



Safety Data Sheet

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Document Group:	05-8565-3	Version Number:	1.00
Issue Date:	31/03/2021	Supersedes Date:	Initial Issue

This Safety Data Sheet has been prepared in accordance with the Malaysia Occupational Safety and Health (Chemical Classification, Labelling and Safety Data Sheets) Regulations 2013.

SECTION 1: Identification

1.1. Product identifier

3M™ Adhesive 1099

Product Identification Numbers

FJ-9250-6471-1	FS-9100-0586-7	FS-9100-0589-1	FS-9100-0590-9	FS-9100-0634-5
FS-9100-0699-8	FS-9100-2535-2	FS-9100-2536-0	GS-2000-5791-6	GS-2000-5792-4
KT-7773-0257-3				

1.2. Recommended use and restrictions on use

Recommended use

Plastic Adhesive, Fast drying adhesive with good resistance to plasticiser migration, used for bonding vinyl extrusions and sheeting.

1.3. Supplier's details

ADDRESS:	3M Malaysia Sdn. Bhd., Level 8, Block F, Oasis Square, No.2, Jalan PJU 1A/7A, Ara Damansara 47301 Petaling, Jaya, Selangor
Telephone:	03-7884 2888
E Mail:	3mmyehsr@mmm.com
Website:	www.3M.com.my

1.4. Emergency telephone number

+60 03-7884 2888

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

Flammable Liquid: Category 2.

Serious Eye Damage/Irritation: Category 2.

Chronic Aquatic Toxicity: Category 2.

2.2. Label elements

Signal word

Danger

Symbols

Flame | Exclamation mark | Environment |

Pictograms



Hazard Statements

H225	Highly flammable liquid and vapor.
H319	Causes serious eye irritation.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements

General:

P102	Keep out of reach of children.
P101	If medical advice is needed, have product container or label at hand.

Prevention:

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233	Keep container tightly closed.
P280B	Wear protective gloves and eye/face protection.
P273	Avoid release to the environment.

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.
P370 + P378G	In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

Storage:

P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.

Disposal:

P501	Dispose of contents/container in accordance with applicable local/regional/national/international regulations.
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2.3. Other hazards

May cause drowsiness or dizziness.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	C.A.S. No.	% by Wt
ACETONE	67-64-1	60 - 70
ACRYLONITRILE-BUTADIENE POLYMER	9003-18-3	10 - 20
Phenol-formaldehyde resin	Trade Secret	5 - 10
Phenolic resin	Trade Secret	5 - 10
SALICYLIC ACID	69-72-7	< 3

ZINC OXIDE	1314-13-2	1 - 3
BENZENAMINE, N-PHENYL-, REACTION PRODUCTS WITH 2,4,4- TRIMETHYLPENTENE	68411-46-1	< 1
p-Tert-Butylphenol	98-54-4	< 1
PHENOL	108-95-2	< 0.75
O-CRESOL	95-48-7	< 0.5
Formaldehyde	50-00-0	< 0.1

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. Remove contact lenses if easy to do. Continue rinsing. Get medical attention.

If Swallowed:

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

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

No critical symptoms or effects. See Section 11.1, information on toxicological effects.

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

Carbon monoxide
Carbon dioxide
Hydrogen Cyanide
Oxides of Nitrogen

Condition

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

6.2. Environmental precautions

Avoid release to the environment. For larger spills, cover drains and build dikes 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 that is resistant to polar solvents. 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 authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. 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/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) Wear low static or properly grounded shoes. Use personal protective equipment (gloves, respirators, etc.) 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. Protect from sunlight. Store away from heat. Store away from acids. Store away from oxidizing 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	C.A.S. No.	Agency	Limit type	Additional Comments
ACETONE		ACGIH	TWA:250 ppm;STEL:500 ppm	A4: Not class. as human carcin
ACETONE		Malaysia OELs	TWA(8 hours):1187 mg/m3(500 ppm)	
CRESOLS (ORTHO-; META-; PARA-)		Malaysia OELs	TWA(8 hours):22 mg/m3(5 ppm)	SKIN
Formaldehyde		ACGIH	TWA:0.1 ppm;STEL:0.3 ppm	A1: Confirmed human carcin., Dermal/Respiratory Sensitizer

