



Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice (Safe Work Australia, December 2011)

SECTION 1: Identification

1.1. Product identifier

3M™ Adhesion Promoter 4298

Product Identification Numbers

70-0706-9842-1

1.2. Recommended use and restrictions on use

Recommended use

Automotive, Adhesion Promoter absorbed on a sponge for use with attachment tapes

For Industrial or Professional use only.

1.3. Supplier's details

Address:	3M Australia - Building A, 1 Rivett Road, North Ryde NSW 2113
Telephone:	136 136
E Mail:	productinfo.au@mmm.com
Website:	www.3m.com.au

1.4. Emergency telephone number

EMERGENCY: 1800 097 146 (Australia only)

SECTION 2: Hazard identification

This product is classified as a hazardous chemical according to the Model Work Health and Safety Regulations, 2011, in accordance with applicable State and Territory legislation.

Refer to Section 14 of this Safety Data Sheets for product Dangerous Goods Classification.

2.1. Classification of the substance or mixture

Flammable Liquid: Category 2.

Serious Eye Damage/Irritation: Category 2.

Skin Sensitizer: Category 1A.

Carcinogenicity: Category 2.

Reproductive Toxicity: Category 1.

Specific Target Organ Toxicity (single exposure): Category 1.

Specific Target Organ Toxicity (repeated exposure): Category 1.

Specific Target Organ Toxicity (single exposure): Category 3

2.2. Label elements

The label elements below were prepared in accordance with the Code of Practice on Preparation of Safety Data Sheets for Hazardous Chemicals (Safe Work Australia, December 2011). This information may be different from the actual product label.

Signal word

Danger

Symbols

Flame | Exclamation mark | Health Hazard |

Pictograms



Hazard statements

H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation.
H317	May cause an allergic skin reaction.
H351	Suspected of causing cancer.
H360	May damage fertility or the unborn child.
H336	May cause drowsiness or dizziness.
H370	Causes damage to organs: sensory organs.
H372	Causes damage to organs through prolonged or repeated exposure: nervous system.
H373	May cause damage to organs through prolonged or repeated exposure: sensory organs.

Precautionary statements

Prevention:

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof electrical, ventilating and lighting equipment.
P242	Use non-sparking tools.
P243	Take action to prevent static discharges.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280F	Wear respiratory protection.

Response:

P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P312	Call a POISON CENTRE or doctor/physician if you feel unwell.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P337 + P313	IF eye irritation persists: Get medical advice/attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P370 + P378	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 assigned/identified product hazards

None known.

2.4. Other hazards which do not result in classification

May be harmful in contact with skin.
 Causes mild skin irritation.
 May be harmful if inhaled.
 Very toxic to aquatic life.
 Harmful to aquatic life with long lasting effects.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	CAS Nbr	% by Weight
Cyclohexane	110-82-7	45 - 50
Xylene	1330-20-7	15 - 35
M-xylene	108-38-3	< 15
Ethylbenzene	100-41-4	3 - 12
Ethanol	64-17-5	5 - 8
P-xylene	106-42-3	< 7
O-xylene	95-47-6	< 5
Acrylate Polymer	Trade Secret	1 - 5
Chlorinated rubber.	68609-36-9	1 - 5
Ethyl Acetate	141-78-6	< 4
4,4'-isopropylidenediphenol-epichlorohydrin polymer	25068-38-6	< 1
Methanol	67-56-1	< 0.5
Toluene	108-88-3	= 0.3
Cumene	98-82-8	= 0.15
Maleic anhydride	108-31-6	< 0.05

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). Central nervous system depression (headache, dizziness, drowsiness, incoordination, nausea, slurred speech, giddiness, and unconsciousness). Target organ effects. See Section 11 for additional details. Target organ effects following prolonged or repeated exposure. See Section 11 for additional details.

4.3. Indication of any immediate medical attention and special treatment required

Not applicable

SECTION 5: Fire-fighting measures

5.1. 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

<u>Substance</u>	<u>Condition</u>
Aldehydes.	During combustion.
Formaldehyde	During combustion.
Carbon monoxide.	During combustion.
Carbon dioxide.	During combustion.
Hydrogen Chloride	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.

Hazchem Code: 1Z

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. **WARNING !** A motor could be an ignition source and could cause flammable gases or vapours 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.

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 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. 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. 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 vapour 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
Ethylbenzene	100-41-4	ACGIH	TWA:20 ppm	A3: Confirmed animal carcin., Ototoxicant
Ethylbenzene	100-41-4	Australia OELs	TWA(8 hours):434 mg/m3(100 ppm);STEL(15 minutes):543 mg/m3(125 ppm)	
Benzene, dimethyl-	106-42-3	ACGIH	TWA:20 ppm;STEL:150 ppm	A4: Not class. as human carcin
P-xylene	106-42-3	ACGIH	TWA:20 ppm	A4: Not class. as human carcinogen, Ototoxicant
P-xylene	106-42-3	Australia OELs	TWA(8 hours):350 mg/m3(80 ppm);STEL(15 minutes):655 mg/m3(150 ppm)	
Maleic anhydride	108-31-6	ACGIH	TWA(inhalable fraction and	A4: Not class. as human

			vapor):0.01 mg/m3	carcin, Dermal/Respiratory Sensitizer
Maleic anhydride	108-31-6	Australia OELs	TWA(8 hours): 1 mg/m3 (0.25 ppm)	
Benzene, dimethyl-	108-38-3	ACGIH	TWA:20 ppm;STEL:150 ppm	A4: Not class. as human carcin
M-xylene	108-38-3	ACGIH	TWA:20 ppm	A4: Not class. as human carcin
M-xylene	108-38-3	Australia OELs	TWA(8 hours):350 mg/m3(80 ppm);STEL(15 minutes):655 mg/m3(150 ppm)	
Toluene	108-88-3	ACGIH	TWA:20 ppm	A4: Not class. as human carcinogen, Ototoxicant
Toluene	108-88-3	Australia OELs	TWA(8 hours):191 mg/m3(50 ppm);STEL(15 minutes):574 mg/m3(150 ppm)	SKIN
Cyclohexane	110-82-7	ACGIH	TWA:100 ppm	
Cyclohexane	110-82-7	Australia OELs	TWA(8 hours):350 mg/m3(100 ppm);STEL(15 minutes):1050 mg/m3(300 ppm)	
Xylene	1330-20-7	ACGIH	TWA:20 ppm;STEL:150 ppm	A4: Not class. as human carcin
Xylene	1330-20-7	Australia OELs	TWA(8 hours):350 mg/m3(80 ppm);STEL(15 minutes):655 mg/m3(150 ppm)	
ETHYL ACETATE	141-78-6	ACGIH	TWA:400 ppm	
ETHYL ACETATE	141-78-6	Australia OELs	TWA(8 hours):720 mg/m3(200 ppm);STEL(15 minutes):1440 mg/m3(400 ppm)	
Ethanol	64-17-5	ACGIH	STEL:1000 ppm	A3: Confirmed animal carcinogen.
Ethanol	64-17-5	Australia OELs	TWA(8 hours):1880 mg/m3(1000 ppm)	
Methanol	67-56-1	ACGIH	TWA:200 ppm;STEL:250 ppm	Danger of cutaneous absorption
Methanol	67-56-1	Australia OELs	TWA(8 hours):262 mg/m3(200 ppm);STEL(15 minutes):328 mg/m3(250 ppm)	SKIN
Benzene, dimethyl-	95-47-6	ACGIH	TWA:20 ppm;STEL:150 ppm	A4: Not class. as human carcin
O-xylene	95-47-6	ACGIH	TWA:20 ppm	A4: Not class. as human carcin
O-xylene	95-47-6	Australia OELs	TWA(8 hours):350 mg/m3(80 ppm);STEL(15 minutes):655 mg/m3(150 ppm)	
Cumene	98-82-8	ACGIH	TWA:5 ppm	A3: Confirmed animal carcinogen.
Cumene	98-82-8	Australia OELs	TWA(8 hours): 125 mg/m3 (25 ppm); STEL(15 minutes): 375 mg/m3 (75 ppm)	SKIN

