



## 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-10 (10mil)

#### Product Identification Numbers

62-1511-4700-6

7000046330

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

##### Identified uses

Structural adhesive film.

#### 1.3. Details of the supplier of the safety data sheet

<b>Address:</b>	3M United Kingdom PLC, 3M Centre, Cain Road, Bracknell, Berkshire, RG12 8HT.
<b>Telephone:</b>	+44 (0)1344 858 000
<b>E Mail:</b>	tox.uk@mmm.com
<b>Website:</b>	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.

The eye damage/irritation classification is not applied due to the nature of this product (adhesive film).

**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

Carcinogenicity, Category 1B - Carc. 1B; H350

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**

DANGER.

**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 - 60
formaldehyde	50-00-0	200-001-8	< 1.5
phenol	108-95-2	203-632-7	< 1.5
benzothiazole-2-thiol	149-30-4	205-736-8	< 1

**HAZARD STATEMENTS:**

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H411	Toxic to aquatic life with long lasting effects.

**PRECAUTIONARY STATEMENTS****Prevention:**

P201	Obtain special instructions before use.
P273	Avoid release to the environment.
P280K	Wear protective gloves and respiratory protection.

**Response:**

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

**SUPPLEMENTAL INFORMATION:****Supplemental Precautionary Statements:**

Restricted to professional users.

2% of the mixture consists of components of unknown acute oral toxicity.

2% of the mixture consists of components of unknown acute dermal toxicity.

Contains 2% 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], as amended for GB
Formaldehyde, oligomeric reaction products with phenol	(CAS-No.) 9003-35-4 (EC-No.) 500-005-2	40 - 60	Skin Sens. 1, H317
Acrylonitrile - butadiene polymer	(CAS-No.) 9003-18-3	35 - 45	Substance not classified as hazardous
1,2-Dihydro-2,2,4-trimethylquinoline, oligomers	(CAS-No.) 26780-96-1 (EC-No.) 500-051-3	< 1.5	Aquatic Chronic 3, H412
formaldehyde	(CAS-No.) 50-00-0 (EC-No.) 200-001-8	< 1.5	Acute Tox. 2, H330 Acute Tox. 3, H311 Acute Tox. 3, H301 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1A, H317 Muta. 2, H341 Carc. 1B, H350 STOT SE 3, H335 Nota B,D
phenol	(CAS-No.) 108-95-2 (EC-No.) 203-632-7	< 1.5	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
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
ANTIOXIDANT 1	None	< 2	Substance not classified as hazardous
Amorphous silica	(CAS-No.) 7631-86-9 (EC-No.) 231-545-4	< 2	Substance with a national occupational exposure limit

benzothiazole-2-thiol	(CAS-No.) 149-30-4 (EC-No.) 205-736-8	< 1	Skin Sens. 1, H317 Aquatic Acute 1, H400,M=1 Aquatic Chronic 1, H410,M=1
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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
formaldehyde	(CAS-No.) 50-00-0 (EC-No.) 200-001-8	(C >= 25%) Skin Corr. 1B, H314 (5% =< C < 25%) Skin Irrit. 2, H315 (C >= 25%) Eye Dam. 1, H318 (5% =< C < 25%) Eye Irrit. 2, H319 (C >= 0.2%) Skin Sens. 1A, H317 (C >= 5%) STOT SE 3, H335
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

If exposed, flush eyes with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms develop, get medical attention.

#### If swallowed

Rinse mouth. If you feel unwell, get medical attention.

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

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

Closed containers exposed to heat from fire may build pressure and explode.

### Hazardous Decomposition or By-Products

#### Substance

Carbon monoxide  
Carbon dioxide.  
Oxides of nitrogen.  
Oxides of sulphur.

#### Condition

During combustion.  
During combustion.  
During combustion.  
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. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

### 6.2. Environmental precautions

Avoid release to the environment.

### 6.3. Methods and material for containment and cleaning up

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

### 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. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Use personal protective equipment (eg. gloves, respirators...) as required.

### 7.2. Conditions for safe storage including any incompatibilities

No special storage requirements.

