Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the GHS guidelines & India Hazardous substances (Classification, Labeling & Packaging) Draft Rules 2011.

SECTION 1: Identification

1.1. Product identifier
3M Underseal

Product Identification Numbers
IA-2601-0041-6 IA-2601-0324-6 IA-2601-0550-6

1.2. Recommended use and restrictions on use

Recommended use
Automotive.

1.3. Supplier's details
Address: 3M India Limited, plot-48-51, Electronic city, Hosur road, Bangalore-560100
Telephone: 080-45543000, contact Product EHS team
E Mail: productehs.in@mmm.com
Website: http://solutions.3mindia.co.in

1.4. Emergency telephone number
080-45543000 (Contact hours: 8:00 AM to 5:00 PM)

SECTION 2: Hazard identification

Under MSIHC Rules, information is noted below on flammability, acute toxicity and explosivity relevant to this product. In line with international standards, information on other hazard classes and associated precautionary statements relevant to this product are included as well.

2.1. Classification of the substance or mixture
Flammable liquid: Category 3.
Acute Toxicity (inhalation): Category 5.
Skin Corrosion/Irritation: Category 2.
Serious Eye Damage/Irritation: Category 1.
Respiratory Sensitizer: Category 1.
Skin Sensitizer: Category 1A.
Carcinogenicity: Category 1A.
Reproductive Toxicity: Category 1B.
Specific Target Organ Toxicity (single exposure): Category 1.

Specific Target Organ Toxicity (repeated exposure): Category 1.
Specific Target Organ Toxicity (single exposure): Category 3.
Acute Aquatic Toxicity: Category 2.
Chronic Aquatic Toxicity: Category 2.

2.2. Label elements
Signal Word
Danger

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

Pictograms



HAZARD STATEMENTS:

H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H333	May be harmful if inhaled.
H317	May cause an allergic skin reaction.
H350	May cause 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 | respiratory system.
H373	May cause damage to organs through prolonged or repeated exposure: sensory organs.
H411	Toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS

Prevention:

P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P273	Avoid release to the environment.
P280I	Wear protective gloves, eye protection, face protection, and respiratory protection.

Response:

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.
P310	Immediately call a POISON CENTER or doctor/physician.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.

P342 + P311	If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
P370 + P378	In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.
P391	Collect spillage.

2.3. Other hazards

Aspiration does not apply - viscosity Aspiration hazard classification does not apply due to the kinematic viscosity of the product. Aspiration classification does not apply due to the viscosity of the product.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	CAS Nbr	% by Wt
Quartz	14808-60-7	25 - 45
TURPENTINE	8006-64-2	10 - 25
Distillates (petroleum), hydrotreated light	64742-47-8	5 - 25
ZIRCONIUM ALKONATE	22464-99-9	< 10
Oleic acid	112-80-1	< 10
Phthalic anhydride	85-44-9	< 10
Glycerol	56-81-5	1 - 5
Iron hydroxide oxide	20344-49-4	1 - 5
Rosin	8050-09-7	< 5
Kaolinite	1318-74-7	< 5
POLYAMINE AMIDE SALT	Trade Secret	< 3
Xylene	1330-20-7	< 3
Water	7732-18-5	0.1 - 1.5
Maleic anhydride	108-31-6	< 0.5
Ethylbenzene	100-41-4	< 0.5

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation

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

Skin contact

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

Eye contact

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

If swallowed

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

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

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

Substance	Condition
Aldehydes.	During combustion.
Hydrocarbons.	During combustion.
Carbon monoxide.	During combustion.
Carbon dioxide.	During combustion.
Irritant vapours or gases.	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
Use PPE - Exposure Assessment Use personal protective equipment based on the results of an exposure assessment. Refer to Section 8 for PPE recommendations. If anticipated exposure resulting from an accidental release exceeds the protective capabilities of the PPE listed in Section 8, or are unknown, select PPE that offers an appropriate level of protection. Consider the physical and chemical hazards of the material when doing so. Examples of PPE ensembles for emergency response could include wearing bunker gear for a release of flammable material; wearing chemical protective clothing if the spilled material is a corrosive, a sensitizer, a significant dermal irritant, or can be absorbed through the skin; or donning a positive pressure supplied-air respirator for chemicals with inhalation hazards. For information regarding physical and health hazards, refer to sections 2 and 11 of the SDS. Evacuate area. 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.

6.2. Environmental precautions
Avoid release to the environment. For larger spills, cover drains and build dykes to prevent entry into sewer systems or bodies of water.

6.3. Methods and material for containment and cleaning up
Contain spill. Cover spill area with a fire extinguishing foam 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

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 vapor accumulation. Ground/bond container and receiving equipment if there is potential for static electricity accumulation during transfer.