Formaldehyde		Malaysia OELs	CEIL:0.37 mg/m3(0.3 ppm)	
O-CRESOL		ACGIH	TWA(inhalable fraction and vapor):20 mg/m3	A4: Not class. as human carcin, Danger of cutaneous absorption
PHENOL		ACGIH	TWA:5 ppm	A4: Not class. as human carcin, Danger of cutaneous absorption
PHENOL		Malaysia OELs	TWA(8 hours):19 mg/m3(5 ppm)	SKIN
ZINC OXIDE		ACGIH	TWA(respirable fraction):2 mg/m3;STEL(respirable fraction):10 mg/m3	
ZINC OXIDE		Malaysia OELs	TWA(as fume)(8 hours):5 mg/m3;TWA(as dust)(8 hours):10 mg/m3	

ACGIH : American Conference of Governmental Industrial Hygienists

CMRG : Chemical Manufacturer's Recommended Guidelines

Malaysia OELs : Malaysia. Occupational Safety and Health (Use and Standards of Exposure of Chemicals Hazardous to Health) Regulations

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/vapors/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:

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.

Gloves made from the following material(s) are recommended: Butyl Rubber

Fluoroelastomer

Neoprene

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 vapors and particulates

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:	Liquid
Color	Off-White
Odor	Ketones
Odor threshold	No Data Available
pH	No Data Available
Melting point/Freezing point	No Data Available
Boiling point/Initial boiling point/Boiling range	56 °C [Details: Acetone value]
Flash Point	-18 °C [Details: closed cup]
Evaporation rate	1.9 [Ref Std: WATER=1]
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	2.1 % volume [Details: Acetone value LEL]
Flammable Limits(UEL)	13 % volume [Details: Acetone value UEL]
Vapor Pressure	23,998 Pa
Vapor Density and/or Relative Vapor Density	2 [Ref Std: AIR=1]
Density	No Data Available
Relative Density	0.87 - 0.9 [Ref Std: WATER=1]
Water solubility	No Data Available
Solubility- non-water	No Data Available
Partition coefficient: n-octanol/ water	No Data Available
Autoignition temperature	No Data Available
Decomposition temperature	No Data Available
Viscosity/Kinematic Viscosity	1,500 - 5,000 mPa-s [Details: CONDITIONS: AT 26 DEG. C]
Volatile Organic Compounds	No Data Available
Percent volatile	62 - 67 %
VOC Less H2O & Exempt Solvents	No Data Available
Molecular weight	No Data Available

Nanoparticles

This material does not contain nanoparticles.

SECTION 10: Stability and reactivity

10.1. Reactivity

This material is considered to be non reactive under normal use conditions.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Heat
Sparks and/or flames

10.5. Incompatible materials

Strong oxidizing agents

10.6. Hazardous decomposition products**Substance**

None known.

Condition

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 labeling, 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:

Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness. Allergic Skin Reaction (non-photo induced) in sensitive people: Signs/symptoms may include redness, swelling, blistering, and itching.

Eye Contact:

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

Ingestion:

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

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.

