Safety Data Sheet

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

Document group:	16-5643-8	**Version number:**	2.00
Issue Date:	18/03/2024	**Supersedes date:**	03/03/2021

IDENTIFICATION

1.1. Product identifier
3M™ Impregum™ Penta™/ Impregum™ Penta™ Medium Body / Impregum™ Penta™ L DuoSoft/ Impregum™ Soft LB (31615, 31616, 31642, 31644, 31684, 31744, 31745, 31746, 31747, 31791, 31793, 77796)

1.2. Recommended use and restrictions on use

Recommended use
Dental Product, Dental Impression Material

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

Company Emergency Hotline: +65 6591 6601 (8.15am - 5.00pm, Monday - Friday)

This product is a kit or a multipart product which consists of multiple, independently packaged components. An SDS for each of these components is included. Please do not separate the component SDSs from this cover page. The document numbers of the SDSs for components of this product are:

16-5547-1, 16-5550-5

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

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

Safety Data Sheet

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

Document group:	16-5547-1	**Version number:**	2.01
Issue Date:	07/08/2024	**Supersedes date:**	18/03/2024

SECTION 1: Identification

1.1. Product identifier
3M™ Impregum™ Penta™ / Impregum™ Penta™ Medium Body / Impregum™ Penta™ L DuoSoft/ Impregum™ Penta™ Soft LB Base

1.2. Recommended use and restrictions on use

Recommended use
Dental Product, Impression material

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
Serious Eye Damage/Irritation: Category 2.
Skin Sensitizer: Category 1.
Reproductive Toxicity: Category 1B.
Acute Aquatic Toxicity: Category 1.
Chronic Aquatic Toxicity: Category 1.

2.2. Label elements
SIGNAL WORD
DANGER!

Symbols
Exclamation mark |Health Hazard | Environment |

Pictograms

HAZARD STATEMENTS

H319	Causes serious eye irritation.
H317	May cause an allergic skin reaction.
H360	May damage fertility or the unborn child.
H410	Very toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS

Prevention:

P201	Obtain special instructions before use.
P273	Avoid release to the environment.
P280E	Wear protective gloves.

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.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P391	Collect spillage.

2.3. Other hazards

None known.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	CAS Nbr	% by Wt
Furan, tetrahydro-, polymer with oxirane, bis[[3-(1-aziridinyl)butyl]carbamate]	110531-92-5	50 - 70
Oxirane, polymer with tetrahydrofuran diacetate	91825-26-2	1 - 20
DIATOMACEOUS EARTH	67701-27-3	1 - 20
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	68855-54-9	1 - 20
Benzene, bis(phenylmethyl)-, ar-methyl deriv.	53585-53-8	5 - 15
1-Dodecylimidazole	4303-67-7	< 1
2-Cyclohexen-1-one, 2-methyl-5-(1-methylethenyl)-, (R)-	6485-40-1	< 0.3
(S)-(-)-P-MENTHA-1,8-DIENE	5989-54-8	< 0.2
Cyclohexanone, 5-methyl-2-(1-methylethyl)-, (2S-trans)-	14073-97-3	<= 0.1

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

Allergic skin reaction (redness, swelling, blistering, and itching).

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	Condition
Carbon monoxide.	During combustion.
Carbon dioxide.	During combustion.
Irritant vapours or gases.	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. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. 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
Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. 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
Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapours/spray. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidising agents (eg. chlorine, chromic acid etc.) Do not get in eyes. Use personal protective equipment (eg. gloves, respirators…) as required. A no-touch technique is recommended. If skin contact occurs, wash skin with soap and water. If product contacts glove, remove and discard glove, wash hands immediately with soap and water and then re-glove.

7.2. Conditions for safe storage including any incompatibilities
Store away from heat. Store away from acids. Store away from strong bases. 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
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	68855-54-9	Singapore PELs	TWA(8 hours):10 mg/m3	
Particles (insoluble or poorly soluble) not otherwise specified, inhalable particles	68855-54-9	ACGIH	TWA(inhalable particulates):10 mg/m3	
Particles (insoluble or poorly soluble) not otherwise specified, respirable particles	68855-54-9	ACGIH	TWA(respirable particles):3 mg/m3	

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	Solid.
Specific Physical Form:	Paste
Color	Purple
Odor	Moderate Honey
Odour threshold	*No data available.*
pH	*Not applicable.*
Melting point/Freezing point	*Not applicable.*
Boiling point/Initial boiling point/Boiling range	*Not applicable.*
Flash point	Flash point > 93 °C (200 °F)
Evaporation rate	*Not applicable.*
Flammability	Not applicable.
Flammable Limits(LEL)	*Not applicable.*
Flammable Limits(UEL)	*Not applicable.*
Vapour pressure	*No data available.*
Vapor Density and/or Relative Vapor Density	*No data available.*
Density	1 g/cm3 - 1.2 g/cm3
Relative density	> 1 [*Ref Std:*WATER=1]
Water solubility	Negligible
Solubility- non-water	*No data available.*
Partition coefficient: n-octanol/water	*No data available.*
Autoignition temperature	*No data available.*
Decomposition temperature	*No data available.*
Kinematic Viscosity	*No data available.*
Volatile organic compounds (VOC)	*No data available.*
Percent volatile	*No data available.*
VOC less H2O & exempt solvents	*No data available.*
Molecular weight	*No data available.*

Particle Characteristics	*Not applicable.*

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
Heat.