### 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.

<b>Ingredient</b>	<b>CAS Nbr</b>	<b>Agency</b>	<b>Limit type</b>	<b>Additional comments</b>
phenol	108-95-2	UK HSC	TWA:7.8 mg/m3(2 ppm);STEL:16 mg/m3(4 ppm)	SKIN

DUST, INERT OR NUISANCE	1314-13-2	UK HSC	TWA(as respirable dust):4 mg/m3;TWA(as inhalable dust):10 mg/m3
formaldehyde	50-00-0	UK HSC	TWA:2.5 mg/m3(2 ppm);STEL:2.5 mg/m3(2 ppm)
DUST, INERT OR NUISANCE	7631-86-9	UK HSC	TWA(as respirable dust):4 mg/m3;TWA(as inhalable dust):10 mg/m3

UK HSC : 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

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:

<b>Material</b>	<b>Thickness (mm)</b>	<b>Breakthrough Time</b>
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	Solid.
Specific Physical Form:	Film
Colour	Light Tan, Yellow
Odor	Odourless
Odour threshold	No data available.
Melting point/freezing point	No data available.
Boiling point/boiling range	Not applicable.
Flammability (solid, gas)	Not classified
Flammable Limits(LEL)	Not applicable.
Flammable Limits(UEL)	Not applicable.
Flash point	101.1 °C [Test Method: Estimated]
Autoignition temperature	No data available.
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	0.7 g/cm <sup>3</sup> [ @ 20 °C ]
Relative density	0.7 [Test Method: Estimated] [Ref Std: WATER=1]
Relative Vapour Density	Not applicable.

### 9.2. Other information

#### 9.2.2 Other safety characteristics

EU Volatile Organic Compounds	No data available.
Evaporation rate	Not applicable.
Molecular weight	No data available.
Percent volatile	0 % weight

## 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

Avoid curing large quantities of material to prevent a premature reaction (exotherm) with production of intense heat and smoke.

### 10.5 Incompatible materials

None known.

### 10.6 Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
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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

May be harmful if inhaled. Respiratory tract irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. Allergic Respiratory Reaction in sensitive people: Signs/symptoms may include difficulty breathing, wheezing, cough, and tightness of chest.

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.

#### Genotoxicity:

Genotoxicity and Mutagenicity: May interact with genetic material and possibly alter gene expression.

#### Carcinogenicity:

Contains a chemical or chemicals which can cause cancer.

#### Toxicological Data

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

#### Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE >5,000 mg/kg
Overall product	Inhalation-Dust/Mist(4 hr)		No data available; calculated ATE >5 - =12.5 mg/l
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
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
Amorphous silica	Dermal	Rabbit	LD50 > 5,000 mg/kg
Amorphous silica	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Amorphous silica	Ingestion	Rat	LD50 > 5,110 mg/kg
formaldehyde	Dermal	Rabbit	LD50 270 mg/kg
formaldehyde	Inhalation-Gas (4 hours)	Rat	LC50 470 ppm
formaldehyde	Ingestion	Rat	LD50 800 mg/kg
1,2-Dihydro-2,2,4-trimethylquinoline, oligomers	Dermal	Rabbit	LD50 > 5,010 mg/kg
1,2-Dihydro-2,2,4-trimethylquinoline, oligomers	Ingestion	Rat	LD50 3,190 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
benzothiazole-2-thiol	Dermal	Rabbit	LD50 > 7,940 mg/kg
benzothiazole-2-thiol	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 1.27 mg/l
benzothiazole-2-thiol	Ingestion	Rat	LD50 2,830 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
zinc oxide	Human and animal	No significant irritation
Amorphous silica	Rabbit	No significant irritation
formaldehyde	official classification	Corrosive
1,2-Dihydro-2,2,4-trimethylquinoline, oligomers	Rabbit	No significant irritation
phenol	Rat	Corrosive
benzothiazole-2-thiol	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
zinc oxide	Rabbit	Mild irritant
Amorphous silica	Rabbit	No significant irritation
formaldehyde	official classification	Corrosive
1,2-Dihydro-2,2,4-trimethylquinoline, oligomers	Rabbit	No significant irritation
phenol	Rabbit	Corrosive
benzothiazole-2-thiol	Rabbit	Mild irritant

### Skin Sensitisation

Name	Species	Value
Formaldehyde, oligomeric reaction products with phenol	Human and animal	Sensitising
zinc oxide	Guinea pig	Not classified
Amorphous silica	Human and animal	Not classified
formaldehyde	Guinea pig	Sensitising
1,2-Dihydro-2,2,4-trimethylquinoline, oligomers	Guinea pig	Not classified
phenol	Guinea pig	Not classified
benzothiazole-2-thiol	Human and animal	Sensitising

