Safety Data Sheet

Document group:	25-9853-0	**Version number:**	2.00
Revision date:	14/03/2025	**Supersedes date:**	10/12/2024

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™ Scotch-Weld™ Epoxy Potting Compound/Adhesive 270 Black, Part A

Product Identification Numbers
62-3366-8530-0

7000046463

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

Identified uses
Structural adhesive.

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.
This material has been tested for eye damage/irritation and the test results are reflected in the assigned classification.
This material has been tested for skin corrosion/irritation and the test results are reflected in the assigned classification.

CLASSIFICATION:

Acute Toxicity, Category 4 - Acute Tox. 4; H302
Acute Toxicity, Category 3 - Acute Tox. 3; H311
Skin Corrosion/Irritation, Category 2 - Skin Irrit. 2; H315
Serious Eye Damage/Eye Irritation, Category 2 - Eye Irrit. 2; H319
Skin Sensitization, Category 1 - Skin Sens. 1; H317
Reproductive Toxicity, Category 2 - Repr. 2; H361fd
Specific Target Organ Toxicity-Repeated Exposure, Category 2 - STOT RE 2; H373
Hazardous to the Aquatic Environment (Acute), Category 1 - Aquatic Acute 1; H400
Hazardous to the Aquatic Environment (Chronic), Category 1 - Aquatic Chronic 1; H410

For full text of H phrases, see Section 16.

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

SIGNAL WORD
DANGER.

Symbols
GHS06 (Skull and crossbones) |GHS08 (Health Hazard) |GHS09 (Environment) |

Pictograms

Ingredients:

Ingredient	CAS Nbr	EC No.	% by Wt
4-nonylphenol, branched	84852-15-3	284-325-5	40 - 60
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	6864-37-5	229-962-1	15 - 40
benzyl alcohol	100-51-6	202-859-9	1 - 10
Phenol, 2-nonyl-, branched	91672-41-2	294-048-1	< 10

HAZARD STATEMENTS:

H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H317	May cause an allergic skin reaction.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure: blood or blood-forming organs | cardiovascular system | endocrine system | kidney/urinary tract | liver | musculoskeletal system.
H410	Very toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS

Prevention:

P260A	Do not breathe vapours.
P273	Avoid release to the environment.

P280C	Wear protective gloves and protective clothing.

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

For containers not exceeding 125 ml the following Hazard and Precautionary statements may be used:

<=125 ml Hazard statements

H311	Toxic in contact with skin.
H317	May cause an allergic skin reaction.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.

<=125 ml Precautionary statements

Prevention:

P280C	Wear protective gloves and protective clothing.

Response:

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

9% of the mixture consists of components of unknown acute dermal toxicity.

2.3. Other hazards

Contains a substance identified as an endocrine disrupter in the list established in accordance with REACH Article 59(1)
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]
4-nonylphenol, branched	(CAS-No.) 84852-15-3 (EC-No.) 284-325-5 (REACH-No.) 01-2119510715-45	40 - 60	Acute Tox. 4, H302 Skin Corr. 1B, H314 Repr. 2, H361df Aquatic Acute 1, H400,M=10 Aquatic Chronic 1, H410,M=10 Eye Dam. 1, H318
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	(CAS-No.) 6864-37-5 (EC-No.) 229-962-1 (REACH-No.) 01-2119497829-12	15 - 40	Acute Tox. 2, H330 Acute Tox. 3, H311 Acute Tox. 4, H302 Skin Corr. 1A, H314 Aquatic Chronic 2, H411 Eye Dam. 1, H318 STOT RE 2, H373
Phenol, 2-nonyl-, branched	(CAS-No.) 91672-41-2 (EC-No.) 294-048-1	< 10	Acute Tox. 4, H302 Skin Corr. 1B, H314 Eye Dam. 1, H318

			Repr. 2, H361df Aquatic Acute 1, H400,M=10 Aquatic Chronic 1, H410,M=10
benzyl alcohol	(CAS-No.) 100-51-6 (EC-No.) 202-859-9	1 - 10	Acute Tox. 4, H302 Eye Irrit. 2, H319 Skin Sens. 1B, H317

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. Get medical attention. Wash clothing before reuse.

