Safety Data Sheet

Document group:	05-8564-6	**Version number:**	4.02
Issue Date:	20/04/2026	**Supersedes date:**	23/01/2024

This Safety Data Sheet has been prepared in accordance with the South African National Standard SANS 10234:2008.

SECTION 1: Identification

1.1. Product identifier
3M™ Adhesive 847

Product Identification Numbers
FS-9100-0633-7

1.2. Recommended use and restrictions on use

Recommended use
Adhesive

1.3. Supplier's details

Address:	3M South Africa (Pty) Ltd, Private Bag X926, Rivonia 2128
Telephone:	011 806 2000
E Mail:	Not available.
Website:	www.3m.co.za

1.4. Emergency telephone number
011 806 2000

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture
Flammable Liquid: Category 2.
Serious Eye Damage/Irritation: Category 1.
Skin Sensitizer: Category 1A.
Carcinogenicity: Category 2.
Reproductive Toxicity: Category 2.
Specific Target Organ Toxicity (single exposure): Category 3.
Acute Aquatic Toxicity: Category 2.
Chronic Aquatic Toxicity: Category 2.

2.2. Label elements

Signal word
Danger

Symbols
Flame |Corrosion |Exclamation mark |Health Hazard |Environment |

Pictograms

HAZARD STATEMENTS:

H225	Highly flammable liquid and vapour.
H318	Causes serious eye damage.
H317	May cause an allergic skin reaction.
H351	Suspected of causing cancer.
H361	Suspected of damaging fertility or the unborn child.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS

Prevention:

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P273	Avoid release to the environment.
P280I	Wear protective gloves, eye protection, face protection, and respiratory protection.

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.
P310	Immediately call a POISON CENTER or doctor/physician.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P370 + P378	In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.
P391	Collect spillage.

2.3. Other hazards
Repeated exposure may cause skin dryness or cracking.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	CAS Nbr	% by Wt
Acetone	67-64-1	60 - 70
Acrylonitrile - butadiene polymer	9003-18-3	10 - 20
FUMARATED ROSIN	65997-04-8	< 10
Resin acids and rosin acids, esters with glycerol	8050-31-5	5 - 10
Phenol-formaldehyde resin	Trade Secret	1 - 10
Salicylic acid	69-72-7	< 3
Zinc oxide	1314-13-2	< 2.5

p-Tert-Butylphenol	98-54-4	< 0.5

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation
Remove person to fresh air. If you feel unwell, get medical attention.

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

Eye contact
Immediately flush with large amounts of water for at least 15 minutes. Remove contact lenses if easy to do. Continue rinsing. Immediately get medical attention.

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

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

Allergic skin reaction (redness, swelling, blistering, and itching). Serious damage to the eyes (corneal cloudiness, severe pain, tearing, ulcerations, and significantly impaired or loss of vision). Central nervous system depression (headache, dizziness, drowsiness, incoordination, nausea, slurred speech, giddiness, and unconsciousness).

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

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media
In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

5.2. Special hazards arising from the substance or mixture
Closed containers exposed to heat from fire may build pressure and explode.

Hazardous Decomposition or By-Products

Substance	Condition
Aldehydes.	During combustion.
Hydrocarbons.	During combustion.
Carbon monoxide.	During combustion.
Carbon dioxide.	During combustion.
Hydrogen cyanide.	During combustion.
Ketones.	During combustion.
Oxides of nitrogen.	During combustion.

5.3. Special protective actions for fire-fighters
Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture. 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. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools.

Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. WARNING ! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. 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. Cover spill area with a fire-extinguishing foam. 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 using non-sparking tools. Place in a metal 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 in accordance with applicable local/regional/national/international regulations.

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. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidising agents (eg. chlorine, chromic acid etc.) Wear low static or properly grounded shoes. Use personal protective equipment (eg. gloves, respirators…) as required. To minimize the risk of ignition, determine applicable electrical classifications for the process using this product and select specific local exhaust ventilation equipment to avoid flammable vapor accumulation. Ground/bond container and receiving equipment if there is potential for static electricity accumulation during transfer.

