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 Graffiti Remover System

Product Identification Numbers
DR-5000-0135-6

7000069903

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

Identified uses
Graffiti Remover

1.3. Details of the supplier of the safety data sheet
Address: 3M Ireland Limited, 70 SIR JOHN ROGERSON'S QUAY, D02R296 DUBLIN 2
Telephone: +353 1 280 3555
E Mail: ner-productstewardship@mmm.com
Website: www.3M.com

1.4. Emergency telephone number
Emergency medical information: 8am-10pm (seven days) contact National Poisons Information Centre, Beaumont Hospital, Dublin 9 DOV2NO, Ireland. Telephone Number: +353 (0)1 809 2166

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture
CLP REGULATION (EC) No 1272/2008

The health and environmental classifications of this material have been derived using the calculation method, except in cases where test data are available or the physical form impacts classification. Classification(s) based on test data or physical form are noted below, if applicable.

CLASSIFICATION:
Serious Eye Damage/Eye Irritation, Category 1 - Eye Dam. 1; H318

For full text of H phrases, see Section 16.

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

SIGNAL WORD
DANGER.

Symbols
GHS05 (Corrosion) |

Pictograms

Ingredients:

Ingredient	CAS Nbr	EC No.	% by Wt
Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, branched	69011-36-5	500-241-6	1 - 10

HAZARD STATEMENTS:

H318	Causes serious eye damage.

PRECAUTIONARY STATEMENTS

Prevention:

P280A	Wear eye/face protection.

Response:

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTRE or doctor/physician.

Contains 10% of components with unknown hazards to the aquatic environment.

Notes on labelling
Updated per Regulation (EC) No. 648/2004 on detergents.
Ingredients required per 648/2004: <5%: Non-ionic surfactant.

2.3. Other hazards

May cause thermal burns.
This material does not contain any substances that are assessed to be a PBT or vPvB

SECTION 3: Composition/information on ingredients

3.1. Substances
Not applicable

3.2. Mixtures

Ingredient	Identifier(s)	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Dipropylene Glycol Dimethyl Ether	(CAS-No.) 111109-77-4 (EC-No.) ELINCS 404-640-5	15 - 40	Substance not classified as hazardous
Dimethyl glutarate	(CAS-No.) 1119-40-0 (EC-No.) 214-277-2	15 - 40	Substance not classified as hazardous
Dimethyl adipate	(CAS-No.) 627-93-0 (EC-No.) 211-020-6	10 - 30	Eye Irrit. 2, H319
Dimethyl succinate	(CAS-No.) 106-65-0 (EC-No.) 203-419-9	10 - 30	Eye Irrit. 2, H319
Water	Mixture	1 - 10	Substance not classified as hazardous
Hydroxypropyl methyl cellulose	(CAS-No.) 9004-65-3	1 - 10	Substance not classified as hazardous
(2-Methoxymethylethoxy)propanol	(CAS-No.) 34590-94-8 (EC-No.) 252-104-2	1 - 10	Substance with a Union workplace exposure limit
2-(2-butoxyethoxy)ethanol	(CAS-No.) 112-34-5 (EC-No.) 203-961-6	1 - 10	Eye Irrit. 2, H319
Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, branched	(CAS-No.) 69011-36-5 (EC-No.) 500-241-6	1 - 10	Aquatic Acute 1, H400,M=1 Aquatic Chronic 3, H412
methanol	(CAS-No.) 67-56-1 (EC-No.) 200-659-6	< 0.5	Flam. Liq. 2, H225 Acute Tox. 3, H331 Acute Tox. 3, H311 Acute Tox. 3, H301 STOT SE 1, H370

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

Specific Concentration Limits

Ingredient	Identifier(s)	Specific Concentration Limits
methanol	(CAS-No.) 67-56-1 (EC-No.) 200-659-6	(C >= 10%) STOT SE 1, H370 (3% =< C < 10%) STOT SE 2, H371

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 are concerned, get medical advice.

Skin contact
Immediately flush skin with large amounts of cold water for at least 15 minutes. DO NOT ATTEMPT TO REMOVE MOLTEN MATERIAL. Cover affected area with a clean dressing. Get immediate medical attention.

Eye contact
Immediately flush eyes with large amounts of water for at least 15 minutes. DO NOT ATTEMPT TO REMOVE MOLTEN MATERIAL. Get immediate medical attention.