Eye contact
Immediately flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. 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:
Toxic in contact with skin. Irritation to the skin (localized redness, swelling, itching, and dryness). Allergic skin reaction (redness, swelling, blistering, and itching). Serious irritation to the eyes (significant redness, swelling, pain, tearing, and impaired vision). Harmful if swallowed. Target organ effects. See Section 11 for additional details.

4.3. Indication of any immediate medical attention and special treatment required
Not applicable

SECTION 5: Fire-fighting measures

5.1. 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
Amine compounds.	During combustion.
Carbon monoxide	During combustion.
Carbon dioxide.	During combustion.
Oxides of nitrogen.	During combustion.
Toxic vapour, gas, particulate.	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. Use personal protective equipment based on the results of an exposure assessment. Refer to Section 8 for PPE recommendations. If anticipated exposure resulting from an accidental release exceeds the protective capabilities of the PPE listed in Section 8, or are unknown, select PPE that offers an appropriate level of protection. Consider the physical and chemical hazards of the material when doing so. Examples of PPE ensembles for emergency response could include wearing bunker gear for a release of flammable material; wearing chemical protective clothing if the spilled material is a corrosive, a sensitizer, a significant dermal irritant, or can be absorbed through the skin; or donning a positive pressure supplied-air respirator for chemicals with inhalation hazards. For information regarding physical and health hazards, refer to sections 2 and 11 of the SDS.

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
For industrial/occupational use only. Not for consumer sale or use. 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. 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 acids. 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
No occupational exposure limit values exist for any of the components listed in Section 3 of this Safety Data Sheet.

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

8.2. Exposure controls

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

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:
Safety glasses with side shields.
Indirect vented goggles.

Applicable Norms/Standards
Use eye protection conforming to EN 166

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
Half facepiece or full facepiece supplied-air respirator

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
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.
Colour	Colourless
Odor	Mild Amine, Pungent Odour
Odour threshold	*No data available.*
Melting point/freezing point	*No data available.*
Boiling point/boiling range	205 ºC [*Details:*CONDITIONS: @ 760mm Hg (benzyl alcohol)]
Flammability	Not applicable.
Flammable Limits(LEL)	*No data available.*
Flammable Limits(UEL)	*No data available.*
Flash point	> 115.6 ºC [*Test Method:*Closed Cup]
Autoignition temperature	*No data available.*
Decomposition temperature	*No data available.*
pH	*substance/mixture is non-soluble (in water)*
Kinematic Viscosity	13,500 mm²/sec
Water solubility	Slight (less than 10%)
Solubility- non-water	*No data available.*
Partition coefficient: n-octanol/water	*No data available.*
Vapour pressure	13.3 Pa [*Details:*CONDITIONS: @ 86F (30C); 13.3mm Hg @ 212F (100C).]
Density	1 g/ml
Relative density	1 [*Ref Std:*WATER=1]
Relative Vapour Density	3.72 [*Ref Std:*AIR=1]
Particle Characteristics	*Not applicable.*

9.2. Other information

9.2.2 Other safety characteristics

EU Volatile Organic Compounds	*No data available.*
Evaporation rate	*No data available.*
Molecular weight	*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 will not occur.

10.4 Conditions to avoid
Heat is generated during cure. Do not cure a mass larger than 50 grams in a confined space to prevent a premature exothermic reaction with production of intense heat and smoke.

10.5 Incompatible materials
Strong acids.
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.

Skin contact
Toxic in contact with skin.
Skin Irritation: Signs/symptoms may include localised redness, swelling, itching, dryness, cracking, blistering, and pain. Allergic Skin Reaction (non-photo induced) in sensitive people: Signs/symptoms may include redness, swelling, blistering, and itching.

Eye contact
Severe eye irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired vision.