7.2. Conditions for safe storage including any incompatibilities

Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store away from heat. Store away from acids. Store away from oxidising agents.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

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

Ingredient	CAS Nbr	Agency	Limit type	Additional comments
Ethylbenzene	100-41-4	ACGIH	TWA:20 ppm	A3: Confirmed animal carcin., Ototoxicant
Maleic anhydride	108-31-6	ACGIH	TWA(inhalable fraction and vapor):0.01 mg/m3	A4: Not class. as human carcin, Dermal/Respiratory Sensitizer
Aluminum metal and insoluble compounds, respirable fraction	1318-74-7	ACGIH	TWA(respirable fraction):1 mg/m3	A4: Not class. as human carcin
Xylene	1330-20-7	ACGIH	TWA:20 ppm	A4: Not class. as human carcin
Silica, crystalline, respirable fraction	14808-60-7	ACGIH	TWA(respirable fraction):0.025 mg/m3	A2: Suspected human carcin.
Zirconium and compounds, as Zr	22464-99-9	ACGIH	TWA(as Zr):5 mg/m3;STEL(as Zr):10 mg/m3	A4: Not class. as human carcin
Turpentine and selected monoterpenes	8006-64-2	ACGIH	TWA:20 ppm	A4: Not class. as human carcin, Dermal Sensitizer
Resin acids, as total Resin Acids, inhalable fraction	8050-09-7	ACGIH	TWA(as Resin, inhalable fraction):0.001 mg/m3	Dermal/Respiratory Sensitizer
Phthalic anhydride	85-44-9	ACGIH	TWA(inhalable fraction and vapor):0.002 mg/m3;STEL(inhalable fraction and vapor):0.005 mg/m3;TLV-Surface Limit(inhalable fraction and vapor):0.05 mg/100 cm2	A4: Not class. as human carcin, Dermal/Respiratory Sensitizer, SKIN; Resp+Dermal sensitizer

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
CMRG : Chemical Manufacturer's Recommended Guidelines
TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit
CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls
Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapours/spray. If ventilation is not adequate, use respiratory protection equipment. Use explosion-proof ventilation equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:
Full face shield.
Indirect vented goggles.

Skin/hand protection
Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.

For prolonged or repeated contact, gloves made from the following material(s) are recommended (breakthrough times are >4 hours): Polymer laminate

Any glove recommended for prolonged/repeated contact is also suitable for short-term/splash contact.

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

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
Full facepiece air-purifying respirator suitable for organic vapours 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.
Color	Black
Odor	Mineral spirits
Odour threshold	*Not applicable.*
pH	*Not applicable.*
Melting point/Freezing point: NA	*No data available.*
Boiling point/Initial boiling point/Boiling range	138 ºC
Flash point	45 ºC [*Test Method:*Closed Cup]

Evaporation rate	*Not applicable.*
Flammability	Flammable liquid: Category 3.
Flammable Limits(LEL)	*Not applicable.*
Flammable Limits(UEL)	*Not applicable.*
Vapour pressure	*Not applicable.*
Relative Vapor Density	*Not applicable.*
Density	1.1 - 1.25 kg/l [*Details:*25 deg C]
Relative density	*Not applicable.*
Water solubility	*Not applicable.*
Solubility- non-water	*Not applicable.*
Partition coefficient: n-octanol/water	*Not applicable.*
Autoignition temperature	*Not applicable.*
Decomposition temperature	*Not applicable.*
Kinematic Viscosity	3,478 mm²/sec
Volatile organic compounds (VOC)	*No data available.*
Percent volatile	*No data available.*
VOC less H2O & exempt solvents	*No data available.*

Particle Characteristics	*Not applicable.*

SECTION 10: Stability and reactivity

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

10.2 Chemical stability
Stable.

10.3 Possibility of hazardous reactions
Hazardous polymerisation will not occur.

10.4 Conditions to avoid
Direct sunlight
Heat.
Sparks and/or flames.
Temperatures above 45 ºC (113 ºF)
Temperatures above the boiling point.

10.5 Incompatible materials
Strong oxidising agents.

10.6 Hazardous decomposition products

Substance	**Condition**
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

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

relevant to the material as a whole.

11.1 Information on Toxicological effects

Signs and Symptoms of Exposure

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

Inhalation
May be harmful if inhaled. Respiratory tract irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. Allergic respiratory reaction: Signs/symptoms may include difficulty breathing, wheezing, cough, and tightness of chest. May cause additional health effects (see below).

Skin contact
Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, dryness, cracking, blistering, and pain. Allergic skin reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

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

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

Additional Health Effects:

Single exposure may cause target organ effects:
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:
Silicosis: Signs/symptoms may include breathlessness, weakness, chest pain, persistent cough, increased amounts of sputum, and heart disease. Pneumoconiosis: Sign/symptoms may include persistent cough, breathlessness, chest pain, increased amounts of sputum, and changes in lung function tests. 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.