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

4.2. Most important symptoms and effects, both acute and delayed
No critical symptoms or effects. 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 flammable liquids such as dry chemical or carbon dioxide to extinguish.

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

Hazardous Decomposition or By-Products

Substance	Condition
Carbon monoxide	During combustion.
Carbon dioxide.	During combustion.

5.3. Advice for fire-fighters
Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture. 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.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Use personal protective equipment based on the results of an exposure assessment. Refer to Section 8 for PPE recommendations. If anticipated exposure resulting from an accidental release exceeds the protective capabilities of the PPE listed in Section 8, or are unknown, select PPE that offers an appropriate level of protection. Consider the physical and chemical hazards of the material when doing so. Examples of PPE ensembles for emergency response could include wearing bunker gear for a release of flammable material; wearing chemical protective clothing if the spilled material is a corrosive, a sensitizer, a significant dermal irritant, or can be absorbed through the skin; or donning a positive pressure supplied-air respirator for chemicals with inhalation hazards. For information regarding physical and health hazards, refer to sections 2 and 11 of the SDS. Evacuate area. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. 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. Warning! A motor could be an ignition source and could cause flammable gases or vapours in the spill area to burn or explode.

6.2. Environmental precautions
Avoid release to the environment. For larger spills, cover drains and build dykes to prevent entry into sewer systems or bodies of water.

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 physical, health, or environmental hazard. Collect as much of the spilled material as possible using non-sparking tools. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with water. 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 eye contact. Avoid skin contact with hot material. For industrial/occupational use only. Not for consumer sale or use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. 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 release to the environment. Avoid contact with oxidising agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (eg. gloves, respirators…) as required.

7.2. Conditions for safe storage including any incompatibilities
Store in a well-ventilated place. Keep cool. Protect from sunlight. Store away from heat. Store away from acids. Store away from oxidising agents.

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
2-(2-butoxyethoxy)ethanol	112-34-5	Ireland OELs	TWA(8 hours):67.5 mg/m3(10 ppm);TWA(8 hours):10 ppm(67.5 mg/m3);STEL(15 minutes):101.2 mg/m3(12 ppm);STEL(15 minutes):12 ppm(101.2 mg/m3)	
(2-Methoxymethylethoxy)propanol	34590-94-8	Ireland OELs	TWA(8 hours):308 mg/m3(50 ppm);TWA(8 hours):50 ppm(308 mg/m3)	SKIN
methanol	67-56-1	Ireland OELs	TWA(8 hours):260 mg/m3(200 ppm);TWA(8 hours):200 ppm(260 mg/m3)	SKIN

Ireland OELs : Ireland. OELs
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.

Recommended monitoring procedures: Information on recommended monitoring procedures can be obtained from Indust. Inspect./Ministry (IE)

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.

Applicable Norms/Standards
Use eye/face protection conforming to EN 166

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
Polymer laminate	No data available	No data available

Applicable Norms/Standards
Use gloves tested to EN 374

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

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

Applicable Norms/Standards
Use a respirator conforming to EN 140 or EN 136: filter type A

Thermal hazards
Wear heat insulating gloves, indirect vented goggles, and a full face shield when handling hot material to prevent thermal burns.

Applicable Norms/Standards
Use gloves tested to EN 407

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Specific Physical Form:	Liquid.
Colour	Yellow
Odor	Aromatic Odour
Odour threshold	*No data available.*
Melting point/freezing point	*Not applicable.*
Boiling point/boiling range	175 ºC
Flammability	Not applicable.
Flammable Limits(LEL)	*No data available.*
Flammable Limits(UEL)	*No data available.*
Flash point	65 ºC [*Test Method:*Closed Cup]
Autoignition temperature	*No data available.*
Decomposition temperature	*No data available.*
pH	7
Kinematic Viscosity	*No data available.*
Water solubility	Complete
Solubility- non-water	*No data available.*
Partition coefficient: n-octanol/water	*No data available.*
Vapour pressure	70 Pa
Density	1.02 g/cm3
Relative density	1.02
Relative Vapour Density	*No data available.*
Particle Characteristics	*Not applicable.*

9.2. Other information

9.2.2 Other safety characteristics

EU Volatile Organic Compounds	*No data available.*
Evaporation rate	*No data available.*
Percent volatile	35 %

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
None known.