7.2. Conditions for safe storage including any incompatibilities
Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store away from heat. Store away from acids. Store away from oxidising agents.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

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

Ingredient	CAS Nbr	Agency	Limit type	Additional comments
Zinc oxide	1314-13-2	ACGIH	TWA(respirable fraction):2 mg/m3;STEL(respirable fraction):10 mg/m3	
Zinc oxide	1314-13-2	South Africa	TWA(respirable fraction)(8	

		RELs	hours):4 mg/m3;STEL(respirable fraction)(15 minutes):20 mg/m3	
Acetone	67-64-1	ACGIH	TWA:250 ppm;STEL:500 ppm	A4: Not class. as human carcin
Acetone	67-64-1	South Africa RELs	TWA(8 hours):500 ppm;STEL(15 minutes):1000 ppm	

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
CMRG : Chemical Manufacturer's Recommended Guidelines
South Africa CLs : South Africa. Control Limits. Regulations for Hazardous Chemical Substances, Table 1
South Africa RELs : South Africa. Recommended Exposure Limits (RELs) Regulations for Hazardous Chemical Substances, Table 2
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

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. Use explosion-proof ventilation 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:
Full face shield.
Indirect vented goggles.

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: Polymer laminate

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
Organic vapor cartridges may have short service life.

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Specific Physical Form:	Viscous.
Colour	Brown
Odor	Acetone
Odour threshold	*No data available.*
pH	*No data available.*
Melting point/Freezing point	*No data available.*
Boiling point/Initial boiling point/Boiling range	55,8 - 56,6 ºC [*Details:*Acetone value]
Flash point	-17 ºC [*Test Method:*Closed Cup]
Evaporation rate	*No data available.*
Flammability	Flammable Liquid: Category 2.
Flammable Limits(LEL)	*No data available.*
Flammable Limits(UEL)	*No data available.*
Vapour pressure	*No data available.*
Relative Vapor Density	*No data available.*
Density	0,9 g/cm3
Relative density	0,87 - 0,9 [*Ref Std:*WATER=1]
Water solubility	Slight (less than 10%)
Solubility- non-water	*No data available.*
Partition coefficient: n-octanol/water	*No data available.*
Autoignition temperature	*No data available.*
Decomposition temperature	*No data available.*
Kinematic Viscosity	1 667 mm²/sec
Volatile organic compounds (VOC)	580 g/l
Percent volatile	± 65 % weight
VOC less H2O & exempt solvents	*No data available.*

Particle Characteristics	*Not applicable.*

SECTION 10: Stability and reactivity

10.1 Reactivity
This material may be reactive with certain agents under certain conditions - see the remaining headings in this section

10.2 Chemical stability
Stable.

10.3 Possibility of hazardous reactions
Hazardous polymerisation will not occur.

10.4 Conditions to avoid
Heat.
Sparks and/or flames.

10.5 Incompatible materials
Strong oxidising agents.

10.6 Hazardous decomposition products

Substance	Condition
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labelling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1 Information on Toxicological effects

Signs and Symptoms of Exposure

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

Inhalation
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
Prolonged or repeated exposure may cause: Dermal Defatting: Signs/symptoms may include localized redness, itching, drying and cracking of skin. Allergic skin reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

Eye contact
Corrosive (eye burns): Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.

Ingestion
Gastrointestinal irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhoea. May cause additional health effects (see below).

