



Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the SS586 Specification for Hazard Communication for Hazardous Chemicals and Dangerous Goods.

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SECTION 1: Identification

1.1. Product identifier

3M™ Marine Vinyl Cleaner & Restorer, 09029

1.2. Recommended use and restrictions on use

Recommended use

Vinyl Surface Cleaner and Restorer, Marine

1.3. Supplier's details

Address: 3M Technologies (S) Pte Ltd, 10 Ang Mo Kio Street 65, Singapore 569059
Telephone: +65 6450 8888
Website: www.3m.com.sg

1.4. Emergency telephone number

+65 6591 6601 (8.15am - 5.00pm, Monday - Friday)

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

This product is not classified as hazardous per GHS criteria as implemented by Singapore Standard SS586.

2.2. Label elements

SIGNAL WORD

Not applicable.

Symbols

Not applicable.

Pictograms

Not applicable.

2.3. Other hazards

None known.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	CAS Nbr	% by Wt
Water	7732-18-5	60 - 100
Poly(Dimethylsiloxane)	63148-62-9	7 - 13
Hydrotreated light petroleum distillates	64742-47-8	1 - 5
Morpholine	110-91-8	< 0.7

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation

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

Skin contact

Wash with soap and water. If you are concerned, get medical advice.

Eye contact

If exposed, flush eyes with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms develop, get medical attention.

If swallowed

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

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

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. Suitable extinguishing media

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

5.2. Special hazards arising from the substance or mixture

None inherent in this product.

Hazardous Decomposition or By-Products

Substance

Carbon monoxide.

Carbon dioxide.

Condition

During combustion.

During combustion.

5.3. Special protective actions for fire-fighters

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. Ventilate the area with fresh air. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

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 detergent and water. Seal the container. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

Keep out of reach of children. Do not handle until all safety precautions have been read and understood. 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. Use personal protective equipment (eg. gloves, respirators...) as required.

7.2. Conditions for safe storage including any incompatibilities

Keep from freezing.

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
Morpholine	110-91-8	ACGIH	TWA:20 ppm	A4: Not class. as human carcin, Danger of cutaneous absorption
Morpholine	110-91-8	Singapore PELs	TWA(8 hours):71 mg/m3(20 ppm)	

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

Singapore PELs : Singapore. Workplace Safety and Health (Permissible Exposure Levels of Toxic Substances) Order

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

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:

Safety glasses with side shields.

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: Butyl rubber.

Polymer laminate

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

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Color	White
Odor	Mild Odor
Odour threshold	<i>No data available.</i>
pH	8.8 - 9.3
Melting point/Freezing point	<i>Not applicable.</i>
Boiling point/Initial boiling point/Boiling range	± 98.9 °C
Flash point	≥104.4 °C [<i>Test Method:</i> Closed Cup] [<i>Details:</i> ASTM D-3278-96]
Evaporation rate	<i>Not applicable.</i>
Flammability (solid, gas)	Not applicable.
Flammable Limits(LEL)	<i>No data available.</i>
Flammable Limits(UEL)	<i>No data available.</i>
Vapour pressure	≤186,158.4 Pa [<i>@ 55 °C</i>] [<i>Details:</i> MITS data]
Vapor Density and/or Relative Vapor Density	<i>Not applicable.</i>
Density	1 g/ml
Relative density	1 [<i>Ref Std:</i> WATER=1]
Water solubility	Appreciable
Solubility- non-water	<i>No data available.</i>
Partition coefficient: n-octanol/water	<i>No data available.</i>
Autoignition temperature	<i>No data available.</i>
Decomposition temperature	<i>No data available.</i>
Viscosity/Kinematic Viscosity	<i>No data available.</i>
Volatile organic compounds (VOC)	0.6 % weight
Percent volatile	± 85 % weight
Molecular weight	<i>No data available.</i>

SECTION 10: Stability and reactivity

10.1 Reactivity

This material is considered to be non reactive under normal use conditions

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

None known.

10.6 Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

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

11.1 Information on Toxicological effects

Signs and Symptoms of Exposure

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

Inhalation

Respiratory tract irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

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

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	Ingestion		No data available; calculated ATE >5,000 mg/kg
Poly(Dimethylsiloxane)	Dermal	Rabbit	LD50 > 19,400 mg/kg
Poly(Dimethylsiloxane)	Ingestion	Rat	LD50 > 17,000 mg/kg
Hydrotreated light petroleum distillates	Inhalation-Vapor	Professional judgement	LC50 estimated to be 20 - 50 mg/l
Hydrotreated light petroleum distillates	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 3 mg/l
Hydrotreated light petroleum distillates	Ingestion	Rat	LD50 > 5,000 mg/kg
Hydrotreated light petroleum distillates	Dermal	similar compounds	LD50 > 2,000 mg/kg
Morpholine	Dermal	Rabbit	LD50 500 mg/kg
Morpholine	Inhalation-Vapor	Rat	LC50 estimated to be 10 - 20 mg/l
Morpholine	Ingestion	Rat	LD50 1,680 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Poly(Dimethylsiloxane)	Rabbit	No significant irritation
Hydrotreated light petroleum distillates	Rabbit	Mild irritant
Morpholine	Rabbit	Corrosive

Serious Eye Damage/Irritation

Name	Species	Value
Poly(Dimethylsiloxane)	Rabbit	No significant irritation
Hydrotreated light petroleum distillates	Rabbit	Mild irritant
Morpholine	Rabbit	Corrosive

Sensitization:

Skin Sensitisation

Name	Species	Value
Hydrotreated light petroleum distillates	Guinea pig	Not classified
Morpholine	Guinea pig	Not classified