10.5 Incompatible materials
Strong oxidising agents.
Aluminium or magnesium powder and high/shear temperature conditions.

10.6 Hazardous decomposition products

Substance	Condition
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

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 internal hazard assessments.

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Signs and Symptoms of Exposure

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

Inhalation
May cause additional health effects (see below).

Skin contact
Thermal burns: Signs/symptoms may include intense pain, redness and swelling, and tissue destruction. Mild Skin Irritation: Signs/symptoms may include localised redness, swelling, itching, and dryness.

Eye contact
Thermal burns: Signs/symptoms may include severe pain, redness and swelling, and tissue destruction. Corrosive (eye burns): Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.

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

Additional Health Effects:

Reproductive/Developmental Toxicity:
Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

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	Dermal		No data available; calculated ATE >5,000 mg/kg
Overall product	Inhalation-Vapour(4 hr)		No data available; calculated ATE >50 mg/l
Overall product	Ingestion		No data available; calculated ATE >2,000 - =5,000 mg/kg
Dimethyl glutarate	Dermal	similar compounds	LD50 > 2,000 mg/kg

Dimethyl glutarate	Inhalation-Dust/Mist (4 hours)	similar compounds	LC50 > 11 mg/l
Dimethyl glutarate	Ingestion	similar compounds	LD50 > 5,000 mg/kg
Dipropylene Glycol Dimethyl Ether	Dermal	Rat	LD50 > 2,000 mg/kg
Dipropylene Glycol Dimethyl Ether	Inhalation-Vapour (4 hours)	Rat	LC50 > 5.2 mg/l
Dipropylene Glycol Dimethyl Ether	Ingestion	Rat	LD50 3,075 mg/kg
Dimethyl succinate	Dermal	Rat	LD50 > 2,000 mg/kg
Dimethyl succinate	Ingestion	Rat	LD50 6,892 mg/kg
Dimethyl succinate	Inhalation-Dust/Mist (4 hours)	similar compounds	LC50 > 11 mg/l
Dimethyl adipate	Dermal	Rabbit	LD50 > 5,000 mg/kg
Dimethyl adipate	Ingestion	Rat	LD50 > 5,000 mg/kg
Dimethyl adipate	Inhalation-Dust/Mist (4 hours)	similar compounds	LC50 > 11 mg/l
(2-Methoxymethylethoxy)propanol	Dermal	Rabbit	LD50 > 19,000 mg/kg
(2-Methoxymethylethoxy)propanol	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 50 mg/l
(2-Methoxymethylethoxy)propanol	Ingestion	Rat	LD50 5,180 mg/kg
2-(2-butoxyethoxy)ethanol	Dermal	Rabbit	LD50 2,764 mg/kg
2-(2-butoxyethoxy)ethanol	Ingestion	Rat	LD50 7,292 mg/kg
Hydroxypropyl methyl cellulose	Dermal		LD50 estimated to be > 5,000 mg/kg
Hydroxypropyl methyl cellulose	Ingestion		LD50 estimated to be > 5,000 mg/kg
Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, branched	Ingestion	Rat	LD50 > 10,000 mg/kg
Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, branched	Dermal	similar compounds	LD50 > 2,000 mg/kg
methanol	Dermal		LD50 estimated to be 1,000 - 2,000 mg/kg
methanol	Inhalation-Vapour		LC50 estimated to be 10 - 20 mg/l
methanol	Ingestion		LD50 estimated to be 50 - 300 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Dimethyl glutarate	similar compounds	No significant irritation
Dipropylene Glycol Dimethyl Ether	Rabbit	No significant irritation
Dimethyl succinate	Rabbit	No significant irritation
Dimethyl adipate	Rabbit	No significant irritation
(2-Methoxymethylethoxy)propanol	Human and animal	No significant irritation
2-(2-butoxyethoxy)ethanol	Rabbit	Minimal irritation
Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, branched	similar compounds	No significant irritation
methanol	Rabbit	Mild irritant

Serious Eye Damage/Irritation

Name	Species	Value
Dimethyl glutarate	similar	Mild irritant

	compounds	
Dipropylene Glycol Dimethyl Ether	Rabbit	Mild irritant
Dimethyl succinate	Rabbit	Moderate irritant
Dimethyl adipate	Rabbit	Moderate irritant
(2-Methoxymethylethoxy)propanol	Rabbit	Mild irritant
2-(2-butoxyethoxy)ethanol	Rabbit	Corrosive
Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, branched	similar compounds	No significant irritation
methanol	Rabbit	Moderate irritant