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 >20 - =50 mg/l
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg

Quartz	Dermal		LD50 estimated to be > 5,000 mg/kg
Quartz	Ingestion		LD50 estimated to be > 5,000 mg/kg
TURPENTINE	Dermal	Rabbit	LD50 > 2,000 mg/kg
TURPENTINE	Inhalation-Vapor (4 hours)	Rat	LC50 13.7 mg/l
TURPENTINE	Ingestion	Rat	LD50 3,956 mg/kg
Distillates (petroleum), hydrotreated light	Inhalation-Vapor	Professional judgement	LC50 estimated to be 20 - 50 mg/l
Distillates (petroleum), hydrotreated light	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 3 mg/l
Distillates (petroleum), hydrotreated light	Ingestion	Rat	LD50 > 5,000 mg/kg
Distillates (petroleum), hydrotreated light	Dermal	similar compounds	LD50 > 2,000 mg/kg
Oleic acid	Dermal	Guinea pig	LD50 > 3,000 mg/kg
Oleic acid	Ingestion	Rat	LD50 57,000 mg/kg
Phthalic anhydride	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 2.14 mg/l
Phthalic anhydride	Ingestion	Rat	LD50 1,530 mg/kg
ZIRCONIUM ALKONATE	Dermal	similar compounds	LD50 > 2,000 mg/kg
ZIRCONIUM ALKONATE	Inhalation-Dust/Mist (4 hours)	similar compounds	LC50 > 4.3 mg/l
ZIRCONIUM ALKONATE	Ingestion	similar compounds	LD50 2,043 mg/kg
Kaolinite	Dermal		LD50 estimated to be > 5,000 mg/kg
Kaolinite	Ingestion	Human	LD50 > 15,000 mg/kg
Glycerol	Dermal	Rabbit	LD50 estimated to be > 5,000 mg/kg
Glycerol	Ingestion	Rat	LD50 > 5,000 mg/kg
Rosin	Dermal	Rabbit	LD50 > 2,500 mg/kg
Rosin	Ingestion	Rat	LD50 7,600 mg/kg
Xylene	Dermal	Rabbit	LD50 > 4,200 mg/kg
Xylene	Inhalation-Vapor (4 hours)	Rat	LC50 29 mg/l
Xylene	Ingestion	Rat	LD50 3,523 mg/kg
Iron hydroxide oxide	Dermal		LD50 estimated to be > 5,000 mg/kg
Iron hydroxide oxide	Ingestion	Rat	LD50 > 10,000 mg/kg
Maleic anhydride	Dermal	Rabbit	LD50 2,620 mg/kg
Maleic anhydride	Ingestion	Rat	LD50 1,030 mg/kg
Ethylbenzene	Dermal	Rabbit	LD50 15,433 mg/kg
Ethylbenzene	Inhalation-Vapor (4 hours)	Rat	LC50 17.4 mg/l
Ethylbenzene	Ingestion	Rat	LD50 4,769 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Quartz	Professional judgement	No significant irritation
TURPENTINE	In vitro data	Irritant

Distillates (petroleum), hydrotreated light	Rabbit	Irritant
Oleic acid	Rabbit	Minimal irritation
Phthalic anhydride	Human	Irritant
ZIRCONIUM ALKONATE	Rabbit	No significant irritation
Kaolinite	Professional judgement	No significant irritation
Glycerol	Rabbit	No significant irritation
Rosin	Rabbit	No significant irritation
Xylene	Rabbit	Mild irritant
Iron hydroxide oxide	Rabbit	No significant irritation
Maleic anhydride	Human and animal	Corrosive
Ethylbenzene	Rabbit	Mild irritant

Serious Eye Damage/Irritation

Name	Species	Value
TURPENTINE	Rabbit	Mild irritant
Distillates (petroleum), hydrotreated light	Rabbit	Mild irritant
Oleic acid	Rabbit	Mild irritant
Phthalic anhydride	Human	Corrosive
ZIRCONIUM ALKONATE	Rabbit	No significant irritation
Kaolinite	Professional judgement	No significant irritation
Glycerol	Rabbit	No significant irritation
Rosin	Rabbit	Mild irritant
Xylene	Rabbit	Mild irritant
Iron hydroxide oxide	Rabbit	No significant irritation
Maleic anhydride	Rabbit	Corrosive
Ethylbenzene	Rabbit	Moderate irritant

Sensitization:

