Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the REACH Regulation (1907/2006), as amended for GB.

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

1.1. Product identifier
3M™ Scotch-Weld™ Structural Adhesive Film AF 31

Product Identification Numbers
62-1514-4705-9

7000046333

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 United Kingdom PLC, 3M Centre, Cain Road, Bracknell, Berkshire, RG12 8HT.
Telephone:	+44 (0)1344 858 000
E Mail:	ner-productstewardship@mmm.com
Website:	www.3M.com/uk

1.4. Emergency telephone number
+44 (0)1344 858 000

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture
The retained CLP Regulation (EU) No 1272/2008 as amended for Great Britain

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 Corrosion/Irritation, Category 2 - Skin Irrit. 2; H315
Skin Sensitization, Category 1 - Skin Sens. 1; H317
Germ Cell Mutagenicity, Category 2 - Muta. 2; H341
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
The retained CLP Regulation (EU) No 1272/2008 as amended for Great Britain

SIGNAL WORD
WARNING.

Symbols
GHS07 (Exclamation mark) |GHS08 (Health Hazard) |GHS09 (Environment) |

Pictograms



Ingredient	CAS Nbr	EC No.	% by Wt
Formaldehyde, oligomeric reaction products with phenol	9003-35-4	500-005-2	40 - 70
methenamine	100-97-0	202-905-8	4 - 10
N-cyclohexylbenzothiazole-2- sulphenamide	95-33-0	202-411-2	< 0.5
phenol	108-95-2	203-632-7	< 3

HAZARD STATEMENTS:

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H341	Suspected of causing genetic defects.
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.

2.3. Other hazards

Persons previously sensitised to amines may develop a cross-sensitisation reaction to certain other amines.
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], as amended for GB
Formaldehyde, oligomeric reaction products with phenol	(CAS-No.) 9003-35-4 (EC-No.) 500-005-2	40 - 70	Skin Sens. 1, H317
Acrylonitrile - butadiene polymer	(CAS-No.) 9003-18-3	15 - 40	Substance not classified as hazardous
methenamine	(CAS-No.) 100-97-0 (EC-No.) 202-905-8	4 - 10	Flam. Sol. 2, H228 Skin Sens. 1B, H317
sulfur	(CAS-No.) 7704-34-9 (EC-No.) 231-722-6	1 - 5	Skin Irrit. 2, H315
N-cyclohexylbenzothiazole-2-sulphenamide	(CAS-No.) 95-33-0 (EC-No.) 202-411-2	< 0.5	Skin Sens. 1, H317 Aquatic Acute 1, H400,M=1 Aquatic Chronic 1, H410,M=10
zinc oxide	(CAS-No.) 1314-13-2 (EC-No.) 215-222-5	1 - 5	Aquatic Acute 1, H400,M=1 Aquatic Chronic 1, H410,M=1
phenol	(CAS-No.) 108-95-2 (EC-No.) 203-632-7	< 3	Acute Tox. 3, H331 Acute Tox. 3, H311 Acute Tox. 3, H301 Skin Corr. 1B, H314 Muta. 2, H341 STOT RE 2, H373 Aquatic Chronic 2, H411
Distillates (petroleum), hydro- treated light	(CAS-No.) 64742-47-8 (EC-No.) 265-149-8	< 2	Asp. Tox. 1, H304 Aquatic Chronic 2, H411 Flam. Liq. 3, H226 Skin Irrit. 2, H315 STOT SE 3, H336

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
phenol	(CAS-No.) 108-95-2 (EC-No.) 203-632-7	(C >= 3%) Skin Corr. 1B, H314 (1% =< C < 3%) Skin Irrit. 2, H315 (1% =< C < 3%) Eye Irrit. 2, H319

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 GB CLP classification include:
Irritation to the skin (localized redness, swelling, itching, and dryness). 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
formaldehyde	During combustion.
Carbon monoxide	During combustion.
Carbon dioxide.	During combustion.
Ammonia	During combustion.
Oxides of nitrogen.	During combustion.
Oxides of sulphur.	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
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. Evacuate area. Ventilate the area with fresh air.

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. Seal the container. Dispose of collected material as soon as possible.

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 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.

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

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
phenol	108-95-2	UK HSE	TWA:7.8 mg/m3(2 ppm);STEL:16 mg/m3(4 ppm)	SKIN
DUST, INERT OR NUISANCE	1314-13-2	UK HSE	TWA(as respirable dust):4 mg/m3;TWA(as inhalable dust):10 mg/m3	

UK HSE : UK Health and Safety Commission
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.