Skin Sensitisation

Name	Species	Value
Dimethyl glutarate	similar compounds	Not classified
Dipropylene Glycol Dimethyl Ether	Guinea pig	Not classified
Dimethyl succinate	Mouse	Not classified
Dimethyl adipate	similar compounds	Not classified
(2-Methoxymethylethoxy)propanol	Human	Not classified
Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, branched	similar compounds	Not classified
methanol	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
Dimethyl glutarate	In vivo	Not mutagenic
Dimethyl glutarate	In Vitro	Some positive data exist, but the data are not sufficient for classification
Dipropylene Glycol Dimethyl Ether	In Vitro	Not mutagenic
Dipropylene Glycol Dimethyl Ether	In vivo	Not mutagenic
Dimethyl succinate	In Vitro	Not mutagenic
Dimethyl adipate	In Vitro	Some positive data exist, but the data are not sufficient for classification
(2-Methoxymethylethoxy)propanol	In Vitro	Not mutagenic
Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, branched	In Vitro	Not mutagenic
methanol	In Vitro	Some positive data exist, but the data are not sufficient for classification
methanol	In vivo	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
methanol	Inhalation	Multiple animal species	Not carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration

Dimethyl glutarate	Inhalation	Not classified for development	Rabbit	NOAEL 1 mg/l	during gestation
Dipropylene Glycol Dimethyl Ether	Ingestion	Not classified for development	Rabbit	NOAEL 250 mg/kg/day	during gestation
(2-Methoxymethylethoxy)propanol	Inhalation	Not classified for development	Multiple animal species	NOAEL 1.82 mg/l	during organogenesis
Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, branched	Ingestion	Not classified for female reproduction	Rat	NOAEL 500 mg/kg/day	premating into lactation
Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, branched	Ingestion	Not classified for male reproduction	Rat	NOAEL 500 mg/kg/day	31 days
Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, branched	Ingestion	Not classified for development	Rat	NOAEL 500 mg/kg/day	premating into lactation
methanol	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,600 mg/kg/day	21 days
methanol	Ingestion	Toxic to development	Mouse	LOAEL 4,000 mg/kg/day	during organogenesis
methanol	Inhalation	Toxic to development	Mouse	NOAEL 1.3 mg/l	during organogenesis

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Dimethyl glutarate	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Professional judgement	NOAEL Not available	
Dimethyl succinate	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Professional judgement	NOAEL Not available	
Dimethyl adipate	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Professional judgement	NOAEL Not available	
(2-Methoxymethylethoxy)propanol	Dermal	central nervous system depression	Not classified	Rabbit	NOAEL 2,850 mg/kg	
(2-Methoxymethylethoxy)propanol	Inhalation	central nervous system depression	Not classified	Rat	LOAEL 3.07 mg/l	7 hours
(2-Methoxymethylethoxy)propanol	Ingestion	central nervous system depression	Not classified	Rat	LOAEL 5,000 mg/kg	
methanol	Inhalation	blindness	Causes damage to organs	Human	NOAEL Not available	occupational exposure
methanol	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	not available
methanol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL Not available	6 hours
methanol	Ingestion	blindness	Causes damage to organs	Human	NOAEL Not available	poisoning and/or abuse
methanol	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Dimethyl glutarate	Inhalation	endocrine system | respiratory system | hematopoietic	Not classified	Rat	NOAEL 0.4 mg/l	90 days