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-Vapor(4 hr)		No data available; calculated ATE >50 mg/l
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
Phenolic resin	Dermal		LD50 estimated to be > 5,000 mg/kg
Phenolic resin	Ingestion		LD50 estimated to be 2,000 - 5,000 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
PHENOL	Inhalation-Vapor		LC50 estimated to be 2 - 10 mg/l
PHENOL	Dermal	Rat	LD50 670 mg/kg
PHENOL	Ingestion	Rat	LD50 340 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
BENZENAMINE, N-PHENYL-, REACTION PRODUCTS WITH 2,4,4-TRIMETHYLPENTENE	Dermal	Rat	LD50 > 2,000 mg/kg
BENZENAMINE, N-PHENYL-, REACTION PRODUCTS WITH 2,4,4-TRIMETHYLPENTENE	Ingestion	Rat	LD50 > 5,000 mg/kg
O-CRESOL	Dermal	Rabbit	LD50 890 mg/kg
O-CRESOL	Inhalation-Vapor (4 hours)	Rat	LC50 > 24.5 mg/l
O-CRESOL	Ingestion	Rat	LD50 121 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

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
ACETONE	Mouse	Minimal irritation
ACRYLONITRILE-BUTADIENE POLYMER	Professional judgement	No significant irritation
SALICYLIC ACID	Rabbit	No significant irritation
ZINC OXIDE	Human and animal	No significant irritation
PHENOL	Rat	Corrosive
p-Tert-Butylphenol	Rabbit	Irritant
O-CRESOL	Rabbit	Corrosive
Formaldehyde	official classification	Corrosive

Serious Eye Damage/Irritation

Name	Species	Value
ACETONE	Rabbit	Severe irritant
ACRYLONITRILE-BUTADIENE POLYMER	Professional judgement	No significant irritation
SALICYLIC ACID	Rabbit	Corrosive
ZINC OXIDE	Rabbit	Mild irritant
PHENOL	Rabbit	Corrosive
p-Tert-Butylphenol	Rabbit	Corrosive
O-CRESOL	Rabbit	Corrosive
Formaldehyde	official classification	Corrosive

Sensitization:**Skin Sensitization**

Name	Species	Value
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
PHENOL	Guinea pig	Not classified
p-Tert-Butylphenol	Human and animal	Not classified
Formaldehyde	Guinea pig	Sensitizing

Photosensitization

Name	Species	Value
SALICYLIC ACID	Mouse	Not sensitizing

Respiratory Sensitization

Name	Species	Value
Formaldehyde	Human	Some positive data exist, but 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
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
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

p-Tert-Butylphenol	In Vitro	Not mutagenic
O-CRESOL	In vivo	Not mutagenic
O-CRESOL	In Vitro	Some positive data exist, but the data are not sufficient for classification
Formaldehyde	In Vitro	Some positive data exist, but the data are not sufficient for classification
Formaldehyde	In vivo	Mutagenic

Carcinogenicity

Name	Route	Species	Value
ACETONE	Not Specified	Multiple animal species	Not carcinogenic
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
p-Tert-Butylphenol	Ingestion	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
O-CRESOL	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
O-CRESOL	Ingestion	Mouse	Some positive data exist, but the data are not sufficient for classification
Formaldehyde	Not Specified	Human and animal	Carcinogenic

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
SALICYLIC ACID	Ingestion	Toxic to development	Rat	NOAEL 75 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
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
p-Tert-Butylphenol	Ingestion	Not classified for male reproduction	Rat	NOAEL 600 mg/kg/day	2 generation
p-Tert-Butylphenol	Ingestion	Not classified for female 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
O-CRESOL	Ingestion	Not classified for female reproduction	Rat	NOAEL 450 mg/kg/day	2 generation
O-CRESOL	Ingestion	Not classified for male reproduction	Rat	NOAEL 450 mg/kg/day	2 generation
O-CRESOL	Ingestion	Not classified for development	Rat	NOAEL 175 mg/kg/day	2 generation
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

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
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
p-Tert-Butylphenol	Inhalation	respiratory irritation	May cause respiratory irritation	Rat	LOAEL 5.6 mg/l	4 hours
O-CRESOL	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
O-CRESOL	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Rat	LOAEL 68 mg/kg	
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	