8.2. Exposure controls

8.2.1. Engineering controls
Curing enclosures must be exhausted to outdoors or to a suitable emission control device. 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.

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 (e.g., spraying, high splash potential, etc.), then use of a protective apron may be necessary. See recommended glove material(s) for determining appropriate apron material(s). If a glove material is not available as an apron, polymer laminate is a suitable option.

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	Solid.
Specific Physical Form:	Film
Colour	Brown, Yellow
Odor	Odourless
Odour threshold	*No data available.*
Melting point/freezing point	*No data available.*
Boiling point/boiling range	*Not applicable.*
Flammability	Not applicable.
Flammable Limits(LEL)	*Not applicable.*
Flammable Limits(UEL)	*Not applicable.*
Flash point	No flash point

Autoignition temperature	*Not applicable.*
Decomposition temperature	*No data available.*
pH	*substance/mixture is non-soluble (in water)*
Kinematic Viscosity	*Not applicable.*
Water solubility	Nil
Solubility- non-water	*No data available.*
Partition coefficient: n-octanol/water	*No data available.*
Vapour pressure	*Not applicable.*
Density	*No data available.*
Relative density	*No data available.*
Relative Vapour Density	*Not applicable.*
Particle Characteristics	*Not applicable.*

9.2. Other information

9.2.2 Other safety characteristics

EU Volatile Organic Compounds	*No data available.*
Evaporation rate	*Not applicable.*
Percent volatile	Nil

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
Amines.

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 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 3M assessments.

11.1. Information on hazard classes as defined in the retained CLP Regulation (EU) No 1272/2008, as amended for Great Britain.

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
Skin Irritation: Signs/symptoms may include localised redness, swelling, itching, dryness, cracking, blistering, and pain. Allergic skin reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching. May cause additional health effects (see below).

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

Ingestion
Physical Blockage: Signs/symptoms may include cramping, abdominal pain, and constipation. May cause additional health effects (see below).

Additional Health Effects:

Single 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. Neurological effects: Signs/symptoms may include personality changes, lack of coordination, sensory loss, tingling or numbness of the extremities, weakness, tremors, and changes in blood pressure and heart rate. Respiratory effects: Signs/symptoms may include cough, shortness of breath, chest tightness, wheezing, increased heart rate, bluish coloured skin (cyanosis), sputum production, changes in lung function tests, and respiratory failure. 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.

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. Neurological effects: Signs/symptoms may include personality changes, lack of coordination, sensory loss, tingling or numbness of the extremities, weakness, tremors, and changes in blood pressure and heart rate. Respiratory effects: Signs/symptoms may include cough, shortness of breath, chest tightness, wheezing, increased heart rate, bluish coloured skin (cyanosis), sputum production, changes in lung function tests, and respiratory failure. 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.

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

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
Formaldehyde, oligomeric reaction products with phenol	Dermal	Rat	LD50 > 2,000 mg/kg

Formaldehyde, oligomeric reaction products with phenol	Ingestion	Rat	LD50 > 2,900 mg/kg
Acrylonitrile - butadiene polymer	Dermal	Rabbit	LD50 > 15,000 mg/kg
Acrylonitrile - butadiene polymer	Ingestion	Rat	LD50 > 30,000 mg/kg
methenamine	Dermal	Rat	LD50 > 2,000 mg/kg
methenamine	Ingestion	Rat	LD50 9,200 mg/kg
phenol	Inhalation-Vapour		LC50 estimated to be 2 - 10 mg/l
phenol	Dermal	Rat	LD50 670 mg/kg
phenol	Ingestion	Rat	LD50 340 mg/kg
sulfur	Dermal	Rabbit	LD50 > 2,000 mg/kg
sulfur	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 9.2 mg/l
sulfur	Ingestion	Rat	LD50 > 5,000 mg/kg
zinc oxide	Dermal		LD50 estimated to be > 5,000 mg/kg
zinc oxide	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.7 mg/l
zinc oxide	Ingestion	Rat	LD50 > 5,000 mg/kg
Distillates (petroleum), hydro- treated light	Inhalation-Vapour	Professional judgement	LC50 estimated to be 20 - 50 mg/l
Distillates (petroleum), hydro- treated light	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 3 mg/l
Distillates (petroleum), hydro- treated light	Ingestion	Rat	LD50 > 5,000 mg/kg
Distillates (petroleum), hydro- treated light	Dermal	similar compounds	LD50 > 2,000 mg/kg
N-cyclohexylbenzothiazole-2- sulphenamide	Dermal	Rabbit	LD50 > 7,940 mg/kg
N-cyclohexylbenzothiazole-2- sulphenamide	Ingestion	Rat	LD50 5,300 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Formaldehyde, oligomeric reaction products with phenol	Human and animal	Mild irritant
Acrylonitrile - butadiene polymer	Professional judgement	No significant irritation
methenamine	Rabbit	No significant irritation
phenol	Rat	Corrosive
sulfur	Rabbit	Irritant
zinc oxide	Human and animal	No significant irritation
Distillates (petroleum), hydro- treated light	Rabbit	Irritant
N-cyclohexylbenzothiazole-2- sulphenamide	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Formaldehyde, oligomeric reaction products with phenol	Human and animal	Moderate irritant
Acrylonitrile - butadiene polymer	Professional judgement	No significant irritation
methenamine	Rabbit	No significant irritation

