Safety Data Sheet

Document group:	18-1610-7	**Version number:**	10.00
Revision date:	23/01/2024	**Supersedes date:**	22/02/2023
Transportation version number:			

This Safety Data Sheet has been prepared in accordance with the REACH Regulation (EC) 1907/2006 and its modifications.

IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier
3M Applique Edge Sealer ES2000

Product Identification Numbers
70-0062-7013-9 70-2022-8147-6

7000048849 7100181764

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

Identified uses
Edge sealer for applique film.

1.3. Details of the supplier of the safety data sheet

Address: 3M Ireland Limited, The Iveagh Building, The Park, Carrickmines, Dublin 18.
Telephone: +353 1 280 3555
E Mail: tox.uk@mmm.com

Website: www.3M.com

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

This product is a kit or a multipart product which consists of multiple, independently packaged components. A Safety Data Sheet for each of these components is included. Please do not separate the component Safety Data Sheets from this cover page. The document numbers of the MSDSs for components of this product are:

16-4356-8, 18-1571-1

TRANSPORTATION INFORMATION

Refer to section 14 of the kit components for transport information.

KIT LABEL

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

CLASSIFICATION:
Skin Sensitization, Category 1 - Skin Sens. 1; H317
Specific Target Organ Toxicity-Single Exposure, Category 3 - STOT SE 3; H335
Hazardous to the Aquatic Environment (Chronic), Category 2 - Aquatic Chronic 2; H411

For full text of H phrases, see Section 16.

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

SIGNAL WORD
WARNING.

Symbols
GHS07 (Exclamation mark) |GHS09 (Environment) |

Pictograms

Contains:
3,3'-[(dibutylstannylene)bis(thio)]bis(propane-1,2-diol); HDI oligomers, isocyanurate; hexamethylene-di-isocyanate; Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate.

HAZARD STATEMENTS:

H317	May cause an allergic skin reaction.
H335	May cause respiratory irritation.
H411	Toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS

Prevention:

P261A	Avoid breathing vapours.
P273	Avoid release to the environment.
P280E	Wear protective gloves.

Response:

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

Refer to Safety Data Sheet for component % unknown values (www.3M.com/msds).

Information required per Regulation (EU) 2020/1149 as regards diisocyanates:
As from 24 August 2023 adequate training is required before industrial or professional use. Further information can

be found at feica.eu/Puinfo

Revision information:
Label: CLP Ingredients - kit components information was modified.

Safety Data Sheet

Document group:	16-4356-8	**Version number:**	10.01
Revision date:	23/01/2024	**Supersedes date:**	10/12/2021

This Safety Data Sheet has been prepared in accordance with the REACH Regulation (EC) 1907/2006 and its modifications.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
3M™ ES-2000 Edge Sealer, Part A

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

Identified uses
Edge sealer.

1.3. Details of the supplier of the safety data sheet

Address:	3M Ireland Limited, The Iveagh Building, The Park, Carrickmines, Dublin 18.
Telephone:	+353 1 280 3555
E Mail:	tox.uk@mmm.com
Website:	www.3M.com

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

SECTION 2: Hazard identification

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

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

CLASSIFICATION:
Skin Sensitization, Category 1 - Skin Sens. 1; H317
Specific Target Organ Toxicity-Single Exposure, Category 3 - STOT SE 3; H335

For full text of H phrases, see Section 16.

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

SIGNAL WORD
WARNING.

Symbols
GHS07 (Exclamation mark) |

Pictograms

Ingredients:

Ingredient	CAS Nbr	EC No.	% by Wt
HDI oligomers, isocyanurate		931-274-8	95 - 100
hexamethylene-di-isocyanate	822-06-0	212-485-8	<= 0.15

HAZARD STATEMENTS:

H317	May cause an allergic skin reaction.
H335	May cause respiratory irritation.

PRECAUTIONARY STATEMENTS

Prevention:

P261A	Avoid breathing vapours.
P280E	Wear protective gloves.

Response:

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

Information required per Regulation (EU) 2020/1149 as regards diisocyanates:
As from 24 August 2023 adequate training is required before industrial or professional use. Further information can be found at feica.eu/Puinfo

2.3. Other hazards

Persons previously sensitised to isocyanates may develop a cross-sensitisation reaction to other isocyanates.
This material does not contain any substances that are assessed to be a PBT or vPvB

SECTION 3: Composition/information on ingredients

3.1. Substances

Ingredient	Identifier(s)	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
HDI oligomers, isocyanurate	(EC-No.) 931-274-8	95 - 100	Acute Tox. 4, H332 Skin Sens. 1, H317 STOT SE 3, H335
hexamethylene-di-isocyanate	(CAS-No.) 822-06-0 (EC-No.) 212-485-8	<= 0.15	Resp. Sens. 1A, H334 Skin Sens. 1A, H317 STOT SE 3, H335 Nota 2 Acute Tox. 1, H330

			Acute Tox. 4, H302 Skin Corr. 1C, H314 Eye Dam. 1, H318

Any entry in the Identifier(s) column that begins with the numbers 6, 7, 8, or 9 are a Provisional List Number provided by ECHA pending publication of the official EC Inventory Number for the substance.
Please see section 16 for the full text of any H statements referred to in this section

Specific Concentration Limits

Ingredient	Identifier(s)	Specific Concentration Limits
hexamethylene-di-isocyanate	(CAS-No.) 822-06-0 (EC-No.) 212-485-8	(C >= 0.5%) Resp. Sens. 1A, H334 (C >= 0.5%) Skin Sens. 1A, H317

For information on ingredient occupational exposure limits or PBT or vPvB status, see sections 8 and 12 of this SDS

3.2. Mixtures
Not applicable

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
The most important symptoms and effects based on the CLP classification include:
Irritating to the respiratory tract (coughing, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain).
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. Extinguishing media
DO NOT USE WATER In case of fire: Use a carbon dioxide or dry chemical extinguisher 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.
Hydrogen cyanide.	During combustion.
Oxides of nitrogen.	During combustion.

