



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™ Clinpro™ 5% Sodium Fluoride White Varnish (12246, 12247, 12249, 12250, 12251)

1.2. Recommended use and restrictions on use

Recommended use

Dental product, Fluoride varnish

Restrictions on use

For use by dental professionals only.

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

Flammable Liquid: Category 2.

Reproductive Toxicity: Category 2.

Specific Target Organ Toxicity (repeated exposure): Category 1.

Aspiration Hazard: Category 1.

2.2. Label elements

SIGNAL WORD

DANGER!

Symbols

Flame | Health Hazard |

Pictograms



HAZARD STATEMENTS

- H225 Highly flammable liquid and vapour.
- H361 Suspected of damaging fertility or the unborn child.
H304 May be fatal if swallowed and enters airways.
- H372 Causes damage to organs through prolonged or repeated exposure: musculoskeletal system | nervous system.

PRECAUTIONARY STATEMENTS

Prevention:

- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P280F Wear respiratory protection.

Response:

- P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P331 Do NOT induce vomiting.
P370 + P378 In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

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	CAS Nbr	% by Wt
Pentaerythritol glycerol ester of colophony resin	Trade Secret	60 - 75
n-Hexane	110-54-3	10 - 15
Sodium fluoride	7681-49-4	1 - 5
USP/Food Grade Flavor	Mixture	1 - 5
Thickener	Trade Secret	1 - 5
Ethyl alcohol	64-17-5	1 - 5
Flavor enhancer	Trade Secret	1 - 5
Modified tricalcium phosphate	None	< 1

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

Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get

medical attention.

Eye contact

Immediately flush with large amounts of water for at least 15 minutes. Remove contact lenses if easy to do. Continue rinsing. Immediately get medical attention.

If swallowed

Do not induce vomiting. Get immediate medical attention.

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

Serious damage to the eyes (corneal cloudiness, severe pain, tearing, ulcerations, and significantly impaired or loss of vision). Aspiration pneumonitis (coughing, gasping, choking, burning of the mouth, and difficulty breathing). Target organ effects following prolonged or repeated exposure. See Section 11 for additional details.

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

Carbon monoxide.
Carbon dioxide.

Condition

During combustion.
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.

6.3. Methods and material for containment and cleaning up

Contain spill. Cover spill area with a fire extinguishing foam that is resistant to polar solvents. Collect as much of the spilled material as possible using non-sparking tools. Place in a metal 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

Avoid prolonged or repeated skin contact. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Take precautionary measures against static discharge. Do not breathe dust/fume/gas/mist/vapours/spray. 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.) Do not get in eyes. 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. Keep container tightly closed. Store away from heat. Store away from acids. Store away from oxidising 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	CAS Nbr	Agency	Limit type	Additional comments
n-Hexane	110-54-3	ACGIH	TWA:50 ppm	Danger of cutaneous absorption
n-Hexane	110-54-3	Singapore PELs	TWA(8 hours):176 mg/m ³ (50 ppm)	
Ethyl alcohol	64-17-5	ACGIH	STEL:1000 ppm	A3: Confirmed animal carcin.
Ethyl alcohol	64-17-5	Singapore PELs	TWA(8 hours):1880 mg/m ³ (1000 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 in a well-ventilated area.

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

See Section 7.1 for additional information on skin protection.

Respiratory protection

None required.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Specific Physical Form:	Liquid.
Color	Light Yellow
Odor	Moderate Cherry, Moderate Melon, Moderate Minty
Odour threshold	<i>No data available.</i>
pH	<i>Not applicable.</i>
Melting point/Freezing point	<i>Not applicable.</i>
Boiling point/Initial boiling point/Boiling range	68 °C
Flash point	6 °C [<i>Test Method: Closed Cup</i>]
Evaporation rate	<i>Not applicable.</i>
Flammability	Flammable Liquid: Category 2.
Flammable Limits(LEL)	<i>No data available.</i>
Flammable Limits(UEL)	<i>No data available.</i>
Vapor Density and/or Relative Vapor Density	<i>Not applicable.</i>
Density	1 g/ml
Relative density	1 [<i>Ref Std: WATER=1</i>]
Water solubility	Moderate
Solubility- non-water	<i>No data available.</i>
Partition coefficient: n-octanol/water	<i>Not applicable.</i>
Autoignition temperature	<i>No data available.</i>
Decomposition temperature	<i>No data available.</i>
Kinematic Viscosity	<i>No data available.</i>
Volatile organic compounds (VOC)	<i>No data available.</i>
Molecular weight	<i>Not applicable.</i>

Particle Characteristics	<i>Not applicable.</i>
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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

Heat.

10.5 Incompatible materials

Strong oxidising agents.

Strong acids.

10.6 Hazardous decomposition products**Substance**

None known.