		system | liver | nervous system | eyes | kidney and/or bladder				
Dipropylene Glycol Dimethyl Ether	Ingestion	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Dimethyl succinate	Inhalation	respiratory system | heart | skin | endocrine system | gastrointestinal tract | hematopoietic system | liver | immune system | muscles | nervous system | eyes | kidney and/or bladder | vascular system	Not classified	Rat	NOAEL 1 mg/l	90 days
Dimethyl adipate	Inhalation	respiratory system | hematopoietic system | liver | nervous system | eyes | kidney and/or bladder	Not classified	Rat	NOAEL 0.4 mg/l	90 days
(2-Methoxymethylethoxy)propanol	Dermal	kidney and/or bladder | heart | endocrine system | hematopoietic system | liver | respiratory system	Not classified	Rabbit	NOAEL 9,500 mg/kg/day	90 days
(2-Methoxymethylethoxy)propanol	Inhalation	heart | hematopoietic system | liver | immune system | nervous system | eyes | kidney and/or bladder	Not classified	Rat	NOAEL 1.21 mg/l	90 days
(2-Methoxymethylethoxy)propanol	Ingestion	liver | heart | endocrine system | bone, teeth, nails, and/or hair | hematopoietic system | immune system | nervous system | kidney and/or bladder | respiratory system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, branched	Ingestion	gastrointestinal tract | liver | kidney and/or bladder | heart | skin | endocrine system | bone, teeth, nails, and/or hair | hematopoietic system | immune system | muscles | nervous system | eyes | respiratory system | vascular system	Not classified	Rat	NOAEL 500 mg/kg/day	13 weeks
methanol	Inhalation	liver	Not classified	Rat	NOAEL 6.55 mg/l	4 weeks
methanol	Inhalation	respiratory system	Not classified	Rat	NOAEL 13.1 mg/l	6 weeks
methanol	Ingestion	liver | nervous system	Not classified	Rat	NOAEL 2,500 mg/kg/day	90 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.

11.2. Information on other hazards

This material does not contain any substances that are assessed to be an endocrine disruptor for human health.

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 #	Organism	Type	Exposure	Test endpoint	Test result
Dimethyl glutarate	1119-40-0	Bacteria	Experimental	18 hours	EC10	62.5 mg/l
Dimethyl glutarate	1119-40-0	Bluegill	Experimental	96 hours	LC50	30.9 mg/l
Dimethyl glutarate	1119-40-0	Green algae	Experimental	72 hours	EC50	>85 mg/l
Dimethyl glutarate	1119-40-0	Green algae	Experimental	72 hours	NOEC	36 mg/l
Dipropylene Glycol Dimethyl Ether	111109-77-4	Green algae	Experimental	72 hours	EC50	4,307 mg/l
Dipropylene Glycol Dimethyl Ether	111109-77-4	Guppy	Experimental	96 hours	LC50	>1,000 mg/l
Dipropylene Glycol Dimethyl Ether	111109-77-4	Water flea	Experimental	24 hours	LC50	>1,000 mg/l
Dipropylene Glycol Dimethyl Ether	111109-77-4	Water flea	Experimental	21 days	NOEC	10 mg/l
Dipropylene Glycol Dimethyl Ether	111109-77-4	Activated sludge	Experimental	30 minutes	NOEC	100 mg/l
Dipropylene Glycol Dimethyl Ether	111109-77-4	Redworm	Experimental	14 days	LC50	>1,000 mg/kg (Dry Weight)
Dimethyl adipate	627-93-0	Green algae	Experimental	72 hours	ErC50	>100 mg/l
Dimethyl adipate	627-93-0	Water flea	Experimental	48 hours	EC50	72 mg/l
Dimethyl adipate	627-93-0	Green algae	Experimental	72 hours	NOEC	12.5 mg/l
Dimethyl succinate	106-65-0	Activated sludge	Experimental	3 hours	EC50	>1,000 mg/l
Dimethyl succinate	106-65-0	Green algae	Experimental	72 hours	ErC50	>100 mg/l
Dimethyl succinate	106-65-0	Water flea	Experimental	48 hours	EC50	>100 mg/l
Dimethyl succinate	106-65-0	Zebra Fish	Experimental	96 hours	LC50	50 mg/l
Dimethyl succinate	106-65-0	Green algae	Experimental	72 hours	NOEC	100 mg/l
(2-Methoxymethylethoxy) propanol	34590-94-8	Bacteria	Experimental	18 hours	EC10	4,168 mg/l