5.3. Advice 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 vapours, 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
Pour isocyanate decontaminant solution (90% water, 8% concentrated ammonia, 2% detergent) on spill and allow to react for 10 minutes. Or pour water on spill and allow to react for more than 30 minutes. Cover with absorbent material. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a container approved for transportation by appropriate authorities, but do not seal the container for 48 hours to avoid pressure build-up. Clean up residue with an appropriate solvent selected by a qualified and authorised person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and Safety Data Sheet. Dispose of collected material as soon as possible.

6.4. Reference to other sections
Refer to Section 8 and Section 13 for more information

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Do not use in a confined area with minimal air exchange. Avoid breathing dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. 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.)

7.2. Conditions for safe storage including any incompatibilities
Store in a well-ventilated place. Keep container tightly closed to prevent contamination with water or air. If contamination is suspected, do not reseal container. Store away from heat. Store away from acids. Store away from strong bases. Store away from oxidising agents.

7.3. Specific end use(s)
See information in Section 7.1 and 7.2 for handling and storage recommendations. See Section 8 for exposure controls and personal protection recommendations.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

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

Ingredient	CAS Nbr	Agency	Limit type	Additional comments
Free isocyanates	822-06-0	Ireland OELs	TWA(8 hours):0.02 mg/m3;STEL(15 minutes):0.07 mg/m3	as NCO
hexamethylene-di-isocyanate	822-06-0	Ireland OELs	TWA(8 hours):0.005 ppm	as NCO

Ireland OELs : Ireland. OELs
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

Biological limit values
No biological limit values exist for any of the components listed in Section 3 of this safety data sheet.

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

8.2. Exposure controls

8.2.1. Engineering controls
Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapours/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection
None required.

Skin/hand protection
Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.
Gloves made from the following material(s) are recommended:

Material	Thickness (mm)	Breakthrough Time
Butyl rubber.	0.5	=>8 hours
Polyethylene	>0.30	=>8 hours
Polymer laminate	>0.30	=>8 hours

The glove data presented are based on the substance driving dermal toxicity and the conditions present at the time of testing. Breakthrough time may be altered when the glove is subjected to use conditions that place additional stress on the glove.

Applicable Norms/Standards
Use gloves tested to EN 374

If this product is used in a manner that presents a higher potential for exposure (eg. spraying, high splash potential etc.), then use of protective coveralls may be necessary. Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended: Apron – Butyl rubber
Apron – Polyethylene
Apron - polymer laminate

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
Half facepiece or full facepiece air-purifying respirator suitable for organic vapours and particulates

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

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Specific Physical Form:	Paste
Colour	Pale Yellow
Odor	Odourless
Odour threshold	*No data available.*
Melting point/freezing point	*No data available.*
Boiling point/boiling range	203 ºC
Flammability (solid, gas)	Not applicable.
Flammable Limits(LEL)	*No data available.*
Flammable Limits(UEL)	*No data available.*
Flash point	Flash point > 93 °C (200 °F)
Autoignition temperature	*No data available.*
Decomposition temperature	*No data available.*
pH	*substance/mixture reacts with water*
Kinematic Viscosity	34,483 mm²/sec
Water solubility	Appreciable [*Details:*CONDITIONS: Reacts]
Solubility- non-water	*No data available.*
Partition coefficient: n-octanol/water	*No data available.*
Density	1.16 g/l
Relative density	1.16 [*Ref Std:*WATER=1]
Relative Vapour Density	*No data available.*

9.2. Other information

9.2.2 Other safety characteristics

EU Volatile Organic Compounds	2.3 g/l
Evaporation rate	*No data available.*
Molecular weight	*No data available.*
Percent volatile	*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 polymerisation may occur.

10.4 Conditions to avoid
Heat.

10.5 Incompatible materials
Strong acids.
Strong bases.
Strong oxidising agents.
Water

10.6 Hazardous decomposition products

Substance	Condition
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not agree with the EU material classification in Section 2 and/or the ingredient classifications in Section 3 if specific ingredient classifications are mandated by a competent authority. In addition, statements and data presented in Section 11 are based on UN GHS calculation rules and classifications derived from internal hazard assessments.

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

Signs and Symptoms of Exposure

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

Inhalation
Respiratory tract irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. Allergic respiratory reaction: Signs/symptoms may include difficulty breathing, wheezing, cough, and tightness of chest.

Skin contact
Contact with the skin during product use is not expected to result in significant irritation. 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
Gastrointestinal irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhoea.

Additional information:
Persons previously sensitised to isocyanates may develop a cross-sensitisation reaction to other isocyanates.

