composition/information on ingredients

Ingredient	CAS Nbr	EC No.	REACH Registration No.	% by Wt	Classification
Methyl nonafluoroisobutyl ether	163702-08-7	ELINCS 422-270-2		50 - 70	Substance not classified as hazardous
Methyl nonafluorobutyl ether	163702-07-6	ELINCS 422-270-2	01-0000016878-53	30 - 50	Substance not classified as hazardous
Carbon dioxide	124-38-9	204-696-9		1 - 5	Liquified gas, H280

Please see section 16 for the full text of any H statements referred to in this section

For information on ingredient occupational exposure limits or PBT or vPvB status, see sections 8 and 12 of this SDS

SECTION 4: First aid measures**4.1. Description of first aid measures****Inhalation**

No need for first aid is anticipated.

Skin contact

No need for first aid is anticipated.

Eye contact

No need for first aid is anticipated.

If swallowed

No need for first aid is anticipated.

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

See Section 11.1 Information on toxicological effects

4.3. Indication of any immediate medical attention and special treatment required

Not applicable

SECTION 5: Fire-fighting measures

5.1. Extinguishing media

Material will not burn. 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. Exposure to extreme heat can give rise to thermal decomposition.

5.3. Advice for fire-fighters

When fire fighting conditions are severe and total thermal decomposition of the product is possible, wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, tunic and trousers (leggings), bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

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. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapours, in accordance with good industrial hygiene practice. 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.

6.4. Reference to other sections

Refer to Section 8 and Section 13 for more information

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid inhalation of thermal decomposition products. Avoid skin contact with hot material. For industrial or professional use only. Store work clothes separately from other clothing, food and tobacco products. Do not pierce or burn, even after use. 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

Protect from sunlight. Do not expose to temperatures exceeding 50C/122F. Protect from sunlight. Store in a well-ventilated place. Store away from strong bases.

7.3. Specific end use(s)

See information in Section 7.1 and 7.2 for handling and storage recommendations. See Section 8 for exposure controls and personal protection recommendations.

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	UK HSC	TWA:9150 mg/m3(5000 ppm);STEL:27400 mg/m3(15000 ppm)	

UK HSC : UK Health and Safety Commission

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

Biological limit values

No biological limit values exist for any of the components listed in Section 3 of this safety data sheet.

8.2. Exposure controls**8.2.1. Engineering controls**

Provide appropriate local exhaust when product is heated. For those situations where the material might be exposed to extreme overheating due to misuse or equipment failure, use with appropriate local exhaust ventilation sufficient to maintain levels of thermal decomposition products below their exposure guidelines. Do not remain in area where available oxygen may be reduced. 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.

Skin/hand protection

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.

Gloves made from the following material(s) are recommended:

Material	Thickness (mm)	Breakthrough Time
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Polymer laminate

No data available

No data available

If this product is used in a manner that presents a higher potential for exposure (eg. spraying, high splash potential etc.), then use of protective coveralls may be necessary. Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended: Apron - polymer laminate

Respiratory protection

During heating:

Use a positive pressure supplied-air respirator if there is a potential for over exposure from an uncontrolled release, exposure levels are not known, or under any other circumstances where air-purifying respirators may not provide adequate protection.

Thermal hazards

Wear heat insulating gloves when handling hot material to prevent thermal burns.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Specific Physical Form:	Aerosol
Appearance/Odour	Clear, Colourless, Liquid with Slight Ethereal Odour, Contents Under Pressure
Odour threshold	<i>No data available.</i>
pH	<i>Not applicable.</i>
Boiling point/boiling range	61 °C
Melting point	<i>Not applicable.</i>
Flammability (solid, gas)	Not applicable.
Explosive properties	Not classified
Oxidising properties	Not classified
Flash point	No flash point
Autoignition temperature	405 °C [<i>Details:</i> per ASTM E659-84 method]
Flammable Limits(LEL)	[<i>Details:</i> None per ASTM 681-94 method @100C]
Flammable Limits(UEL)	[<i>Details:</i> None per ASTM 681-94 method @100C]
Vapour pressure	26,664.4 Pa [<i>@ 25 °C</i>] [<i>Details:</i> Internal Pressure for Aerosol Can is approximately 75 psig @25C]
Relative density	1.52 [<i>@ 20 °C</i>] [<i>Ref Std:</i> WATER=1]
Water solubility	< 12 ppm
Solubility- non-water	<i>No data available.</i>
Partition coefficient: n-octanol/water	<i>No data available.</i>
Evaporation rate	49 [<i>Ref Std:</i> BUOAC=1]
Vapour density	8.6 [<i>Ref Std:</i> AIR=1]
Decomposition temperature	<i>No data available.</i>
Viscosity	0.6 mPa-s
Density	1.52 g/ml

9.2. Other information

EU Volatile Organic Compounds	<i>No data available.</i>
Molecular weight	<i>No data available.</i>
Percent volatile	100 %

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 Possibility of hazardous reactions

Hazardous polymerisation will not occur.

10.4 Conditions to avoid

Not determined

10.5 Incompatible materials

Strong bases.

10.6 Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
Hydrogen Fluoride	At elevated temperatures. - extreme condition of heat
Perfluoroisobutylene (PFIB).	At elevated temperatures. - extreme condition of heat

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 agree with the EU material classification in Section 2 and/or the ingredient classifications in Section 3 if specific ingredient classifications are mandated by a competent authority. In addition, statements and data presented in Section 11 are based on UN GHS calculation rules and classifications derived from 3M assessments.

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

No health effects are expected.

Skin contact

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

Eye contact

Contact with the eyes during product use is not expected to result in significant irritation.

Ingestion

No known health effects.