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 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	Not classified	Rat	NOAEL 200	13 weeks

		system			mg/kg/day	
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 bone, teeth, nails, and/or hair	Not classified	Mouse	NOAEL 11,298 mg/kg/day	13 weeks
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 hematopoietic system kidney and/or bladder	Not classified	Other	NOAEL 500 mg/kg/day	6 months
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
p-Tert-Butylphenol	Ingestion	endocrine system liver 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
O-CRESOL	Ingestion	nervous system	Not classified	Rat	NOAEL 600 mg/kg/day	90 days
O-CRESOL	Ingestion	hematopoietic system liver immune system kidney and/or bladder	Not classified	Rat	NOAEL 2,024 mg/kg/day	90 days
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 ppm	13 weeks
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

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 labeling, 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 #	Organism	Type	Exposure	Test Endpoint	Test Result
ACETONE		Algae other	Experimental	96 hours	EC50	11,493 mg/l

ACETONE		Crustacea other	Experimental	24 hours	LC50	2,100 mg/l
ACETONE		Rainbow Trout	Experimental	96 hours	LC50	5,540 mg/l
ACETONE		Water flea	Experimental	21 days	NOEC	1,000 mg/l
ACETONE		Bacteria	Experimental	16 hours	NOEC	1,700 mg/l
ACETONE		Redworm	Experimental	48 hours	LC50	>100
ACRYLONITRILE-BUTADIENE POLYMER			Data not available or insufficient for classification			N/A
Phenol-formaldehyde resin	Trade Secret		Data not available or insufficient for classification			N/A
Phenolic resin	Trade Secret		Data not available or insufficient for classification			N/A
SALICYLIC ACID		Green algae	Experimental	72 hours	EC50	>100 mg/l
SALICYLIC ACID		Medaka	Experimental	96 hours	LC50	>100 mg/l
SALICYLIC ACID		Water flea	Experimental	48 hours	EC50	870 mg/l
SALICYLIC ACID		Water flea	Experimental	21 days	NOEC	10 mg/l
SALICYLIC ACID		Activated sludge	Experimental	3 hours	EC50	>3,200
SALICYLIC ACID		Bacteria	Experimental	18 hours	EC10	465
ZINC OXIDE		Activated sludge	Estimated	3 hours	EC50	6.5 mg/l
ZINC OXIDE		Green Algae	Estimated	72 hours	EC50	0.052 mg/l
ZINC OXIDE		Rainbow Trout	Estimated	96 hours	LC50	0.21 mg/l
ZINC OXIDE		Water flea	Estimated	48 hours	EC50	0.07 mg/l
ZINC OXIDE		Green Algae	Estimated	72 hours	NOEC	0.006 mg/l
ZINC OXIDE		Water flea	Estimated	7 days	NOEC	0.02 mg/l
BENZENAMINE, N-PHENYL-, REACTION PRODUCTS WITH 2,4,4-TRIMETHYLPENTENE		Activated sludge	Experimental	3 hours	EC50	>100 mg/l
BENZENAMINE, N-PHENYL-, REACTION PRODUCTS WITH 2,4,4-TRIMETHYLPENTENE		Green algae	Experimental	72 hours	EC50	>100 mg/l
BENZENAMINE, N-		Water flea	Experimental	24 hours	EC50	0.82 mg/l