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-Vapour(4		No data available; calculated ATE >50 mg/l

	hr)		
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
HDI oligomers, isocyanurate	Inhalation-Dust/Mist	Professional judgement	LC50 estimated to be 1 - 5 mg/l
HDI oligomers, isocyanurate	Dermal	Rabbit	LD50 > 5,000 mg/kg
HDI oligomers, isocyanurate	Ingestion	Rat	LD50 > 5,000 mg/kg
hexamethylene-di-isocyanate	Dermal	Rat	LD50 > 7,000 mg/kg
hexamethylene-di-isocyanate	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.124 mg/l
hexamethylene-di-isocyanate	Inhalation-Vapour (4 hours)	Rat	LC50 0.124 mg/l
hexamethylene-di-isocyanate	Ingestion	Rat	LD50 710 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
HDI oligomers, isocyanurate	Rabbit	Minimal irritation
hexamethylene-di-isocyanate	Rabbit	Corrosive

Serious Eye Damage/Irritation

Name	Species	Value
HDI oligomers, isocyanurate	Rabbit	Mild irritant
hexamethylene-di-isocyanate	Rabbit	Corrosive

Skin Sensitisation

Name	Species	Value
HDI oligomers, isocyanurate	Guinea pig	Sensitising
hexamethylene-di-isocyanate	Multiple animal species	Sensitising

Respiratory Sensitisation

Name	Species	Value
HDI oligomers, isocyanurate	similar compounds	Not classified
hexamethylene-di-isocyanate	Human and animal	Sensitising

Germ Cell Mutagenicity

Name	Route	Value
HDI oligomers, isocyanurate	In Vitro	Not mutagenic
HDI oligomers, isocyanurate	In vivo	Not mutagenic
hexamethylene-di-isocyanate	In Vitro	Not mutagenic
hexamethylene-di-isocyanate	In vivo	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
hexamethylene-di-isocyanate	Inhalation	Rat	Not carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
hexamethylene-di-isocyanate	Inhalation	Not classified for female reproduction	Rat	NOAEL 0.002 mg/l	7 weeks
hexamethylene-di-isocyanate	Inhalation	Not classified for development	Rat	NOAEL 0.002 mg/l	7 weeks
hexamethylene-di-isocyanate	Inhalation	Not classified for male reproduction	Rat	NOAEL 0.014 mg/l	4 weeks

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
HDI oligomers, isocyanurate	Inhalation	respiratory irritation	May cause respiratory irritation		NOAEL Not available	
hexamethylene-di-isocyanate	Inhalation	respiratory irritation	May cause respiratory irritation	Human and animal	NOAEL Not available	
hexamethylene-di-isocyanate	Inhalation	blood	Not classified	Human	NOAEL Not available	occupational exposure

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
HDI oligomers, isocyanurate	Inhalation	immune system | blood	Not classified	Rat	NOAEL 0.084 mg/l	2 weeks
hexamethylene-di-isocyanate	Inhalation	liver | kidney and/or bladder	Not classified	Rat	NOAEL 0.002 mg/l	3 weeks
hexamethylene-di-isocyanate	Inhalation	endocrine system	Not classified	Rat	NOAEL 0.0014 mg/l	4 weeks
hexamethylene-di-isocyanate	Inhalation	blood	Not classified	Rat	NOAEL 0.0012 mg/l	2 years
hexamethylene-di-isocyanate	Inhalation	nervous system	Not classified	Rat	NOAEL 0.002 mg/l	7 weeks
hexamethylene-di-isocyanate	Inhalation	heart	Not classified	Rat	NOAEL 0.001 mg/l	90 days

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

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

11.2. Information on other hazards

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

SECTION 12: Ecological information

The information below may not agree with the EU material classification in Section 2 and/or the ingredient classifications in Section 3 if specific ingredient classifications are mandated by a competent authority. In addition, statements and data presented in Section 12 are based on UN GHS calculation rules and classifications derived from 3M assessments.

12.1. Toxicity

No product test data available.

Material	CAS #	Organism	Type	Exposure	Test endpoint	Test result
hexamethylene-di-isocyanate	822-06-0	Green algae	Estimated	96 hours	EC50	14.8 mg/l
hexamethylene-di-isocyanate	822-06-0	Medaka	Estimated	96 hours	LC50	71 mg/l
hexamethylene-di-isocyanate	822-06-0	Water flea	Estimated	48 hours	EC50	27 mg/l
hexamethylene-di-isocyanate	822-06-0	Activated sludge	Experimental	3 hours	EC50	842 mg/l
hexamethylene-di-isocyanate	822-06-0	Green algae	Estimated	72 hours	NOEC	10 mg/l
hexamethylene-di-isocyanate	822-06-0	Water flea	Estimated	21 days	NOEC	4.2 mg/l

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
hexamethylene-di-isocyanate	822-06-0	Estimated Biodegradation	28 days	BOD	82 %BOD/ThOD	OECD 301D - Closed bottle test
hexamethylene-di-isocyanate	822-06-0	Experimental Hydrolysis		Hydrolytic half-life	5 minutes (t 1/2)	

12.3 : Bioaccumulative potential

Material	Cas No.	Test type	Duration	Study Type	Test result	Protocol
hexamethylene-di-isocyanate	822-06-0	Estimated Bioconcentration		Log Kow	0.02	

12.4. Mobility in soil
No test data available.

12.5. Results of the PBT and vPvB assessment

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

12.6. Endocrine disrupting properties

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

12.7. Other adverse effects
No information available.

SECTION 13: Disposal considerations

13.1 Waste treatment 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. Proper destruction may require the use of additional fuel during incineration processes. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

The coding of a waste stream is based on the application of the product by the consumer. Since this is out of the control of

3M, no waste code(s) for products after use will be provided. Please refer to the European Waste Code (EWC - 2000/532/EC and amendments) to assign the correct waste code to your waste stream. Ensure national and/or regional regulations are complied with and always use a licensed waste contractor.