### Respiratory Sensitisation

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

formaldehyde	Human	Some positive data exist, but the data are not sufficient for classification
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### Germ Cell Mutagenicity

Name	Route	Value
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
Amorphous silica	In Vitro	Not mutagenic
formaldehyde	In Vitro	Some positive data exist, but the data are not sufficient for classification
formaldehyde	In vivo	Mutagenic
1,2-Dihydro-2,2,4-trimethylquinoline, oligomers	In Vitro	Not mutagenic
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
benzothiazole-2-thiol	In vivo	Not mutagenic
benzothiazole-2-thiol	In Vitro	Some positive data exist, but the data are not sufficient for classification

### Carcinogenicity

Name	Route	Species	Value
Amorphous silica	Not specified.	Mouse	Some positive data exist, but the data are not sufficient for classification
formaldehyde	Not specified.	Human and animal	Carcinogenic.
1,2-Dihydro-2,2,4-trimethylquinoline, oligomers	Ingestion	Rat	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
benzothiazole-2-thiol	Inhalation	Human	Carcinogenic.
benzothiazole-2-thiol	Ingestion	Multiple animal species	Carcinogenic.

### Reproductive Toxicity

#### Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
zinc oxide	Ingestion	Not classified for reproduction and/or development	Multiple animal species	NOAEL 125 mg/kg/day	premating & during gestation
Amorphous silica	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Amorphous silica	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Amorphous silica	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
formaldehyde	Ingestion	Not classified for male reproduction	Rat	NOAEL 100 mg/kg	not applicable
formaldehyde	Inhalation	Not classified for development	Rat	NOAEL 10 ppm	during gestation
1,2-Dihydro-2,2,4-trimethylquinoline, oligomers	Ingestion	Not classified for development	Rat	NOAEL 120 mg/kg/day	during organogenesis
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
benzothiazole-2-thiol	Ingestion	Not classified for female reproduction	Rat	NOAEL 745 mg/kg/day	2 generation
benzothiazole-2-thiol	Ingestion	Not classified for male reproduction	Rat	NOAEL 788 mg/kg/day	2 generation
benzothiazole-2-thiol	Ingestion	Not classified for development	Rabbit	NOAEL 300 mg/kg/day	during organogenesis

## Target Organ(s)

### Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
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	
formaldehyde	Inhalation	respiratory system	Causes damage to organs	Rat	LOAEL 128 ppm	6 hours
formaldehyde	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
phenol	Dermal	hematopoietic 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

### 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
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
Amorphous silica	Inhalation	respiratory system   silicosis	Not classified	Human	NOAEL Not available	occupational exposure
formaldehyde	Dermal	respiratory system	Not classified	Mouse	NOAEL 80 mg/kg/day	60 weeks
formaldehyde	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	NOAEL 0.3 ppm	28 months
formaldehyde	Inhalation	liver	Not classified	Rat	NOAEL 20 ppm	13 weeks
formaldehyde	Inhalation	hematopoietic system	Not classified	Mouse	NOAEL 15 ppm	3 weeks
formaldehyde	Inhalation	nervous system	Not classified	Mouse	NOAEL 10	13 weeks

					ppm	
formaldehyde	Inhalation	endocrine system   immune system   muscles   kidney and/or bladder	Not classified	Rat	NOAEL 15 ppm	28 months
formaldehyde	Inhalation	gastrointestinal tract	Not classified	Rat	NOAEL 15 ppm	2 years
formaldehyde	Inhalation	eyes   vascular system	Not classified	Rat	NOAEL 14.3 ppm	2 years
formaldehyde	Inhalation	heart	Not classified	Mouse	NOAEL 14.3 ppm	2 years
formaldehyde	Ingestion	liver	Not classified	Rat	NOAEL 300 mg/kg/day	2 years
formaldehyde	Ingestion	immune system	Not classified	Rat	NOAEL 20 mg/kg/day	4 weeks
formaldehyde	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 15 mg/kg/day	24 months
formaldehyde	Ingestion	nervous system	Not classified	Rat	NOAEL 109 mg/kg/day	2 years
formaldehyde	Ingestion	heart   endocrine system   hematopoietic system   respiratory system   vascular system	Not classified	Rat	NOAEL 300 mg/kg/day	2 years
formaldehyde	Ingestion	skin   muscles   eyes	Not classified	Rat	NOAEL 109 mg/kg/day	2 years
1,2-Dihydro-2,2,4-trimethylquinoline, oligomers	Ingestion	endocrine system   liver   heart   skin   gastrointestinal tract   bone, teeth, nails, and/or hair   hematopoietic system   immune system   muscles   nervous system   eyes   kidney and/or bladder   respiratory system   vascular system	Not classified	Rat	NOAEL 48 mg/kg/day	2 years
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
benzothiazole-2-thiol	Ingestion	gastrointestinal tract   kidney and/or bladder   heart   endocrine system   bone, teeth, nails, and/or hair   hematopoietic system   liver   immune system   nervous system   eyes   respiratory system	Not classified	Rat	NOAEL 375 mg/kg/day	2 years