10.5 Incompatible materials
Strong acids.
Strong bases.
Strong oxidising 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 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
This product may have a characteristic odour; however, no adverse health effects are anticipated.

Skin contact
Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness. Allergic skin reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

Eye contact
Moderate eye irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

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.

Carcinogenicity:
Exposures needed to cause the following health effect(s) are not expected during normal, intended use:
Contains a chemical or chemicals which can cause cancer.

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
Furan, tetrahydro-, polymer with oxirane, bis[[3-(1-aziridinyl)butyl]carbamate]	Dermal	Professional judgement	LD50 Not applicable
Furan, tetrahydro-, polymer with oxirane, bis[[3-(1-	Ingestion	Rat	LD50 > 2,000 mg/kg

aziridinyl)butyl]carbamate]			
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 2.7 mg/l
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	Ingestion	Rat	LD50 > 2,000 mg/kg
DIATOMACEOUS EARTH	Dermal	similar compounds	LD50 > 2,000 mg/kg
DIATOMACEOUS EARTH	Inhalation-Dust/Mist (4 hours)	similar compounds	LC50 > 2.8 mg/l
DIATOMACEOUS EARTH	Ingestion	similar compounds	LD50 > 2,000 mg/kg
Benzene, bis(phenylmethyl)-, ar-methyl deriv.	Dermal	Rat	LD50 > 2,000 mg/kg
Benzene, bis(phenylmethyl)-, ar-methyl deriv.	Ingestion	Rat	LD50 > 10,360 mg/kg
Oxirane, polymer with tetrahydrofuran diacetate	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
Oxirane, polymer with tetrahydrofuran diacetate	Ingestion	Rat	LD50 > 2,000 mg/kg
1-Dodecylimidazole	Ingestion	Rat	LD50 641 mg/kg
2-Cyclohexen-1-one, 2-methyl-5-(1-methylethenyl)-, (R)-	Dermal	Rat	LD50 > 2,000 mg/kg
2-Cyclohexen-1-one, 2-methyl-5-(1-methylethenyl)-, (R)-	Ingestion	Rat	LD50 4,900 mg/kg
2-Cyclohexen-1-one, 2-methyl-5-(1-methylethenyl)-, (R)-	Inhalation-Dust/Mist (4 hours)	similar compounds	LC50 > 5.66 mg/l
(S)-(-)-P-MENTHA-1,8-DIENE	Inhalation-Vapor (4 hours)	Mouse	LC50 > 3.14 mg/l
Cyclohexanone, 5-methyl-2-(1-methylethyl)-, (2S-trans)-	Ingestion	Multiple animal species	LD50 > 2,000 mg/kg
(S)-(-)-P-MENTHA-1,8-DIENE	Dermal	Rabbit	LD50 > 5,000 mg/kg
Cyclohexanone, 5-methyl-2-(1-methylethyl)-, (2S-trans)-	Dermal	Rabbit	LD50 > 5,000 mg/kg
(S)-(-)-P-MENTHA-1,8-DIENE	Ingestion	Rat	LD50 4,400 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Furan, tetrahydro-, polymer with oxirane, bis[[3-(1-aziridinyl)butyl]carbamate]	Rabbit	No significant irritation
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	In vitro data	No significant irritation
DIATOMACEOUS EARTH	similar compounds	No significant irritation
Benzene, bis(phenylmethyl)-, ar-methyl deriv.	Rabbit	Mild irritant
1-Dodecylimidazole	Rabbit	Mild irritant
2-Cyclohexen-1-one, 2-methyl-5-(1-methylethenyl)-, (R)-	Human and animal	No significant irritation
(S)-(-)-P-MENTHA-1,8-DIENE	Rabbit	Irritant
Cyclohexanone, 5-methyl-2-(1-methylethyl)-, (2S-trans)-	In vitro data	Irritant

Serious Eye Damage/Irritation

Name	Species	Value
Furan, tetrahydro-, polymer with oxirane, bis[[3-(1-aziridinyl)butyl]carbamate]	Rabbit	Moderate irritant
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	Rabbit	Mild irritant