Skin Sensitisation

Name	Species	Value
TURPENTINE	Multiple animal species	Sensitising
Distillates (petroleum), hydrotreated light	Guinea pig	Not classified
Oleic acid	similar compounds	Not classified
Phthalic anhydride	Human and animal	Sensitising
ZIRCONIUM ALKONATE	similar compounds	Not classified
Glycerol	Guinea pig	Not classified
Rosin	Guinea pig	Sensitising
Iron hydroxide oxide	Human and animal	Not classified
Maleic anhydride	Multiple animal species	Sensitising

Ethylbenzene	Human	Not classified

Respiratory Sensitisation

Name	Species	Value
Phthalic anhydride	Human	Sensitising
Rosin	Human	Not classified
Maleic anhydride	Human	Sensitising

Germ Cell Mutagenicity

Name	Route	Value
Quartz	In Vitro	Some positive data exist, but the data are not sufficient for classification
Quartz	In vivo	Some positive data exist, but the data are not sufficient for classification
TURPENTINE	In Vitro	Not mutagenic
Distillates (petroleum), hydrotreated light	In Vitro	Not mutagenic
Oleic acid	In Vitro	Some positive data exist, but the data are not sufficient for classification
Phthalic anhydride	In Vitro	Not mutagenic
Xylene	In Vitro	Not mutagenic
Xylene	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
Ethylbenzene	In vivo	Not mutagenic
Ethylbenzene	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Quartz	Inhalation	Human and animal	Carcinogenic.
Distillates (petroleum), hydrotreated light	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Oleic acid	Dermal	Mouse	Not carcinogenic
Oleic acid	Ingestion	Rat	Not carcinogenic
Oleic acid	Not specified.	Multiple animal species	Not carcinogenic
Phthalic anhydride	Ingestion	Multiple animal species	Not carcinogenic
Kaolinite	Inhalation	Multiple animal species	Not carcinogenic
Glycerol	Ingestion	Mouse	Some positive data exist, but the data are not sufficient for classification
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
Iron hydroxide oxide	Inhalation	Rat	Not carcinogenic
Ethylbenzene	Inhalation	Multiple animal species	Carcinogenic.

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
TURPENTINE	Ingestion	Not classified for development	Rat	NOAEL 250 mg/kg/day	during organogenesis
ZIRCONIUM ALKONATE	Ingestion	Not classified for female reproduction	similar compounds	NOAEL 800 mg/kg/day	1 generation
ZIRCONIUM ALKONATE	Ingestion	Not classified for male reproduction	similar compounds	NOAEL 800 mg/kg/day	1 generation
ZIRCONIUM ALKONATE	Ingestion	Toxic to development	similar compounds	NOAEL 100 mg/kg/day	during organogenesis
Glycerol	Ingestion	Not classified for female reproduction	Rat	NOAEL 2,000 mg/kg/day	2 generation
Glycerol	Ingestion	Not classified for male reproduction	Rat	NOAEL 2,000 mg/kg/day	2 generation
Glycerol	Ingestion	Not classified for development	Rat	NOAEL 2,000 mg/kg/day	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
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
Ethylbenzene	Inhalation	Not classified for development	Rat	NOAEL 4.3 mg/l	premating & during gestation

Lactation

Name	Route	Species	Value
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
TURPENTINE	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
TURPENTINE	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
TURPENTINE	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Distillates (petroleum), hydrotreated light	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
Distillates (petroleum), hydrotreated light	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
Distillates (petroleum), hydrotreated light	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgeme	NOAEL Not available	

				nt		
Phthalic anhydride	Inhalation	respiratory irritation	May cause respiratory irritation	Human	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
Maleic anhydride	Inhalation	respiratory irritation	May cause respiratory irritation	Human	NOAEL Not available	
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	
Ethylbenzene	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Quartz	Inhalation	silicosis	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
TURPENTINE	Inhalation	liver	Not classified	Rat	NOAEL 2.2 mg/l	14 weeks
TURPENTINE	Inhalation	immune system	Not classified	Rat	NOAEL 2.2 mg/l	14 weeks
TURPENTINE	Inhalation	respiratory system	Not classified	Rat	NOAEL 2.2 mg/l	14 weeks
TURPENTINE	Inhalation	kidney and/or bladder	Not classified	Rat	LOAEL 0.14 mg/l	14 weeks
Oleic acid	Ingestion	liver	Not classified	Rat	NOAEL 2,250 mg/kg/day	108 weeks
Oleic acid	Ingestion	immune system	Not classified	Rat	NOAEL 2,250 mg/kg/day	108 weeks
Oleic acid	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 2,550 mg/kg/day	108 weeks
Phthalic anhydride	Ingestion	endocrine system	Some positive data exist, but the data are not sufficient for classification	Mouse	LOAEL 2,340 mg/kg/day	2 years
Phthalic anhydride	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Mouse	LOAEL 1,717 mg/kg/day	2 years
Phthalic anhydride	Ingestion	nervous system	Not classified	Mouse	NOAEL 4,670 mg/kg/day	2 years
Phthalic anhydride	Ingestion	heart	Not classified	Mouse	NOAEL 4,670 mg/kg/day	2 years
Phthalic anhydride	Ingestion	skin	Not classified	Mouse	NOAEL	2 years