phenol	Rabbit	Corrosive
sulfur	Rabbit	Mild irritant
zinc oxide	Rabbit	Mild irritant
Distillates (petroleum), hydro- treated light	Rabbit	Mild irritant
N-cyclohexylbenzothiazole-2- sulphenamide	Rabbit	Mild irritant

Skin Sensitisation

Name	Species	Value
Formaldehyde, oligomeric reaction products with phenol	Human and animal	Sensitising
methenamine	Multiple animal species	Sensitising
phenol	Guinea pig	Not classified
zinc oxide	Guinea pig	Not classified
Distillates (petroleum), hydro- treated light	Guinea pig	Not classified
N-cyclohexylbenzothiazole-2- sulphenamide	Human	Sensitising

Respiratory Sensitisation

Name	Species	Value
Formaldehyde, oligomeric reaction products with phenol	Human	Not classified

Germ Cell Mutagenicity

Name	Route	Value
methenamine	In vivo	Not mutagenic
methenamine	In Vitro	Some positive data exist, but the data are not sufficient for classification
phenol	In Vitro	Some positive data exist, but the data are not sufficient for classification
phenol	In vivo	Some positive data exist, but the data are not sufficient for classification
zinc oxide	In Vitro	Some positive data exist, but the data are not sufficient for classification
zinc oxide	In vivo	Some positive data exist, but the data are not sufficient for classification
Distillates (petroleum), hydro- treated light	In Vitro	Not mutagenic
N-cyclohexylbenzothiazole-2- sulphenamide	In vivo	Not mutagenic
N-cyclohexylbenzothiazole-2- sulphenamide	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
methenamine	Ingestion	Multiple animal species	Not carcinogenic
methenamine	Dermal	Human	Some positive data exist, but the data are not sufficient for classification
methenamine	Inhalation	Human	Some positive data exist, but the data are not sufficient for classification
phenol	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
phenol	Ingestion	Rat	Some positive data exist, but the data are not sufficient for classification
Distillates (petroleum), hydro- treated light	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
N-cyclohexylbenzothiazole-2- sulphenamide	Ingestion	Mouse	Not carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
methenamine	Ingestion	Not classified for female reproduction	Rat	NOAEL 2,000 mg/kg/day	3 generation
methenamine	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,500 mg/kg/day	3 generation
methenamine	Ingestion	Not classified for development	Dog	NOAEL 15 mg/kg/day	during gestation
phenol	Ingestion	Not classified for female reproduction	Rat	NOAEL 321 mg/kg/day	2 generation
phenol	Ingestion	Not classified for male reproduction	Rat	NOAEL 321 mg/kg/day	2 generation
phenol	Ingestion	Not classified for development	Rat	NOAEL 120 mg/kg/day	during organogenesis
zinc oxide	Ingestion	Not classified for reproduction and/or development	Multiple animal species	NOAEL 125 mg/kg/day	premating & during gestation
N-cyclohexylbenzothiazole-2-sulphenamide	Ingestion	Not classified for development	Rat	NOAEL 300 mg/kg/day	during organogenesis