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

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Name	Route	Species	Value
Overall product	Ingestion		No data available; calculated ATE >5,000 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

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Methyl nonafluoroisobutyl ether	Rabbit	No significant irritation
Methyl nonafluorobutyl ether	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Methyl nonafluoroisobutyl ether	Rabbit	No significant irritation
Methyl nonafluorobutyl ether	Rabbit	No significant irritation

Skin Sensitisation

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

Respiratory Sensitisation

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

Germ Cell Mutagenicity

Name	Route	Value
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

Carcinogenicity

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

Reproductive Toxicity**Reproductive and/or Developmental Effects**

Name	Route	Value	Species	Test result	Exposure Duration
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	during

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				mg/l	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

Target Organ(s)
Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Methyl nonafluoroisobutyl ether	Inhalation	nervous system	Not classified	Dog	LOAEL 913 mg/l	10 minutes
Methyl nonafluoroisobutyl ether	Inhalation	cardiac sensitisation	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 sensitisation	Not classified	Dog	NOAEL 913 mg/l	10 minutes

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
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 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 hematopoietic system immune system muscles nervous system eyes kidney and/or bladder respiratory system	Not classified	Rat	NOAEL 155 mg/l	13 weeks
Methyl nonafluorobutyl ether	Ingestion	endocrine system liver heart hematopoietic	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days

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		system immune system nervous system eyes kidney and/or bladder respiratory system				
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

Aspiration Hazard

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

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information

The information below may not agree with the EU material classification in Section 2 and/or the ingredient classifications in Section 3 if specific ingredient classifications are mandated by a competent authority. In addition, statements and data presented in Section 12 are based on UN GHS calculation rules and classifications derived from 3M assessments.

12.1. Toxicity

No product test data available.

Material	CAS Nbr	Organism	Type	Exposure	Test endpoint	Test result
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	Water flea	Estimated	48 hours	EC50	>100 mg/l
Methyl nonafluorobutyl ether	163702-07-6	Green Algae	Estimated	72 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

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Methyl nonafluoroisobutyl ether	163702-08-7	Estimated Biodegradation	28 days	BOD	22 % BOD/ThBOD	OECD 301D - Closed bottle test
Methyl nonafluoroisobutyl ether	163702-08-7	Estimated		Half-life (t 1/2)	2.9 years (t 1/2)	Other methods

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ether		Photolysis				
Methyl nonafluorobutyl ether	163702-07-6	Estimated Biodegradation	28 days	BOD	22 % BOD/ThBOD	OECD 301D - Closed bottle test
Carbon dioxide	124-38-9	Data not available or insufficient for classification	N/A	N/A	N/A	N/A

12.3 : Bioaccumulative potential

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Methyl nonafluoroisobutyl ether	163702-08-7	Estimated Bioconcentration		Log Kow	4.0	Other methods
Methyl nonafluorobutyl ether	163702-07-6	Estimated Bioconcentration		Log Kow	4.0	Other methods
Methyl nonafluorobutyl ether	163702-07-6	Estimated Photolysis		Half-life (t 1/2)	2.9 years (t 1/2)	Other methods
Carbon dioxide	124-38-9	Experimental Bioconcentration		Log Kow	0.83	Other methods

12.4. Mobility in soil

Please contact manufacturer for more details

12.5. Results of the PBT and vPvB assessment

No information available at this time, contact manufacturer for more details

12.6. Other adverse effects

No information available.

SECTION 13: Disposal considerations**13.1 Waste treatment methods**

See Section 11.1 Information on toxicological effects

This product has been classified as a non-hazardous waste. Prior to disposal, consult all applicable authorities and regulations to insure proper classification. 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. Empty and clean product containers may be disposed as non-hazardous waste. Consult your specific regulations and service providers to determine available options and requirements.

The coding of a waste stream is based on the application of the product by the consumer. Since this is out of the control of 3M, no waste code(s) for products after use will be provided. Please refer to the European Waste Code (EWC - 2000/532/EC and amendments) to assign the correct waste code to your waste stream. Ensure national and/or regional regulations are complied with and always use a licensed waste contractor.

EU waste code (product as sold)

070603* Organic halogenated solvents, washing liquids and mother liquors

SECTION 14: Transportation information

FF-9200-1180-7

ADR/RID: UN1950, AEROSOLS, LIMITED QUANTITY, 2.2, (E), ADR Classification Code: 5A.

IMDG-CODE: UN1950, AEROSOLS, 2.2, IMDG-Code segregation code: NONE, LIMITED QUANTITY, EMS: FD,SU.

ICAO/IATA: UN1950, AEROSOLS, NON-FLAMMABLE, 2.2.

FQ-1000-7921-6

ADR/RID: UN1950, AEROSOLS, LIMITED QUANTITY, 2.2, (E), ADR Classification Code: 5A.

IMDG-CODE: UN1950, AEROSOLS, 2.2, IMDG-Code segregation code: NONE, LIMITED QUANTITY, EMS: FD,SU.

ICAO/IATA: UN1950, AEROSOLS, NON-FLAMMABLE, 2.2.

SECTION 15: Regulatory information

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

Global inventory status

Contact 3M for more information. The components of this product are in compliance with the chemical notification requirements of TSCA. This product complies with Measures on Environmental Management of New Chemical Substances. All ingredients are listed on or exempt from on China IECSC inventory.

15.2. Chemical Safety Assessment

Not applicable

SECTION 16: Other information

List of relevant H statements

H229	Pressurised container. may burst if heated.
H280	Contains gas under pressure; may explode if heated.

Revision information:

Section 13: Standard Phrase Category Waste GHS information was modified.

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 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.

3M United Kingdom MSDSs are available at www.3M.com/uk