DIATOMACEOUS EARTH	similar compounds	No significant irritation
Benzene, bis(phenylmethyl)-, ar-methyl deriv.	Rabbit	No significant irritation
1-Dodecylimidazole	In vitro data	Severe irritant
2-Cyclohexen-1-one, 2-methyl-5-(1-methylethenyl)-, (R)-	Rabbit	No significant irritation
(S)-(-)-P-MENTHA-1,8-DIENE	Rabbit	Mild irritant
Cyclohexanone, 5-methyl-2-(1-methylethyl)-, (2S-trans)-	In vitro data	No significant irritation

Sensitization:

Skin Sensitisation

Name	Species	Value
Furan, tetrahydro-, polymer with oxirane, bis[[3-(1-aziridinyl)butyl]carbamate]	Guinea pig	Not classified
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	Mouse	Not classified
DIATOMACEOUS EARTH	similar compounds	Not classified
Benzene, bis(phenylmethyl)-, ar-methyl deriv.	Guinea pig	Not classified
1-Dodecylimidazole	Mouse	Sensitising
2-Cyclohexen-1-one, 2-methyl-5-(1-methylethenyl)-, (R)-	Multiple animal species	Sensitising
(S)-(-)-P-MENTHA-1,8-DIENE	Mouse	Sensitising
Cyclohexanone, 5-methyl-2-(1-methylethyl)-, (2S-trans)-	Mouse	Sensitising

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
Furan, tetrahydro-, polymer with oxirane, bis[[3-(1-aziridinyl)butyl]carbamate]	In Vitro	Not mutagenic
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	In Vitro	Some positive data exist, but the data are not sufficient for classification
DIATOMACEOUS EARTH	In Vitro	Not mutagenic
Benzene, bis(phenylmethyl)-, ar-methyl deriv.	In Vitro	Not mutagenic
Benzene, bis(phenylmethyl)-, ar-methyl deriv.	In vivo	Not mutagenic
Oxirane, polymer with tetrahydrofuran diacetate	In Vitro	Not mutagenic
1-Dodecylimidazole	In Vitro	Not mutagenic
2-Cyclohexen-1-one, 2-methyl-5-(1-methylethenyl)-, (R)-	In Vitro	Not mutagenic
(S)-(-)-P-MENTHA-1,8-DIENE	In Vitro	Not mutagenic
(S)-(-)-P-MENTHA-1,8-DIENE	In vivo	Not mutagenic
Cyclohexanone, 5-methyl-2-(1-methylethyl)-, (2S-trans)-	In Vitro	Not mutagenic
Cyclohexanone, 5-methyl-2-(1-methylethyl)-, (2S-trans)-	In vivo	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	Inhalation	Human and animal	Carcinogenic.
(S)-(-)-P-MENTHA-1,8-DIENE	Ingestion	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
Benzene, bis(phenylmethyl)-, ar-methyl deriv.	Ingestion	Toxic to male reproduction	Rat	NOAEL 250 mg/kg/day	28 days
Benzene, bis(phenylmethyl)-, ar-methyl deriv.	Ingestion	Toxic to female reproduction	Rat	NOAEL 250 mg/kg/day	premating into lactation
Benzene, bis(phenylmethyl)-, ar-methyl deriv.	Ingestion	Toxic to development	Rabbit	LOAEL 10 mg/kg/day	during gestation
2-Cyclohexen-1-one, 2-methyl-5-(1-methylethenyl)-, (R)-	Ingestion	Not classified for development	Rat	NOAEL 250 mg/kg/day	during gestation
(S)-(-)-P-MENTHA-1,8-DIENE	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	premating & during gestation
(S)-(-)-P-MENTHA-1,8-DIENE	Ingestion	Not classified for development	Multiple animal species	NOAEL 591 mg/kg/day	during organogenesis

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Benzene, bis(phenylmethyl)-, ar-methyl deriv.	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL not available	
(S)-(-)-P-MENTHA-1,8-DIENE	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
(S)-(-)-P-MENTHA-1,8-DIENE	Ingestion	nervous system	Not classified		NOAEL Not available	
Cyclohexanone, 5-methyl-2-(1-methylethyl)-, (2S-trans)-	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
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	Inhalation	silicosis	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	Ingestion	hematopoietic system | eyes | kidney and/or bladder	Not classified	Rat	NOAEL 3,738 mg/kg/day	90 days
Benzene, bis(phenylmethyl)-, ar-methyl deriv.	Ingestion	liver | kidney and/or bladder | heart | skin | endocrine system | gastrointestinal tract | 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	120 days
(S)-(-)-P-MENTHA-1,8-DIENE	Ingestion	kidney and/or bladder	Not classified	Rat	LOAEL 75 mg/kg/day	103 weeks
(S)-(-)-P-MENTHA-1,8-DIENE	Ingestion	liver	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
(S)-(-)-P-MENTHA-1,8-DIENE	Ingestion	heart | endocrine system | bone, teeth, nails, and/or hair | hematopoietic	Not classified	Rat	NOAEL 600 mg/kg/day	103 weeks

