Safety Data Sheet

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Document group:	20-0405-9	**Version number:**	6.00
Revision date:	30/05/2013	**Supersedes date:**	27/06/2012

Transportation version number: 2.00 (09/08/2011)

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

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

Identified uses

Electronics cleaning only; not intended for use as a medical device or drug.

1.3. Details of the supplier of the substance or mixture

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

E Mail: tox.uk@mmm.com
Website: www.3M.com/uk

Supplied by:
RS Components Ltd,
Birchington Road, Corby, Northants, NN17 9RS.
Tel: +44 (0) 1536 402888 (8am to 8pm)
Email: technical.help@rs-components.com

1.4. Emergency telephone number

+44 (0)1344 858 000

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

Dangerous substances(67/548/EEC)/preparations(1999/45/EC) directive

This product is not classified as hazardous according to EU Directive 1999/45/EC.

2.2. Label elements

Dangerous substances(67/548/EEC)/preparations(1999/45/EC) directive

Symbol(s)

None.

Contains:

No ingredients are assigned to the label.

Risk phrases None.
Safety phrases
S2 Keep out of the reach of children.

Special provisions concerning the labelling of certain substances

Pressurised container: protect from sunlight and do not expose to temperatures exceeding 50 °C. Do not pierce or burn, even after use.

2.3. Other hazards

None known.

SECTION 3: Composition/information on ingredients

Ingredient	CAS Nbr	EU Inventory	% by Wt	Classification
Methyl nonafluoroisobutyl ether	163702-08-7	ELINCS 422-270-2	50 - 70	
Methyl nonafluorobutyl ether	163702-07-6	ELINCS 422-270-2	30 - 50	
Carbon dioxide	124-38-9	EINECS 204-696-9	1 - 5	Liquified gas, H280 (Self Classified)

Please see section 16 for the full text of any R phrases and H statements referred to in this section
Please refer to section 15 for the any applicable Notas that have been applied to the above components

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

Skin contact
Wash with soap and water. If signs/symptoms develop, get medical attention.

Eye contact
Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

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
In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam.

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
No unusual fire or explosion hazards are anticipated.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Ventilate the area with fresh air.

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
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 toxic, corrosivity or flammability hazard. Collect as much of the spilled material as possible. Seal the container.

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 skin contact with hot material. For industrial or professional use only. Store work clothes separately from other clothing, food and tobacco products. Avoid breathing dust/fume/gas/mist/vapours/spray. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. 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. Store away from heat.

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

Ingredient	CAS Nbr	Agency	Limit type	Additional comments
Carbon dioxide	124-38-9	Health and Safety Comm. (UK)	TWA:9150 mg/m3(5000 ppm);STEL:27400 mg/m3(15000 ppm)	

Health and Safety Comm. (UK) : UK Health and Safety Commission
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
ppm: parts per million
mg/m^3: milligrams per cubic metre
CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls
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. 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

The following eye protection(s) are recommended: Safety glasses with side shields.

Skin/hand protection

Select and use gloves and/or protective clothing to prevent skin contact based on the results of an exposure assessment. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible materials. Skin protection is not required.
Gloves made from the following material(s) are recommended: Neoprene.
Nitrile rubber.

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 and particulates
Half facepiece or full facepiece supplied-air respirator

For questions about suitability for a specific application, consult with your respirator manufacturer.

Thermal hazards
Wear heat insulating gloves when handling this 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	*No data available.*
pH	*Not applicable.*
Boiling point/boiling range	61 ºC
Melting point	*Not applicable.*
Flammability (solid, gas)	Not applicable.
Explosive properties	Not classified

Oxidising properties	Not classified
Flash point	No flash point
Autoignition temperature	405 ºC [*Details:*per ASTM E659-84 method]
Flammable Limits(LEL)	[*Details:*None per ASTM 681-94 method @100C]
Flammable Limits(UEL)	[*Details:*None per ASTM 681-94 method @100C]
Vapour pressure	26,664.4 Pa [@ 25 ºC] [*Details:*Internal Pressure for Aerosol Can is approximately 75 psig @25C]
Relative density	1.52 [@ 20 ºC] [*Ref Std:*WATER=1]
Water solubility	< 12 ppm
Solubility- non-water	*No data available.*
Partition coefficient: n-octanol/water	*No data available.*
Evaporation rate	49 [*Ref Std:*BUOAC=1]
Vapour density	8.6 [*Ref Std:*AIR=1]
Decomposition temperature	*No data available.*
Viscosity	0.001 Pa-s
Density	1.52 g/ml

9.2. Other information

Volatile organic compounds (VOC)	[*Details:*Exempt]
Percent volatile	100 %
VOC less H2O & exempt solvents	[*Details:*Exempt]

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

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

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
Harmful if inhaled. Vapours from heated material may cause irritation of the respiratory system: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, nose and throat pain.

