Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the Malaysia Occupational Safety and Health (Chemical Classification, Labelling and Safety Data Sheets) Regulations 2013.

SECTION 1: Identification

1.1. Product identifier
3M™ Cavilon™ No Sting Barrier Film Spray (IO) Cat. # 3346, 3346E, 3346P

Product Identification Numbers

70-0051-3419-5	70-2007-4661-1	70-2007-4662-9	70-2007-4663-7	70-2007-6394-7
70-2007-6494-5	70-2007-6557-9	70-2007-8434-9	GH-6206-0435-1	

1.2. Recommended use and restrictions on use

Recommended use
Skin protectant barrier film.

1.3. Supplier's details
ADDRESS: 3M Malaysia Sdn. Bhd., Level 8, Block F, Oasis Square, No.2, Jalan PJU 1A/7A, Ara Damansara 47301 Petaling, Jaya, Selangor
Telephone: 03-7884 2888
E Mail: 3mmyehsr@mmm.com
Website: www.3M.com.my

1.4. Emergency telephone number
+60 03-7884 2888

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture
Flammable Liquid: Category 2.
Aspiration Hazard: Category 1.
Acute Aquatic Toxicity: Category 1.
Chronic Aquatic Toxicity: Category 1.

2.2. Label elements
Signal word
Danger

Symbols
Flame | Health Hazard | Environment |

Pictograms

Hazard Statements

H225	Highly flammable liquid and vapor.
H304	May be fatal if swallowed and enters airways.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statements

General:

P102	Keep out of reach of children.
P101	If medical advice is needed, have product container or label at hand.

Prevention:

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233	Keep container tightly closed.
P280B	Wear protective gloves and eye/face protection.
P273	Avoid release to the environment.

Response:

P331	Do NOT induce vomiting.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P370 + P378G	In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

Storage:

P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.

Disposal:

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

2.3. Other hazards

All or part of the classification is based on toxicity test data.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	C.A.S. No.	% by Wt
Hexamethyldisiloxane	107-46-0	65 - 90
Isooctane	540-84-1	5 - 30
Acrylate Terpolymer	Trade Secret	3 - 12
Polyphenylmethylsiloxane Copolymer	70131-69-0	0.1 - 5

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:
No need for first aid is anticipated.

Eye Contact:
No need for first aid is anticipated.

If Swallowed:
Do not induce vomiting. Get immediate medical attention.

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. Suitable 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. Special protective actions 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
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 vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. 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. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

6.3. Methods and material for containment and cleaning up

Contain spill. Cover spill area with a fire-extinguishing foam. An appropriate aqueous film forming foam (AFFF) is recommended. 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. Collect as much of the spilled material as possible using non-sparking tools. Place in a metal container approved for transportation by appropriate authorities. 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. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) Wear low static or properly grounded shoes. To minimize the risk of ignition, determine applicable electrical classifications for the process using this product and select specific local exhaust ventilation equipment to avoid flammable vapor accumulation. Ground/bond container and receiving equipment if there is potential for static electricity accumulation during transfer.

7.2. Conditions for safe storage including any incompatibilities
Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store away from heat. Store away from acids. Store away from oxidizing agents.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
Octane	540-84-1	ACGIH	TWA:300 ppm	

ACGIH : American Conference of Governmental Industrial Hygienists
CMRG : Chemical Manufacturer's Recommended Guidelines
Malaysia OELs : Malaysia. Occupational Safety and Health (Use and Standards of Exposure of Chemicals Hazardous to Health) Regulations
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/vapors/spray. If ventilation is not adequate, use respiratory protection equipment. Use explosion-proof ventilation equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Eye protection not required.

Skin/hand protection
No protective gloves required.

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
Half facepiece or full facepiece air-purifying respirator suitable for organic vapors 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	Colorless
Odor	Slight Odor, Odorless
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point/Freezing point	*Not Applicable*
Boiling point/Initial boiling point/Boiling range	100 ºC [*Test Method:*Tested per ASTM protocol]
Flash Point	-10 ºC [*Test Method:*Closed Cup]
Evaporation rate	<=1 [*Test Method:*Tested per ASTM protocol] [*Ref Std:*ETHER=1]
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	0.7 %
Flammable Limits(UEL)	18.3 %
Vapor Pressure	< 186,158.4 Pa [@ 55 ºC]
Vapor Density	*Not Applicable*
Density	0.78 g/ml
Relative Density	0.78 [*Test Method:*Tested per ASTM protocol] [*Ref Std:*WATER=1]
Water solubility	<=0.1 % [*Test Method:*Tested per ASTM protocol]
Solubility- non-water	*No Data Available*
Partition coefficient: n-octanol/ water	*Not Applicable*
Autoignition temperature	351.7 ºC
Decomposition temperature	*No Data Available*
Viscosity	5 mPa-s [*Test Method:*Tested per ASTM protocol]
Volatile Organic Compounds	720 g/l
Percent volatile	88 - 94 %
VOC Less H2O & Exempt Solvents	*No Data Available*

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 polymerization will not occur.