PHENYL-, REACTION PRODUCTS WITH 2,4,4- TRIMETHYLP ENTENE						
BENZENAMI NE, N- PHENYL-, REACTION PRODUCTS WITH 2,4,4- TRIMETHYLP ENTENE		Zebra Fish	Experimental	96 hours	LC50	>71 mg/l
BENZENAMI NE, N- PHENYL-, REACTION PRODUCTS WITH 2,4,4- TRIMETHYLP ENTENE		Green algae	Experimental	72 hours	NOEC	10 mg/l
BENZENAMI NE, N- PHENYL-, REACTION PRODUCTS WITH 2,4,4- TRIMETHYLP ENTENE		Water flea	Experimental	21 days	EC10	1.69 mg/l
p-Tert- Butylphenol		Ciliated protozoa	Experimental	60 hours	IC50	18.4 mg/l
p-Tert- Butylphenol		Crustacea other	Experimental	96 hours	LC50	1.9 mg/l
p-Tert- Butylphenol		Green Algae	Experimental	72 hours	EC50	14 mg/l
p-Tert- Butylphenol		Medaka	Experimental	96 hours	LC50	5.1 mg/l
p-Tert- Butylphenol		Water flea	Experimental	48 hours	EC50	3.9 mg/l
p-Tert- Butylphenol		Fathead Minnow	Experimental	128 days	NOEC	0.01 mg/l
p-Tert- Butylphenol		Green Algae	Experimental	72 hours	NOEC	0.32 mg/l
p-Tert- Butylphenol		Water flea	Experimental	21 days	NOEC	0.73 mg/l
PHENOL		Bacteria	Experimental	24 hours	IC50	21 mg/l
PHENOL		Green algae	Experimental	96 hours	EC50	61.1 mg/l
PHENOL		Rainbow Trout	Experimental	96 hours	LC50	8.9 mg/l
PHENOL		Water flea	Experimental	48 hours	EC50	3.1 mg/l
PHENOL		Fish other	Experimental	60 days	NOEC	0.077 mg/l
PHENOL		Water flea	Experimental	16 days	NOEC	0.16 mg/l
O-CRESOL		Activated sludge	Experimental	5 days	EC50	940 mg/l

O-CRESOL		Bacteria	Experimental	16 hours	NOEC	33 mg/l
O-CRESOL		Fish other	Experimental	96 hours	LC50	6.2 mg/l
O-CRESOL		Green Algae	Experimental	96 hours	EC50	65 mg/l
O-CRESOL		Water flea	Experimental	48 hours	LC50	9.6 mg/l
O-CRESOL		Fathead Minnow	Estimated	32 days	NOEC	1.35 mg/l
O-CRESOL		Water flea	Estimated	21 days	NOEC	1 mg/l
O-CRESOL		Algae	Experimental	96 hours	NOEC	40 mg/l
Formaldehyde		Activated sludge	Experimental	3 hours	IC50	20.4 mg/l
Formaldehyde		Fish other	Experimental	96 hours	LC50	6.7 mg/l
Formaldehyde		Green algae	Experimental	72 hours	EC50	4.89 mg/l
Formaldehyde		Water flea	Experimental	48 hours	EC50	5.8 mg/l
Formaldehyde		Medaka	Experimental	28 days	NOEC	>=48 mg/l
Formaldehyde		Water flea	Experimental	21 days	NOEC	>=6.4 mg/l

12.2. Persistence and degradability

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
ACETONE		Experimental Photolysis		Photolytic half-life (in air)	147 days (t 1/2)	
ACETONE		Experimental Biodegradation	28 days	Biological Oxygen Demand	78 % BOD/ThBOD	OECD 301D - Closed Bottle Test
ACRYLONITRILE-BUTADIENE POLYMER		Data not available - insufficient			N/A	
Phenol-formaldehyde resin	Trade Secret	Experimental Biodegradation	28 days	Carbon dioxide evolution	0 %CO2 evolution/THC O2 evolution	
Phenolic resin	Trade Secret	Data not available - insufficient			N/A	
SALICYLIC ACID		Experimental Biodegradation	14 days	Biological Oxygen Demand	88.1 % BOD/ThBOD	OECD 301C - MITI (I)
ZINC OXIDE		Data not available - insufficient			N/A	
BENZENAMINE, N-PHENYL-, REACTION PRODUCTS WITH 2,4,4-TRIMETHYLPENTENE		Experimental Biodegradation	28 days	Carbon dioxide evolution	<=1 % weight	OECD 301B - Mod. Sturm or CO2
p-Tert-Butylphenol		Experimental Biodegradation	28 days	Dissolv. Organic Carbon Deplet	98 % weight	Non-standard method
PHENOL		Experimental Biodegradation	100 hours	Biological Oxygen Demand	62 % BOD/ThBOD	OECD 301C - MITI (I)