Condition

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

Exposures needed to cause the following health effect(s) are not expected during normal, intended use:

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

May cause additional health effects (see below).

Skin contact

Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness.

Eye contact

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

Chemical (aspiration) pneumonitis: Signs/symptoms may include coughing, gasping, choking, burning of the mouth, difficulty breathing, bluish coloured skin (cyanosis), and may be fatal. Gastrointestinal irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhoea. May cause additional health effects (see below).

Additional Health Effects:

Prolonged or repeated exposure may cause target organ effects:

Exposures needed to cause the following health effect(s) are not expected during normal, intended use:

Hard tissue effects: Signs/symptoms may include colour changes in the teeth and nails, changes in development of bone, teeth or nails, weakening of the bones, and hair loss. Peripheral neuropathy: Signs/symptoms may include tingling or numbness of the extremities, incoordination, weakness of the hands and feet, tremors and muscle atrophy.

Reproductive/Developmental Toxicity:

Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

Additional information:

This product contains ethanol. Alcoholic beverages and ethanol in alcoholic beverages have been classified by the International Agency for Research on Cancer as carcinogenic to humans. There are also data associating human consumption of alcoholic beverages with developmental toxicity and liver toxicity. Exposure to ethanol during the foreseeable use of this product is not expected to cause cancer, developmental toxicity, or liver toxicity.

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	Ingestion	Rat	LD50 > 2,000 mg/kg
Pentaerythritol glycerol ester of colophony resin	Dermal		LD50 estimated to be > 5,000 mg/kg
Pentaerythritol glycerol ester of colophony resin	Ingestion	Rat	LD50 8,400 mg/kg
n-Hexane	Dermal	Rabbit	LD50 > 2,000 mg/kg
n-Hexane	Inhalation-Vapor (4 hours)	Rat	LC50 170 mg/l
n-Hexane	Ingestion	Rat	LD50 > 28,700 mg/kg
Sodium fluoride	Dermal	Rat	LD50 > 2,000 mg/kg
Sodium fluoride	Inhalation-Dust/Mist	Rat	LC50 1 mg/l
Sodium fluoride	Ingestion	Rat	LD50 148.5 mg/kg
Thickener	Dermal	Rabbit	LD50 > 5,000 mg/kg
Thickener	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Thickener	Ingestion	Rat	LD50 > 5,110 mg/kg
Ethyl alcohol	Dermal	Rabbit	LD50 > 15,800 mg/kg
Ethyl alcohol	Inhalation-Vapor (4 hours)	Rat	LC50 124.7 mg/l
Ethyl alcohol	Ingestion	Rat	LD50 17,800 mg/kg
Flavor enhancer	Ingestion	Rat	LD50 > 4,000 mg/kg
Flavor enhancer	Dermal	similar health hazards	LD50 estimated to be > 5,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
n-Hexane	Human and animal	Mild irritant
Sodium fluoride	official classification	Irritant
Thickener	Rabbit	No significant irritation
Ethyl alcohol	Rabbit	No significant irritation
Flavor enhancer	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Overall product	In vitro data	No significant irritation
n-Hexane	Rabbit	Mild irritant
Sodium fluoride	Rabbit	Corrosive
Thickener	Rabbit	No significant irritation
Ethyl alcohol	Rabbit	Severe irritant
Flavor enhancer	In vitro data	No significant irritation

Sensitization:

Skin Sensitisation

Name	Species	Value
n-Hexane	Human	Not classified
Thickener	Human and	Not classified

	animal	
Ethyl alcohol	Human	Not classified
Flavor enhancer	Human	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
n-Hexane	In Vitro	Not mutagenic
n-Hexane	In vivo	Not mutagenic
Thickener	In Vitro	Not mutagenic
Ethyl alcohol	In Vitro	Some positive data exist, but the data are not sufficient for classification
Ethyl alcohol	In vivo	Some positive data exist, but the data are not sufficient for classification
Flavor enhancer	In Vitro	Not mutagenic
Flavor enhancer	In vivo	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
n-Hexane	Dermal	Mouse	Not carcinogenic
n-Hexane	Inhalation	Mouse	Some positive data exist, but the data are not sufficient for classification
Thickener	Not specified.	Mouse	Some positive data exist, but the data are not sufficient for classification
Ethyl alcohol	Ingestion	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
Flavor enhancer	Ingestion	Multiple animal species	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
n-Hexane	Ingestion	Not classified for development	Mouse	NOAEL 2,200 mg/kg/day	during organogenesis
n-Hexane	Inhalation	Not classified for development	Rat	NOAEL 0.7 mg/l	during gestation
n-Hexane	Ingestion	Toxic to male reproduction	Rat	NOAEL 1,140 mg/kg/day	90 days
n-Hexane	Inhalation	Toxic to male reproduction	Rat	LOAEL 3.52 mg/l	28 days
Thickener	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Thickener	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Thickener	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
Ethyl alcohol	Inhalation	Not classified for development	Rat	NOAEL 38 mg/l	during gestation
Ethyl alcohol	Ingestion	Not classified for development	Rat	NOAEL 5,200 mg/kg/day	premating & during gestation
Flavor enhancer	Ingestion	Not classified for female reproduction	Rat	NOAEL 0.2 in the diet	3 generation
Flavor enhancer	Ingestion	Not classified for male reproduction	Rat	NOAEL 0.2	3 generation