Lactation

Name	Route	Species	Value
methenamine	Ingestion	Human	Not classified for effects on or via lactation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Formaldehyde, oligomeric reaction products with phenol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human and animal	NOAEL Not available	
phenol	Dermal	hematoppoitic system	Causes damage to organs	Rat	LOAEL 108 mg/kg	not available
phenol	Dermal	heart | nervous system | kidney and/or bladder	Causes damage to organs	Rat	LOAEL 107 mg/kg	24 hours
phenol	Dermal	liver	Not classified	Human	NOAEL Not available	not available
phenol	Inhalation	respiratory irritation	May cause respiratory irritation	Multiple animal species	NOAEL Not available	not available
phenol	Ingestion	kidney and/or bladder	Causes damage to organs	Rat	NOAEL 120 mg/kg/day	not applicable
phenol	Ingestion	respiratory system	Causes damage to organs	Human	NOAEL not available	poisoning and/or abuse
phenol	Ingestion	endocrine system | liver	Not classified	Rat	NOAEL 224 mg/kg	not applicable
phenol	Ingestion	heart	Not classified	Human	NOAEL Not available	poisoning and/or abuse
Distillates (petroleum), hydro- treated light	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
Distillates (petroleum), hydro- treated light	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
Distillates (petroleum), hydro- treated light	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional	NOAEL Not available	

				judgeme nt		

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Formaldehyde, oligomeric reaction products with phenol	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
phenol	Dermal	nervous system	May cause damage to organs though prolonged or repeated exposure	Rabbit	LOAEL 260 mg/kg/day	18 days
phenol	Inhalation	heart | liver | kidney and/or bladder | respiratory system	Causes damage to organs through prolonged or repeated exposure	Guinea pig	LOAEL 0.1 mg/l	41 days
phenol	Inhalation	nervous system	May cause damage to organs though prolonged or repeated exposure	Multiple animal species	LOAEL 0.1 mg/l	14 days
phenol	Inhalation	hematopoietic system	Not classified	Human	NOAEL Not available	occupational exposure
phenol	Inhalation	immune system	Not classified	Rat	NOAEL 0.1 mg/l	2 weeks
phenol	Ingestion	kidney and/or bladder	Causes damage to organs through prolonged or repeated exposure	Rat	NOAEL 12 mg/kg/day	14 days
phenol	Ingestion	hematopoietic system	Causes damage to organs through prolonged or repeated exposure	Mouse	LOAEL 1.8 mg/kg/day	28 days
phenol	Ingestion	nervous system	May cause damage to organs though prolonged or repeated exposure	Rat	LOAEL 308 mg/kg/day	13 weeks
phenol	Ingestion	liver	Not classified	Rat	NOAEL 40 mg/kg/day	14 days
phenol	Ingestion	respiratory system	Not classified	Rat	LOAEL 40 mg/kg/day	14 days
phenol	Ingestion	immune system	Not classified	Mouse	NOAEL 1.8 mg/kg/day	28 days
phenol	Ingestion	endocrine system	Not classified	Rat	NOAEL 120 mg/kg/day	14 days
phenol	Ingestion	skin | bone, teeth, nails, and/or hair	Not classified	Multiple animal species	NOAEL 1,204 mg/kg/day	103 weeks
zinc oxide	Ingestion	nervous system	Not classified	Rat	NOAEL 600 mg/kg/day	10 days
zinc oxide	Ingestion	endocrine system | hematopoietic system | kidney and/or bladder	Not classified	Other	NOAEL 500 mg/kg/day	6 months
N-cyclohexylbenzothiazole-2- sulphenamide	Dermal	skin | hematopoietic system	Not classified	Rabbit	NOAEL 2,000 mg/kg/day	21 days
N-cyclohexylbenzothiazole-2- sulphenamide	Inhalation	hematopoietic system | immune system | respiratory system | eyes | kidney and/or bladder	Not classified	Rat	NOAEL 0.048 mg/l	29 days
N-cyclohexylbenzothiazole-2- sulphenamide	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 800 mg/kg/day	28 days
N-cyclohexylbenzothiazole-2- sulphenamide	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 80 mg/kg/day	28 days
N-cyclohexylbenzothiazole-2- sulphenamide	Ingestion	heart | endocrine system | gastrointestinal tract | immune system | nervous system	Not classified	Rat	NOAEL 800 mg/kg/day	28 days