10.4. Conditions to avoid
Heat
Sparks and/or flames

10.5. Incompatible materials
Strong oxidizing agents

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 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 labeling, 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:
Chemical (Aspiration) Pneumonitis: Signs/symptoms may include coughing, gasping, choking, burning of the mouth, difficulty breathing, bluish colored skin (cyanosis), and may be fatal.

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

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

Acute Toxicity

Name	Route	Species	Value
Overall product	Inhalation-Dust/Mist(4 hr)		No data available; calculated ATE >12.5 mg/l
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
Hexamethyldisiloxane	Dermal	Rabbit	LD50 > 2,000 mg/kg
Hexamethyldisiloxane	Inhalation-Vapor (4 hours)	Rat	LC50 106 mg/l
Hexamethyldisiloxane	Ingestion	Rat	LD50 > 5,000 mg/kg
Isooctane	Dermal	Rabbit	LD50 > 2,000 mg/kg
Isooctane	Inhalation-	Rat	LC50 > 33.5 mg/l

	Vapor (4 hours)		
Isooctane	Ingestion	Rat	LD50 > 5,000 mg/kg
Polyphenylmethylsiloxane Copolymer	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.5 mg/l

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Overall product	Human	No significant irritation
Hexamethyldisiloxane	Rabbit	No significant irritation
Isooctane	Human and animal	Minimal irritation

Serious Eye Damage/Irritation

Name	Species	Value
Hexamethyldisiloxane	Rabbit	Mild irritant
Isooctane	Rabbit	Mild irritant

Skin Sensitization

Name	Species	Value
Hexamethyldisiloxane	Guinea pig	Not classified
Isooctane	Human	Not classified

Respiratory Sensitization

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

Germ Cell Mutagenicity

Name	Route	Value
Hexamethyldisiloxane	In Vitro	Not mutagenic
Hexamethyldisiloxane	In vivo	Not mutagenic
Isooctane	In vivo	Not mutagenic
Isooctane	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

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

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Hexamethyldisiloxane	Inhalation	Not classified for male reproduction	Rat	NOAEL 33 mg/l	13 weeks
Isooctane	Inhalation	Not classified for development	Rat	NOAEL 5.6 mg/l	during organogenesis

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure

						Duration
Hexamethyldisiloxane	Inhalation	respiratory irritation	Not classified	Rat	NOAEL 33 mg/l	6 hours
Hexamethyldisiloxane	Ingestion	central nervous system depression	Not classified	Guinea pig	LOAEL 22,900 mg/kg	not applicable
Isooctane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Multiple animal species	NOAEL Not available	not available
Isooctane	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
Isooctane	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Multiple animal species	NOAEL Not available	not applicable

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Hexamethyldisiloxane	Dermal	liver | kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Hexamethyldisiloxane	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 4 mg/l	13 weeks
Hexamethyldisiloxane	Inhalation	hematopoietic system	Not classified	Rat	NOAEL 33 mg/l	13 weeks
Hexamethyldisiloxane	Inhalation	liver	Not classified	Multiple animal species	NOAEL 29 mg/l	15 days
Hexamethyldisiloxane	Inhalation	heart | endocrine system | immune system | nervous system | respiratory system	Not classified	Rat	NOAEL 33 mg/l	13 weeks
Isooctane	Inhalation	hematopoietic system	Not classified	Rat	NOAEL 5.6 mg/l	12 weeks
Isooctane	Inhalation	kidney and/or bladder	Not classified	Rat	LOAEL 0.2 mg/l	1 years
Isooctane	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL Not available	4 weeks
Isooctane	Ingestion	liver	Not classified	Rat	NOAEL 500 mg/kg/day	21 days

Aspiration Hazard

Name	Value
Isooctane	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 labeling, 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 1: Very toxic to aquatic life.

Chronic aquatic hazard:
GHS Chronic 1: Very toxic to aquatic life with long lasting effects.