EU waste code (product as sold)

08 04 09*	Waste adhesives and sealants containing organic solvents or other dangerous substances
080501*	Waste isocyanates

SECTION 14: Transportation information

Not hazardous for transportation.

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

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

SECTION 15: Regulatory information

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

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

Ingredient	CAS Nbr
hexamethylene-di-isocyanate	822-06-0

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

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

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

Seveso named dangerous substances, Annex 1, Part 2

Dangerous Substances	Identifier(s)	Qualifying quantity (tonnes) for the application of	
		Lower-tier requirements	Upper-tier requirements
hexamethylene-di-isocyanate	822-06-0	50	200

Regulation (EU) No 649/2012
No chemicals listed

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

SECTION 16: Other information

List of relevant H statements

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H330	Fatal if inhaled.
H332	Harmful if inhaled.

H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.

Revision information:
CLP: Ingredient table information was modified.
Section 3: Composition/ Information of ingredients table information was modified.
Section 8: Occupational exposure limit table information was added.
Section 8: Occupational exposure limit table information was modified.
OEL Reg Agency Desc information was added.
Section 8: STEL key information was added.
Section 8: TWA key information was added.
Section 09: Kinematic Viscosity information information was modified.
Section 9: Vapour density value information was modified.
Section 11: Target Organs - Repeated Table information was added.
Section 11: Target Organs - Repeated Table information was deleted.
Section 12: Component ecotoxicity information information was modified.
Section 12: Persistence and Degradability information information was modified.
Section 12:Bioccumulative potential information information was modified.
Section 14 Marine transport in bulk according to IMO instruments – Main Heading information was modified.
Section 14 UN Number information was modified.
Section 2: No PBT/vPvB information available warning information was added.

DISCLAIMER: The information on this Safety Data Sheet is based on our experience and is correct to the best of our knowledge at the date of publication, but we do not accept any liability for any loss, damage or injury resulting from its use (except as required by law). The information may not be valid for any use not referred to in this Data Sheet or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own test to satisfy themselves as to the suitability of the product for their own intended applications. In addition, this SDS is being provided to convey health and safety information. If you are the importer of record of this product into the European Union, you are responsible for all regulatory requirements, including, but not limited to, product registrations/notifications, substance volume tracking, and potential substance registration.

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

Safety Data Sheet

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Revision date:	31/08/2023	**Supersedes date:**	30/08/2023

This Safety Data Sheet has been prepared in accordance with the REACH Regulation (EC) 1907/2006 and its modifications.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
3M ES-2000 Edge Sealer (Part B)

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

Identified uses
Edge Sealer for Applique

1.3. Details of the supplier of the safety data sheet

Address:	3M Ireland Limited, The Iveagh Building, The Park, Carrickmines, Dublin 18.
Telephone:	+353 1 280 3555
E Mail:	tox.uk@mmm.com
Website:	www.3M.com

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

SECTION 2: Hazard identification

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

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

CLASSIFICATION:
Skin Sensitization, Category 1 - Skin Sens. 1; H317
Hazardous to the Aquatic Environment (Chronic), Category 2 - Aquatic Chronic 2; H411

For full text of H phrases, see Section 16.

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

SIGNAL WORD
WARNING.

Symbols
GHS07 (Exclamation mark) |GHS09 (Environment) |

Pictograms

Ingredients:

Ingredient	CAS Nbr	EC No.	% by Wt
Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate		915-687-0	< 1.5
3,3'-[(dibutylstannylene)bis(thio)]bis(propane-1,2-diol)	68298-38-4	269-561-9	< 0.25

HAZARD STATEMENTS:

H317	May cause an allergic skin reaction.
H411	Toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS

Prevention:

P273	Avoid release to the environment.
P280E	Wear protective gloves.

Response:

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

Contains 71% of components with unknown hazards to the aquatic environment.

2.3. Other hazards

None known.
This material does not contain any substances that are assessed to be a PBT or vPvB

SECTION 3: Composition/information on ingredients

3.1. Substances
Not applicable

3.2. Mixtures

Ingredient	Identifier(s)	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
POLYESTER POLYOL 1	Trade Secret	50 - 70	Substance not classified as hazardous
ε-Caprolactone, oligomeric reaction	(CAS-No.) 37625-56-2	10 - 30	Substance not classified as hazardous

products with propylidynetrimethanol	(EC-No.) 500-099-5		
1,4-Butanediol, polyester with 2-oxepanone	(CAS-No.) 31831-53-5	5 - 10	Substance not classified as hazardous
Neopentyl glycol, adipic acid polymer	(CAS-No.) 27925-07-1	5 - 10	Substance not classified as hazardous
Octocrilene	(CAS-No.) 6197-30-4 (EC-No.) 228-250-8	< 2.2	Aquatic Chronic 1, H410,M=10
Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	(EC-No.) 915-687-0	< 1.5	Aquatic Acute 1, H400,M=1 Aquatic Chronic 1, H410,M=1 Skin Sens. 1A, H317 Repr. 2, H361f
3,3'-[(dibutylstannylene)bis(thio)]bis(propane-1,2-diol)	(CAS-No.) 68298-38-4 (EC-No.) 269-561-9	< 0.25	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1B, H317 Muta. 2, H341 Repr. 1B, H360FD STOT SE 1, H370 STOT RE 1, H372

Any entry in the Identifier(s) column that begins with the numbers 6, 7, 8, or 9 are a Provisional List Number provided by ECHA pending publication of the official EC Inventory Number for the substance.
Please see section 16 for the full text of any H statements referred to in this section

For information on ingredient occupational exposure limits or PBT or vPvB status, see sections 8 and 12 of this SDS

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation
Remove person to fresh air. If you 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
The most important symptoms and effects based on the CLP classification include:
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. 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.
Oxides of nitrogen.	During combustion.