Ingestion
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:
Cardiac effects: Signs/symptoms may include irregular heartbeat (arrhythmia), changes in heart rate, damage to heart muscle, heart attack, and may be fatal. Hematopoietic effects: Signs/symptoms may include generalised weakness, fatigue and alterations in numbers of circulating blood cells. Liver effects: Signs/symptoms may include loss of appetite, weight loss, fatigue, weakness, abdominal tenderness and jaundice. Muscular effects: Signs/symptoms may include generalised muscle weakness, paralysis and atrophy. Endocrine effects: Signs/symptoms may include disruption of gonadal, thyroid, adrenal, or pancreatic function, changes in hormone production, alterations in circulating hormone levels, and/or changes in tissue response to hormones. Kidney/Bladder effects: Signs/symptoms may include changes in urine production, abdominal or lower back pain, increased protein in urine, increased blood urea nitrogen (BUN), blood in urine, and painful urination.

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 >200 - =1,000 mg/kg
Overall product	Ingestion		No data available; calculated ATE >300 - =2,000 mg/kg
4-nonylphenol, branched	Dermal	Rabbit	LD50 > 2,000 mg/kg
4-nonylphenol, branched	Ingestion	Rat	LD50 1,531 mg/kg
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	Dermal	Rabbit	LD50 > 200 mg/kg
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.42 mg/l
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	Ingestion	Rat	LD50 > 320 mg/kg
benzyl alcohol	Inhalation-Dust/Mist (4 hours)	Rat	LC50 8.8 mg/l
benzyl alcohol	Ingestion	Rat	LD50 1,200 mg/kg
Phenol, 2-nonyl-, branched	Dermal	Rabbit	LD50 > 2,000 mg/kg
Phenol, 2-nonyl-, branched	Ingestion	Rat	LD50 1,531 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Overall product	In vitro data	Irritant
4-nonylphenol, branched	Rabbit	Corrosive
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	Rabbit	Corrosive
benzyl alcohol	Multiple animal species	Mild irritant
Phenol, 2-nonyl-, branched	Rabbit	Corrosive

Serious Eye Damage/Irritation

Name	Species	Value
Overall product	similar health hazards	Severe irritant
4-nonylphenol, branched	Rabbit	Corrosive
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	Rabbit	Corrosive
benzyl alcohol	Rabbit	Severe irritant
Phenol, 2-nonyl-, branched	Rabbit	Corrosive

Skin Sensitisation

Name	Species	Value
4-nonylphenol, branched	Guinea pig	Not classified
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	Guinea pig	Not classified
benzyl alcohol	Human	Some positive data exist, but the data are not sufficient for classification
Phenol, 2-nonyl-, branched	Guinea pig	Not classified

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
4-nonylphenol, branched	In Vitro	Not mutagenic
4-nonylphenol, branched	In vivo	Not mutagenic
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	In Vitro	Not mutagenic
benzyl alcohol	In vivo	Not mutagenic
benzyl alcohol	In Vitro	Some positive data exist, but the data are not sufficient for classification
Phenol, 2-nonyl-, branched	In Vitro	Not mutagenic
Phenol, 2-nonyl-, branched	In vivo	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
benzyl alcohol	Ingestion	Multiple animal species	Not carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
4-nonylphenol, branched	Ingestion	Not classified for male reproduction	Rat	NOAEL 400 mg/kg/day	28 days
4-nonylphenol, branched	Ingestion	Toxic to female reproduction	official classification	NOAEL Not available	
4-nonylphenol, branched	Ingestion	Toxic to development	official classification	NOAEL Not available	
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	Ingestion	Not classified for female reproduction	Rat	NOAEL 1.5 mg/kg/day	1 generation
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	Ingestion	Not classified for male reproduction	Rat	NOAEL 1.5 mg/kg/day	1 generation
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	Ingestion	Not classified for development	Rat	NOAEL 45 mg/kg/day	during gestation
benzyl alcohol	Ingestion	Not classified for development	Mouse	NOAEL 550 mg/kg/day	during organogenesis
Phenol, 2-nonyl-, branched	Ingestion	Not classified for male reproduction	Rat	NOAEL 400 mg/kg/day	28 days
Phenol, 2-nonyl-, branched	Ingestion	Toxic to female reproduction	official classification	NOAEL Not available	
Phenol, 2-nonyl-, branched	Ingestion	Toxic to development	official classification	NOAEL Not available	