					4,670 mg/kg/day	
Phthalic anhydride	Ingestion	hematopoietic system	Not classified	Mouse	NOAEL 4,670 mg/kg/day	2 years
Phthalic anhydride	Ingestion	immune system	Not classified	Mouse	NOAEL 4,670 mg/kg/day	2 years
Phthalic anhydride	Ingestion	kidney and/or bladder	Not classified	Mouse	NOAEL 4,670 mg/kg/day	2 years
Phthalic anhydride	Ingestion	respiratory system	Not classified	Mouse	NOAEL 4,670 mg/kg/day	2 years
Kaolinite	Inhalation	pneumoconiosis	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL NA	occupational exposure
Kaolinite	Inhalation	pulmonary fibrosis	Not classified	Rat	NOAEL Not available	
Glycerol	Inhalation	respiratory system	Not classified	Rat	NOAEL 3.91 mg/l	14 days
Glycerol	Inhalation	heart	Not classified	Rat	NOAEL 3.91 mg/l	14 days
Glycerol	Inhalation	liver	Not classified	Rat	NOAEL 3.91 mg/l	14 days
Glycerol	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 3.91 mg/l	14 days
Glycerol	Ingestion	endocrine system	Not classified	Rat	NOAEL 10,000 mg/kg/day	2 years
Glycerol	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 10,000 mg/kg/day	2 years
Glycerol	Ingestion	liver	Not classified	Rat	NOAEL 10,000 mg/kg/day	2 years
Glycerol	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 10,000 mg/kg/day	2 years
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 though 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	Not classified	Multiple animal species	NOAEL 3.5 mg/l	13 weeks
Xylene	Inhalation	endocrine system	Not classified	Multiple animal species	NOAEL 3.5 mg/l	13 weeks
Xylene	Inhalation	gastrointestinal tract	Not classified	Multiple animal species	NOAEL 3.5 mg/l	13 weeks
Xylene	Inhalation	hematopoietic system	Not classified	Multiple animal species	NOAEL 3.5 mg/l	13 weeks
Xylene	Inhalation	muscles	Not classified	Multiple animal species	NOAEL 3.5 mg/l	13 weeks
Xylene	Inhalation	kidney and/or bladder	Not classified	Multiple animal species	NOAEL 3.5 mg/l	13 weeks
Xylene	Inhalation	respiratory system	Not classified	Multiple animal species	NOAEL 3.5 mg/l	13 weeks
Xylene	Ingestion	auditory system	Not classified	Rat	NOAEL 900	2 weeks

					mg/kg/day	
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	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
Xylene	Ingestion	skin	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
Xylene	Ingestion	endocrine system	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
Xylene	Ingestion	bone, teeth, nails, and/or hair	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
Xylene	Ingestion	hematopoietic system	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
Xylene	Ingestion	immune system	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
Xylene	Ingestion	nervous system	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
Xylene	Ingestion	respiratory system	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
Iron hydroxide oxide	Inhalation	respiratory system	Not classified	Rat	NOAEL 0.2 mg/l	14 days
Iron hydroxide oxide	Inhalation	liver	Not classified	Rat	NOAEL 0.2 mg/l	14 days
Iron hydroxide oxide	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 0.2 mg/l	14 days
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	Not classified	Rat	NOAEL 0.0098 mg/l	6 months
Maleic anhydride	Inhalation	hematopoietic system	Not classified	Rat	NOAEL 0.0098 mg/l	6 months
Maleic anhydride	Inhalation	nervous system	Not classified	Rat	NOAEL 0.0098 mg/l	6 months
Maleic anhydride	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 0.0098 mg/l	6 months
Maleic anhydride	Inhalation	heart	Not classified	Rat	NOAEL 0.0098 mg/l	6 months
Maleic anhydride	Inhalation	liver	Not classified	Rat	NOAEL 0.0098 mg/l	6 months
Maleic anhydride	Inhalation	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	Not classified	Rat	NOAEL 600 mg/kg/day	183 days
Maleic anhydride	Ingestion	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	Not classified	Rat	NOAEL 150 mg/kg/day	80 days
Maleic anhydride	Ingestion	endocrine system	Not classified	Rat	NOAEL 150 mg/kg/day	80 days
Maleic anhydride	Ingestion	immune system	Not classified	Rat	NOAEL 150 mg/kg/day	80 days
Maleic anhydride	Ingestion	eyes	Not classified	Rat	NOAEL 150 mg/kg/day	80 days
Maleic anhydride	Ingestion	respiratory system	Not classified	Rat	NOAEL 150 mg/kg/day	80 days
Ethylbenzene	Inhalation	auditory system	May cause damage to organs though prolonged or repeated exposure	Rat	LOAEL 0.9 mg/l	13 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	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	Not classified	Multiple animal species	NOAEL 4.2 mg/l	90 days
Ethylbenzene	Inhalation	muscles	Not classified	Multiple animal species	NOAEL 4.2 mg/l	90 days
Ethylbenzene	Inhalation	heart	Not classified	Multiple animal species	NOAEL 3.3 mg/l	2 years
Ethylbenzene	Inhalation	immune system	Not classified	Multiple animal species	NOAEL 3.3 mg/l	2 years
Ethylbenzene	Inhalation	respiratory system	Not classified	Multiple animal species	NOAEL 3.3 mg/l	2 years
Ethylbenzene	Ingestion	liver	Not classified	Rat	NOAEL 680 mg/kg/day	6 months
Ethylbenzene	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 680 mg/kg/day	6 months