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				in the diet	
Flavor enhancer	Ingestion	Not classified for development	Rabbit	NOAEL 6,770 mg/kg/day	during gestation

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

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
n-Hexane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	not available
n-Hexane	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Rabbit	NOAEL Not available	8 hours
n-Hexane	Inhalation	respiratory system	Not classified	Rat	NOAEL 24.6 mg/l	8 hours
Sodium fluoride	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
Ethyl alcohol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	LOAEL 9.4 mg/l	not available
Ethyl alcohol	Inhalation	central nervous system depression	Not classified	Human and animal	NOAEL not available	
Ethyl alcohol	Ingestion	central nervous system depression	Not classified	Multiple animal species	NOAEL not available	
Ethyl alcohol	Ingestion	kidney and/or bladder	Not classified	Dog	NOAEL 3,000 mg/kg	
Flavor enhancer	Dermal	photoirritation	Not classified	Guinea pig	Irritation Positive	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
n-Hexane	Inhalation	peripheral nervous system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
n-Hexane	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Mouse	LOAEL 1.76 mg/l	13 weeks
n-Hexane	Inhalation	liver	Not classified	Rat	NOAEL Not available	6 months
n-Hexane	Inhalation	kidney and/or bladder	Not classified	Rat	LOAEL 1.76 mg/l	6 months
n-Hexane	Inhalation	hematopoietic system	Not classified	Mouse	NOAEL 35.2 mg/l	13 weeks
n-Hexane	Inhalation	auditory system immune system eyes	Not classified	Human	NOAEL Not available	occupational exposure
n-Hexane	Inhalation	heart skin endocrine system	Not classified	Rat	NOAEL 1.76 mg/l	6 months
n-Hexane	Ingestion	peripheral nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1,140 mg/kg/day	90 days
n-Hexane	Ingestion	endocrine system hematopoietic system liver immune system kidney and/or bladder	Not classified	Rat	NOAEL Not available	13 weeks
Sodium fluoride	Inhalation	bone, teeth, nails, and/or hair	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
Sodium fluoride	Ingestion	bone, teeth, nails, and/or hair	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL 0.33 mg/kg/day	environmental exposure

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Thickener	Inhalation	respiratory system silicosis	Not classified	Human	NOAEL Not available	occupational exposure
Ethyl alcohol	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Rabbit	LOAEL 124 mg/l	365 days
Ethyl alcohol	Inhalation	hematopoietic system immune system	Not classified	Rat	NOAEL 25 mg/l	14 days
Ethyl alcohol	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 8,000 mg/kg/day	4 months
Ethyl alcohol	Ingestion	kidney and/or bladder	Not classified	Dog	NOAEL 3,000 mg/kg/day	7 days
Flavor enhancer	Inhalation	eyes kidney and/or bladder respiratory system	Not classified	Dog	NOAEL 3.5 mg/l	14 days
Flavor enhancer	Ingestion	kidney and/or bladder	Not classified	Mouse	NOAEL 0.02 in the diet	106 weeks
Flavor enhancer	Ingestion	heart endocrine system hematopoietic system liver nervous system eyes respiratory system	Not classified	Rat	NOAEL 20,000 mg/kg/day	13 weeks

Aspiration Hazard

Name	Value
n-Hexane	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:

Not chronically toxic to aquatic life by GHS criteria.

No product test data available.

Material	CAS Nbr	Organism	Type	Exposure	Test endpoint	Test result
Pentaerythritol glycerol ester of colophony resin	Trade Secret	Fathead minnow	Experimental	96 hours	LL50	>100 mg/l
Pentaerythritol glycerol ester of colophony resin	Trade Secret	Green algae	Experimental	72 hours	EL50	>100 mg/l
Pentaerythritol glycerol ester of colophony resin	Trade Secret	Water flea	Experimental	48 hours	EL50	>100 mg/l