(2-Methoxymethylethoxy) propanol	34590-94-8	Fathead minnow	Experimental	96 hours	LC50	>10,000 mg/l
(2-Methoxymethylethoxy) propanol	34590-94-8	Green algae	Experimental	72 hours	ErC50	>969 mg/l
(2-Methoxymethylethoxy) propanol	34590-94-8	Water flea	Experimental	48 hours	LC50	1,919 mg/l
(2-Methoxymethylethoxy) propanol	34590-94-8	Green algae	Experimental	72 hours	EC10	133 mg/l
2-(2-butoxyethoxy)ethanol	112-34-5	Atlantic Silverside	Experimental	96 hours	LC50	2,000 mg/l
2-(2-butoxyethoxy)ethanol	112-34-5	Bluegill	Experimental	96 hours	LC50	1,300 mg/l
2-(2-butoxyethoxy)ethanol	112-34-5	Green algae	Experimental	96 hours	EC50	1,101 mg/l
2-(2-butoxyethoxy)ethanol	112-34-5	Water flea	Experimental	48 hours	EC50	4,950 mg/l
2-(2-butoxyethoxy)ethanol	112-34-5	Green algae	Experimental	96 hours	NOEC	100 mg/l
2-(2-butoxyethoxy)ethanol	112-34-5	Activated sludge	Experimental	30 minutes	EC10	>1,995 mg/l
Hydroxypropyl methyl cellulose	9004-65-3	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, branched	69011-36-5	Green algae	Experimental	72 hours	ErC50	3.4 mg/l
Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, branched	69011-36-5	Water flea	Experimental	48 hours	EC50	0.544 mg/l
Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, branched	69011-36-5	Zebra Fish	Experimental	96 hours	LC50	>1.1 mg/l
Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, branched	69011-36-5	Green algae	Experimental	72 hours	ErC10	1.328 mg/l
Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, branched	69011-36-5	Water flea	Experimental	21 days	NOEC	0.218 mg/l
Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, branched	69011-36-5	Bacteria	Analogous Compound	17 hours	EC10	>10,000 mg/l
Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, branched	69011-36-5	Cress	Analogous Compound	17 days	NOEC	10 mg/kg (Dry Weight)
Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, branched	69011-36-5	Redworm	Experimental	56 days	NOEC	125 mg/kg (Dry Weight)
methanol	67-56-1	Algae or other aquatic plants	Experimental	96 hours	EC50	16.9 mg/l
methanol	67-56-1	Bay mussel	Experimental	96 hours	LC50	15,900 mg/l
methanol	67-56-1	Bluegill	Experimental	96 hours	LC50	15,400 mg/l
methanol	67-56-1	Green algae	Experimental	96 hours	ErC50	22,000 mg/l

methanol	67-56-1	Sediment organism	Experimental	96 hours	LC50	54,890 mg/l
methanol	67-56-1	Water flea	Experimental	48 hours	LC50	3,289 mg/l
methanol	67-56-1	Green algae	Experimental	96 hours	NOEC	9.96 mg/l
methanol	67-56-1	Medaka	Experimental	8.33 days	NOEC	158,000 mg/l
methanol	67-56-1	Water flea	Experimental	21 days	NOEC	122 mg/l
methanol	67-56-1	Activated sludge	Experimental	3 hours	IC50	>1,000 mg/l
methanol	67-56-1	Barley	Experimental	14 days	EC50	15,492 mg/kg (Dry Weight)
methanol	67-56-1	Redworm	Experimental	63 days	EC50	26,646 mg/kg (Dry Weight)
methanol	67-56-1	Springtail	Experimental	28 days	EC50	5,683 mg/kg (Dry Weight)

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Dimethyl glutarate	1119-40-0	Experimental Biodegradation	14 days	BOD	90 %BOD/ThOD	OECD 301C - MITI test (I)
Dipropylene Glycol Dimethyl Ether	111109-77-4	Experimental Biodegradation	28 days	CO2 evolution	≤32 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2
Dipropylene Glycol Dimethyl Ether	111109-77-4	Experimental Aquatic Inherent Biodegrad.	28 days	Dissolv. Organic Carbon Deplet	25 %removal of DOC	OECD 302B Zahn-Wellens/EVPA
Dimethyl adipate	627-93-0	Analogous Compound Biodegradation	28 days	Dissolv. Organic Carbon Deplet	97 %removal of DOC	ISO 7827 Ready Ult Aer Biodeg
Dimethyl succinate	106-65-0	Experimental Biodegradation	28 days	CO2 evolution	74.1 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2
(2-Methoxymethylethoxy)propanol	34590-94-8	Experimental Biodegradation	28 days	BOD	75 %BOD/ThOD	OECD 301F - Manometric respirometry
(2-Methoxymethylethoxy)propanol	34590-94-8	Experimental Aquatic Inherent Biodegrad.	13 days	Dissolv. Organic Carbon Deplet	94 %removal of DOC	OECD 302B Zahn-Wellens/EVPA
2-(2-butoxyethoxy)ethanol	112-34-5	Experimental Biodegradation	28 days	BOD	92 %BOD/ThOD	OECD 301C - MITI test (I)
Hydroxypropyl methyl cellulose	9004-65-3	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, branched	69011-36-5	Analogous Compound Biodegradation	28 days	CO2 evolution	75 %CO2 evolution/THCO2 evolution	similar to OECD 301B
methanol	67-56-1	Experimental Biodegradation	3 days	Percent degraded	91 %degraded	
methanol	67-56-1	Experimental Biodegradation	14 days	BOD	92 %BOD/ThOD	OECD 301C - MITI test (I)
methanol	67-56-1	Experimental Photolysis		Photolytic half-life (in air)	35 days (t 1/2)	
methanol	67-56-1	Experimental Soil Metabolism Aerobic	5 days	CO2 evolution	53.4 %CO2 evolution/THCO2 evolution	