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. Vapours from heated material may cause eye irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Ingestion
No health effects are expected.

Toxicological Data

Acute Toxicity

Name	Route	Species	Value
Overall product	Inhalation-Vapor(4 hr)		Data not available or insufficient for classification; calculated ATE10 - 20 mg/l
Methyl nonafluoroisobutyl ether			Data not available or insufficient for classification
Methyl nonafluorobutyl ether			Data not available or insufficient for classification
Carbon dioxide			Data not available or insufficient for classification

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Methyl nonafluoroisobutyl ether		Data not available or insufficient for classification
Methyl nonafluorobutyl ether		Data not available or insufficient for classification
Carbon dioxide		Data not available or insufficient for classification

Serious Eye Damage/Irritation

Name	Species	Value
Methyl nonafluoroisobutyl ether		Data not available or insufficient for classification
Methyl nonafluorobutyl ether		Data not available or insufficient for classification
Carbon dioxide		Data not available or insufficient for classification

Skin Sensitisation

Name	Species	Value
Methyl nonafluoroisobutyl ether		Data not available or insufficient for classification
Methyl nonafluorobutyl ether		Data not available or insufficient for classification
Carbon dioxide		Data not available or insufficient for classification

Respiratory Sensitisation

Name	Species	Value
Methyl nonafluoroisobutyl ether		Data not available or insufficient for classification
Methyl nonafluorobutyl ether		Data not available or insufficient for classification
Carbon dioxide		Data not available or insufficient for classification

Germ Cell Mutagenicity

Name	Route	Value
Methyl nonafluoroisobutyl ether		Data not available or insufficient for classification
Methyl nonafluorobutyl ether		Data not available or insufficient for classification
Carbon dioxide		Data not available or insufficient for classification

Carcinogenicity

Name	Route	Species	Value
Methyl nonafluoroisobutyl ether			Data not available or insufficient for classification
Methyl nonafluorobutyl ether			Data not available or insufficient for classification
Carbon dioxide			Data not available or insufficient for classification

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
Methyl nonafluoroisobutyl ether		Data not available or insufficient for classification			
Methyl nonafluorobutyl ether		Data not available or insufficient for classification			
Carbon dioxide		Data not available or insufficient for classification			

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Methyl nonafluoroiso butyl ether			Data not available or insufficient for classification			
Methyl			Data not available			

nonafluorobutyl ether			or insufficient for classification			
Carbon dioxide	Inhalation	central nervous system depression	Some positive data exist, but the data are not sufficient for classification			

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Methyl nonafluoroisobutyl ether			Data not available or insufficient for classification			
Methyl nonafluorobutyl ether			Data not available or insufficient for classification			
Carbon dioxide			Data not available or insufficient for classification			

Aspiration Hazard

Name	Value
Methyl nonafluoroisobutyl ether	Not an aspiration hazard
Methyl nonafluorobutyl ether	Not an aspiration hazard
Carbon dioxide	Not an aspiration hazard

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 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:
Not acutely toxic to aquatic life by GHS criteria.

Chronic aquatic hazard:
Not chronically toxic to aquatic life by GHS criteria.

Material	Organism	Type	Exposure	Test endpoint	Test result
3M Novec Contact Cleaner	Fathead minnow	Laboratory	96 hours	LC50	mg/l
3M Novec Contact Cleaner	Green algae	Laboratory	96 hours	IC50	mg/l
3M Novec Contact Cleaner	Water flea	Laboratory	48 hours	EC50	mg/l

Material	CAS Nbr	Organism	Type	Exposure	Test endpoint	Test result
Methyl	163702-07-6	Water flea	Experimental	48 hours	EC50	>10 mg/l

nonafluorobutyl ether						
Methyl nonafluorobutyl ether	163702-07-6	Fathead minnow	Experimental	96 hours	LC50	>7.9 mg/l
Methyl nonafluorobutyl ether	163702-07-6	Green Algae	Experimental	96 hours	EC50	>8.9 mg/l
Carbon dioxide	124-38-9	Fish	Experimental	96 hours	LC50	112.2 mg/l
Methyl nonafluoroisobutyl ether	163702-08-7	Fathead minnow	Experimental	96 hours	LC50	>7.9 mg/l
Methyl nonafluoroisobutyl ether	163702-08-7	Water flea	Experimental	48 hours	EC50	>10 mg/l
Methyl nonafluoroisobutyl ether	163702-08-7	Green Algae	Experimental	96 hours	EC50	>8.9 mg/l
Methyl nonafluorobutyl ether	163702-07-6	Green Algae	Experimental	96 hours	NOEC	>8.9 mg/l
Carbon dioxide	124-38-9	Atlantic Salmon	Experimental	43 days	NOEC	26 mg/l
Methyl nonafluoroisobutyl ether	163702-08-7	Green Algae	Experimental	96 hours	NOEC	>8.9 mg/l