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
4-nonylphenol, branched	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL Not available	
benzyl alcohol	Inhalation	central nervous system depression	May cause drowsiness or dizziness		NOAEL Not available	
benzyl alcohol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	

benzyl alcohol	Ingestion	central nervous system depression	May cause drowsiness or dizziness		NOAEL Not available	
Phenol, 2-nonyl-, branched	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
4-nonylphenol, branched	Ingestion	endocrine system | hematopoietic system | liver	Not classified	Rat	NOAEL 400 mg/kg/day	28 days
4-nonylphenol, branched	Ingestion	kidney and/or bladder | heart | bone, teeth, nails, and/or hair | immune system | muscles | nervous system | respiratory system	Not classified	Rat	NOAEL 150 mg/kg/day	90 days
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	Inhalation	endocrine system | hematopoietic system | liver | kidney and/or bladder | respiratory system	Not classified	Rat	NOAEL 0.048 mg/l	3 months
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	Inhalation	skin	Not classified	Human	NOAEL Not available	occupational exposure
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	Inhalation	heart | gastrointestinal tract | bone, teeth, nails, and/or hair | immune system | muscles | nervous system | eyes | vascular system	Not classified	Rat	NOAEL 0.048 mg/l	3 months
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	Ingestion	muscles	May cause damage to organs though prolonged or repeated exposure	Rat	NOAEL 5 mg/kg/day	3 months
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	Ingestion	heart | kidney and/or bladder	May cause damage to organs though prolonged or repeated exposure	Rat	NOAEL 2.5 mg/kg/day	3 months
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	Ingestion	endocrine system | hematopoietic system | liver	May cause damage to organs though prolonged or repeated exposure	Rat	NOAEL 12 mg/kg/day	3 months
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	Ingestion	gastrointestinal tract | immune system | nervous system | eyes | respiratory system	Not classified	Rat	NOAEL 5 mg/kg/day	3 months
benzyl alcohol	Ingestion	endocrine system | muscles | kidney and/or bladder	Not classified	Rat	NOAEL 400 mg/kg/day	13 weeks
benzyl alcohol	Ingestion	nervous system | respiratory system	Not classified	Mouse	NOAEL 645 mg/kg/day	8 days
Phenol, 2-nonyl-, branched	Ingestion	endocrine system | hematopoietic system | liver	Not classified	Rat	NOAEL 400 mg/kg/day	28 days
Phenol, 2-nonyl-, branched	Ingestion	kidney and/or bladder | heart | bone, teeth, nails, and/or hair | immune system | muscles | nervous system | respiratory system	Not classified	Rat	NOAEL 150 mg/kg/day	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
4-nonylphenol, branched	84852-15-3	Fish	Analogous Compound	96 hours	LC50	0.05 mg/l
4-nonylphenol, branched	84852-15-3	Green algae	Analogous Compound	72 hours	ErC50	0.323 mg/l
4-nonylphenol, branched	84852-15-3	Invertebrate	Analogous Compound	96 hours	LC50	0.038 mg/l
4-nonylphenol, branched	84852-15-3	Diatom	Experimental	96 hours	EC50	0.027 mg/l
4-nonylphenol, branched	84852-15-3	Fish	Experimental	96 hours	LC50	0.017 mg/l
4-nonylphenol, branched	84852-15-3	Water flea	Experimental	48 hours	LC50	0.02 mg/l
4-nonylphenol, branched	84852-15-3	Green algae	Analogous Compound	72 hours	ErC10	0.0251 mg/l
4-nonylphenol, branched	84852-15-3	Midge	Analogous Compound	28 days	EC10	203 mg/kg (Dry Weight)
4-nonylphenol, branched	84852-15-3	Rainbow trout	Analogous Compound	91 days	NOEC	0.006 mg/l
4-nonylphenol, branched	84852-15-3	Water flea	Analogous Compound	21 days	NOEC	0.024 mg/l
4-nonylphenol, branched	84852-15-3	Mysid Shrimp	Experimental	28 days	NOEC	0.0039 mg/l
4-nonylphenol, branched	84852-15-3	Activated sludge	Analogous Compound	3 hours	EC50	950 mg/l
4-nonylphenol, branched	84852-15-3	Japanese quail	Analogous Compound	147 days	NOEC	-10 ppm diet
4-nonylphenol, branched	84852-15-3	Lettuce	Analogous Compound	14 days	EC50	625 mg/kg (Dry Weight)
4-nonylphenol, branched	84852-15-3	Soil microbes	Analogous Compound	40 days	NOEC	100 mg/kg (Dry Weight)
4-nonylphenol, branched	84852-15-3	Springtail	Analogous Compound	21 days	EC10	23 mg/kg (Dry Weight)
4-nonylphenol, branched	84852-15-3	Worm	Analogous Compound	14 days	LC50	88.6 mg/kg (Wet Weight)
4-nonylphenol, branched	84852-15-3	Worm	Analogous Compound	28 days	NOEC	24 mg/kg (Dry Weight)
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	6864-37-5	Activated sludge	Experimental	30 minutes	EC20	160 mg/l