No product test data available

Material	Cas #	Organism	Type	Exposure	Test Endpoint	Test Result
Hexamethyldisiloxane	107-46-0	Green Algae	Experimental	70 hours	Effect Concentration 50%	>0.55 mg/l
Hexamethyldisiloxane	107-46-0	Rainbow Trout	Experimental	96 hours	Lethal Concentration 50%	0.46 mg/l
Hexamethyldisiloxane	107-46-0	Green Algae	Experimental	70 hours	Effect Concentration 10%	0.09 mg/l
Hexamethyldisiloxane	107-46-0	Water flea	Experimental	21 days	No obs Effect Conc	0.08 mg/l
Isooctane	540-84-1	Water flea	Estimated	48 hours	Effect Concentration 50%	0.4 mg/l
Isooctane	540-84-1	Ricefish	Experimental	96 hours	Lethal Concentration 50%	0.561 mg/l
Acrylate Terpolymer	Trade Secret		Data not available or insufficient for classification			
Polyphenylmethylsiloxane Copolymer	70131-69-0	Green algae	Estimated	72 hours	No tox obs at lmt of water sol	>100 mg/l
Polyphenylmethylsiloxane Copolymer	70131-69-0	Green Algae	Estimated	72 hours	No tox obs at lmt of water sol	>100 mg/l
Polyphenylmethylsiloxane Copolymer	70131-69-0	Rainbow Trout	Estimated	60 days	No tox obs at lmt of water sol	>100 mg/l
Polyphenylmethylsiloxane Copolymer	70131-69-0	Water flea	Estimated	21 days	No tox obs at lmt of water sol	>100 mg/l

12.2. Persistence and degradability

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
Hexamethyldisiloxane	107-46-0	Experimental Photolysis		Photolytic half-life (in air)	22.5 days (t 1/2)	Other methods
Hexamethyldisiloxane	107-46-0	Experimental Hydrolysis		Hydrolytic half-life	120 hours (t 1/2)	Other methods
Isooctane	540-84-1	Experimental Photolysis		Photolytic half-life (in air)	8.36 days (t 1/2)	Other methods
Isooctane	540-84-1	Experimental Biodegradation	28 days	Biological Oxygen Demand	0 % BOD/ThBOD	OECD 301C - MITI (I)
Acrylate Terpolymer	Trade Secret	Data not availbl-insufficient			N/A	

Polyphenylmethylsiloxane Copolymer	70131-69-0	Estimated Biodegradation	28 days	Biological Oxygen Demand	2.2 % BOD/ThBOD	OECD 301F - Manometric Respiro

12.3. Bioaccumulative potential

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
Hexamethyldisiloxane	107-46-0	Experimental BCF-Carp	56 days	Bioaccumulation Factor	2410	OECD 305C-Bioaccum degree fish
Isooctane	540-84-1	Experimental BCF-Carp	28 days	Bioaccumulation Factor	540	OECD 305E-Bioaccum Fl-thru fis
Acrylate Terpolymer	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Polyphenylmethylsiloxane Copolymer	70131-69-0	Estimated BCF - Bluegill	45 days	Bioaccumulation Factor	2992	OECD 305E-Bioaccum Fl-thru fis

12.4. Mobility in soil
Please contact manufacturer for more details

12.5 Other adverse effects
No information available

SECTION 13: Disposal considerations

13.1. Disposal methods

According to the Environmental Quality (Scheduled Wastes) Regulations 2005, scheduled waste has to be sent to a prescribed premise for recycling, treatment or disposal. Please approach Kualiti Alam for proper schedule waste classification and disposal.

SECTION 14: Transport Information

Marine Transport (IMDG)

UN Number:UN1866
Proper Shipping Name:RESIN SOLUTION
Technical Name: None assigned.
Hazard Class/Division:3
Subsidiary Risk: None assigned.
Packing Group:II
Limited Quantity: Yes
Marine Pollutant: None assigned.
Marine Pollutant Technical Name: None assigned.
Other Dangerous Goods Descriptions:
None assigned.

Air Transport (IATA)

UN Number:UN1866
Proper Shipping Name:RESIN SOLUTION

Technical Name: None assigned.
Hazard Class/Division:3
Subsidiary Risk: None assigned.
Packing Group:II
Limited Quantity: None assigned.
Marine Pollutant: None assigned.
Marine Pollutant Technical Name: None assigned.
Other Dangerous Goods Descriptions:
None assigned.

Transportation classifications are provided as a customer service. As for shipping, YOU remain responsible for complying with all applicable laws and regulations, including proper transportation classification and packaging. 3M's transportation classifications are based on product formulation, packaging, 3M policies and 3M's understanding of applicable current regulations. 3M does not guarantee the accuracy of this classification information. This information applies only to transportation classification and not the packaging, labeling or marking requirements. The above information is only for reference. If you are shipping by air or ocean, YOU are advised to check & meet applicable regulatory requirements.

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.

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 Malaysia SDSs are available at www.3M.com.my