Additional Health Effects:

Single exposure may cause target organ effects:
Central nervous system (CNS) depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

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

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	Ingestion		No data available; calculated ATE >5 000 mg/kg

Acetone	Dermal	Rabbit	LD50 > 15 688 mg/kg
Acetone	Inhalation-Vapor (4 hours)	Rat	LC50 76 mg/l
Acetone	Ingestion	Rat	LD50 5 800 mg/kg
Acrylonitrile - butadiene polymer	Dermal	Rabbit	LD50 > 15 000 mg/kg
Acrylonitrile - butadiene polymer	Ingestion	Rat	LD50 > 30 000 mg/kg
Resin acids and rosin acids, esters with glycerol	Dermal	Rabbit	LD50 > 5 000 mg/kg
FUMARATED ROSIN	Dermal	Rat	LD50 > 2 000 mg/kg
FUMARATED ROSIN	Ingestion	Rat	LD50 > 2 000 mg/kg
Resin acids and rosin acids, esters with glycerol	Ingestion	Rat	LD50 > 2 000 mg/kg
Phenol-formaldehyde resin	Dermal		LD50 estimated to be > 5 000 mg/kg
Phenol-formaldehyde resin	Ingestion	Rat	LD50 5 660 mg/kg
Salicylic acid	Dermal	Rat	LD50 > 2 000 mg/kg
Salicylic acid	Ingestion	Rat	LD50 891 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
p-Tert-Butylphenol	Dermal	Rabbit	LD50 2 318 mg/kg
p-Tert-Butylphenol	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5,6 mg/l
p-Tert-Butylphenol	Ingestion	Rat	LD50 4 000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Acetone	Mouse	Minimal irritation
Acrylonitrile - butadiene polymer	Professional judgement	No significant irritation
FUMARATED ROSIN	Rabbit	No significant irritation
Resin acids and rosin acids, esters with glycerol	Rabbit	Minimal irritation
Salicylic acid	Rabbit	No significant irritation
Zinc oxide	Human and animal	No significant irritation
p-Tert-Butylphenol	Rabbit	Irritant

Serious Eye Damage/Irritation

Name	Species	Value
Acetone	Rabbit	Severe irritant
Acrylonitrile - butadiene polymer	Professional judgement	No significant irritation
FUMARATED ROSIN	Rabbit	Corrosive
Resin acids and rosin acids, esters with glycerol	Rabbit	Mild irritant
Salicylic acid	Rabbit	Corrosive
Zinc oxide	Rabbit	Mild irritant
p-Tert-Butylphenol	Rabbit	Corrosive

Sensitization:

Skin Sensitisation

Name	Species	Value
FUMARATED ROSIN	Mouse	Sensitising

Resin acids and rosin acids, esters with glycerol	Guinea pig	Not classified
Phenol-formaldehyde resin	Human	Some positive data exist, but the data are not sufficient for classification
Salicylic acid	Mouse	Not classified
Zinc oxide	Guinea pig	Not classified
p-Tert-Butylphenol	Human and animal	Not classified

Photosensitisation

Name	Species	Value
Salicylic acid	Mouse	Not sensitizing

Respiratory Sensitisation

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

Germ Cell Mutagenicity

Name	Route	Value
Acetone	In vivo	Not mutagenic
Acetone	In Vitro	Some positive data exist, but the data are not sufficient for classification
FUMARATED ROSIN	In Vitro	Not mutagenic
Resin acids and rosin acids, esters with glycerol	In Vitro	Not mutagenic
Salicylic acid	In Vitro	Not mutagenic
Salicylic acid	In vivo	Not mutagenic
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
p-Tert-Butylphenol	In Vitro	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Acetone	Not specified.	Multiple animal species	Not carcinogenic
p-Tert-Butylphenol	Ingestion	Multiple animal species	Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
Acetone	Ingestion	Not classified for male reproduction	Rat	NOAEL 1 700 mg/kg/day	13 weeks
Acetone	Inhalation	Not classified for development	Rat	NOAEL 5,2 mg/l	during organogenesis
FUMARATED ROSIN	Ingestion	Not classified for female reproduction	Rat	NOAEL 450 mg/kg/day	premating into lactation
FUMARATED ROSIN	Ingestion	Not classified for male reproduction	Rat	NOAEL 650 mg/kg/day	28 days
FUMARATED ROSIN	Ingestion	Not classified for development	Rat	NOAEL 370 mg/kg/day	during gestation
Salicylic acid	Ingestion	Toxic to development	Rat	NOAEL 75 mg/kg/day	during organogenesis
Zinc oxide	Ingestion	Not classified for reproduction and/or	Multiple	NOAEL 125	premating &