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

Australia OELs : Australia. Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment

CMRG : Chemical Manufacturer's Recommended Guidelines

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

Sen: Sensitiser

Sk: Absorption through the skin may be a significant source of exposure.

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:

Safety glasses with side shields.

Indirect vented goggles.

Select and use eye protection in accordance with AS/NZS 1336. Eye protection should comply with the performance specifications of AS/NZS 1337.

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 (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

Select and use gloves according to AS/NZ 2161.

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for organic vapours and particulates

Half facepiece or full facepiece supplied-air respirator.

Organic vapour respirators may have short service life.

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

Select and use respirators according to AS/NZS 1715. Respirators should comply with AS/NZS 1716 performance specifications. For information about respirators, call 3M on 1800 024 464.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Specific Physical Form:	Sponge holding approximately 2 milliliters of liquid.
Colour	Yellow
Odour	Solvent
Odour threshold	<i>No data available.</i>
pH	4.4 - 5 [Test Method: Tested per ASTM protocol] [Details: @23°C]
Melting point/Freezing point	<i>Not applicable.</i>
Boiling point/Initial boiling point/Boiling range	73.1 °C [Test Method: Tested per ASTM protocol] [Details: @760mmHg]
Flash point	1.1 °C [Test Method: Setflash]
Evaporation rate	6.4 [Test Method: Estimated] [Ref Std: XYLENE=1]
Flammability (solid, gas)	Not applicable.
Flammable Limits(LEL)	1 % [Test Method: Estimated]
Flammable Limits(UEL)	6 % [Test Method: Estimated]
Vapour pressure	11,092.4 Pa [@ 20 °C] [Test Method: Tested per ASTM protocol]
Vapor Density and/or Relative Vapor Density	1.7 [Test Method: Estimated] [Ref Std: AIR=1]
Density	0.82 g/ml
Relative density	0.82 [Ref Std: WATER=1]
Water solubility	10 %
Solubility- non-water	<i>No data available.</i>
Partition coefficient: n-octanol/water	<i>No data available.</i>
Autoignition temperature	430 °C
Decomposition temperature	<i>No data available.</i>
Viscosity/Kinematic Viscosity	<=25 mPa-s [@ 20 °C]
Volatile organic compounds (VOC)	<=781 g/l [Test Method: calculated SCAQMD rule 443.1] [Details: Calculated]
Percent volatile	Approximately 95 %
VOC less H₂O & exempt solvents	<=781 g/l [Test Method: calculated SCAQMD rule 443.1] [Details: Calculated]
Molecular weight	<i>No data available.</i>

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. Conditions to avoid

Heat.

Sparks and/or flames.

10.4. Possibility of hazardous reactions

Hazardous polymerisation will not occur.

10.5 Incompatible materials

Strong acids.

Strong oxidising agents.

10.6 Hazardous decomposition products

Substance

None known.

Condition**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

May be harmful if inhaled. 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

May be harmful in contact with skin.

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

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 diarrhoea. May cause additional health effects (see below).

Additional Health Effects:**Single exposure may cause target organ effects:**

Auditory effects: Signs/symptoms may include hearing impairment, balance dysfunction and ringing in the ears. Central nervous system (CNS) depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

Prolonged or repeated exposure may cause target organ effects:

Auditory effects: Signs/symptoms may include hearing impairment, balance dysfunction and ringing in the ears. 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.

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.

Additional information:

This product contains ethanol. Alcoholic beverages and ethanol in alcoholic beverages have been classified by the

International Agency for Research on Cancer as carcinogenic to humans. There are also data associating human consumption of alcoholic beverages with developmental toxicity and liver toxicity. Exposure to ethanol during the foreseeable use of this product is not expected to cause cancer, developmental toxicity, or liver toxicity.

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 >2,000 - =5,000 mg/kg
Overall product	Inhalation-Vapour(4 hr)		No data available; calculated ATE >20 - =50 mg/l
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
Cyclohexane	Dermal	Rat	LD50 > 2,000 mg/kg
Cyclohexane	Inhalation-Vapour (4 hours)	Rat	LC50 > 32.9 mg/l
Cyclohexane	Ingestion	Rat	LD50 6,200 mg/kg
Xylene	Dermal	Rabbit	LD50 > 4,200 mg/kg
Xylene	Inhalation-Vapour (4 hours)	Rat	LC50 29 mg/l
Xylene	Ingestion	Rat	LD50 3,523 mg/kg
M-xylene	Dermal	Rabbit	LD50 > 4,200 mg/kg
M-xylene	Inhalation-Vapour (4 hours)	Rat	LC50 29 mg/l
M-xylene	Ingestion	Rat	LD50 3,523 mg/kg
Ethylbenzene	Dermal	Rabbit	LD50 15,433 mg/kg
Ethylbenzene	Inhalation-Vapour (4 hours)	Rat	LC50 17.4 mg/l
Ethylbenzene	Ingestion	Rat	LD50 4,769 mg/kg
Ethanol	Dermal	Rabbit	LD50 > 15,800 mg/kg
Ethanol	Inhalation-Vapour (4 hours)	Rat	LC50 124.7 mg/l
Ethanol	Ingestion	Rat	LD50 17,800 mg/kg
P-xylene	Dermal	Rabbit	LD50 > 4,200 mg/kg
P-xylene	Inhalation-Vapour (4 hours)	Rat	LC50 29 mg/l
P-xylene	Ingestion	Rat	LD50 3,523 mg/kg
O-xylene	Dermal	Rabbit	LD50 > 4,200 mg/kg
O-xylene	Inhalation-Vapour (4 hours)	Rat	LC50 29 mg/l
O-xylene	Ingestion	Rat	LD50 3,523 mg/kg
ETHYL ACETATE	Dermal	Rabbit	LD50 > 18,000 mg/kg
ETHYL ACETATE	Inhalation-Vapour (4 hours)	Rat	LC50 70.5 mg/l
ETHYL ACETATE	Ingestion	Rat	LD50 5,620 mg/kg
Chlorinated rubber.	Dermal	Guinea pig	LD50 > 1,000 mg/kg
Chlorinated rubber.	Ingestion	Rat	LD50 > 3,200 mg/kg
Methanol	Dermal		LD50 estimated to be 1,000 - 2,000 mg/kg
Methanol	Inhalation-Vapour		LC50 estimated to be 10 - 20 mg/l
Methanol	Ingestion		LD50 estimated to be 50 - 300 mg/kg
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Dermal	Rat	LD50 > 1,600 mg/kg
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Ingestion	Rat	LD50 > 1,000 mg/kg
Toluene	Dermal	Rat	LD50 12,000 mg/kg