		system | immune system | muscles | nervous system | respiratory system				

Aspiration Hazard

Name	Value
Benzene, bis(phenylmethyl)-, ar-methyl deriv.	Aspiration hazard
(S)-(-)-P-MENTHA-1,8-DIENE	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 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 Nbr	Organism	Type	Exposure	Test endpoint	Test result
Furan, tetrahydro-, polymer with oxirane, bis[[3-(1-aziridinyl)butyl]carbamate]	110531-92-5	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
DIATOMACEOUS EARTH	67701-27-3	Green algae	Estimated	72 hours	EC50	>100 mg/l
DIATOMACEOUS EARTH	67701-27-3	Water flea	Estimated	48 hours	EC50	>100 mg/l
DIATOMACEOUS EARTH	67701-27-3	Zebra Fish	Estimated	96 hours	LC50	>100 mg/l
DIATOMACEOUS EARTH	67701-27-3	Green algae	Estimated	72 hours	NOEC	100 mg/l
DIATOMACEOUS EARTH	67701-27-3	Water flea	Estimated	21 days	NOEC	100 mg/l
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	68855-54-9	Green algae	Experimental	72 hours	No tox obs at lmt of water sol	>100 mg/l
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	68855-54-9	Rainbow trout	Experimental	96 hours	No tox obs at lmt of water sol	>100 mg/l
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	68855-54-9	Water flea	Experimental	48 hours	No tox obs at lmt of water sol	>100 mg/l
Flux calcined diatomaceous earth (cristobalite 1 -	68855-54-9	Green algae	Experimental	72 hours	No tox obs at lmt of water sol	>100 mg/l

<10%)						
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	68855-54-9	Activated sludge	Experimental	3 hours	EC50	>1,000 mg/l
Oxirane, polymer with tetrahydrofuran diacetate	91825-26-2	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
Benzene, bis(phenylmethyl)-, ar-methyl deriv.	53585-53-8	Bacteria	Experimental	4.92 hours	EC10	>1,000 mg/l
Benzene, bis(phenylmethyl)-, ar-methyl deriv.	53585-53-8	Copepod	Experimental	48 hours	LC50	>0.0206 mg/l
Benzene, bis(phenylmethyl)-, ar-methyl deriv.	53585-53-8	Green algae	Experimental	96 hours	EC50	0.019 mg/l
Benzene, bis(phenylmethyl)-, ar-methyl deriv.	53585-53-8	Water flea	Experimental	48 hours	EC50	>0.029 mg/l
Benzene, bis(phenylmethyl)-, ar-methyl deriv.	53585-53-8	Zebra Fish	Experimental	96 hours	No tox obs at lmt of water sol	>100 mg/l
Benzene, bis(phenylmethyl)-, ar-methyl deriv.	53585-53-8	Green algae	Experimental	96 hours	EC10	0.006 mg/l
Benzene, bis(phenylmethyl)-, ar-methyl deriv.	53585-53-8	Water flea	Experimental	21 days	NOEC	0.03 mg/l
1-Dodecylimidazole	4303-67-7	Green algae	Experimental	72 hours	ErC50	0.00557 mg/l
1-Dodecylimidazole	4303-67-7	Water flea	Experimental	48 hours	EC50	>100 mg/l
1-Dodecylimidazole	4303-67-7	Green algae	Experimental	72 hours	ErC10	0.0021 mg/l
2-Cyclohexen-1-one, 2-methyl-5-(1-methylethenyl)-, (R)-	6485-40-1	Green algae	Experimental	72 hours	EC50	19 mg/l
2-Cyclohexen-1-one, 2-methyl-5-(1-methylethenyl)-, (R)-	6485-40-1	Rainbow trout	Experimental	96 hours	LC50	6.1 mg/l
2-Cyclohexen-1-one, 2-methyl-5-(1-methylethenyl)-, (R)-	6485-40-1	Water flea	Experimental	48 hours	EC50	38 mg/l
2-Cyclohexen-1-one, 2-methyl-5-(1-methylethenyl)-, (R)-	6485-40-1	Green algae	Experimental	72 hours	NOEC	4.3 mg/l
(S)-(-)-P-MENTHA-1,8-DIENE	5989-54-8	Fathead minnow	Analogous Compound	96 hours	LC50	0.702 mg/l
(S)-(-)-P-MENTHA-1,8-DIENE	5989-54-8	Green algae	Analogous Compound	72 hours	ErC50	0.32 mg/l
(S)-(-)-P-MENTHA-1,8-DIENE	5989-54-8	Water flea	Analogous Compound	48 hours	EC50	0.307 mg/l
(S)-(-)-P-MENTHA-1,8-DIENE	5989-54-8	Fathead minnow	Analogous Compound	8 days	EC10	0.32 mg/l
(S)-(-)-P-MENTHA-1,8-DIENE	5989-54-8	Green algae	Analogous Compound	72 hours	ErC10	0.174 mg/l
(S)-(-)-P-	5989-54-8	Water flea	Analogous	21 days	NOEC	0.153 mg/l