O-CRESOL		Experimental Biodegradation	20 days	Biological Oxygen Demand	86 % BOD/ThBOD	Non-standard method
Formaldehyde		Experimental Photolysis		Photolytic half-life(in water)	1-2 hours (t _{1/2})	Non-standard method
Formaldehyde		Experimental Biodegradation	28 days	Dissolv. Organic Carbon Deplet	99 %removal of DOC	OECD 301A - DOC Die Away Test

12.3. Bioaccumulative potential

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
ACETONE		Experimental BCF - Other		Bioaccumulation Factor	0.65	
ACETONE		Experimental Bioconcentration		Log of Octanol/H ₂ O part. coeff	-0.24	
ACRYLONITRILE-BUTADIENE POLYMER		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	Non-standard method
Phenolic resin	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
SALICYLIC ACID		Experimental Bioconcentration		Log of Octanol/H ₂ O part. coeff	2.26	
ZINC OXIDE		Experimental BCF-Carp	56 days	Bioaccumulation Factor	≤217	OECD 305E-Bioaccum FI-thru fis
BENZENAMINE, N-PHENYL-, REACTION PRODUCTS WITH 2,4,4-TRIMETHYLPENTENE		Estimated BCF-Carp	42 days	Bioaccumulation Factor	1730	Non-standard method
p-Tert-Butylphenol		Experimental BCF-Carp	56 days	Bioaccumulation Factor	88	OECD 305E-Bioaccum FI-thru fis
PHENOL		Experimental Bioconcentration		Log of Octanol/H ₂ O part. coeff	1.47	Non-standard method
O-CRESOL		Experimental BCF - Other		Bioaccumulation Factor	10.7	OECD 305E-Bioaccum FI-thru fis
Formaldehyde		Experimental Bioconcentration		Log of Octanol/H ₂ O part. coeff	0.35	Non-standard 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**

According to the Environmental Quality (Scheduled Wastes) Regulations 2005, scheduled waste has to be sent to a prescribed premise for recycling, treatment or disposal. Please approach Kualiti Alam for proper schedule waste classification and disposal.

SECTION 14: Transport Information**Marine Transport (IMDG)**

UN Number:UN1133

Proper Shipping Name:ADHESIVES

Technical Name:None assigned.

Hazard Class/Division:3

Subsidiary Risk:None assigned.

Packing Group:II

Limited Quantity:Yes

Marine Pollutant: None assigned.

Marine Pollutant Technical Name: None assigned.

Other Dangerous Goods Descriptions:

None assigned.

Air Transport (IATA)

UN Number:UN1133

Proper Shipping Name:ADHESIVES

Technical Name:None assigned.

Hazard Class/Division:3

Subsidiary Risk:None assigned.

Packing Group:II

Limited Quantity:None assigned.

Marine Pollutant: None assigned.

Marine Pollutant Technical Name: None assigned.

Other Dangerous Goods Descriptions:

None assigned.

Transportation classifications are provided as a customer service. As for shipping, YOU remain responsible for complying with all applicable laws and regulations, including proper transportation classification and packaging. 3M's transportation classifications are based on product formulation, packaging, 3M policies and 3M's understanding of applicable current regulations. 3M does not guarantee the accuracy of this classification information. This information applies only to transportation classification and not the packaging, labeling or marking requirements. The above information is only for reference. If you are shipping by air or ocean, YOU are advised to check & meet applicable regulatory requirements.

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****Global inventory status**

Contact 3M for more information. The components of this material are in compliance with the provisions of 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.

SECTION 16: Other information

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.

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