Toluene	Inhalation-Vapour (4 hours)	Rat	LC50 30 mg/l
Toluene	Ingestion	Rat	LD50 5,550 mg/kg
Cumene	Dermal	Rabbit	LD50 > 3,160 mg/kg
Cumene	Inhalation-Vapour (4 hours)	Rat	LC50 39.4 mg/l
Cumene	Ingestion	Rat	LD50 1,400 mg/kg
Maleic anhydride	Dermal	Rabbit	LD50 2,620 mg/kg
Maleic anhydride	Ingestion	Rat	LD50 1,030 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Cyclohexane	Rabbit	Mild irritant
Xylene	Rabbit	Mild irritant
M-xylene	Rabbit	Mild irritant
Ethylbenzene	Rabbit	Mild irritant
Ethanol	Rabbit	No significant irritation
P-xylene	Rabbit	Mild irritant
O-xylene	Rabbit	Mild irritant
ETHYL ACETATE	Rabbit	Minimal irritation
Chlorinated rubber.	Guinea pig	No significant irritation
Methanol	Rabbit	Mild irritant
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Rabbit	Mild irritant
Toluene	Rabbit	Irritant
Cumene	Rabbit	Minimal irritation
Maleic anhydride	Human and animal	Corrosive

Serious Eye Damage/Irritation

Name	Species	Value
Cyclohexane	Rabbit	Mild irritant
Xylene	Rabbit	Mild irritant
M-xylene	Rabbit	Mild irritant
Ethylbenzene	Rabbit	Moderate irritant
Ethanol	Rabbit	Severe irritant
P-xylene	Rabbit	Mild irritant
O-xylene	Rabbit	Mild irritant
ETHYL ACETATE	Rabbit	Mild irritant
Chlorinated rubber.	Professional judgement	Mild irritant
Methanol	Rabbit	Moderate irritant
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Rabbit	Moderate irritant
Toluene	Rabbit	Moderate irritant
Cumene	Rabbit	Mild irritant
Maleic anhydride	Rabbit	Corrosive

Skin Sensitisation

Name	Species	Value
Ethylbenzene	Human	Not classified
Ethanol	Human	Not classified
ETHYL ACETATE	Guinea pig	Not classified
Methanol	Guinea pig	Not classified
4,4'-isopropylidenediphenol-epichlorohydrin	Human and animal	Sensitising

polymer		
Toluene	Guinea pig	Not classified
Cumene	Guinea pig	Not classified
Maleic anhydride	Multiple animal species	Sensitising

Respiratory Sensitisation

Name	Species	Value
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Human	Not classified
Maleic anhydride	Human	Sensitising

Germ Cell Mutagenicity

Name	Route	Value
Cyclohexane	In Vitro	Not mutagenic
Cyclohexane	In vivo	Some positive data exist, but the data are not sufficient for classification
Xylene	In Vitro	Not mutagenic
Xylene	In vivo	Not mutagenic
M-xylene	In Vitro	Not mutagenic
M-xylene	In vivo	Not mutagenic
Ethylbenzene	In vivo	Not mutagenic
Ethylbenzene	In Vitro	Some positive data exist, but the data are not sufficient for classification
Ethanol	In Vitro	Some positive data exist, but the data are not sufficient for classification
Ethanol	In vivo	Some positive data exist, but the data are not sufficient for classification
P-xylene	In Vitro	Not mutagenic
P-xylene	In vivo	Not mutagenic
O-xylene	In Vitro	Not mutagenic
O-xylene	In vivo	Not mutagenic
ETHYL ACETATE	In Vitro	Not mutagenic
ETHYL ACETATE	In vivo	Not mutagenic
Methanol	In Vitro	Some positive data exist, but the data are not sufficient for classification
Methanol	In vivo	Some positive data exist, but the data are not sufficient for classification
4,4'-isopropylidenediphenol-epichlorohydrin polymer	In vivo	Not mutagenic
4,4'-isopropylidenediphenol-epichlorohydrin polymer	In Vitro	Some positive data exist, but the data are not sufficient for classification
Toluene	In Vitro	Not mutagenic
Toluene	In vivo	Not mutagenic
Cumene	In Vitro	Not mutagenic
Cumene	In vivo	Not mutagenic
Maleic anhydride	In vivo	Not mutagenic
Maleic anhydride	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Xylene	Dermal	Rat	Not carcinogenic
Xylene	Ingestion	Multiple animal species	Not carcinogenic
Xylene	Inhalation	Human	Some positive data exist, but the data are not sufficient for classification

M-xylene	Dermal	Rat	Not carcinogenic
M-xylene	Ingestion	Multiple animal species	Not carcinogenic
M-xylene	Inhalation	Human	Some positive data exist, but the data are not sufficient for classification
Ethylbenzene	Inhalation	Multiple animal species	Carcinogenic.
Ethanol	Ingestion	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
P-xylene	Dermal	Rat	Not carcinogenic
P-xylene	Ingestion	Multiple animal species	Not carcinogenic
P-xylene	Inhalation	Human	Some positive data exist, but the data are not sufficient for classification
O-xylene	Dermal	Rat	Not carcinogenic
O-xylene	Ingestion	Multiple animal species	Not carcinogenic
O-xylene	Inhalation	Human	Some positive data exist, but the data are not sufficient for classification
Methanol	Inhalation	Multiple animal species	Not carcinogenic
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Toluene	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Toluene	Ingestion	Rat	Some positive data exist, but the data are not sufficient for classification
Toluene	Inhalation	Mouse	Some positive data exist, but the data are not sufficient for classification
Cumene	Inhalation	Multiple animal species	Carcinogenic.