5.3. Advice 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 vapours, 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. For larger spills, cover drains and build dykes to prevent entry into sewer systems or bodies of water.

6.3. Methods and material for containment and cleaning up
Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorised person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and Safety Data Sheet. Seal the container. Dispose of collected material as soon as possible.

6.4. Reference to other sections
Refer to Section 8 and Section 13 for more information

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. 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.) Use personal protective equipment (eg. gloves, respirators…) as required.

7.2. Conditions for safe storage including any incompatibilities
Store away from heat. Store away from oxidising agents.

7.3. Specific end use(s)
See information in Section 7.1 and 7.2 for handling and storage recommendations. See Section 8 for exposure controls and personal protection recommendations.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

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

Ingredient	CAS Nbr	Agency	Limit type	Additional comments
TIN, ORGANIC COMPOUNDS	68298-38-4	Ireland OELs	TWA(8 hours):0.1 mg/m3;STEL(15 minutes):0.2 mg/m3	as Sn

Ireland OELs : Ireland. OELs
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

Biological limit values
No biological limit values exist for any of the components listed in Section 3 of this safety data sheet.

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

8.2. Exposure controls

8.2.1. Engineering controls
Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapours/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection
None required.

Skin/hand protection
Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.
Gloves made from the following material(s) are recommended:

Material	Thickness (mm)	Breakthrough Time
Polymer laminate	No data available	No data available

Applicable Norms/Standards
Use gloves tested to EN 374

If this product is used in a manner that presents a higher potential for exposure (eg. spraying, high splash potential etc.), then use of protective coveralls may be necessary. Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended: Apron - polymer laminate

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
Half facepiece or full facepiece air-purifying respirator suitable for organic vapours and particulates

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

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Specific Physical Form:	Viscous.
Colour	Gold
Odor	Polyester
Odour threshold	*No data available.*
Melting point/freezing point	*No data available.*
Boiling point/boiling range	>=126.7 ºC
Flammability (solid, gas)	Not applicable.
Flammable Limits(LEL)	*Not applicable.*
Flammable Limits(UEL)	*Not applicable.*
Flash point	Flash point > 93 °C (200 °F)
Autoignition temperature	*No data available.*
Decomposition temperature	*No data available.*
pH	*substance/mixture is non-soluble (in water)*
Kinematic Viscosity	36,842 mm²/sec
Water solubility	Slight (less than 10%)
Solubility- non-water	*No data available.*
Partition coefficient: n-octanol/water	*No data available.*
Density	1.14 kg/l
Relative density	1.14 [*Ref Std:*WATER=1]
Relative Vapour Density	*No data available.*

9.2. Other information

9.2.2 Other safety characteristics

EU Volatile Organic Compounds	0.8 g/l
Evaporation rate	*Not applicable.*
Molecular weight	*No data available.*
Percent volatile	*No data available.*
Percent volatile	Negligible

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 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 agree with the EU material classification in Section 2 and/or the ingredient classifications in Section 3 if specific ingredient classifications are mandated by a competent authority. In addition, statements and data presented in Section 11 are based on UN GHS calculation rules and classifications derived from internal hazard assessments.

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

Signs and Symptoms of Exposure

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

Inhalation
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
Contact with the skin during product use is not expected to result in significant irritation. 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
Gastrointestinal irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhoea. May cause additional health effects (see below).

Additional Health Effects:

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

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

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE >5,000 mg/kg
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
ε-Caprolactone, oligomeric reaction products with propylidynetrimethanol	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
ε-Caprolactone, oligomeric reaction products with propylidynetrimethanol	Ingestion	Rat	LD50 > 2,000 mg/kg

1,4-Butanediol, polyester with 2-oxepanone	Dermal		LD50 estimated to be 2,000 - 5,000 mg/kg
Neopentyl glycol, adipic acid polymer	Dermal		LD50 estimated to be > 5,000 mg/kg
Neopentyl glycol, adipic acid polymer	Ingestion		LD50 estimated to be > 5,000 mg/kg
1,4-Butanediol, polyester with 2-oxepanone	Ingestion	Rat	LD50 > 2,000 mg/kg
Octocrilene	Dermal		LD50 estimated to be > 5,000 mg/kg
Octocrilene	Ingestion	Rat	LD50 > 5,000 mg/kg
Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	Dermal	Professional judgement	LD50 estimated to be 2,000 - 5,000 mg/kg
Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	Ingestion	Rat	LD50 3,125 mg/kg
3,3'-[(dibutylstannylene)bis(thio)]bis(propane-1,2-diol)	Ingestion		LD50 estimated to be 300 - 2,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
ε-Caprolactone, oligomeric reaction products with propylidynetrimethanol	Rabbit	No significant irritation
Octocrilene	Rabbit	Minimal irritation
Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	Rabbit	Minimal irritation
3,3'-[(dibutylstannylene)bis(thio)]bis(propane-1,2-diol)	similar compounds	Irritant