MENTHA-1,8-DIENE			Compound			
(S)-(-)-P-MENTHA-1,8-DIENE	5989-54-8	Activated sludge	Analogous Compound	3 hours	EC50	209 mg/l
Cyclohexanone, 5-methyl-2-(1-methylethyl)-, (2S-trans)-	14073-97-3	Green algae	Experimental	72 hours	EC50	58 mg/l
Cyclohexanone, 5-methyl-2-(1-methylethyl)-, (2S-trans)-	14073-97-3	Water flea	Experimental	48 hours	EC50	30.6 mg/l
Cyclohexanone, 5-methyl-2-(1-methylethyl)-, (2S-trans)-	14073-97-3	Zebra Fish	Experimental	96 hours	LC50	15.6 mg/l
Cyclohexanone, 5-methyl-2-(1-methylethyl)-, (2S-trans)-	14073-97-3	Green algae	Experimental	72 hours	NOEC	10 mg/l

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Furan, tetrahydro-, polymer with oxirane, bis[[3-(1-aziridinyl)butyl]carbamate]	110531-92-5	Data not available-insufficient	N/A	N/A	N/A	N/A
DIATOMACEOUS EARTH	67701-27-3	Estimated Biodegradation	28 days	BOD	79 %BOD/ThOD	OECD 301F - Manometric respirometry
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	68855-54-9	Data not available-insufficient	N/A	N/A	N/A	N/A
Oxirane, polymer with tetrahydrofuran diacetate	91825-26-2	Data not available-insufficient	N/A	N/A	N/A	N/A
Benzene, bis(phenylmethyl)-, ar-methyl deriv.	53585-53-8	Experimental Biodegradation	28 days	BOD	0.5 %BOD/ThOD	OECD 301D - Closed bottle test
1-Dodecylimidazole	4303-67-7	Experimental Biodegradation	28 days	CO2 evolution	2-3 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2
2-Cyclohexen-1-one, 2-methyl-5-(1-methylethenyl)-, (R)-	6485-40-1	Experimental Biodegradation	28 days	BOD	90 %BOD/ThOD	OECD 301F - Manometric respirometry
2-Cyclohexen-1-one, 2-methyl-5-(1-methylethenyl)-, (R)-	6485-40-1	Estimated Photolysis		Photolytic half-life (in air)	2.7 hours (t 1/2)	
(S)-(-)-P-MENTHA-1,8-DIENE	5989-54-8	Experimental Biodegradation	28 days	BOD	85 %BOD/ThOD	OECD 301D - Closed bottle test
(S)-(-)-P-MENTHA-1,8-DIENE	5989-54-8	Analogous Compound Photolysis		Photolytic half-life (in air)	2.3 hours (t 1/2)	
Cyclohexanone, 5-methyl-2-(1-methylethyl)-, (2S-	14073-97-3	Analogous Compound Biodegradation	28 days	BOD	63 %BOD/ThOD	EC C.4.E Closed Bottle Test

trans)-						

12.3 : Bioaccumulative potential

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Furan, tetrahydro-, polymer with oxirane, bis[[3-(1-aziridinyl)butyl]carbamate]	110531-92-5	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
DIATOMACEOUS EARTH	67701-27-3	Estimated Bioconcentration		Bioaccumulation factor	7.4	
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	68855-54-9	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Oxirane, polymer with tetrahydrofuran diacetate	91825-26-2	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Benzene, bis(phenylmethyl)-, ar-methyl deriv.	53585-53-8	Experimental BCF - Fish	56 days	Bioaccumulation factor	6300	OECD305-Bioconcentration
1-Dodecylimidazole	4303-67-7	Modeled Bioconcentration		Bioaccumulation factor	3090	Catalogic™
2-Cyclohexen-1-one, 2-methyl-5-(1-methylethenyl)-, (R)-	6485-40-1	Experimental Bioconcentration		Log Kow	2.74	
(S)-(-)-P-MENTHA-1,8-DIENE	5989-54-8	Modeled Bioconcentration		Bioaccumulation factor	630	Catalogic™
(S)-(-)-P-MENTHA-1,8-DIENE	5989-54-8	Experimental Bioconcentration		Log Kow	4.5	similar to OECD 107
Cyclohexanone, 5-methyl-2-(1-methylethyl)-, (2S-trans)-	14073-97-3	Experimental Bioconcentration		Log Kow	3.05	

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.