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
Cyclohexane	Inhalation	Not classified for female reproduction	Rat	NOAEL 24 mg/l	2 generation
Cyclohexane	Inhalation	Not classified for male reproduction	Rat	NOAEL 24 mg/l	2 generation
Cyclohexane	Inhalation	Not classified for development	Rat	NOAEL 6.9 mg/l	2 generation
Xylene	Inhalation	Not classified for female reproduction	Human	NOAEL Not available	occupational exposure
Xylene	Ingestion	Not classified for development	Mouse	NOAEL Not available	during organogenesis
Xylene	Inhalation	Not classified for development	Multiple animal species	NOAEL Not available	during gestation
M-xylene	Inhalation	Not classified for female reproduction	Human	NOAEL Not available	occupational exposure
M-xylene	Ingestion	Not classified for development	Mouse	NOAEL Not available	during organogenesis
M-xylene	Inhalation	Not classified for development	Multiple animal species	NOAEL Not available	during gestation
Ethylbenzene	Inhalation	Not classified for development	Rat	NOAEL 4.3 mg/l	premating & during gestation
Ethanol	Inhalation	Not classified for development	Rat	NOAEL 38 mg/l	during gestation
Ethanol	Ingestion	Not classified for	Rat	NOAEL	premating & during

		development		5,200 mg/kg/day	gestation
P-xylene	Inhalation	Not classified for female reproduction	Human	NOAEL Not available	occupational exposure
P-xylene	Ingestion	Not classified for development	Mouse	NOAEL Not available	during organogenesis
P-xylene	Inhalation	Not classified for development	Multiple animal species	NOAEL Not available	during gestation
O-xylene	Inhalation	Not classified for female reproduction	Human	NOAEL Not available	occupational exposure
O-xylene	Ingestion	Not classified for development	Mouse	NOAEL Not available	during organogenesis
O-xylene	Inhalation	Not classified for development	Multiple animal species	NOAEL Not available	during gestation
Methanol	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,600 mg/kg/day	21 days
Methanol	Ingestion	Toxic to development	Mouse	LOAEL 4,000 mg/kg/day	during organogenesis
Methanol	Inhalation	Toxic to development	Mouse	NOAEL 1.3 mg/l	during organogenesis
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Ingestion	Not classified for male reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Dermal	Not classified for development	Rabbit	NOAEL 300 mg/kg/day	during organogenesis
4,4'-isopropylidenediphenol-epichlorohydrin polymer	Ingestion	Not classified for development	Rat	NOAEL 750 mg/kg/day	2 generation
Toluene	Inhalation	Not classified for female reproduction	Human	NOAEL Not available	occupational exposure
Toluene	Inhalation	Not classified for male reproduction	Rat	NOAEL 2.3 mg/l	1 generation
Toluene	Ingestion	Toxic to development	Rat	LOAEL 520 mg/kg/day	during gestation
Toluene	Inhalation	Toxic to development	Human	NOAEL Not available	poisoning and/or abuse
Cumene	Inhalation	Not classified for development	Rabbit	NOAEL 11.3 mg/l	during organogenesis
Maleic anhydride	Ingestion	Not classified for female reproduction	Rat	NOAEL 55 mg/kg/day	2 generation
Maleic anhydride	Ingestion	Not classified for male reproduction	Rat	NOAEL 55 mg/kg/day	2 generation
Maleic anhydride	Ingestion	Not classified for development	Rat	NOAEL 140 mg/kg/day	during organogenesis

Lactation

Name	Route	Species	Value
Xylene	Ingestion	Mouse	Not classified for effects on or via lactation

M-xylene	Ingestion	Mouse	Not classified for effects on or via lactation
P-xylene	Ingestion	Mouse	Not classified for effects on or via lactation
O-xylene	Ingestion	Mouse	Not classified for effects on or via lactation

Target Organ(s)**Specific Target Organ Toxicity - single exposure**

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Cyclohexane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
Cyclohexane	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human and animal	NOAEL Not available	
Cyclohexane	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
Xylene	Inhalation	auditory system	Causes damage to organs	Rat	LOAEL 6.3 mg/l	8 hours
Xylene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Xylene	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Xylene	Inhalation	eyes	Not classified	Rat	NOAEL 3.5 mg/l	not available
Xylene	Inhalation	liver	Not classified	Multiple animal species	NOAEL Not available	
Xylene	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Multiple animal species	NOAEL Not available	
Xylene	Ingestion	eyes	Not classified	Rat	NOAEL 250 mg/kg	not applicable
M-xylene	Inhalation	auditory system	Causes damage to organs	Rat	LOAEL 6.3 mg/l	8 hours
M-xylene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
M-xylene	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
M-xylene	Inhalation	eyes	Not classified	Rat	NOAEL 3.5 mg/l	not available
M-xylene	Inhalation	liver	Not classified	Multiple animal species	NOAEL Not available	
M-xylene	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Multiple animal species	NOAEL Not available	
M-xylene	Ingestion	eyes	Not classified	Rat	NOAEL 250	not applicable

					mg/kg	
Ethylbenzene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Ethylbenzene	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human and animal	NOAEL Not available	
Ethanol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	LOAEL 9.4 mg/l	not available
Ethanol	Inhalation	central nervous system depression	Not classified	Human and animal	NOAEL not available	
Ethanol	Ingestion	central nervous system depression	Not classified	Multiple animal species	NOAEL not available	
Ethanol	Ingestion	kidney and/or bladder	Not classified	Dog	NOAEL 3,000 mg/kg	
P-xylene	Inhalation	auditory system	Causes damage to organs	Rat	LOAEL 6.3 mg/l	8 hours
P-xylene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
P-xylene	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
P-xylene	Inhalation	eyes	Not classified	Rat	NOAEL 3.5 mg/l	not available
P-xylene	Inhalation	liver	Not classified	Multiple animal species	NOAEL Not available	
P-xylene	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Multiple animal species	NOAEL Not available	
P-xylene	Ingestion	eyes	Not classified	Rat	NOAEL 250 mg/kg	not applicable
O-xylene	Inhalation	auditory system	Causes damage to organs	Rat	LOAEL 6.3 mg/l	8 hours
O-xylene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
O-xylene	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
O-xylene	Inhalation	eyes	Not classified	Rat	NOAEL 3.5 mg/l	not available
O-xylene	Inhalation	liver	Not classified	Multiple animal species	NOAEL Not available	
O-xylene	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Multiple animal species	NOAEL Not available	
O-xylene	Ingestion	eyes	Not classified	Rat	NOAEL 250 mg/kg	not applicable

ETHYL ACETATE	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
ETHYL ACETATE	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
ETHYL ACETATE	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Methanol	Inhalation	blindness	Causes damage to organs	Human	NOAEL Not available	occupational exposure
Methanol	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	not available
Methanol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL Not available	6 hours
Methanol	Ingestion	blindness	Causes damage to organs	Human	NOAEL Not available	poisoning and/or abuse
Methanol	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse
Toluene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Toluene	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Toluene	Inhalation	immune system	Not classified	Mouse	NOAEL 0.004 mg/l	3 hours
Toluene	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse
Cumene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Multiple animal species	NOAEL Not available	not available
Cumene	Inhalation	respiratory irritation	May cause respiratory irritation	Human	LOAEL 0.2 mg/l	occupational exposure
Cumene	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Multiple animal species	NOAEL Not available	not available
Maleic anhydride	Inhalation	respiratory irritation	May cause respiratory irritation	Human	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Cyclohexane	Inhalation	liver	Not classified	Rat	NOAEL 24 mg/l	90 days
Cyclohexane	Inhalation	auditory system	Not classified	Rat	NOAEL 1.7 mg/l	90 days
Cyclohexane	Inhalation	kidney and/or bladder	Not classified	Rabbit	NOAEL 2.7 mg/l	10 weeks