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Carbon dioxide	124-38-9	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Methyl nonafluoroisobutyl ether	163702-08-7	Experimental Biodegradation	28 days	BOD	22 % weight	OECD 301D - Closed bottle test
Methyl nonafluorobutyl ether	163702-07-6	Experimental Biodegradation	28 days	BOD	22 % weight	OECD 301D - Closed bottle test

12.3 : Bioaccumulative potential

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Carbon dioxide	124-38-9	Experimental Bioconcentration		Log Kow	0.83	Other methods
Methyl nonafluorobutyl ether	163702-07-6	Experimental Bioconcentration		Log Kow	3.54	Other methods
Methyl nonafluoroisobutyl ether	163702-08-7	Experimental Bioconcentration		Log Kow	3.54	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
Dispose of contents/ container in accordance with the local/regional/national/international regulations

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. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities. This product has been classified as a non-hazardous waste. Prior to disposal, consult all applicable authorities and regulations to insure proper classification.

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, 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
All applicable chemical ingredients in this material are listed on the European Inventory of Existing Chemical Substances (EINECS), or are exempt polymers whose monomers are listed on EINECS. Contact 3M for more information. The components of this product are in compliance with the chemical notification requirements of TSCA.

List of ingredients according to Annex VII D of the regulation on detergents 648/2004/EC
The following ingredient information is provided per Regulation EC No. 648/2004 on Detergents:

Ingredient	CAS No.	Concentration
Methyl perfluoroisobutyl ether	163702-08-7	>10%
Methyl perfluorobutyl ether	163702-07-6	>10%

Carbon dioxide	124-38-9	1-10%

15.2. Chemical Safety Assessment
Not applicable

SECTION 16: Other information

List of relevant H statements

H280	Contains gas under pressure; may explode if heated.

Revision information:
Revision Changes:
Section 8: Respiratory protection - recommended respirators was modified.
Section 1: Product use information was modified.
Section 3: Composition/ Information of ingredients table was modified.
Section 9: Flammability (solid, gas) information was modified.
Copyright was modified.
Section 8: Occupational exposure limit table was modified.
Aspiration Hazard Table was modified.
Section 11: Acute Toxicity table was modified.
Carcinogenicity Table was modified.
Serious Eye Damage/Irritation Table was modified.
Germ Cell Mutagenicity Table was modified.
Skin Sensitisation Table was modified.
Respiratory Sensitisation Table was modified.
Reproductive Toxicity Table was modified.
Skin Corrosion/Irritation Table was modified.
Target Organs - Repeated Table was modified.
Target Organs - Single Table was modified.
Section 5: Fire - Extinguishing media information was modified.
Section 6: Accidental release clean-up information was modified.
Section 7: Conditions safe storage was modified.
Section 13: Standard Phrase Category Waste GHS was modified.
Section 8: Respiratory protection - recommended respirators guide was added.
Section 12: Component ecotoxicity information was added.
Section 12: Persistence and Degradability information was added.
Section 12:Bioccumulative potential information was added.
Section 12: Component Ecotoxicity table Material column header was added.
Section 12: Component Ecotoxicity table CAS No column header was added.
Section 12: Component Ecotoxicity table Organism column header was added.
Section 12: Component Ecotoxicity table Type column header was added.
Section 12: Component Ecotoxicity table Exposure column header was added.
Section 12: Component Ecotoxicity table End point column header was added.
Section 12: Component Ecotoxicity table Result column header was added.
Section 12: Persistence and degradability table Material column header was added.
Section 12: Persistence and degradability table CAS No column header was added.
Section 12: Persistence and degradability table Test Type column header was added.
Section 12: Persistence and degradability table Duration column header was added.
Section 12: Persistence and degradability table Test Result column header was added.
Section 12: Persistence and degradability table Protocol column header was added.
Section 12:Bioccumulative potential table Material column header was added.
Section 12:Bioccumulative potential table CAS No column header was added.
Section 12:Bioccumulative potential table CAS No column header was added.
Section 12:Bioccumulative potential table Test Result column header was added.

Section 12:Bioccumulative potential table Protocol column header was added.
Section 12:Bioccumulative potential table Test Type column header was added.
Section 12: Persistence and degradability table Study Type column header was added.
Section 12:Bioccumulative potential table Test Type column header was added.
Section 9: Odour Threshold was added.
Section 9: Solubility (non-water) was added.
Section 09: Decomposition Temperature was added.
Label: Graphic was added.
Section 02: Graphic information was added.
Section 9: Flammability (solid, gas) information was added.
Section 2: Symbols heading was deleted.
Section 15: Symbol information was deleted.
Prints No Data if Component ecotoxicity information is not present was deleted.
Prints No Data if Persistence and Degradability information is not present was deleted.
Prints No Data if Bioccumulative potential information is not present was deleted.

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