		development	animal species	mg/kg/day	during gestation
p-Tert-Butylphenol	Ingestion	Not classified for male reproduction	Rat	NOAEL 600 mg/kg/day	2 generation
p-Tert-Butylphenol	Ingestion	Not classified for development	Rat	NOAEL 70 mg/kg/day	2 generation
p-Tert-Butylphenol	Ingestion	Toxic to female reproduction	Rat	NOAEL 200 mg/kg/day	2 generation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Acetone	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Acetone	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Acetone	Inhalation	immune system	Not classified	Human	NOAEL 1,19 mg/l	6 hours
Acetone	Inhalation	liver	Not classified	Guinea pig	NOAEL Not available	
Acetone	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse
FUMARATED ROSIN	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available.	
p-Tert-Butylphenol	Inhalation	respiratory irritation	May cause respiratory irritation	Rat	LOAEL 5,6 mg/l	4 hours

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Acetone	Dermal	eyes	Not classified	Guinea pig	NOAEL Not available	3 weeks
Acetone	Inhalation	hematopoietic system	Not classified	Human	NOAEL 3 mg/l	6 weeks
Acetone	Inhalation	immune system	Not classified	Human	NOAEL 1,19 mg/l	6 days
Acetone	Inhalation	kidney and/or bladder	Not classified	Guinea pig	NOAEL 119 mg/l	not available
Acetone	Inhalation	heart	Not classified	Rat	NOAEL 45 mg/l	8 weeks
Acetone	Inhalation	liver	Not classified	Rat	NOAEL 45 mg/l	8 weeks
Acetone	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 900 mg/kg/day	13 weeks
Acetone	Ingestion	heart	Not classified	Rat	NOAEL 2 500 mg/kg/day	13 weeks
Acetone	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 200 mg/kg/day	13 weeks
Acetone	Ingestion	liver	Not classified	Mouse	NOAEL 3 896 mg/kg/day	14 days
Acetone	Ingestion	eyes	Not classified	Rat	NOAEL 3 400 mg/kg/day	13 weeks
Acetone	Ingestion	respiratory system	Not classified	Rat	NOAEL 2 500 mg/kg/day	13 weeks
Acetone	Ingestion	muscles	Not classified	Rat	NOAEL 2 500 mg/kg	13 weeks
Acetone	Ingestion	skin	Not classified	Mouse	NOAEL 11 298	13 weeks