Cyclohexane	Inhalation	hematopoietic system	Not classified	Mouse	NOAEL 24 mg/l	14 weeks
Cyclohexane	Inhalation	peripheral nervous system	Not classified	Rat	NOAEL 8.6 mg/l	30 weeks
Xylene	Inhalation	nervous system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.4 mg/l	4 weeks
Xylene	Inhalation	auditory system	May cause damage to organs through prolonged or repeated exposure	Rat	LOAEL 7.8 mg/l	5 days
Xylene	Inhalation	liver	Not classified	Multiple animal species	NOAEL Not available	
Xylene	Inhalation	heart endocrine system gastrointestinal tract hematopoietic system muscles kidney and/or bladder respiratory system	Not classified	Multiple animal species	NOAEL 3.5 mg/l	13 weeks
Xylene	Ingestion	auditory system	Not classified	Rat	NOAEL 900 mg/kg/day	2 weeks
Xylene	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 1,500 mg/kg/day	90 days
Xylene	Ingestion	liver	Not classified	Multiple animal species	NOAEL Not available	
Xylene	Ingestion	heart skin endocrine system bone, teeth, nails, and/or hair hematopoietic system immune system nervous system respiratory system	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
M-xylene	Inhalation	nervous system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.4 mg/l	4 weeks
M-xylene	Inhalation	auditory system	May cause damage to organs through prolonged or repeated exposure	Rat	LOAEL 7.8 mg/l	5 days
M-xylene	Inhalation	liver	Not classified	Multiple animal species	NOAEL Not available	
M-xylene	Inhalation	heart endocrine system gastrointestinal tract hematopoietic system muscles kidney and/or bladder	Not classified	Multiple animal species	NOAEL 3.5 mg/l	13 weeks

		respiratory system				
M-xylene	Ingestion	auditory system	Not classified	Rat	NOAEL 900 mg/kg/day	2 weeks
M-xylene	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 1,500 mg/kg/day	90 days
M-xylene	Ingestion	liver	Not classified	Multiple animal species	NOAEL Not available	
M-xylene	Ingestion	heart skin endocrine system bone, teeth, nails, and/or hair hematopoietic system immune system nervous system respiratory system	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
Ethylbenzene	Inhalation	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1.1 mg/l	2 years
Ethylbenzene	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 1.1 mg/l	103 weeks
Ethylbenzene	Inhalation	hematopoietic system	Not classified	Rat	NOAEL 3.4 mg/l	28 days
Ethylbenzene	Inhalation	auditory system	Not classified	Rat	NOAEL 2.4 mg/l	5 days
Ethylbenzene	Inhalation	endocrine system	Not classified	Mouse	NOAEL 3.3 mg/l	103 weeks
Ethylbenzene	Inhalation	gastrointestinal tract	Not classified	Rat	NOAEL 3.3 mg/l	2 years
Ethylbenzene	Inhalation	bone, teeth, nails, and/or hair muscles	Not classified	Multiple animal species	NOAEL 4.2 mg/l	90 days
Ethylbenzene	Inhalation	heart immune system respiratory system	Not classified	Multiple animal species	NOAEL 3.3 mg/l	2 years
Ethylbenzene	Ingestion	liver kidney and/or bladder	Not classified	Rat	NOAEL 680 mg/kg/day	6 months
Ethanol	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Rabbit	LOAEL 124 mg/l	365 days
Ethanol	Inhalation	hematopoietic system immune system	Not classified	Rat	NOAEL 25 mg/l	14 days
Ethanol	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 8,000 mg/kg/day	4 months
Ethanol	Ingestion	kidney and/or bladder	Not classified	Dog	NOAEL 3,000 mg/kg/day	7 days

P-xylene	Inhalation	nervous system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.4 mg/l	4 weeks
P-xylene	Inhalation	auditory system	May cause damage to organs though prolonged or repeated exposure	Rat	LOAEL 7.8 mg/l	5 days
P-xylene	Inhalation	liver	Not classified	Multiple animal species	NOAEL Not available	
P-xylene	Inhalation	heart endocrine system gastrointestinal tract hematopoietic system muscles kidney and/or bladder respiratory system	Not classified	Multiple animal species	NOAEL 3.5 mg/l	13 weeks
P-xylene	Ingestion	auditory system	Not classified	Rat	NOAEL 900 mg/kg/day	2 weeks
P-xylene	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 1,500 mg/kg/day	90 days
P-xylene	Ingestion	liver	Not classified	Multiple animal species	NOAEL Not available	
P-xylene	Ingestion	heart skin endocrine system bone, teeth, nails, and/or hair hematopoietic system immune system nervous system respiratory system	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
O-xylene	Inhalation	nervous system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.4 mg/l	4 weeks
O-xylene	Inhalation	auditory system	May cause damage to organs though prolonged or repeated exposure	Rat	LOAEL 7.8 mg/l	5 days
O-xylene	Inhalation	liver	Not classified	Multiple animal species	NOAEL Not available	
O-xylene	Inhalation	heart endocrine system gastrointestinal tract hematopoietic system muscles kidney and/or bladder respiratory system	Not classified	Multiple animal species	NOAEL 3.5 mg/l	13 weeks
O-xylene	Ingestion	auditory system	Not classified	Rat	NOAEL 900 mg/kg/day	2 weeks

O-xylene	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 1,500 mg/kg/day	90 days
O-xylene	Ingestion	liver	Not classified	Multiple animal species	NOAEL Not available	
O-xylene	Ingestion	heart skin endocrine system bone, teeth, nails, and/or hair hematopoietic system immune system nervous system respiratory system	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
ETHYL ACETATE	Inhalation	endocrine system liver nervous system	Not classified	Rat	NOAEL 0.043 mg/l	90 days
ETHYL ACETATE	Inhalation	hematopoietic system	Not classified	Rabbit	LOAEL 16 mg/l	40 days
ETHYL ACETATE	Ingestion	hematopoietic system liver kidney and/or bladder	Not classified	Rat	NOAEL 3,600 mg/kg/day	90 days
Methanol	Inhalation	liver	Not classified	Rat	NOAEL 6.55 mg/l	4 weeks
Methanol	Inhalation	respiratory system	Not classified	Rat	NOAEL 13.1 mg/l	6 weeks
Methanol	Ingestion	liver nervous system	Not classified	Rat	NOAEL 2,500 mg/kg/day	90 days
4,4'-isopropyliden ediphenol-epichlorohydrin polymer	Dermal	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	2 years
4,4'-isopropyliden ediphenol-epichlorohydrin polymer	Dermal	nervous system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
4,4'-isopropyliden ediphenol-epichlorohydrin polymer	Ingestion	auditory system heart endocrine system hematopoietic system liver eyes kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Toluene	Inhalation	auditory system eyes olfactory system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
Toluene	Inhalation	nervous system	May cause damage to organs though prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
Toluene	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for	Rat	LOAEL 2.3 mg/l	15 months