Dispose of waste product in a permitted industrial waste 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

Safety Data Sheet

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

Document group:	16-5550-5	**Version number:**	2.01
Issue Date:	16/08/2024	**Supersedes date:**	18/03/2024

SECTION 1: Identification

1.1. Product identifier
3M™ Impregum™ Penta™ / Impregum™ Penta™ Medium Body / Impregum™ Penta™ L DuoSoft/ Impregum™ Penta™ Soft LB Catalyst

1.2. Recommended use and restrictions on use

Recommended use
Dental Product, Impression material

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
Skin Sensitizer: Category 1.
Reproductive Toxicity: Category 2.
Specific Target Organ Toxicity (repeated exposure): Category 1.

2.2. Label elements
SIGNAL WORD
DANGER!

Symbols
Exclamation mark |Health Hazard |

Pictograms

HAZARD STATEMENTS

H317	May cause an allergic skin reaction.
H361	Suspected of damaging fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure: blood or blood-forming organs.
H373	May cause damage to organs through prolonged or repeated exposure: respiratory system | sensory organs.

PRECAUTIONARY STATEMENTS

Prevention:

P280E	Wear protective gloves.

Response:

P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.

2.3. Other hazards

None known.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	CAS Nbr	% by Wt
Citric Ester	77-90-7	35 - 50
Silane Treatead Silica	68909-20-6	20 - 30
Sulfonium Salt	72140-65-9	15 - 30
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	68855-54-9	1 - 20
Polyethylene-Polypropylene Glycol	9003-11-6	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

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

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	Condition
Carbon monoxide.	During combustion.
Carbon dioxide.	During combustion.
Irritant vapours or gases.	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. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. 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
Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. 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
Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapours/spray. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidising agents (eg. chlorine, chromic acid etc.) Do not get in eyes. Use personal protective equipment (eg. gloves, respirators…) as required. A no-touch technique is recommended. If skin contact occurs, wash skin with soap and water. If product contacts glove, remove and discard glove, wash hands immediately with soap and water and then re-glove.

7.2. Conditions for safe storage including any incompatibilities
Store away from heat. Store away from acids. Store away from strong bases. 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
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	68855-54-9	Singapore PELs	TWA(8 hours):10 mg/m3	
Particles (insoluble or poorly soluble) not otherwise specified, inhalable particles	68855-54-9	ACGIH	TWA(inhalable particulates):10 mg/m3	
Particles (insoluble or poorly soluble) not otherwise specified, respirable particles	68855-54-9	ACGIH	TWA(respirable particles):3 mg/m3	

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	Solid.
Specific Physical Form:	Paste
Color	Dark Red
Odor	Slight Acrid
Odour threshold	*No data available.*
pH	*Not applicable.*
Melting point/Freezing point	*Not applicable.*
Boiling point/Initial boiling point/Boiling range	*Not applicable.*
Flash point	Flash point > 93 °C (200 °F)
Evaporation rate	*No data available.*
Flammability	Not applicable.

Flammable Limits(LEL)	*Not applicable.*
Flammable Limits(UEL)	*Not applicable.*
Vapour pressure	*No data available.*
Vapor Density and/or Relative Vapor Density	*No data available.*
Density	1.1 g/cm3 - 1.4 g/cm3
Relative density	>= 1 [*Ref Std:*WATER=1]
Water solubility	Negligible
Solubility- non-water	*No data available.*
Partition coefficient: n-octanol/water	*No data available.*
Autoignition temperature	*Not applicable.*
Decomposition temperature	*No data available.*
Kinematic Viscosity	*No data available.*
Volatile organic compounds (VOC)	*Not applicable.*
Percent volatile	*Not applicable.*
VOC less H2O & exempt solvents	*Not applicable.*
Molecular weight	*No data available.*

Particle Characteristics	*Not applicable.*

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
Heat.

10.5 Incompatible materials
Strong acids.
Strong bases.
Strong oxidising 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 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
This product may have a characteristic odour; however, no adverse health effects are anticipated.

Skin contact
Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness. Allergic skin reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

Eye contact
Contact with the eyes during product use is not expected to result in significant irritation.

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:

Prolonged or repeated exposure may cause target organ effects:
Ocular effects: Signs/symptoms may include blurred or significantly impaired vision. Bone marrow effects: Signs/symptoms may include generalised weakness, pallor of the skin, fatty infiltration of the bone marrow, decreases in the numbers of circulating blood cells, increased susceptibility to infection. Respiratory effects: Signs/symptoms may include cough, shortness of breath, chest tightness, wheezing, increased heart rate, bluish coloured skin (cyanosis), sputum production, changes in lung function tests, and respiratory failure.

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

Carcinogenicity:
Exposures needed to cause the following health effect(s) are not expected during normal, intended use:
Contains a chemical or chemicals which can cause cancer.