Aspiration Hazard

Name	Value
TURPENTINE	Aspiration hazard
Distillates (petroleum), hydrotreated light	Aspiration hazard
Xylene	Aspiration hazard
Ethylbenzene	Aspiration hazard

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

SECTION 12: Ecological information

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

12.1. Toxicity

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

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

No product test data available.

Material	CAS Nbr	Organism	Type	Exposure	Test endpoint	Test result
Quartz	14808-60-7	Green algae	Estimated	72 hours	EC50	440 mg/l
Quartz	14808-60-7	Water flea	Estimated	48 hours	EC50	7,600 mg/l
Quartz	14808-60-7	Zebra Fish	Estimated	96 hours	LC50	5,000 mg/l
Quartz	14808-60-7	Green algae	Estimated	72 hours	NOEC	60 mg/l
Distillates (petroleum), hydrotreated light	64742-47-8	Green algae	Estimated	72 hours	EC50	1 mg/l
Distillates (petroleum), hydrotreated light	64742-47-8	Rainbow trout	Estimated	96 hours	LL50	2 mg/l
Distillates (petroleum), hydrotreated light	64742-47-8	Water flea	Estimated	48 hours	EL50	1.4 mg/l
Distillates (petroleum), hydrotreated light	64742-47-8	Green algae	Estimated	72 hours	NOEL	1 mg/l
Distillates (petroleum), hydrotreated light	64742-47-8	Water flea	Estimated	21 days	NOEL	0.48 mg/l
TURPENTINE	8006-64-2	Common Carp	Analogous Compound	96 hours	LC50	0.27 mg/l
TURPENTINE	8006-64-2	Green algae	Analogous Compound	48 hours	ErC50	1.44 mg/l
TURPENTINE	8006-64-2	Water flea	Analogous Compound	48 hours	EC50	0.475 mg/l
Oleic acid	112-80-1	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
Phthalic anhydride	85-44-9	Green algae	Hydrolysis Product	72 hours	ErC50	>100 mg/l
Phthalic anhydride	85-44-9	Water flea	Hydrolysis Product	48 hours	EC50	103 mg/l
Phthalic anhydride	85-44-9	Water flea	Experimental	21 days	NOEC	16 mg/l
Phthalic anhydride	85-44-9	Zebra Fish	Experimental	60 days	NOEC	10 mg/l
Phthalic anhydride	85-44-9	Green algae	Hydrolysis Product	72 hours	NOEC	100 mg/l
Phthalic anhydride	85-44-9	Activated sludge	Experimental	3 hours	EC50	>1,000 mg/l
ZIRCONIUM ALKONATE	22464-99-9	Green algae	Analogous Compound	96 hours	ErC50	44.4 mg/l
ZIRCONIUM ALKONATE	22464-99-9	Medaka	Analogous Compound	96 hours	LC50	>100 mg/l
ZIRCONIUM ALKONATE	22464-99-9	Water flea	Analogous Compound	48 hours	EC50	85.4 mg/l
ZIRCONIUM ALKONATE	22464-99-9	Green algae	Analogous Compound	96 hours	ErC10	27.9 mg/l
ZIRCONIUM ALKONATE	22464-99-9	Water flea	Analogous Compound	21 days	NOEC	18 mg/l
ZIRCONIUM ALKONATE	22464-99-9	Activated sludge	Analogous Compound	30 minutes	EC20	650 mg/l
ZIRCONIUM ALKONATE	22464-99-9	Bacteria	Analogous Compound	17 hours	EC50	112.1 mg/l
Glycerol	56-81-5	Rainbow trout	Experimental	96 hours	LC50	54,000 mg/l
Glycerol	56-81-5	Water flea	Experimental	48 hours	LC50	1,955 mg/l
Glycerol	56-81-5	Bacteria	Experimental	16 hours	NOEC	10,000 mg/l
Iron hydroxide oxide	20344-49-4	Green algae	Analogous Compound	72 hours	No tox obs at lmt of water sol	>100 mg/l
Iron hydroxide oxide	20344-49-4	Water flea	Analogous Compound	48 hours	No tox obs at lmt of water sol	>100 mg/l