			classification			
Toluene	Inhalation	heart liver kidney and/or bladder	Not classified	Rat	NOAEL 11.3 mg/l	15 weeks
Toluene	Inhalation	endocrine system	Not classified	Rat	NOAEL 1.1 mg/l	4 weeks
Toluene	Inhalation	immune system	Not classified	Mouse	NOAEL Not available	20 days
Toluene	Inhalation	bone, teeth, nails, and/or hair	Not classified	Mouse	NOAEL 1.1 mg/l	8 weeks
Toluene	Inhalation	hematopoietic system vascular system	Not classified	Human	NOAEL Not available	occupational exposure
Toluene	Inhalation	gastrointestinal tract	Not classified	Multiple animal species	NOAEL 11.3 mg/l	15 weeks
Toluene	Ingestion	nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 625 mg/kg/day	13 weeks
Toluene	Ingestion	heart	Not classified	Rat	NOAEL 2,500 mg/kg/day	13 weeks
Toluene	Ingestion	liver kidney and/or bladder	Not classified	Multiple animal species	NOAEL 2,500 mg/kg/day	13 weeks
Toluene	Ingestion	hematopoietic system	Not classified	Mouse	NOAEL 600 mg/kg/day	14 days
Toluene	Ingestion	endocrine system	Not classified	Mouse	NOAEL 105 mg/kg/day	28 days
Toluene	Ingestion	immune system	Not classified	Mouse	NOAEL 105 mg/kg/day	4 weeks
Cumene	Inhalation	auditory system endocrine system hematopoietic system liver nervous system eyes	Not classified	Rat	NOAEL 59 mg/l	13 weeks
Cumene	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 4.9 mg/l	13 weeks
Cumene	Inhalation	respiratory system	Not classified	Rat	NOAEL 59 mg/l	13 weeks
Cumene	Ingestion	kidney and/or bladder heart endocrine system hematopoietic system liver respiratory system	Not classified	Rat	NOAEL 769 mg/kg/day	6 months
Maleic anhydride	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.0011 mg/l	6 months
Maleic anhydride	Inhalation	endocrine system hematopoietic system nervous system kidney and/or bladder heart liver eyes	Not classified	Rat	NOAEL 0.0098 mg/l	6 months

Maleic anhydride	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 55 mg/kg/day	80 days
Maleic anhydride	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 250 mg/kg/day	183 days
Maleic anhydride	Ingestion	heart nervous system	Not classified	Rat	NOAEL 600 mg/kg/day	183 days
Maleic anhydride	Ingestion	gastrointestinal tract	Not classified	Rat	NOAEL 150 mg/kg/day	80 days
Maleic anhydride	Ingestion	hematopoietic system	Not classified	Dog	NOAEL 60 mg/kg/day	90 days
Maleic anhydride	Ingestion	skin endocrine system immune system eyes respiratory system	Not classified	Rat	NOAEL 150 mg/kg/day	80 days

Aspiration Hazard

Name	Value
Cyclohexane	Aspiration hazard
Xylene	Aspiration hazard
M-xylene	Aspiration hazard
Ethylbenzene	Aspiration hazard
P-xylene	Aspiration hazard
O-xylene	Aspiration hazard
Toluene	Aspiration hazard
Cumene	Aspiration hazard

Exposure Levels

Refer Section 8.1 Control Parameters of this Safety Data Sheet.

Interactive Effects

Not determined.

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 1: Very toxic to aquatic life.

Chronic aquatic hazard:

GHS Chronic 3: Harmful to aquatic life with long lasting effects.

No product test data available.

Material	CAS Number	Organism	Type	Exposure	Test endpoint	Test result
Cyclohexane	110-82-7	Bacteria	Experimental	24 hours	IC50	97 mg/l
Cyclohexane	110-82-7	Fathead minnow	Experimental	96 hours	LC50	4.53 mg/l
Cyclohexane	110-82-7	Water flea	Experimental	48 hours	EC50	0.9 mg/l
Xylene	1330-20-7	Activated sludge	Estimated	3 hours	NOEC	157 mg/l
Xylene	1330-20-7	Green algae	Estimated	72 hours	EC50	4.36 mg/l
Xylene	1330-20-7	Rainbow trout	Estimated	96 hours	LC50	2.6 mg/l
Xylene	1330-20-7	Water flea	Estimated	48 hours	EC50	3.82 mg/l
Xylene	1330-20-7	Green algae	Estimated	72 hours	NOEC	0.44 mg/l
Xylene	1330-20-7	Rainbow trout	Estimated	56 days	NOEC	>1.3 mg/l
Xylene	1330-20-7	Water flea	Estimated	7 days	NOEC	0.96 mg/l
M-xylene	108-38-3	Activated sludge	Experimental	24 hours	EC50	115 mg/l
M-xylene	108-38-3	Rainbow trout	Experimental	96 hours	LC50	8.4 mg/l
M-xylene	108-38-3	Water flea	Experimental	48 hours	EC50	2.4 mg/l
M-xylene	108-38-3	Rainbow trout	Estimated	56 days	NOEC	1.3 mg/l
M-xylene	108-38-3	Green algae	Experimental	72 hours	NOEC	5.3 mg/l
M-xylene	108-38-3	Water flea	Experimental	21 days	NOEC	0.41 mg/l
Ethylbenzene	100-41-4	Green algae	Estimated	73 hours	EC50	4.36 mg/l
Ethylbenzene	100-41-4	Rainbow trout	Estimated	96 hours	LC50	2.6 mg/l
Ethylbenzene	100-41-4	Water flea	Estimated	48 hours	EC50	3.82 mg/l
Ethylbenzene	100-41-4	Activated sludge	Experimental	49 hours	EC50	130 mg/l
Ethylbenzene	100-41-4	Green algae	Estimated	73 hours	NOEC	0.44 mg/l
Ethylbenzene	100-41-4	Rainbow trout	Estimated	56 days	NOEC	>1.3 mg/l
Ethylbenzene	100-41-4	Water flea	Estimated	7 days	NOEC	0.96 mg/l
Ethanol	64-17-5	Fathead minnow	Experimental	96 hours	LC50	14,200 mg/l
Ethanol	64-17-5	Fish	Experimental	96 hours	LC50	11,000 mg/l
Ethanol	64-17-5	Green algae	Experimental	72 hours	EC50	275 mg/l
Ethanol	64-17-5	Water flea	Experimental	48 hours	LC50	5,012 mg/l
Ethanol	64-17-5	Green algae	Experimental	72 hours	ErC10	11.5 mg/l
Ethanol	64-17-5	Water flea	Experimental	10 days	NOEC	9.6 mg/l
P-xylene	106-42-3	Activated sludge	Experimental	N/A	EC50	>196 mg/l
P-xylene	106-42-3	Green algae	Experimental	73 hours	ErC50	4.36 mg/l
P-xylene	106-42-3	Rainbow trout	Experimental	96 hours	LC50	2.6 mg/l
P-xylene	106-42-3	Water flea	Experimental	24 hours	EC50	3.6 mg/l
P-xylene	106-42-3	Green algae	Experimental	73 hours	ErC10	1.9 mg/l
P-xylene	106-42-3	Water flea	Experimental	21 days	EC10	1.91 mg/l
P-xylene	106-42-3	Zebra Fish	Experimental	35 days	NOEC	0.714 mg/l
Acrylate Polymer	Trade Secret	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
Chlorinated rubber.	68609-36-9	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
O-xylene	95-47-6	Activated sludge	Estimated	3 hours	NOEC	157 mg/l
O-xylene	95-47-6	Green algae	Experimental	73 hours	EC50	4.36 mg/l
O-xylene	95-47-6	Rainbow trout	Experimental	96 hours	LC50	2.6 mg/l
O-xylene	95-47-6	Water flea	Experimental	24 hours	IC50	1 mg/l
O-xylene	95-47-6	Green algae	Experimental	73 hours	NOEC	0.44 mg/l
O-xylene	95-47-6	Rainbow trout	Experimental	56 days	NOEC	>1.3 mg/l
O-xylene	95-47-6	Water flea	Experimental	7 days	NOEC	1.17 mg/l
ETHYL ACETATE	141-78-6	Bacteria	Experimental	18 hours	EC10	2,900 mg/l
ETHYL ACETATE	141-78-6	Fish	Experimental	96 hours	LC50	212.5 mg/l
ETHYL ACETATE	141-78-6	Invertebrate	Experimental	48 hours	EC50	165 mg/l
ETHYL ACETATE	141-78-6	Green algae	Experimental	72 hours	NOEC	>100 mg/l
ETHYL ACETATE	141-78-6	Water flea	Experimental	21 days	NOEC	2.4 mg/l
4,4'-isopropylidenediphenol-epichlorohydrin polymer	25068-38-6	Activated sludge	Estimated	3 hours	IC50	>100 mg/l