#### 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 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
formaldehyde	50-00-0	Green algae	Experimental	72 hours	ErC50	4.89 mg/l
formaldehyde	50-00-0	Striped bass	Experimental	96 hours	LC50	6.7 mg/l
formaldehyde	50-00-0	Water flea	Experimental	48 hours	EC50	5.8 mg/l
formaldehyde	50-00-0	Medaka	Experimental	28 days	NOEC	>=48 mg/l
formaldehyde	50-00-0	Water flea	Experimental	21 days	NOEC	>=6.4 mg/l
formaldehyde	50-00-0	Activated sludge	Experimental	3 hours	EC50	19
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
1,2-Dihydro-2,2,4-trimethylquinoline, oligomers	26780-96-1	Activated sludge	Experimental	3 hours	EC50	>10,000 mg/l
1,2-Dihydro-2,2,4-trimethylquinoline, oligomers	26780-96-1	Green algae	Experimental	72 hours	No tox obs at lmt of water sol	>100 mg/l
1,2-Dihydro-2,2,4-trimethylquinoline, oligomers	26780-96-1	Water flea	Experimental	48 hours	EL50	56 mg/l
1,2-Dihydro-2,2,4-trimethylquinoline, oligomers	26780-96-1	Zebra Fish	Experimental	96 hours	No tox obs at lmt of water sol	>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
Amorphous silica	7631-86-9	Green algae	Experimental	72 hours	ErC50	>173.1 mg/l
Amorphous silica	7631-86-9	Rainbow trout	Experimental	96 hours	LC50	>1,000 mg/l
Amorphous silica	7631-86-9	Sediment organism	Experimental	96 hours	EC50	8,500 mg/kg (Dry Weight)
Amorphous silica	7631-86-9	Water flea	Experimental	48 hours	EL50	>1,000 mg/l
Amorphous silica	7631-86-9	Green algae	Experimental	72 hours	NOEC	173.1 mg/l
Amorphous silica	7631-86-9	Water flea	Experimental	21 days	NOEC	68 mg/l
Amorphous silica	7631-86-9	Activated sludge	Experimental	3 hours	EC50	>1,000 mg/l
Amorphous silica	7631-86-9	Redworm	Experimental	56 days	NOEC	100,000 mg/kg (Dry Weight)
benzothiazole-2-thiol	149-30-4	Green algae	Experimental	72 hours	ErC50	0.5 mg/l
benzothiazole-2-thiol	149-30-4	Rainbow trout	Experimental	96 hours	LC50	0.42 mg/l
benzothiazole-2-thiol	149-30-4	Water flea	Experimental	48 hours	EC50	0.71 mg/l
benzothiazole-2-thiol	149-30-4	Green algae	Experimental	72 hours	NOEC	0.066 mg/l
benzothiazole-2-thiol	149-30-4	Water flea	Experimental	21 days	NOEC	0.08 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

formaldehyde	50-00-0	Experimental Biodegradation	28 days	Dissolv. Organic Carbon Deplet	99 %removal of DOC	OECD 301A - DOC Die Away Test
formaldehyde	50-00-0	Experimental Biodegradation	160 days	BOD	99.5 %BOD/COD	OECD 303A - Simulated Aerobic
phenol	108-95-2	Experimental Biodegradation	100 hours	BOD	62 %BOD/ThOD	OECD 301C - MITI test (I)
1,2-Dihydro-2,2,4-trimethylquinoline, oligomers	26780-96-1	Experimental Biodegradation	28 days	BOD	0 %BOD/ThOD	OECD 301C - MITI test (I)
zinc oxide	1314-13-2	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Amorphous silica	7631-86-9	Data not availbl-insufficient	N/A	N/A	N/A	N/A
benzothiazole-2-thiol	149-30-4	Experimental Biodegradation	14 days	BOD	2.5 %BOD/ThOD	OECD 301C - MITI test (I)