Serious Eye Damage/Irritation

Name	Species	Value
ε-Caprolactone, oligomeric reaction products with propylidynetrimethanol	Rabbit	No significant irritation
Octocrilene	similar health hazards	Mild irritant
Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	Rabbit	Mild irritant
3,3'-[(dibutylstannylene)bis(thio)]bis(propane-1,2-diol)	similar compounds	Severe irritant

Skin Sensitisation

Name	Species	Value
ε-Caprolactone, oligomeric reaction products with propylidynetrimethanol	Mouse	Not classified
Octocrilene	Guinea pig	Not classified
Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	Guinea pig	Sensitising
3,3'-[(dibutylstannylene)bis(thio)]bis(propane-1,2-diol)	Guinea pig	Sensitising

Photosensitisation

Name	Species	Value
Octocrilene	Guinea pig	Not sensitising

Respiratory Sensitisation

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

Germ Cell Mutagenicity

Name	Route	Value
ε-Caprolactone, oligomeric reaction products with propylidynetrimethanol	In Vitro	Not mutagenic
Octocrilene	In Vitro	Not mutagenic
Octocrilene	In vivo	Not mutagenic
Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	In vivo	Not mutagenic
Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	In Vitro	Some positive data exist, but the data are not sufficient for classification
3,3'-[(dibutylstannylene)bis(thio)]bis(propane-1,2-diol)	In Vitro	Some positive data exist, but the data are not sufficient for classification
3,3'-[(dibutylstannylene)bis(thio)]bis(propane-1,2-diol)	In vivo	Mutagenic

Carcinogenicity

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

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
ε-Caprolactone, oligomeric reaction products with propylidynetrimethanol	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg	during gestation
Octocrilene	Dermal	Not classified for development	Rabbit	NOAEL 300 mg/kg/day	during organogenesis
Octocrilene	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	during organogenesis
Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,493 mg/kg/day	29 days
Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	Ingestion	Not classified for development	Rat	NOAEL 209 mg/kg/day	premating into lactation
Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	Ingestion	Toxic to female reproduction	Rat	NOAEL 804 mg/kg/day	premating into lactation
3,3'-[(dibutylstannylene)bis(thio)]bis(propane-1,2-diol)	Ingestion	Toxic to female reproduction	Rat	NOAEL 2 mg/kg/day	premating into lactation
3,3'-[(dibutylstannylene)bis(thio)]bis(propane-1,2-diol)	Ingestion	Toxic to development	Rat	NOAEL 2.5 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
Octocrilene	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
3,3'-[(dibutylstannylene)bis(thio)]bis(propane-1,2-diol)	Ingestion	immune system	Causes damage to organs	Rat	LOAEL 5 mg/kg	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Octocrilene	Dermal	hematopoietic	Not classified	Rabbit	NOAEL 534	13 weeks

		system			mg/kg/day	
Octocrilene	Ingestion	endocrine system	Not classified	Rat	NOAEL 1,085 mg/kg	90 days
Octocrilene	Ingestion	blood | liver | kidney and/or bladder	Not classified	Rabbit	NOAEL 1,085 mg/kg/day	13 weeks
Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	Ingestion	eyes	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 300 mg/kg/day	28 days
Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	Ingestion	gastrointestinal tract | liver | immune system | heart | endocrine system | hematopoietic system | nervous system | kidney and/or bladder	Not classified	Rat	NOAEL 1,493 mg/kg/day	29 days
3,3'-[(dibutylstannylene)bis(thio)]bis(propane-1,2-diol)	Ingestion	liver	Causes damage to organs through prolonged or repeated exposure	Rat	NOAEL 2 mg/kg/day	2 weeks
3,3'-[(dibutylstannylene)bis(thio)]bis(propane-1,2-diol)	Ingestion	immune system	Causes damage to organs through prolonged or repeated exposure	Rat	NOAEL 0.3 mg/kg/day	28 days

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

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

11.2. Information on other hazards

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

SECTION 12: Ecological information

The information below may not agree with the EU material classification in Section 2 and/or the ingredient classifications in Section 3 if specific ingredient classifications are mandated by a competent authority. In addition, statements and data presented in Section 12 are based on UN GHS calculation rules and classifications derived from 3M assessments.

12.1. Toxicity

No product test data available.

Material	CAS #	Organism	Type	Exposure	Test endpoint	Test result
POLYESTER POLYOL 1	Trade Secret	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
ε-Caprolactone, oligomeric reaction products with propylidynetrimethanol	37625-56-2	Bacteria	Experimental	16 hours	NOEC	670 mg/l
ε-Caprolactone, oligomeric reaction products with propylidynetrimethanol	37625-56-2	Green algae	Experimental	72 hours	ErC50	490 mg/l
ε-Caprolactone, oligomeric reaction	37625-56-2	Water flea	Experimental	48 hours	EC50	>900 mg/l