					mg/kg/day	
Acetone	Ingestion	bone, teeth, nails, and/or hair	Not classified	Mouse	NOAEL 11 298 mg/kg/day	13 weeks
FUMARATED ROSIN	Ingestion	endocrine system	Not classified	Rat	NOAEL 450 mg/kg/day	53 days
FUMARATED ROSIN	Ingestion	immune system	Not classified	Rat	NOAEL 450 mg/kg/day	53 days
FUMARATED ROSIN	Ingestion	nervous system	Not classified	Rat	NOAEL 705 mg/kg/day	90 days
FUMARATED ROSIN	Ingestion	eyes	Not classified	Rat	NOAEL 705 mg/kg/day	90 days
FUMARATED ROSIN	Ingestion	gastrointestinal tract	Not classified	Rat	NOAEL 450 mg/kg/day	53 days
FUMARATED ROSIN	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 450 mg/kg/day	53 days
FUMARATED ROSIN	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 450 mg/kg/day	53 days
FUMARATED ROSIN	Ingestion	respiratory system	Not classified	Rat	NOAEL 450 mg/kg/day	53 days
Resin acids and rosin acids, esters with glycerol	Ingestion	liver	Not classified	Rat	NOAEL 5 000 mg/kg/day	90 days
Resin acids and rosin acids, esters with glycerol	Ingestion	heart	Not classified	Rat	NOAEL 5 000 mg/kg/day	90 days
Resin acids and rosin acids, esters with glycerol	Ingestion	skin	Not classified	Rat	NOAEL 5 000 mg/kg/day	90 days
Resin acids and rosin acids, esters with glycerol	Ingestion	endocrine system	Not classified	Rat	NOAEL 5 000 mg/kg/day	90 days
Resin acids and rosin acids, esters with glycerol	Ingestion	bone, teeth, nails, and/or hair	Not classified	Rat	NOAEL 5 000 mg/kg/day	90 days
Resin acids and rosin acids, esters with glycerol	Ingestion	blood	Not classified	Rat	NOAEL 5 000 mg/kg/day	90 days
Resin acids and rosin acids, esters with glycerol	Ingestion	bone marrow	Not classified	Rat	NOAEL 5 000 mg/kg/day	90 days
Resin acids and rosin acids, esters with glycerol	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 5 000 mg/kg/day	90 days
Resin acids and rosin acids, esters with glycerol	Ingestion	immune system	Not classified	Rat	NOAEL 5 000 mg/kg/day	90 days
Resin acids and rosin acids, esters with glycerol	Ingestion	muscles	Not classified	Rat	NOAEL 5 000 mg/kg/day	90 days
Resin acids and rosin acids, esters with glycerol	Ingestion	nervous system	Not classified	Rat	NOAEL 5 000 mg/kg/day	90 days
Resin acids and rosin acids, esters with glycerol	Ingestion	eyes	Not classified	Rat	NOAEL 5 000 mg/kg/day	90 days
Resin acids and rosin acids, esters with glycerol	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 5 000 mg/kg/day	90 days
Resin acids and rosin acids, esters with glycerol	Ingestion	respiratory system	Not classified	Rat	NOAEL 5 000 mg/kg/day	90 days
Salicylic acid	Ingestion	liver	Not classified	Rat	NOAEL 500 mg/kg/day	3 days
Zinc oxide	Ingestion	nervous system	Not classified	Rat	NOAEL 600 mg/kg/day	10 days
Zinc oxide	Ingestion	endocrine system	Not classified	Other	NOAEL 500 mg/kg/day	6 months

Zinc oxide	Ingestion	hematopoietic system	Not classified	Other	NOAEL 500 mg/kg/day	6 months
Zinc oxide	Ingestion	kidney and/or bladder	Not classified	Other	NOAEL 500 mg/kg/day	6 months
p-Tert-Butylphenol	Ingestion	endocrine system	Not classified	Rat	NOAEL 600 mg/kg/day	2 generation
p-Tert-Butylphenol	Ingestion	liver	Not classified	Rat	NOAEL 600 mg/kg/day	2 generation
p-Tert-Butylphenol	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 600 mg/kg/day	2 generation
p-Tert-Butylphenol	Ingestion	blood	Not classified	Rat	NOAEL 200 mg/kg	6 weeks

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

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

SECTION 12: Ecological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. Additional information leading to material classification in Section 2 is available upon request. In addition, environmental fate and effects data on ingredients may not be reflected in this section because an ingredient is present below the threshold for labelling, an ingredient is not expected to be available for exposure, or the data is considered not relevant to the material as a whole.

12.1. Toxicity

Acute aquatic hazard:
GHS Acute 2: Toxic to aquatic life.

Chronic aquatic hazard:
GHS Chronic 2: Toxic to aquatic life with long lasting effects.

No product test data available.