Aspiration Hazard

Name	Value
Distillates (petroleum), hydro- treated light	Aspiration hazard

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

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 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
Formaldehyde, oligomeric reaction products with phenol	9003-35-4	N/A	Data not available or insufficient for classification	N/A	N/A	n/a
Acrylonitrile - butadiene polymer	9003-18-3	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
methenamine	100-97-0	Bluegill	Experimental	96 hours	LC50	41,000 mg/l
methenamine	100-97-0	Water flea	Experimental	48 hours	LC50	36,000 mg/l
N-cyclohexylbenzothiazole-2-sulphenamide	95-33-0	Activated sludge	Experimental	3 hours	EC50	>10,000 mg/l
N-cyclohexylbenzothiazole-2-sulphenamide	95-33-0	Green algae	Experimental	72 hours	ErC50	0.15 mg/l
N-cyclohexylbenzothiazole-2-sulphenamide	95-33-0	Medaka	Experimental	96 hours	LC50	2.1 mg/l
N-cyclohexylbenzothiazole-2-sulphenamide	95-33-0	Water flea	Experimental	48 hours	EC50	0.79 mg/l
N-cyclohexylbenzothiazole-2-sulphenamide	95-33-0	Green algae	Experimental	72 days	NOEC	0.008 mg/l
N-cyclohexylbenzothiazole-2-sulphenamide	95-33-0	Water flea	Experimental	21 days	NOEC	0.058 mg/l
sulfur	7704-34-9	Algae or other aquatic plants	Endpoint not reached	72 hours	EL50	>100 mg/l
sulfur	7704-34-9	Activated sludge	Experimental	3 hours	EC50	1,900 mg/l
sulfur	7704-34-9	Rainbow trout	Experimental	96 hours	LL50	>100 mg/l

sulfur	7704-34-9	Water flea	Experimental	48 hours	EL50	>100 mg/l
zinc oxide	1314-13-2	Activated sludge	Estimated	3 hours	EC50	6.5 mg/l
zinc oxide	1314-13-2	Green algae	Estimated	72 hours	EC50	0.052 mg/l
zinc oxide	1314-13-2	Rainbow trout	Estimated	96 hours	LC50	0.21 mg/l
zinc oxide	1314-13-2	Water flea	Estimated	48 hours	EC50	0.07 mg/l
zinc oxide	1314-13-2	Green algae	Estimated	72 hours	NOEC	0.006 mg/l
zinc oxide	1314-13-2	Water flea	Estimated	7 days	NOEC	0.02 mg/l
phenol	108-95-2	Bacteria	Experimental	24 hours	IC50	21 mg/l
phenol	108-95-2	Green algae	Experimental	96 hours	EC50	61.1 mg/l
phenol	108-95-2	Rainbow trout	Experimental	96 hours	LC50	8.9 mg/l
phenol	108-95-2	Water flea	Experimental	48 hours	EC50	3.1 mg/l
phenol	108-95-2	Fish	Experimental	60 days	NOEC	0.077 mg/l
phenol	108-95-2	Water flea	Experimental	16 days	NOEC	0.16 mg/l
Distillates (petroleum), hydro-treated light	64742-47-8	Green algae	Estimated	72 hours	EC50	1 mg/l
Distillates (petroleum), hydro-treated light	64742-47-8	Rainbow trout	Estimated	96 hours	LL50	2 mg/l
Distillates (petroleum), hydro-treated light	64742-47-8	Water flea	Estimated	48 hours	EL50	1.4 mg/l
Distillates (petroleum), hydro-treated light	64742-47-8	Green algae	Estimated	72 hours	NOEL	1 mg/l
Distillates (petroleum), hydro-treated light	64742-47-8	Water flea	Estimated	21 days	NOEL	0.48 mg/l

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Formaldehyde, oligomeric reaction products with phenol	9003-35-4	Estimated Biodegradation	28 days	BOD	3 %BOD/ThOD	
Acrylonitrile - butadiene polymer	9003-18-3	Data not availbl-insufficient	N/A	N/A	N/A	N/A
methenamine	100-97-0	Experimental Hydrolysis		Hydrolytic half-life	13.8 hours (t 1/2)	
N-cyclohexylbenzothiazole-2-sulphenamide	95-33-0	Experimental Biodegradation	28 days	BOD	0 %BOD/ThOD	EC C.4.F. MITI Test
N-cyclohexylbenzothiazole-2-sulphenamide	95-33-0	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	12.5 hours (t 1/2)	similar to OECD 111
sulfur	7704-34-9	Data not availbl-insufficient	N/A	N/A	N/A	N/A
zinc oxide	1314-13-2	Data not availbl-insufficient	N/A	N/A	N/A	N/A
phenol	108-95-2	Experimental	100 hours	BOD	62 %BOD/ThOD	OECD 301C - MITI test (I)