products with propylidynetrimethanol						
ε-Caprolactone, oligomeric reaction products with propylidynetrimethanol	37625-56-2	Zebra Fish	Experimental	96 hours	LC50	150 mg/l
ε-Caprolactone, oligomeric reaction products with propylidynetrimethanol	37625-56-2	Green algae	Experimental	72 hours	ErC10	240 mg/l
1,4-Butanediol, polyester with 2-oxepanone	31831-53-5	Bacteria	Experimental	16 hours	NOEC	461 mg/l
1,4-Butanediol, polyester with 2-oxepanone	31831-53-5	Green algae	Experimental	72 hours	EC50	165 mg/l
1,4-Butanediol, polyester with 2-oxepanone	31831-53-5	Water flea	Experimental	48 hours	EC50	290 mg/l
1,4-Butanediol, polyester with 2-oxepanone	31831-53-5	Zebra Fish	Experimental	96 hours	LC50	72 mg/l
1,4-Butanediol, polyester with 2-oxepanone	31831-53-5	Green algae	Experimental	72 hours	EC10	76 mg/l
Neopentyl glycol, adipic acid polymer	27925-07-1	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
Octocrilene	6197-30-4	Activated sludge	Experimental	30 minutes	NOEC	1,000 mg/l
Octocrilene	6197-30-4	Golden Orfe	Experimental	96 hours	No tox obs at lmt of water sol	>100 mg/l
Octocrilene	6197-30-4	Green algae	Experimental	72 hours	No tox obs at lmt of water sol	>100 mg/l
Octocrilene	6197-30-4	Water flea	Experimental	48 hours	No tox obs at lmt of water sol	>100 mg/l
Octocrilene	6197-30-4	Green algae	Experimental	72 hours	No tox obs at lmt of water sol	>100 mg/l
Octocrilene	6197-30-4	Water flea	Experimental	21 days	NOEC	0.00266 mg/l
Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	915-687-0	Activated sludge	Experimental	3 hours	IC50	>=100 mg/l
Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	915-687-0	Green algae	Experimental	72 hours	ErC50	1.68 mg/l
Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	915-687-0	Zebra Fish	Experimental	96 hours	LC50	0.9 mg/l
Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	915-687-0	Green algae	Experimental	72 hours	NOEC	0.22 mg/l

Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	915-687-0	Water flea	Experimental	21 days	NOEC	1 mg/l
3,3'-[(dibutylstannylene)bis(thio)]bis(propane-1,2-diol)	68298-38-4	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
POLYESTER POLYOL 1	Trade Secret	Data not availbl-insufficient	N/A	N/A	N/A	N/A
ε-Caprolactone, oligomeric reaction products with propylidynetrimethanol	37625-56-2	Experimental Biodegradation	28 days	CO2 evolution	77 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2
1,4-Butanediol, polyester with 2-oxepanone	31831-53-5	Experimental Biodegradation		CO2 evolution	84 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2
Neopentyl glycol, adipic acid polymer	27925-07-1	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Octocrilene	6197-30-4	Experimental Biodegradation	28 days	BOD	0 %BOD/ThOD	EC C.4.D. Manometric Respirom
Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	915-687-0	Experimental Biodegradation	28 days	Dissolv. Organic Carbon Deplet	38 %removal of DOC	OECD 301E - Modif. OECD Screen
3,3'-[(dibutylstannylene)bis(thio)]bis(propane-1,2-diol)	68298-38-4	Data not availbl-insufficient	N/A	N/A	N/A	N/A

12.3 : Bioaccumulative potential

Material	Cas No.	Test type	Duration	Study Type	Test result	Protocol
POLYESTER POLYOL 1	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
ε-Caprolactone, oligomeric reaction products with propylidynetrimethanol	37625-56-2	Experimental Bioconcentration		Log Kow	2.4	OECD 117 log Kow HPLC method
1,4-Butanediol, polyester with 2-oxepanone	31831-53-5	Estimated Bioconcentration		Bioaccumulation factor	7.4	
Neopentyl glycol, adipic acid polymer	27925-07-1	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Octocrilene	6197-30-4	Experimental BCF - Fish	28 days	Bioaccumulation factor	887	OECD305-Bioconcentration
Octocrilene	6197-30-4	Experimental Bioconcentration		Log Kow	6.1	EC A.8 Partition Coefficient
Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	915-687-0	Analogous Compound BCF - Fish	56 days	Bioaccumulation factor	31.4	
3,3'-[(dibutylstannylene)bis(thio)]bis(propane-1,2-diol)	68298-38-4	Data not available or insufficient for classification	N/A	N/A	N/A	N/A

12.4. Mobility in soil

Material	Cas No.	Test type	Study Type	Test result	Protocol
Octocrilene	6197-30-4	Experimental Mobility in Soil	Koc	29934-79018 l/kg	
Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	915-687-0	Modeled Mobility in Soil	Koc	200,000 l/kg	Episuite™

12.5. Results of the PBT and vPvB assessment

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

12.6. Endocrine disrupting properties

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

12.7. Other adverse effects
No information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of waste product in a permitted industrial waste facility. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

The coding of a waste stream is based on the application of the product by the consumer. Since this is out of the control of 3M, no waste code(s) for products after use will be provided. Please refer to the European Waste Code (EWC - 2000/532/EC and amendments) to assign the correct waste code to your waste stream. Ensure national and/or regional regulations are complied with and always use a licensed waste contractor.