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Pentaerythritol glycerol ester of colophony resin	Trade Secret	Green algae	Experimental	72 hours	NOEL	>100 mg/l
n-Hexane	110-54-3	Fathead minnow	Experimental	96 hours	LC50	2.5 mg/l
n-Hexane	110-54-3	Water flea	Experimental	48 hours	LC50	3.9 mg/l
Ethyl alcohol	64-17-5	Fathead minnow	Experimental	96 hours	LC50	14,200 mg/l
Ethyl alcohol	64-17-5	Fish	Experimental	96 hours	LC50	11,000 mg/l
Ethyl alcohol	64-17-5	Green algae	Experimental	72 hours	EC50	275 mg/l
Ethyl alcohol	64-17-5	Water flea	Experimental	48 hours	LC50	5,012 mg/l
Ethyl alcohol	64-17-5	Green algae	Experimental	72 hours	ErC10	11.5 mg/l
Ethyl alcohol	64-17-5	Water flea	Experimental	10 days	NOEC	9.6 mg/l
Flavor enhancer	Trade Secret	Water flea	Experimental	48 hours	LC50	48,500 mg/l
Sodium fluoride	7681-49-4	Green algae	Estimated	96 hours	EbC50	95 mg/l
Sodium fluoride	7681-49-4	Invertebrate	Estimated	96 hours	EC50	57 mg/l
Sodium fluoride	7681-49-4	Mysid Shrimp	Estimated	96 hours	EC50	23.2 mg/l
Sodium fluoride	7681-49-4	Rainbow trout	Estimated	96 hours	LC50	110 mg/l
Sodium fluoride	7681-49-4	Rainbow trout	Estimated	21 days	NOEC	8 mg/l
Sodium fluoride	7681-49-4	Water flea	Experimental	21 days	NOEC	8.2 mg/l
Sodium fluoride	7681-49-4	Soil microbes	Analogous Compound	63 days	NOEC	106 mg/kg (Dry Weight)
Sodium fluoride	7681-49-4	Arthropod	Experimental	126 days	NOEC	800 mg/kg (Dry Weight)
Sodium fluoride	7681-49-4	Bacteria	Experimental	16 hours	NOEC	231 mg/l
Sodium fluoride	7681-49-4	Redworm	Experimental	154 days	NOEC	1,200 mg/kg (Dry Weight)
Thickener	Trade Secret	Green algae	Analogous Compound	72 hours	ErC50	>173.1 mg/l
Thickener	Trade Secret	Sediment organism	Analogous Compound	96 hours	EC50	8,500 mg/kg (Dry Weight)
Thickener	Trade Secret	Water flea	Analogous Compound	24 hours	EL50	>10,000 mg/l
Thickener	Trade Secret	Zebra Fish	Analogous Compound	96 hours	LL50	>10,000 mg/l
Thickener	Trade Secret	Green algae	Analogous Compound	72 hours	NOEC	173.1 mg/l
Thickener	Trade Secret	Water flea	Analogous Compound	21 days	NOEC	68 mg/l
Thickener	Trade Secret	Activated sludge	Experimental	3 hours	EC50	>1,000 mg/l

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Pentaerythritol glycerol ester of colophony resin	Trade Secret	Experimental Biodegradation	28 days	CO2 evolution	0 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2
n-Hexane	110-54-3	Experimental Bioconcentration	28 days	BOD	100 %BOD/ThOD	OECD 301C - MITI test (I)
n-Hexane	110-54-3	Experimental Photolysis		Photolytic half-life (in air)	5.4 days (t 1/2)	
Ethyl alcohol	64-17-5	Experimental Biodegradation	14 days	BOD	89 %BOD/ThOD	OECD 301C - MITI test (I)
Flavor enhancer	Trade Secret	Experimental Biodegradation	14 days	BOD	82 %BOD/ThOD	OECD 301C - MITI test (I)
Sodium fluoride	7681-49-4	Data not available-insufficient	N/A	N/A	N/A	N/A
Thickener	Trade Secret	Data not available-insufficient	N/A	N/A	N/A	N/A

12.3 : Bioaccumulative potential

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
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Pentaerythritol glycerol ester of colophony resin	Trade Secret	Experimental Bioconcentration		Log Kow	3.6	
n-Hexane	110-54-3	Modeled Bioconcentration		Bioaccumulation factor	50	Catalogic™
Ethyl alcohol	64-17-5	Experimental Bioconcentration		Log Kow	-0.35	
Flavor enhancer	Trade Secret	Modeled Bioconcentration		Bioaccumulation factor	2.3	Catalogic™
Flavor enhancer	Trade Secret	Modeled Bioconcentration		Log Kow	-2.6	Episuite™
Sodium fluoride	7681-49-4	Experimental BCF - Fish	28 days	Bioaccumulation factor	≤ 6.4	OECD305-Bioconcentration
Thickener	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A

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**

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

Incinerate in a permitted waste incineration facility.

SECTION 14: Transport Information**International Regulations**

UN No.: None assigned

UN Proper shipping name: None assigned

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.

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

Environmental Protection and Management (Hazardous Substances) 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