2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	6864-37-5	Bacteria	Experimental	17 hours	EC50	96 mg/l
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	6864-37-5	Green algae	Experimental	72 hours	ErC50	7.9 mg/l
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	6864-37-5	Medaka	Experimental	96 hours	LC50	22 mg/l
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	6864-37-5	Water flea	Experimental	48 hours	EC50	4.6 mg/l
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	6864-37-5	Green algae	Experimental	72 hours	NOEC	0.13 mg/l
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	6864-37-5	Water flea	Experimental	21 days	NOEC	4 mg/l
benzyl alcohol	100-51-6	Activated sludge	Experimental	3 hours	EC50	1,385 mg/l
benzyl alcohol	100-51-6	Fathead minnow	Experimental	96 hours	LC50	460 mg/l
benzyl alcohol	100-51-6	Green algae	Experimental	72 hours	ErC50	770 mg/l
benzyl alcohol	100-51-6	Water flea	Experimental	48 hours	EC50	230 mg/l
benzyl alcohol	100-51-6	Green algae	Experimental	72 hours	NOEC	310 mg/l
benzyl alcohol	100-51-6	Water flea	Experimental	21 days	NOEC	51 mg/l
Phenol, 2-nonyl-, branched	91672-41-2	Diatom	Analogous Compound	96 hours	EC50	0.027 mg/l
Phenol, 2-nonyl-, branched	91672-41-2	Fish	Analogous Compound	96 hours	LC50	0.017 mg/l
Phenol, 2-nonyl-, branched	91672-41-2	Fish	Analogous Compound	96 hours	LC50	0.05 mg/l
Phenol, 2-nonyl-, branched	91672-41-2	Green algae	Analogous Compound	72 hours	ErC50	0.323 mg/l
Phenol, 2-nonyl-, branched	91672-41-2	Invertebrate	Analogous Compound	96 hours	LC50	0.038 mg/l
Phenol, 2-nonyl-, branched	91672-41-2	Water flea	Analogous Compound	48 hours	LC50	0.02 mg/l
Phenol, 2-nonyl-, branched	91672-41-2	Green algae	Analogous Compound	72 hours	ErC10	0.0251 mg/l
Phenol, 2-nonyl-, branched	91672-41-2	Midge	Analogous Compound	28 days	EC10	203 mg/l
Phenol, 2-nonyl-, branched	91672-41-2	Mysid Shrimp	Analogous Compound	28 days	NOEC	0.0039 mg/l
Phenol, 2-nonyl-, branched	91672-41-2	Rainbow trout	Analogous Compound	91 days	NOEC	0.006 mg/l
Phenol, 2-nonyl-, branched	91672-41-2	Water flea	Analogous Compound	21 days	NOEC	0.024 mg/l
Phenol, 2-nonyl-, branched	91672-41-2	Activated sludge	Analogous Compound	3 hours	EC50	950 mg/l
Phenol, 2-nonyl-, branched	91672-41-2	Japanese quail	Analogous Compound	147 days	NOEC	-10 ppm diet
Phenol, 2-nonyl-, branched	91672-41-2	Lettuce	Analogous Compound	14 days	EC50	625 mg/kg (Dry Weight)
Phenol, 2-nonyl-, branched	91672-41-2	Soil microbes	Analogous Compound	40 days	NOEC	100 mg/kg (Dry Weight)
Phenol, 2-nonyl-, branched	91672-41-2	Springtail	Analogous Compound	21 days	EC10	23 mg/kg (Dry Weight)
Phenol, 2-nonyl-, branched	91672-41-2	Worm	Analogous Compound	14 days	LC50	88.6 mg/kg (Dry Weight)
Phenol, 2-nonyl-, branched	91672-41-2	Worm	Analogous Compound	28 days	NOEC	24 mg/kg (Dry Weight)