Material	CAS Nbr	Organism	Type	Exposure	Test endpoint	Test result
Acetone	67-64-1	Algae or other aquatic plants	Experimental	96 hours	EC50	11 493 mg/l
Acetone	67-64-1	Invertebrate	Experimental	24 hours	LC50	2 100 mg/l
Acetone	67-64-1	Rainbow trout	Experimental	96 hours	LC50	5 540 mg/l
Acetone	67-64-1	Water flea	Experimental	21 days	NOEC	1 000 mg/l
Acetone	67-64-1	Bacteria	Experimental	16 hours	NOEC	1 700 mg/l
Acetone	67-64-1	Redworm	Experimental	48 hours	LC50	>100
Acrylonitrile - butadiene polymer	9003-18-3	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
FUMARATED ROSIN	65997-04-8	Fathead minnow	Experimental	96 hours	No tox obs at lmt of water sol	>100 mg/l
FUMARATED ROSIN	65997-04-8	Green algae	Experimental	72 hours	No tox obs at lmt of water sol	>100 mg/l
FUMARATED ROSIN	65997-04-8	Water flea	Experimental	48 hours	EL50	>100 mg/l
FUMARATED ROSIN	65997-04-8	Green algae	Experimental	72 hours	No tox obs at lmt of water sol	100 mg/l
FUMARATED ROSIN	65997-04-8	Activated sludge	Analogous Compound	3 hours	EC50	>1 000 mg/l
Resin acids and rosin acids, esters with glycerol	8050-31-5	Green algae	Estimated	72 hours	No tox obs at lmt of water sol	>100 mg/l

Resin acids and rosin acids, esters with glycerol	8050-31-5	Rainbow trout	Estimated	96 hours	No tox obs at lmt of water sol	>100 mg/l
Resin acids and rosin acids, esters with glycerol	8050-31-5	Water flea	Experimental	48 hours	No tox obs at lmt of water sol	>100 mg/l
Resin acids and rosin acids, esters with glycerol	8050-31-5	Green algae	Estimated	72 hours	No tox obs at lmt of water sol	>100 mg/l
Phenol-formaldehyde resin	Trade Secret	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
Salicylic acid	69-72-7	Green algae	Experimental	72 hours	EC50	>100 mg/l
Salicylic acid	69-72-7	Medaka	Experimental	96 hours	LC50	>100 mg/l
Salicylic acid	69-72-7	Water flea	Experimental	48 hours	EC50	870 mg/l
Salicylic acid	69-72-7	Water flea	Experimental	21 days	NOEC	10 mg/l
Salicylic acid	69-72-7	Activated sludge	Experimental	3 hours	EC50	>3 200
Salicylic acid	69-72-7	Bacteria	Experimental	18 hours	EC10	465
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
p-Tert-Butylphenol	98-54-4	Ciliated protozoa	Experimental	60 hours	IC50	18,4 mg/l
p-Tert-Butylphenol	98-54-4	Green algae	Experimental	72 hours	ErC50	14 mg/l
p-Tert-Butylphenol	98-54-4	Invertebrate	Experimental	96 hours	LC50	1,9 mg/l
p-Tert-Butylphenol	98-54-4	Medaka	Experimental	96 hours	LC50	5,1 mg/l
p-Tert-Butylphenol	98-54-4	Water flea	Experimental	48 hours	EC50	3,9 mg/l
p-Tert-Butylphenol	98-54-4	Fathead minnow	Experimental	128 days	NOEC	0,01 mg/l
p-Tert-Butylphenol	98-54-4	Green algae	Experimental	72 hours	NOEC	0,32 mg/l
p-Tert-Butylphenol	98-54-4	Water flea	Experimental	21 days	NOEC	0,73 mg/l