Iron hydroxide oxide	20344-49-4	Zebra Fish	Analogous Compound	96 hours	No tox obs at lmt of water sol	>100 mg/l
Iron hydroxide oxide	20344-49-4	Green algae	Analogous Compound	72 hours	No tox obs at lmt of water sol	>100 mg/l
Iron hydroxide oxide	20344-49-4	Water flea	Analogous Compound	21 days	No tox obs at lmt of water sol	>100 mg/l
Iron hydroxide oxide	20344-49-4	Activated sludge	Analogous Compound	3 hours	EC50	>1,000 mg/l
Kaolinite	1318-74-7	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
Rosin	8050-09-7	Green algae	Experimental	72 hours	No tox obs at lmt of water sol	>100 mg/l
Rosin	8050-09-7	Zebra Fish	Experimental	96 hours	LL50	>1 mg/l
Rosin	8050-09-7	Green algae	Experimental	72 hours	No tox obs at lmt of water sol	>100 mg/l
Rosin	8050-09-7	Activated sludge	Experimental	3 hours	EC50	>10,000 mg/l
Rosin	8050-09-7	Bacteria	Experimental	N/A	EC50	76.1 mg/l
Xylene	1330-20-7	Green algae	Analogous Compound	73 hours	ErC50	4.36 mg/l
Xylene	1330-20-7	Rainbow trout	Analogous Compound	96 hours	LC50	2.6 mg/l
Xylene	1330-20-7	Water flea	Analogous Compound	48 hours	EC50	3.82 mg/l
Xylene	1330-20-7	Green algae	Analogous Compound	73 hours	NOEC	0.44 mg/l
Xylene	1330-20-7	Water flea	Analogous Compound	7 days	NOEC	0.96 mg/l
Xylene	1330-20-7	Rainbow trout	Experimental	56 days	NOEC	1.3 mg/l
Xylene	1330-20-7	Activated sludge	Analogous Compound	30 minutes	EC50	>198 mg/l
Xylene	1330-20-7	Redworm	Experimental	56 days	NOEC	42.6 mg/kg (Dry Weight)
Xylene	1330-20-7	Soil microbes	Experimental	28 days	EC50	>1,000 mg/kg (Dry Weight)
Ethylbenzene	100-41-4	Activated sludge	Experimental	49 hours	EC50	130 mg/l
Ethylbenzene	100-41-4	Atlantic Silverside	Experimental	96 hours	LC50	5.1 mg/l
Ethylbenzene	100-41-4	Green algae	Experimental	96 hours	EC50	3.6 mg/l
Ethylbenzene	100-41-4	Mysid Shrimp	Experimental	96 hours	LC50	2.6 mg/l
Ethylbenzene	100-41-4	Rainbow trout	Experimental	96 hours	LC50	4.2 mg/l
Ethylbenzene	100-41-4	Water flea	Experimental	48 hours	EC50	1.8 mg/l
Ethylbenzene	100-41-4	Water flea	Experimental	7 days	NOEC	0.96 mg/l
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

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Quartz	14808-60-7	Data not available-insufficient	N/A	N/A	N/A	N/A
Distillates (petroleum), hydrotreated light	64742-47-8	Data not available-insufficient	N/A	N/A	N/A	N/A
TURPENTINE	8006-64-2	Analogous Compound Biodegradation	28 days	BOD	68 %BOD/ThOD	OECD 301D - Closed bottle test
TURPENTINE	8006-64-2	Analogous Compound Photolysis		Photolytic half-life (in air)	7.2 hours (t 1/2)	