12.3 : Bioaccumulative potential

Material	Cas No.	Test type	Duration	Study Type	Test result	Protocol
Dimethyl glutarate	1119-40-0	Experimental Bioconcentration		Log Kow	0.49	

Dipropylene Glycol Dimethyl Ether	111109-77-4	Experimental BCF - Fish	43 days	Bioaccumulation factor	4	OECD305-Bioconcentration
Dipropylene Glycol Dimethyl Ether	111109-77-4	Experimental Bioconcentration		Log Kow	0.42	OECD 107 log Kow shke flsk mtd
Dimethyl adipate	627-93-0	Experimental Bioconcentration		Log Kow	1.4	OECD 117 log Kow HPLC method
Dimethyl succinate	106-65-0	Experimental Bioconcentration		Log Kow	0.33	OECD 117 log Kow HPLC method
(2-Methoxymethylethoxy)propanol	34590-94-8	Experimental Bioconcentration		Log Kow	0.004	OECD 107 log Kow shke flsk mtd
2-(2-butoxyethoxy)ethanol	112-34-5	Experimental Bioconcentration		Log Kow	1	OECD 117 log Kow HPLC method
Hydroxypropyl methyl cellulose	9004-65-3	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, branched	69011-36-5	Analogous Compound BCF - Fish	72 hours	Bioaccumulation factor	232.5	
methanol	67-56-1	Experimental BCF - Fish	3 days	Bioaccumulation factor	<4.5	
methanol	67-56-1	Experimental Bioconcentration		Log Kow	-0.77	

12.4. Mobility in soil

Material	Cas No.	Test type	Study Type	Test result	Protocol
Dipropylene Glycol Dimethyl Ether	111109-77-4	Experimental Mobility in Soil	Koc	24 l/kg	OECD 106 Adsp-Desb Batch Equil
Dimethyl adipate	627-93-0	Modeled Mobility in Soil	Koc	10 l/kg	Episuite™
Dimethyl succinate	106-65-0	Modeled Mobility in Soil	Koc	10 l/kg	Episuite™
2-(2-butoxyethoxy)ethanol	112-34-5	Modeled Mobility in Soil	Koc	4.4 l/kg	Episuite™
Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, branched	69011-36-5	Modeled Mobility in Soil	Koc	290-630 l/kg	Episuite™
methanol	67-56-1	Experimental Mobility in Soil	Koc	0.13 l/kg	

12.5. Results of the PBT and vPvB assessment

This material does not contain any substances that are assessed to be a PBT or vPvB

12.6. Endocrine disrupting properties

This material does not contain any substances that are assessed to be an endocrine disruptor for environmental effects

12.7. Other adverse effects

No information available.

The surfactant(s) contained in this preparation comply with the biodegradability criteria as laid down in Regulation (EC) No.648/2004 on detergents.

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. As a disposal alternative, utilize an acceptable permitted waste disposal facility. 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.

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)

070104*	Other organic solvents, washing liquids and mother liquors
14 06 03*	Other solvents and solvent mixtures
20 01 13*	Solvents

SECTION 14: Transportation information

Not hazardous for transportation.

	Ground Transport (ADR)	Air Transport (IATA)	Marine Transport (IMDG)
14.1 UN number or ID number	No data available.	No data available.	No data available.
14.2 UN proper shipping name	No data available.	No data available.	No data available.
14.3 Transport hazard class(es)	No data available.	No data available.	No data available.
14.4 Packing group	No data available.	No data available.	No data available.
14.5 Environmental hazards	No data available.	No data available.	No data available.
14.6 Special precautions for user	Please refer to the other sections of the SDS for further information.	Please refer to the other sections of the SDS for further information.	Please refer to the other sections of the SDS for further information.
14.7 Marine Transport in bulk according to IMO instruments	No data available.	No data available.	No data available.
Control Temperature	No data available.	No data available.	No data available.
Emergency Temperature	No data available.	No data available.	No data available.