Respiratory Sensitisation

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

Germ Cell Mutagenicity

Name	Route	Value
Hydrotreated light petroleum distillates	In Vitro	Not mutagenic
Morpholine	In Vitro	Some positive data exist, but the data are not sufficient for classification
Morpholine	In vivo	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Hydrotreated light petroleum distillates	Dermal	Mouse	Some positive data exist, but the data are not

			sufficient for classification
Morpholine	Ingestion	Multiple animal species	Not carcinogenic
Morpholine	Inhalation	Rat	Not carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
Morpholine	Ingestion	Not classified for development		NA	
Morpholine	Ingestion	Toxic to male reproduction	similar compounds	NOAEL 60 mg/kg/day	2 generation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Hydrotreated light petroleum distillates	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
Hydrotreated light petroleum distillates	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
Hydrotreated light petroleum distillates	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
Morpholine	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Morpholine	Dermal	liver kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Guinea pig	LOAEL 900 mg/kg/day	13 days
Morpholine	Dermal	hematopoietic system	Not classified	Guinea pig	NOAEL 900 mg/kg/day	13 days
Morpholine	Inhalation	eyes	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
Morpholine	Inhalation	pulmonary fibrosis	May cause damage to organs though prolonged or repeated exposure	Rat	NOAEL 0.09 mg/l	13 weeks
Morpholine	Inhalation	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 64 mg/l	5 days
Morpholine	Inhalation	liver	Not classified	Rat	LOAEL 64 mg/l	5 days
Morpholine	Inhalation	heart endocrine system	Not classified	Rat	NOAEL 0.9 mg/l	13 weeks
Morpholine	Inhalation	gastrointestinal tract nervous system	Not classified	Rat	NOAEL 0.53 mg/l	104 weeks
Morpholine	Ingestion	kidney and/or bladder	May cause damage to organs though prolonged or repeated exposure	Rat	LOAEL 160 mg/kg/day	30 days
Morpholine	Ingestion	liver respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 160 mg/kg/day	30 days
Morpholine	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 800 mg/kg/day	30 days

Morpholine	Ingestion	endocrine system	Not classified	Rat	NOAEL 323 mg/kg/day	4 weeks
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Aspiration Hazard

Name	Value
Hydrotreated light petroleum distillates	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:**

GHS Acute 3: Harmful to aquatic life.

Chronic aquatic hazard:

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

No product test data available.

Material	CAS Nbr	Organism	Type	Exposure	Test endpoint	Test result
Poly(Dimethylsiloxane)	63148-62-9	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
Hydrotreated light petroleum distillates	64742-47-8	Green algae	Estimated	72 hours	EC50	1 mg/l
Hydrotreated light petroleum distillates	64742-47-8	Rainbow trout	Estimated	96 hours	LL50	2 mg/l
Hydrotreated light petroleum distillates	64742-47-8	Water flea	Estimated	48 hours	EL50	1.4 mg/l
Hydrotreated light petroleum distillates	64742-47-8	Green algae	Estimated	72 hours	NOEL	1 mg/l
Hydrotreated light petroleum distillates	64742-47-8	Water flea	Estimated	21 days	NOEL	0.48 mg/l
Morpholine	110-91-8	Activated sludge	Experimental	30 minutes	EC20	>1,000 mg/l
Morpholine	110-91-8	Fish	Experimental	96 hours	LC50	100 mg/l
Morpholine	110-91-8	Green algae	Experimental	96 hours	ErC50	28 mg/l
Morpholine	110-91-8	Rainbow trout	Experimental	96 hours	LC50	180 mg/l
Morpholine	110-91-8	Water flea	Experimental	48 hours	EC50	45 mg/l
Morpholine	110-91-8	Green algae	Experimental	96 hours	NOEC	10 mg/l
Morpholine	110-91-8	Water flea	Experimental	21 days	NOEC	5 mg/l

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Poly(Dimethylsiloxane)	63148-62-9	Data not available-insufficient	N/A	N/A	N/A	N/A
Hydrotreated light petroleum distillates	64742-47-8	Data not available-insufficient	N/A	N/A	N/A	N/A
Morpholine	110-91-8	Experimental Biodegradation	28 days	Dissolv. Organic Carbon Deplet	93 %removal of DOC	OECD 301E - Modif. OECD Screen
Morpholine	110-91-8	Experimental Biodegradation	31 days	Dissolv. Organic Carbon Deplet	98 %removal of DOC	OECD 302B Zahn-Wellens/EVPA

12.3 : Bioaccumulative potential

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Poly(Dimethylsiloxane)	63148-62-9	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Hydrotreated light petroleum distillates	64742-47-8	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Morpholine	110-91-8	Experimental BCF - Fish	42 days	Bioaccumulation factor	<2.8	OECD305-Bioconcentration
Morpholine	110-91-8	Experimental Bioconcentration		Log Kow	-2.55	OECD 107 log Kow shke flask mtd

12.4. Mobility in soil

Please contact manufacturer for more details

12.5 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. Disposal methods

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

Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. 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.

SECTION 14: Transport Information

International Regulations

UN No.: Not restricted for transport.

UN Proper shipping name: Not restricted for transport.

Transportation Class (IMO): None assigned

Transportation Class (IATA): None assigned
Other Dangerous Goods Descriptions (IMO): None assigned
Other Dangerous Goods Descriptions (IATA): None assigned
Packing Group: None assigned
Marine pollutant: None assigned

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 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 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.

This product may contain component(s) that are regulated by the following:

Workplace Safety and Health Act & Workplace Safety and Health (General Provisions) Regulations: this product is subject to SDS, labelling, PEL and other requirements in the Act/Regulations.

Fire Safety (Petroleum and Flammable Materials) Regulations: This product is subject to the requirements in the Regulations

SECTION 16: Other information

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 Singapore SDSs are available at www.3m.com.sg