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		No data available; calculated ATE >2,000 - =5,000 mg/kg
Citric Ester	Ingestion	Rat	LD50 > 31,500 mg/kg
Citric Ester	Dermal	similar health hazards	LD50 estimated to be > 5,000 mg/kg
Silane Treatead Silica	Ingestion	Rat	LD50 > 2,000 mg/kg
Silane Treatead Silica	Dermal	similar health hazards	LD50 estimated to be > 5,000 mg/kg
Sulfonium Salt	Dermal	Rat	LD50 > 2,000 mg/kg
Sulfonium Salt	Ingestion	Rat	LD50 300-2,000 mg/kg
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	Dermal	Professional judgeme	LD50 estimated to be > 5,000 mg/kg

		nt	
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 2.7 mg/l
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	Ingestion	Rat	LD50 > 2,000 mg/kg
Polyethylene-Polypropylene Glycol	Dermal	similar compounds	LD50 > 2,000 mg/kg
Polyethylene-Polypropylene Glycol	Ingestion	similar compounds	LD50 > 5,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Citric Ester	Rabbit	No significant irritation
Silane Treatead Silica	Rabbit	No significant irritation
Sulfonium Salt	Rabbit	Mild irritant
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	In vitro data	No significant irritation
Polyethylene-Polypropylene Glycol	similar compounds	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Citric Ester	Rabbit	Mild irritant
Silane Treatead Silica	Rabbit	No significant irritation
Sulfonium Salt	Rabbit	Mild irritant
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	Rabbit	Mild irritant
Polyethylene-Polypropylene Glycol	similar compounds	No significant irritation

Sensitization:

Skin Sensitisation

Name	Species	Value
Citric Ester	Guinea pig	Not classified
Silane Treatead Silica	Guinea pig	Not classified
Sulfonium Salt	Mouse	Sensitising
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	Mouse	Not classified
Polyethylene-Polypropylene Glycol	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
Citric Ester	In Vitro	Not mutagenic
Citric Ester	In vivo	Not mutagenic
Silane Treatead Silica	In Vitro	Not mutagenic
Sulfonium Salt	In Vitro	Not mutagenic
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	In Vitro	Some positive data exist, but the data are not sufficient for classification

Polyethylene-Polypropylene Glycol	In Vitro	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Citric Ester	Ingestion	Rat	Not carcinogenic
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	Inhalation	Human and animal	Carcinogenic.

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
Citric Ester	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	2 generation
Citric Ester	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	2 generation
Citric Ester	Ingestion	Not classified for development	Rat	NOAEL 100 mg/kg/day	2 generation
Silane Treatead Silica	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Silane Treatead Silica	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Sulfonium Salt	Ingestion	Not classified for development	Rat	NOAEL 100 mg/kg/day	premating into lactation
Sulfonium Salt	Ingestion	Toxic to female reproduction	Rat	NOAEL 30 mg/kg/day	premating into lactation
Sulfonium Salt	Ingestion	Toxic to male reproduction	Rat	NOAEL 30 mg/kg/day	30 days

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Sulfonium Salt	Ingestion	respiratory system	Not classified	Rat	NOAEL 300 mg/kg	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Citric Ester	Ingestion	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	2 years
Citric Ester	Ingestion	immune system | respiratory system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
Citric Ester	Ingestion	heart | endocrine system | hematopoietic system | nervous system | eyes | kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	2 years
Silane Treatead Silica	Inhalation	respiratory system	May cause damage to organs though prolonged or repeated exposure	Rat	LOAEL 0.035 mg/l	13 weeks
Silane Treatead Silica	Inhalation	hematopoietic system | kidney and/or bladder	Not classified	Rat	NOAEL 0.035 mg/l	13 weeks
Silane Treatead Silica	Ingestion	liver	Not classified	Rat	NOAEL	5 weeks

					1,000 mg/kg/day	
Sulfonium Salt	Ingestion	bone marrow	Causes damage to organs through prolonged or repeated exposure	Rat	NOAEL 10 mg/kg/day	30 days
Sulfonium Salt	Ingestion	respiratory system	May cause damage to organs though prolonged or repeated exposure	Rat	NOAEL 30 mg/kg/day	30 days
Sulfonium Salt	Ingestion	eyes	May cause damage to organs though prolonged or repeated exposure	Rat	NOAEL 100 mg/kg/day	30 days
Sulfonium Salt	Ingestion	hematopoietic system | liver | immune system | kidney and/or bladder	Not classified	Rat	NOAEL 300 mg/kg/day	30 days
Sulfonium Salt	Ingestion	gastrointestinal tract	Not classified	Rat	NOAEL 30 mg/kg/day	30 days
Sulfonium Salt	Ingestion	auditory system | heart | skin | endocrine system | bone, teeth, nails, and/or hair | muscles | nervous system | vascular system	Not classified	Rat	NOAEL 300 mg/kg/day	30 days
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	Inhalation	silicosis	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	Ingestion	hematopoietic system | eyes | kidney and/or bladder	Not classified	Rat	NOAEL 3,738 mg/kg/day	90 days

Aspiration Hazard
For the component/components, either no data are currently available or the data are 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.