4,4'-isopropylidenediph enol-epichlorohydrin polymer	25068-38-6	Green algae	Estimated	72 hours	EC50	>11 mg/l
4,4'-isopropylidenediph enol-epichlorohydrin polymer	25068-38-6	Rainbow trout	Estimated	96 hours	LC50	2 mg/l
4,4'-isopropylidenediph enol-epichlorohydrin polymer	25068-38-6	Water flea	Estimated	48 hours	EC50	1.8 mg/l
4,4'-isopropylidenediph enol-epichlorohydrin polymer	25068-38-6	Green algae	Estimated	72 hours	NOEC	4.2 mg/l
4,4'-isopropylidenediph enol-epichlorohydrin polymer	25068-38-6	Water flea	Estimated	21 days	NOEC	0.3 mg/l
Methanol	67-56-1	Algae or other aquatic plants	Experimental	96 hours	EC50	16.9 mg/l
Methanol	67-56-1	Bay mussel	Experimental	96 hours	LC50	15,900 mg/l
Methanol	67-56-1	Bluegill	Experimental	96 hours	LC50	15,400 mg/l
Methanol	67-56-1	Green algae	Experimental	96 hours	ErC50	22,000 mg/l
Methanol	67-56-1	Sediment organism	Experimental	96 hours	LC50	54,890 mg/l
Methanol	67-56-1	Water flea	Experimental	48 hours	LC50	3,289 mg/l
Methanol	67-56-1	Green algae	Experimental	96 hours	NOEC	9.96 mg/l
Methanol	67-56-1	Medaka	Experimental	8.33 days	NOEC	158,000 mg/l
Methanol	67-56-1	Water flea	Experimental	21 days	NOEC	122 mg/l
Methanol	67-56-1	Activated sludge	Experimental	3 hours	IC50	>1,000 mg/l
Methanol	67-56-1	Barley	Experimental	14 days	EC50	15,492 mg/kg (Dry Weight)
Methanol	67-56-1	Redworm	Experimental	63 days	EC50	26,646 mg/kg (Dry Weight)
Methanol	67-56-1	Springtail	Experimental	28 days	EC50	5,683 mg/kg (Dry Weight)
Maleic anhydride	108-31-6	Bacteria	Experimental	18 hours	EC10	44.6 mg/l
Maleic anhydride	108-31-6	Rainbow trout	Experimental	96 hours	LC50	75 mg/l
Maleic anhydride	108-31-6	Green algae	Hydrolysis Product	72 hours	ErC50	74.4 mg/l
Maleic anhydride	108-31-6	Water flea	Hydrolysis Product	48 hours	EC50	93.8 mg/l
Maleic anhydride	108-31-6	Water flea	Experimental	21 days	NOEC	10 mg/l
Maleic anhydride	108-31-6	Green algae	Hydrolysis Product	72 hours	ErC10	11.8 mg/l
Cumene	98-82-8	Activated sludge	Experimental	3 hours	EC10	>2,000 mg/l
Cumene	98-82-8	Green algae	Experimental	72 hours	EC50	2.6 mg/l
Cumene	98-82-8	Mysid Shrimp	Experimental	96 hours	EC50	1.2 mg/l
Cumene	98-82-8	Rainbow trout	Experimental	96 hours	LC50	2.7 mg/l
Cumene	98-82-8	Water flea	Experimental	48 hours	EC50	2.14 mg/l
Cumene	98-82-8	Green algae	Experimental	72 hours	NOEC	0.22 mg/l
Cumene	98-82-8	Water flea	Experimental	21 days	NOEC	0.35 mg/l
Toluene	108-88-3	Coho Salmon	Experimental	96 hours	LC50	5.5 mg/l
Toluene	108-88-3	Grass Shrimp	Experimental	96 hours	LC50	9.5 mg/l
Toluene	108-88-3	Green algae	Experimental	72 hours	EC50	12.5 mg/l
Toluene	108-88-3	Leopard frog	Experimental	9 days	LC50	0.39 mg/l
Toluene	108-88-3	Pink Salmon	Experimental	96 hours	LC50	6.41 mg/l
Toluene	108-88-3	Water flea	Experimental	48 hours	EC50	3.78 mg/l
Toluene	108-88-3	Coho Salmon	Experimental	40 days	NOEC	1.39 mg/l
Toluene	108-88-3	Diatom	Experimental	72 hours	NOEC	10 mg/l
Toluene	108-88-3	Water flea	Experimental	7 days	NOEC	0.74 mg/l
Toluene	108-88-3	Activated sludge	Experimental	12 hours	IC50	292 mg/l
Toluene	108-88-3	Bacteria	Experimental	16 hours	NOEC	29 mg/l
Toluene	108-88-3	Bacteria	Experimental	24 hours	EC50	84 mg/l
Toluene	108-88-3	Redworm	Experimental	28 days	LC50	>150 mg per kg of bodyweight

Toluene	108-88-3	Soil microbes	Experimental	28 days	NOEC	<26 mg/kg (Dry Weight)
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12.2. Persistence and degradability