ADR Classification Code	No data available.	No data available.	No data available.
IMDG Segregation Code	No data available.	No data available.	No data available.

Please contact the address or phone number listed on the first page of the SDS for additional information on the transport/shipment of the material by rail (RID) or inland waterways (ADN).

SECTION 15: Regulatory information

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

Restrictions on the manufacture, placing on the market and use:
The following substance(s) contained in this product is/are subject through Annex XVII of REACH regulation to restrictions on the manufacture, placing on the market and use when present in certain dangerous substances, mixtures and articles. Users of this product are required to comply with the restrictions placed upon it by the aforementioned provision.

Ingredient	CAS Nbr
2-(2-butoxyethoxy)ethanol	112-34-5
methanol	67-56-1

Restriction status: listed in REACH Annex XVII
Restricted uses: See Annex XVII to Regulation (EC) No 1907/2006 for Conditions of Restriction

Global inventory status
Contact 3M for more information. The components of this material are in compliance with the provisions of the Korea Chemical Control Act. Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Japan Chemical Substance Control Law. Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Philippines RA 6969 requirements. Certain restrictions may apply. Contact the selling division for additional information. The components of this product are in compliance with the new substance notification requirements of CEPA. This product complies with Measures on Environmental Management of New Chemical Substances. All ingredients are listed on or exempt from on China IECSC inventory. The components of this product are in compliance with the chemical notification requirements of TSCA. All required components of this product are listed on the active portion of the TSCA Inventory.

DIRECTIVE 2012/18/EU
Seveso hazard categories, Annex 1, Part 1
None

Seveso named dangerous substances, Annex 1, Part 2

Dangerous Substances	Identifier(s)	Qualifying quantity (tonnes) for the application of	
		Lower-tier requirements	Upper-tier requirements
methanol	67-56-1	500	5000

Regulation (EU) No 649/2012
No chemicals listed

15.2. Chemical Safety Assessment

A chemical safety assessment has not been carried out for this substance/mixture in accordance with Regulation (EC) No 1907/2006, as amended.

SECTION 16: Other information

List of relevant H statements

H225	Highly flammable liquid and vapour.
H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H370	Causes damage to organs.
H400	Very toxic to aquatic life.
H412	Harmful to aquatic life with long lasting effects.

Revision information:
Section 1: Address information was modified.
Section 1: E-mail address information was modified.
Section 3: Composition/ Information of ingredients table information was modified.
Section 03: SCL table information was modified.
Section 6: Accidental release personal information information was modified.
Section 7: Conditions safe storage information was modified.
Section 8: Occupational exposure limit table information was modified.
Section 8: Personal Protection - Thermal hazards information information was modified.
Section 9: Flammability (solid, gas) information information was deleted.
Section 09: Flammability information information was added.
Section 09: Odor information was modified.
Section 09: Particle Characteristics N/A information was added.
Section 9: Vapour density value information was modified.
Section 11: Acute Toxicity table information was modified.
Section 11: Germ Cell Mutagenicity Table information was modified.
Section 11: Reproductive Toxicity Table information was modified.
Section 11: Serious Eye Damage/Irritation Table information was modified.
Section 11: Skin Corrosion/Irritation Table information was modified.
Section 11: Skin Sensitization Table information was modified.
Section 11: Target Organs - Repeated Table information was modified.
Section 11: Target Organs - Single Table information was modified.
Section 12: Component ecotoxicity information information was modified.
Section 12: Mobility in soil information information was modified.
Section 12: Persistence and Degradability information information was modified.
Section 12:Bioccumulative potential information information was modified.
Section 15: Label remarks and EU Detergent information was modified.
Two-column table displaying the unique list of H Codes and statements (std phrases) for all components of the given material. 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. In addition, this SDS is being provided to convey health and safety information. If you are the importer of record of this product into the European Union, you are responsible for all regulatory requirements, including, but not limited to, product registrations/notifications, substance volume tracking, and potential substance registration.

3M Ireland MSDSs are available at www.3M.com