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 2: Toxic 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
Citric Ester	77-90-7	Bluegill	Experimental	96 hours	LC50	38 mg/l
Citric Ester	77-90-7	Green algae	Experimental	72 hours	ErC50	74.4 mg/l
Citric Ester	77-90-7	Mummichog	Experimental	96 hours	LC50	59 mg/l
Citric Ester	77-90-7	Water flea	Experimental	48 hours	EC50	7.82 mg/l

Citric Ester	77-90-7	Fathead minnow	Experimental	7 days	NOEC	0.355 mg/l
Citric Ester	77-90-7	Green algae	Experimental	72 hours	NOEC	0.109 mg/l
Citric Ester	77-90-7	Water flea	Experimental	21 days	NOEC	>=1.11 mg/l
Citric Ester	77-90-7	Activated sludge	Experimental	3 hours	EC10	>1,000 mg/l
Silane Treatead Silica	68909-20-6	Algae or other aquatic plants	Estimated	72 hours	EC50	>100 mg/l
Sulfonium Salt	72140-65-9	Green algae	Analogous Compound	72 hours	No tox obs at lmt of water sol	>100 mg/l
Sulfonium Salt	72140-65-9	Water flea	Analogous Compound	48 hours	No tox obs at lmt of water sol	>100 mg/l
Sulfonium Salt	72140-65-9	Zebra Fish	Analogous Compound	96 hours	No tox obs at lmt of water sol	>100 mg/l
Sulfonium Salt	72140-65-9	Activated sludge	Experimental	3 hours	EC50	>1,000 mg/l
Sulfonium Salt	72140-65-9	Green algae	Analogous Compound	72 hours	No tox obs at lmt of water sol	>100 mg/l
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	68855-54-9	Green algae	Experimental	72 hours	No tox obs at lmt of water sol	>100 mg/l
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	68855-54-9	Rainbow trout	Experimental	96 hours	No tox obs at lmt of water sol	>100 mg/l
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	68855-54-9	Water flea	Experimental	48 hours	No tox obs at lmt of water sol	>100 mg/l
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	68855-54-9	Green algae	Experimental	72 hours	No tox obs at lmt of water sol	>100 mg/l
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	68855-54-9	Activated sludge	Experimental	3 hours	EC50	>1,000 mg/l
Polyethylene-Polypropylene Glycol	9003-11-6	N/A	Data not available or insufficient for classification	N/A	N/A	N/A

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Citric Ester	77-90-7	Experimental Biodegradation	28 days	BOD	16 %BOD/ThOD	OECD 301D - Closed bottle test
Citric Ester	77-90-7	Experimental Aquatic Inherent Biodegrad.	28 days	BOD	82 %BOD/ThOD	OECD 302C - Modified MITI (II)
Citric Ester	77-90-7	Experimental Soil Metabolism Aerobic	42 days	CO2 evolution	>60 %CO2 evolution/THCO2 evolution	835.3300 Soil Biodeg
Silane Treatead Silica	68909-20-6	Data not available-insufficient	N/A	N/A	N/A	N/A
Sulfonium Salt	72140-65-9	Hydrolysis product	28 days	Percent degraded	52 %degraded	Catalogic™
Sulfonium Salt	72140-65-9	Experimental Hydrolysis		Hydrolytic half-life	2.08 hours (t 1/2)	OECD 111 Hydrolysis func of pH
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	68855-54-9	Data not available-insufficient	N/A	N/A	N/A	N/A
Polyethylene-Polypropylene Glycol	9003-11-6	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
Citric Ester	77-90-7	Modeled Bioconcentration		Bioaccumulation factor	5.1	Catalogic™
Citric Ester	77-90-7	Experimental Bioconcentration		Log Kow	4.86	OECD 117 log Kow HPLC method
Silane Treatead Silica	68909-20-6	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Sulfonium Salt	72140-65-9	Experimental Bioconcentration		Log Kow	≤0.75	830.7550 Part.Coef Shake Flask
Sulfonium Salt	72140-65-9	Hydrolysis product		Log Kow	6.81	Episuite™
Flux calcined diatomaceous earth (cristobalite 1 - <10%)	68855-54-9	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Polyethylene-Polypropylene Glycol	9003-11-6	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.

Dispose of completely cured (or polymerized) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. If no other disposal options are available, waste product that has been completely cured or polymerized may be placed in a landfill properly designed for industrial waste.

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.

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