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
4-nonylphenol, branched	84852-15-3	Experimental Biodegradation	28 days	CO2 evolution	53 %CO2 evolution/THCO2 evolution (does not pass 10-day window)	OECD 301B - Modified sturm or CO2
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	6864-37-5	Experimental Biodegradation	28 days	BOD	0 %BOD/ThOD	OECD 301C - MITI test (I)
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	6864-37-5	Experimental Biodegradation	28 days	Dissolv. Organic Carbon Deplet	<1 %removal of DOC	OECD 302B Zahn-Wellens/EVPA
benzyl alcohol	100-51-6	Experimental Biodegradation	14 days	BOD	94 %BOD/ThOD	OECD 301C - MITI test (I)
Phenol, 2-nonyl-, branched	91672-41-2	Analogous Compound Biodegradation	28 days	CO2 evolution	53 %CO2 evolution/THCO2 evolution (does not pass 10-day window)	OECD 301B - Modified sturm or CO2

12.3 : Bioaccumulative potential

Material	Cas No.	Test type	Duration	Study Type	Test result	Protocol
4-nonylphenol, branched	84852-15-3	Experimental BCF - Fish	28 days	Bioaccumulation factor	984	
4-nonylphenol, branched	84852-15-3	Experimental BCF - Fish	16 days	Bioaccumulation factor	1300	similar to OECD 305
4-nonylphenol, branched	84852-15-3	Experimental Bioconcentration		Log Kow	5.4	OECD 117 log Kow HPLC method
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	6864-37-5	Experimental BCF - Fish	60 days	Bioaccumulation factor	60	OECD305-Bioconcentration
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	6864-37-5	Experimental Bioconcentration		Log Kow	2.51	OECD 107 log Kow shke flsk mtd
benzyl alcohol	100-51-6	Experimental Bioconcentration		Log Kow	1.10	
Phenol, 2-nonyl-, branched	91672-41-2	Analogous Compound BCF - Fish	28 days	Bioaccumulation factor	984	
Phenol, 2-nonyl-, branched	91672-41-2	Analogous Compound BCF - Fish	16 days	Bioaccumulation factor	1300	similar to OECD 305
Phenol, 2-nonyl-, branched	91672-41-2	Analogous Compound Bioconcentration		Log Kow	5.4	OECD 117 log Kow HPLC method

12.4. Mobility in soil

Material	Cas No.	Test type	Study Type	Test result	Protocol
4-nonylphenol, branched	84852-15-3	Analogous Compound Mobility in Soil	Koc	11,060 l/kg	OECD 106 Adsp-Desb Batch Equil
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	6864-37-5	Modeled Mobility in Soil	Koc	≤1.5	ACD/Labs ChemSketch™
benzyl alcohol	100-51-6	Experimental Mobility in Soil	Koc	29 l/kg	
Phenol, 2-nonyl-, branched	91672-41-2	Analogous Compound Mobility in Soil	Koc	11,060 l/kg	OECD 106 Adsp-Desb Batch Equil