### 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
formaldehyde	50-00-0	Experimental Bioconcentration		Log Kow	0.35	
phenol	108-95-2	Experimental Bioconcentration		Log Kow	1.47	
1,2-Dihydro-2,2,4-trimethylquinoline, oligomers	26780-96-1	Experimental BCF - Fish	56 days	Bioaccumulation factor	6720	
1,2-Dihydro-2,2,4-trimethylquinoline, oligomers	26780-96-1	Experimental Bioconcentration		Log Kow	5.8	OECD 117 log Kow HPLC method
zinc oxide	1314-13-2	Experimental BCF - Fish	56 days	Bioaccumulation factor	≤217	OECD305-Bioconcentration
Amorphous silica	7631-86-9	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
benzothiazole-2-thiol	149-30-4	Experimental BCF - Fish	42 days	Bioaccumulation factor	<8	OECD305-Bioconcentration
benzothiazole-2-thiol	149-30-4	Experimental Bioconcentration		Log Kow	2.42	

### 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
formaldehyde	50-00-0	Estimated Mobility in Soil	Koc	15.9 l/kg	
1,2-Dihydro-2,2,4-trimethylquinoline, oligomers	26780-96-1	Experimental Mobility in Soil	Koc	3,715 l/kg	OECD 121 Estim. of Koc by HPLC
benzothiazole-2-thiol	149-30-4	Experimental Mobility in Soil	Koc	326-3560 l/kg	40CFR796.2750 Sed/Soil Adsorp

### 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)
<b>14.1 UN number</b>	UN1845	UN1845	UN1845
<b>14.2 UN proper shipping name</b>	CARBON DIOXIDE, SOLID, AS COOLANT	CARBON DIOXIDE, SOLID	CARBON DIOXIDE, SOLID, AS COOLANT
<b>14.3 Transport hazard class(es)</b>	Not applicable.	Not applicable.	Not applicable.
<b>14.4 Packing group</b>	Not applicable.	Not applicable.	Not applicable.
<b>14.5 Environmental hazards</b>	Not applicable.	Not applicable	Not applicable.
<b>14.6 Special precautions for user</b>	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.
<b>14.7 Transport in bulk according to Annex II of Marpol 73/78 and IBC Code</b>	No data available.	No data available.	No data available.
<b>Control Temperature</b>	Not applicable.	Not applicable.	Not applicable.
<b>Emergency Temperature</b>	Not applicable.	Not applicable.	Not applicable.

<b>ADR Classification Code</b>	Not applicable.	Not applicable.	Not applicable.
<b>IMDG Segregation Code</b>	Not applicable.	Not applicable.	Not applicable.

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

formaldehyde	50-00-0	Carc. 1B	The retained CLP Regulation (EU) No 1272/2008, as amended for Great Britain, UK Mandatory Classification and Labelling list
formaldehyde	50-00-0	Grp. 1: Carcinogenic to humans	International Agency for Research on Cancer
benzothiazole-2-thiol	149-30-4	Grp. 2A: Probable human carc.	International Agency for Research on Cancer
Amorphous silica	7631-86-9	Gr. 3: Not classifiable	International Agency for Research on Cancer
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 reportable 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.

#### 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 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.

#### COMAH Regulation, SI 2015/483

Seveso hazard categories, Annex 1, Part 1

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

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
benzothiazole-2-thiol	149-30-4	100	200
formaldehyde	50-00-0	5	50
phenol	108-95-2	50	200
zinc oxide	1314-13-2	100	200

#### 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

H301	Toxic 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.
H330	Fatal if inhaled.
H331	Toxic if inhaled.
H335	May cause respiratory irritation.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
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.
H412	Harmful to aquatic life with long lasting effects.

#### Revision information:

GB Section 02: CLP Ingredient table information was modified.

GB Section 15: Carcinogenicity information information was modified.

Label: CLP Precautionary - Prevention information was modified.

Section 3: Composition/ Information of ingredients table information was modified.

Section 12: Component ecotoxicity information 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.

**3M SDSs for Great Britain are available at [www.3M.com/uk](http://www.3M.com/uk)**

For Northern Ireland documents, please contact your 3M representative to obtain a copy.