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Acetone	67-64-1	Experimental Biodegradation	28 days	BOD	78 %BOD/ThOD	OECD 301D - Closed bottle test
Acetone	67-64-1	Experimental Photolysis		Photolytic half-life (in air)	147 days (t 1/2)	
Acrylonitrile - butadiene polymer	9003-18-3	Data not availbl-insufficient	N/A	N/A	N/A	N/A
FUMARATED ROSIN	65997-04-8	Experimental Biodegradation	28 days	BOD	15 %BOD/ThOD	OECD 301D - Closed bottle test
Resin acids and rosin acids, esters with glycerol	8050-31-5	Experimental Biodegradation	28 days	CO2 evolution	0 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2
Phenol-formaldehyde resin	Trade Secret	Experimental Biodegradation	28 days	CO2 evolution	0 %CO2 evolution/THCO2 evolution	
Salicylic acid	69-72-7	Experimental Biodegradation	14 days	BOD	88.1 %BOD/ThOD	OECD 301C - MITI test (I)
Zinc oxide	1314-13-2	Data not availbl-insufficient	N/A	N/A	N/A	N/A
p-Tert-Butylphenol	98-54-4	Experimental Biodegradation	28 days	Dissolv. Organic Carbon Deplet	98 %removal of DOC	EC C.4.A. DOC Die-Away Test

12.3 : Bioaccumulative potential

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Acetone	67-64-1	Experimental BCF		Bioaccumulation	0.65	

		- Other		factor		
Acetone	67-64-1	Experimental Bioconcentration		Log Kow	-0.24	
Acrylonitrile - butadiene polymer	9003-18-3	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
FUMARATED ROSIN	65997-04-8	Experimental Bioconcentration		Log Kow	≥4.4	OECD 117 log Kow HPLC method
Resin acids and rosin acids, esters with glycerol	8050-31-5	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Phenol-formaldehyde resin	Trade Secret	Estimated Bioconcentration		Bioaccumulation factor	7.4	
Salicylic acid	69-72-7	Experimental Bioconcentration		Log Kow	2.26	
Zinc oxide	1314-13-2	Experimental BCF - Fish	56 days	Bioaccumulation factor	≤217	OECD305-Bioconcentration
p-Tert-Butylphenol	98-54-4	Experimental BCF - Fish	56 days	Bioaccumulation factor	88	OECD305-Bioconcentration
p-Tert-Butylphenol	98-54-4	Experimental Bioconcentration		Log Kow	3	OECD 117 log Kow HPLC method

12.4. Mobility in soil
Please contact manufacturer for more details

12.5 Other adverse effects
No information available.

SECTION 13: Disposal considerations

13.1. Disposal methods
Product must only be disposed of by an authorized/permitted waste disposal contractor or incinerated in an industrial or commercial facility in the presence of a combustible material.

SECTION 14: Transport Information

Compliance is required to South African Transport Information Road Traffic Act & Regulations and Railroad regulations, IATA Standards for airfreight and Maritime standards for ocean freight.

SECTION 15: Regulatory information

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

Global inventory status
Contact 3M for more information. The components of this 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.

SECTION 16: Other information

Revision information:
Label: GHS Classification information was modified.
Label: GHS Precautionary - Prevention information was modified.
Label: Graphic information was modified.
Section 6: Accidental release personal information information was modified.
Section 7: Conditions safe storage information was modified.
Section 08: Personal Protection - Apron Statement information was added.
Section 8: Personal Protection - Skin/body information information was deleted.

Section 8: Respiratory protection - recommended respirators information information was modified.
Section 8: Skin protection - protective clothing information information was deleted.
Section 8: Skin protection - recommended gloves information information was modified.
Section 8: Skin protection - recommended gloves text information was added.
Section 8: Skin protection - recommended gloves text information was deleted.
Section 9: Flammability (solid, gas) information information was deleted.
Section 09: Flammability information information was added.
Section 09: Kinematic Viscosity information information was added.
Section 09: Particle Characteristics N/A information was added.
Section 09: Vapor Density Value information was modified.
Section 09: Viscosity information was deleted.
Section 11: Cancer Hazards information information was added.
Section 11: Target Organs - Repeated Table 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.

3M South Africa SDSs are available at www.3m.co.za