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

Ingredient	CAS Nbr	Environmental endocrine disruptor information
4-nonylphenol, branched	84852-15-3	This chemical has been determined to cause long-term effects in a wide range of taxa, such as transgenerational effects or changes in the gene pool, and exposure may result in reproductive disorders and dysfunction in wildlife.

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
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	UN2810	UN2810	UN2810
14.2 UN proper shipping name	TOXIC LIQUID, ORGANIC, N.O.S.(4,4-METHYLENEBIS(2-METHYLCYCLOHEXYLAMINE))	TOXIC LIQUID, ORGANIC, N.O.S.(4,4-METHYLENEBIS(2-METHYLCYCLOHEXYLAMINE))	TOXIC LIQUID, ORGANIC, N.O.S.(4,4-METHYLENEBIS(2-METHYLCYCLOHEXYLAMINE); 4-NONYL PHENOL,BRANCHED)
14.3 Transport hazard class(es)	6.1	6.1	6.1

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	T1	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

Authorization status under REACH:
The following substance/s contained in this product might be or is/are subject to authorization in accordance with REACH:

Ingredient	CAS Nbr
4-nonylphenol, branched	84852-15-3

Authorization status: listed in the Candidate List of Substances of Very High Concern for Authorization

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. 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

Hazard Categories	Qualifying quantity (tonnes) for the application of	
	Lower-tier requirements	Upper-tier requirements
E1 Hazardous to the Aquatic environment	100	200

Seveso named dangerous substances, Annex 1, Part 2
None

Regulation (EU) No 649/2012

Chemical	Identifier(s)	Annex I
Phenol, 2-nonyl-, branched	91672-41-2	Part 2
4-nonylphenol, branched	84852-15-3	Part 2

15.2. Chemical Safety Assessment
A chemical safety assessment has not been carried out for this mixture. Chemical safety assessments for the contained substances may have been carried out by the registrants of the substances in accordance with Regulation (EC) No 1907/2006, as amended.

SECTION 16: Other information

List of relevant H statements

H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H361df	Suspected of damaging fertility. Suspected of damaging the unborn child.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure: blood or blood-forming organs | cardiovascular system | endocrine system | kidney/urinary tract | liver | musculoskeletal system.
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:
Section 2: <125ml Hazard - Health information was modified.
Section 2: <125ml Precautionary - Response information was added.
CLP: Ingredient table information was modified.
Section 02: CLP Physical and Health Hazard Statements information was modified.
Label: CLP Classification information was modified.
Label: CLP Percent Unknown information was deleted.
Label: CLP Percent Unknown information was modified.
Label: CLP Precautionary - Prevention information was modified.
Label: CLP Precautionary - Response information was modified.
Label: CLP Target Organ Hazard Statement information was added.

Section 3: Composition/ Information of ingredients table information was modified.
Section 04: First Aid - Symptoms and Effects (CLP) information was modified.
Section 6: Accidental release clean-up information information was modified.
Section 6: Accidental release personal information information was modified.
Section 7: Conditions safe storage information was modified.
Section 7: Precautions safe handling information information was modified.
Section 8: Appropriate Engineering controls information information was modified.
Section 8: Eye/face protection information information was modified.
Section 8: Personal Protection - Skin/body information information was added.
Section 8: Respiratory protection - recommended respirators information information was modified.
Section 8: Skin protection - protective clothing information information was added.
Section 11: Acute Toxicity table information was modified.
Section 11: Germ Cell Mutagenicity Table information was modified.
Section 11: Health Effects - Skin information information was modified.
Lactation Table information was deleted.
Section 11: Prolonged or repeated exposure may cause standard phrases information was added.
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 modified.
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.
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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