		Biodegradation				
Distillates (petroleum), hydro-treated light	64742-47-8	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
Formaldehyde, oligomeric reaction products with phenol	9003-35-4	Estimated Bioconcentration		Bioaccumulation factor	2.57	
Acrylonitrile - butadiene polymer	9003-18-3	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
methenamine	100-97-0	Experimental Bioconcentration		Log Kow	-2.18	
N-cyclohexylbenzothiazole-2-sulphenamide	95-33-0	Modeled Bioconcentration		Bioaccumulation factor	66.1	Catalogic™
N-cyclohexylbenzothiazole-2-sulphenamide	95-33-0	Experimental Bioconcentration		Log Kow	5	OECD 117 log Kow HPLC method
sulfur	7704-34-9	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
zinc oxide	1314-13-2	Experimental BCF - Fish	56 days	Bioaccumulation factor	≤217	OECD305-Bioconcentration
phenol	108-95-2	Experimental Bioconcentration		Log Kow	1.47	
Distillates (petroleum), hydro-treated light	64742-47-8	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
Formaldehyde, oligomeric reaction products with phenol	9003-35-4	Experimental Mobility in Soil	Koc	637 l/kg	OECD 121 Estim. of Koc by HPLC
N-cyclohexylbenzothiazole-2-sulphenamide	95-33-0	Modeled Mobility in Soil	Koc	2,200 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. Other adverse effects

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

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	UN3077	UN3077	UN3077
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(ZINC OXIDE)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(ZINC OXIDE)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(ZINC OXIDE)
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 Transport in bulk according to Annex II of Marpol 73/78 and IBC Code	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	M7	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

Carcinogenicity

Ingredient	CAS Nbr	Classification	Regulation
phenol	108-95-2	Gr. 3: Not classifiable	International Agency for Research on Cancer

Regulation UK regulation 2023/63 (marketing and use of explosive precursors and poisons)

This product contains a regulated substance according to UK legislation 1972/66: all suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point. Please see UK Regulation 2023/63 for further details. Acquisition, introduction, possession or use of this product by the general public is restricted by UK Regulation 1972/66.

Global inventory status
Contact 3M for more 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 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.

COMAH Regulation, SI 2015/483
Seveso hazard categories, Annex 1, Part 1

Hazard Categories	Qualifying quantity (tonnes) for the application of	
	Lower-tier requirements	Upper-tier requirements
E2 Hazardous to the Aquatic environment	200	500

Seveso named dangerous substances, Annex 1, Part 2
None

Regulation (EU) No 649/2012, as amended for GB
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 for GB.

SECTION 16: Other information

List of relevant H statements

H226	Flammable liquid and vapour.
H228	Flammable solid.
H301	Toxic if swallowed.
H304	May be fatal if swallowed and enters airways.
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.
H331	Toxic if inhaled.
H336	May cause drowsiness or dizziness.
H341	Suspected of causing genetic defects.
H373	May cause 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:
Section 1: E-mail address information was modified.
Section 6: Accidental release personal information information was modified.
Section 7: Conditions safe storage information was modified.
Section 8: Occupational exposure limit table information was modified.
OEL Reg Agency Desc information was modified.
Section 08: Personal Protection - Apron Statement information was added.
Section 8: Personal Protection - Skin/body information information was deleted.
Section 8: Skin protection - protective clothing information information was deleted.
Section 9: Flammability (solid, gas) information information was deleted.
Section 09: Flammability information information was added.
Section 09: Particle Characteristics N/A information was added.
Section 11: Acute Toxicity table information was modified.
Section 11: Carcinogenicity Table information was modified.
Section 11: Germ Cell Mutagenicity Table information was modified.
Lactation Table information was added.
Section 11: Reproductive Toxicity Table information was modified.
Section 11: Skin Corrosion/Irritation Table information was modified.
Section 14 Hazardous/Not Hazardous for Transportation information was deleted.
Section 15: Seveso Substance Text information was deleted.

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 SDSs for Great Britain are available at www.3M.com/uk
For Northern Ireland documents, please contact your 3M representative to obtain a copy.