Material	CAS Number	Test type	Duration	Study Type	Test result	Protocol
Cyclohexane	110-82-7	Experimental Biodegradation	28 days	BOD	77 %BOD/ThOD	OECD 301F - Manometric respirometry
Cyclohexane	110-82-7	Experimental Photolysis		Photolytic half-life (in air)	4.1 days (t 1/2)	
Xylene	1330-20-7	Experimental Biodegradation	28 days	BOD	90-98 %BOD/ThOD	OECD 301F - Manometric respirometry
Xylene	1330-20-7	Experimental Photolysis		Photolytic half-life (in air)	1.4 days (t 1/2)	
M-xylene	108-38-3	Experimental Biodegradation	28 days	BOD	100 %BOD/ThOD	OECD 301C - MITI test (I)
Ethylbenzene	100-41-4	Experimental Biodegradation	28 days	BOD	90-98 %BOD/ThOD	OECD 301F - Manometric respirometry
Ethanol	64-17-5	Experimental Biodegradation	14 days	BOD	89 %BOD/ThOD	OECD 301C - MITI test (I)
P-xylene	106-42-3	Experimental Biodegradation	28 days	BOD	90 %BOD/ThOD	OECD 301F - Manometric respirometry
Acrylate Polymer	Trade Secret	Data not available-insufficient	N/A	N/A	N/A	N/A
Chlorinated rubber.	68609-36-9	Data not available-insufficient	N/A	N/A	N/A	N/A
O-xylene	95-47-6	Estimated Biodegradation	28 days	BOD	98 %BOD/ThOD	OECD 301F - Manometric respirometry
ETHYL ACETATE	141-78-6	Experimental Biodegradation	14 days	BOD	94 %BOD/ThOD	OECD 301C - MITI test (I)
ETHYL ACETATE	141-78-6	Experimental Photolysis		Photolytic half-life (in air)	20.0 days (t 1/2)	
4,4'-isopropylidenediph enol-epichlorohydrin polymer	25068-38-6	Estimated Biodegradation	28 days	BOD	5 %BOD/COD	OECD 301F - Manometric respirometry
4,4'-isopropylidenediph enol-epichlorohydrin polymer	25068-38-6	Estimated Hydrolysis		Hydrolytic half-life	117 hours (t 1/2)	
Methanol	67-56-1	Experimental Biodegradation	3 days	Percent degraded	91 % degraded	
Methanol	67-56-1	Experimental Biodegradation	14 days	BOD	92 %BOD/ThOD	OECD 301C - MITI test (I)
Methanol	67-56-1	Experimental Photolysis		Photolytic half-life (in air)	35 days (t 1/2)	
Methanol	67-56-1	Experimental Soil Metabolism Aerobic	5 days	CO2 evolution	53.4 %CO2 evolution/THCO2 evolution	
Maleic anhydride	108-31-6	Hydrolysis Product Biodegradation	25 days	CO2 evolution	>90 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2
Maleic anhydride	108-31-6	Experimental Hydrolysis		Hydrolytic half-life	0.37 minutes (t 1/2)	
Cumene	98-82-8	Experimental Biodegradation	14 days	BOD	33 %BOD/ThOD	OECD 301C - MITI test (I)
Cumene	98-82-8	Experimental Photolysis		Photolytic half-life (in air)	4.5 days (t 1/2)	
Toluene	108-88-3	Experimental Biodegradation	20 days	BOD	80 %BOD/ThOD	APHA Std Meth Water/Wastewater

Toluene	108-88-3	Experimental Photolysis		Photolytic half-life (in air)	5.2 days (t 1/2)	
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12.3 : Bioaccumulative potential

Material	CAS Number	Test type	Duration	Study Type	Test result	Protocol
Cyclohexane	110-82-7	Experimental BCF - Fish	56 days	Bioaccumulation factor	129	OECD305-Bioconcentration
Cyclohexane	110-82-7	Experimental Bioconcentration		Log Kow	3.44	
Xylene	1330-20-7	Experimental BCF - Fish	56 days	Bioaccumulation factor	25.9	
M-xylene	108-38-3	Estimated BCF - Fish	56 days	Bioaccumulation factor	14	
Ethylbenzene	100-41-4	Experimental BCF - Fish	56 days	Bioaccumulation factor	25.9	
Ethanol	64-17-5	Experimental Bioconcentration		Log Kow	-0.35	
P-xylene	106-42-3	Analogous Compound BCF - Fish	56 days	Bioaccumulation factor	25.9	
P-xylene	106-42-3	Experimental Bioconcentration		Log Kow	3.15	
Acrylate Polymer	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Chlorinated rubber.	68609-36-9	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
O-xylene	95-47-6	Experimental Bioconcentration		Log Kow	3.12	
ETHYL ACETATE	141-78-6	Experimental Bioconcentration		Log Kow	0.68	
4,4'-isopropylidenediphenol-epichlorohydrin polymer	25068-38-6	Estimated Bioconcentration		Log Kow	3.242	
Methanol	67-56-1	Experimental BCF - Fish	3 days	Bioaccumulation factor	<4.5	
Methanol	67-56-1	Experimental Bioconcentration		Log Kow	-0.77	
Maleic anhydride	108-31-6	Experimental Bioconcentration		Log Kow	-2.61	OECD 107 log Kow shke flask mtd
Cumene	98-82-8	Modeled Bioconcentration		Bioaccumulation factor	140	Catalogic™
Cumene	98-82-8	Experimental Bioconcentration		Log Kow	3.55	OECD 107 log Kow shke flask mtd
Toluene	108-88-3	Experimental BCF - Other	72 hours	Bioaccumulation factor	90	
Toluene	108-88-3	Experimental Bioconcentration		Log Kow	2.73	

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

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Incinerate in a permitted waste incineration facility. Combustion products will include halogen acid (HCl/HF/HBr). Facility must be capable of handling halogenated materials. As a disposal alternative, utilize an acceptable permitted waste disposal facility.

SECTION 14: Transport Information

Australian Dangerous Goods Code (ADG) - Road/Rail Transport

UN No.: UN3175

Proper shipping name: SOLIDS CONTAINING FLAMMABLE LIQUID, N.O.S. , (Cyclohexane, Xylene)

Class/Division: 4.1

Sub Risk: Not applicable.

Packing Group: II

Special Instructions: Australian Dangerous Goods Code: Not subject to this code as per Special Provision 216

Hazchem Code: 1Z

IERG: 20

International Air Transport Association (IATA) - Air Transport

UN No.: UN3175

Proper shipping name: SOLIDS CONTAINING FLAMMABLE LIQUID, N.O.S. , (Cyclohexane, Xylene)

Class/Division: 4.1

Sub Risk: Not applicable.

Packing Group: II

Special Instructions: Not restricted, as per Special Provision A46.

International Maritime Dangerous Goods Code (IMDG)- Marine Transport

UN No.: UN3175

Proper shipping name: SOLIDS CONTAINING FLAMMABLE LIQUID, N.O.S. , (Cyclohexane, Xylene)

Class/Division: 4.1

Sub Risk: Not applicable.

Packing Group: II

Marine Pollutant: Cyclohexane, 4,4'-isopropylidenediphenol-epichlorohydrin polymer

Special Instructions: Not restricted, as per Special Provision 216.

SECTION 15: Regulatory information

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

Australian Inventory Status:

An ingredient(s) in this product is being introduced under the no unreasonable risk non-cosmetic (<100 Kg) exemption provisions specified in Section 21(4) of the Industrial Chemicals (Notification and Assessment) Act 1989 as amended.

Poison Schedule: This product is intended for Industrial or Professional Use only and therefore is not packaged and labelled in accordance with the requirements of the Standard for the Uniform Scheduling of Medicines and Poisons.

SECTION 16: Other information

Revision information:

Complete document review.

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 Safety 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.

Greenguard ® is a United States based program. The 'Low VOC' reference related to United States Federal and State

regulations exemptions for some solvents.

3M Australia SDSs are available at www.3m.com.au