EU waste code (product as sold)
20 01 27* Paint, inks, adhesives and resins containing dangerous substances

SECTION 14: Transportation information

	Ground Transport (ADR)	Air Transport (IATA)	Marine Transport (IMDG)
14.1 UN number or ID number	UN3082	UN3082	UN3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(2-ETHYLHEXYL 2-CYANO-3,3-	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(2-ETHYLHEXYL 2-CYANO-3,3-DIPHENYLACRYLATE)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(2-ETHYLHEXYL 2-CYANO-3,3-

	DIPHENYLACRYLATE)		DIPHENYLACRYLATE)
14.3 Transport hazard class(es)	9	9	9
14.4 Packing group	III	III	III
14.5 Environmental hazards	Environmentally Hazardous	Not applicable	Marine Pollutant
14.6 Special precautions for user	Please refer to the other sections of the SDS for further information.	Please refer to the other sections of the SDS for further information.	Please refer to the other sections of the SDS for further information.
14.7 Marine Transport in bulk according to IMO instruments	No data available.	No data available.	No data available.
Control Temperature	No data available.	No data available.	No data available.
Emergency Temperature	No data available.	No data available.	No data available.
ADR Classification Code	M6	Not applicable.	Not applicable.
IMDG Segregation Code	Not applicable.	Not applicable.	NONE

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

SECTION 15: Regulatory information

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

Global inventory status
Contact 3M for more information. The components of this material are in compliance with the provisions of the Korea Chemical Control Act. Certain restrictions may apply. Contact the selling division for additional information. The components of this product are in compliance with the new substance notification requirements of CEPA. This product complies with Measures on Environmental Management of New Chemical Substances. All ingredients are listed on or exempt from on China IECSC inventory. The components of this product are in compliance with the chemical notification requirements of TSCA. All required components of this product are listed on the active portion of the TSCA Inventory.

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

Seveso named dangerous substances, Annex 1, Part 2
None

Regulation (EU) No 649/2012

Chemical	Identifier(s)	Annex I
3,3'-[(dibutylstannylene)bis(thio)]bis(propane-1,2-diol)	68298-38-4	Part 1

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

SECTION 16: Other information

List of relevant H statements

H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H341	Suspected of causing genetic defects.
H360FD	May damage fertility. May damage the unborn child.
H361f	Suspected of damaging fertility.
H370	Causes damage to organs.
H372	Causes damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

Revision information:
EU Section 09: pH information information was modified.
Label: CLP Classification information was modified.
Label: CLP Precautionary - Disposal information was deleted.
Label: CLP Precautionary - Response information was modified.
OEL Reg Agency Desc information was modified.
Section 04: First Aid - Symptoms and Effects (CLP) information was added.
Section 04: Information on toxicological effects information was modified.
Section 09: Kinematic Viscosity information information was modified.
Section 11: Acute Toxicity table information was modified.
Section 11: Germ Cell Mutagenicity Table information was modified.
Section 11: Reproductive Toxicity Table information was modified.
Section 11: Serious Eye Damage/Irritation Table information was modified.
Section 11: Skin Corrosion/Irritation Table information was modified.
Section 11: Skin Sensitization Table information was modified.
Section 11: Target Organs - Repeated Table information was added.
Section 11: Target Organs - Repeated Table information was deleted.
Section 11: Target Organs - Single Table information was modified.
Section 12: Component ecotoxicity information information was modified.
Section 12: Mobility in soil information information was modified.
Section 12: Persistence and Degradability information information was modified.
Section 12:Bioccumulative potential information information was modified.
Section 14 Classification Code – Regulation Data information was modified.
Section 14 Control Temperature – Regulation Data information was modified.
Section 14 Emergency Temperature – Regulation Data information was modified.
Section 14 Hazard Class + Sub Risk – Regulation Data information was modified.

Section 14 Hazardous/Not Hazardous for Transportation information was modified.
Section 14 Marine transport in bulk according to IMO instruments – Main Heading information was modified.
Section 14 Multiplier – Main Heading information was deleted.
Section 14 Multiplier – Regulation Data information was deleted.
Section 14 Other Dangerous Goods – Regulation Data information was modified.
Section 14 Packing Group – Regulation Data information was modified.
Section 14 Proper Shipping Name information was modified.
Section 14 Segregation – Regulation Data information was modified.
Section 14 Transport Category – Main Heading information was deleted.
Section 14 Transport Category – Regulation Data information was deleted.
Section 14 Transport in bulk – Regulation Data information was modified.
Section 14 Transport Not Permitted – Main Heading information was deleted.
Section 14 Transport Not Permitted – Regulation Data information was deleted.
Section 14 Tunnel Code – Main Heading information was deleted.
Section 14 Tunnel Code – Regulation Data information was deleted.
Section 14 UN Number Column data information was modified.
Section 14 UN Number information was modified.
Section 14: Transportation classification information was deleted.
Section 15: Regulations - Inventories information was added.
Section 2: No PBT/vPvB information available warning information was added.
Section 3: Composition/ Information of ingredients table information was modified.
Section 8: Occupational exposure limit table information was modified.
Section 9: Property description for optional properties information was modified.
Section 9: Vapour density value information was modified.
Two-column table displaying the unique list of H Codes and statements (std phrases) for all components of the given material. information was modified.

DISCLAIMER: The information on this Safety Data Sheet is based on our experience and is correct to the best of our knowledge at the date of publication, but we do not accept any liability for any loss, damage or injury resulting from its use (except as required by law). The information may not be valid for any use not referred to in this Data Sheet or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own test to satisfy themselves as to the suitability of the product for their own intended applications. In addition, this SDS is being provided to convey health and safety information. If you are the importer of record of this product into the European Union, you are responsible for all regulatory requirements, including, but not limited to, product registrations/notifications, substance volume tracking, and potential substance registration.

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