Oleic acid	112-80-1	Experimental Biodegradation	28 days	BOD	78 %BOD/ThOD	OECD 301C - MITI test (I)
Phthalic anhydride	85-44-9	Experimental Biodegradation	14 days	BOD	85.2 %BOD/ThOD	OECD 301C - MITI test (I)
Phthalic anhydride	85-44-9	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	0.51 minutes (t 1/2)	
ZIRCONIUM ALKONATE	22464-99-9	Experimental Biodegradation	28 days	CO2 evolution	73.82 %CO2 evolution/THCO2 evolution (does not pass 10-day window)	OECD 301B - Modified sturm or CO2
ZIRCONIUM ALKONATE	22464-99-9	Analogous Compound Biodegradation	28 days	Dissolv. Organic Carbon Deplet	99 %removal of DOC	OECD 301E - Modif. OECD Screen
ZIRCONIUM ALKONATE	22464-99-9	Analogous Compound Aquatic Inherent Biodegrad.	5 days	Dissolv. Organic Carbon Deplet	>95 %removal of DOC	OECD 302B Zahn-Wellens/EVPA
Glycerol	56-81-5	Experimental Biodegradation	14 days	BOD	63 %BOD/ThOD	OECD 301C - MITI test (I)
Iron hydroxide oxide	20344-49-4	Data not available-insufficient	N/A	N/A	N/A	N/A
Kaolinite	1318-74-7	Data not available-insufficient	N/A	N/A	N/A	N/A
Rosin	8050-09-7	Experimental Biodegradation	28 days	CO2 evolution	89 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2
Xylene	1330-20-7	Analogous Compound Biodegradation	28 days	BOD	94 %BOD/ThOD	OECD 301F - Manometric respirometry
Xylene	1330-20-7	Experimental Photolysis		Photolytic half-life (in air)	1.4 days (t 1/2)	
Ethylbenzene	100-41-4	Experimental Biodegradation	28 days	CO2 evolution	70-80 %CO2 evolution/THCO2 evolution	ISO 14593 Inorg C Headspace
Ethylbenzene	100-41-4	Experimental Photolysis		Photolytic half-life (in air)	4.26 days (t 1/2)	
Maleic anhydride	108-31-6	Hydrolysis product	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)	

12.3 : Bioaccumulative potential

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Quartz	14808-60-7	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Distillates (petroleum), hydrotreated light	64742-47-8	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
TURPENTINE	8006-64-2	Modeled Bioconcentration		Bioaccumulation factor	1700	Catalogic™
TURPENTINE	8006-64-2	Analogous Compound Bioconcentration		Log Kow	4.44	similar to OECD 117
Oleic acid	112-80-1	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Phthalic anhydride	85-44-9	Experimental Bioconcentration		Log Kow	1.6	
Phthalic anhydride	85-44-9	Hydrolysis product		Log Kow	0.73	OECD 107 log Kow shke flsk mtd

ZIRCONIUM ALKONATE	22464-99-9	Analogous Compound Bioconcentration		Log Kow	2.7	similar to OECD 107
Glycerol	56-81-5	Experimental Bioconcentration		Log Kow	-1.75	similar to OECD 107
Iron hydroxide oxide	20344-49-4	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Kaolinite	1318-74-7	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Rosin	8050-09-7	Analogous Compound BCF - Fish	20 days	Bioaccumulation factor	<=129	
Rosin	8050-09-7	Experimental Bioconcentration		Log Kow	6.2	OECD 117 log Kow HPLC method
Xylene	1330-20-7	Experimental BCF - Fish	56 days	Bioaccumulation factor	<=25.9	
Xylene	1330-20-7	Analogous Compound Bioconcentration		Log Kow	3.2	
Ethylbenzene	100-41-4	Experimental BCF - Fish	42 days	Bioaccumulation factor	1	
Maleic anhydride	108-31-6	Experimental Bioconcentration		Log Kow	-2.61	OECD 107 log Kow shke flsk mtd

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. As a disposal alternative, utilize an acceptable permitted waste disposal facility. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

SECTION 14: Transport Information

Air Transport (IATA)Regulations

UN No UN1993
Proper Shipping Name FLAMMABLE LIQUID, N.O.S. (Contains Solvents)
Hazard Classs/Division 3
Subsidiary Risk Not applicable
Other Dangerous Goods Descriptions: None assigned.

Packing Group: III

Marine Transport (IMDG)
UN No UN1993
Proper Shipping Name FLAMMABLE LIQUID, N.O.S. (Contains Solvents)
Hazard Classs/Division 3

Subsidiary Risk Not applicable
Other Dangerous Goods Descriptions: None assigned.

Packing Group: III
Environmental Hazards: Not applicable

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.

Applicable Environmental, Health and Safety Regulations
The Manufacture, Storage and Import of Hazardous Chemical Rules, 1989
Hazardous Waste(Management , Handling & Transboundary) Rules, 2008
Hazardous Chemicals (Classification, Packaging and Labelling Draft Rules), 2011
Central Motor Vehicle Rules, 1989

The following ingredients are listed as hazardous on Part II of Schedule I of the India Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) rules
Ethylbenzene
Maleic anhydride
Phthalic anhydride
TURPENTINE
Carbonic Acid, Zirconium Complex

The following ingredients are classified as hazardous based on the criteria listed under Part I of Schedule I of the India Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) rules:
The product is classified as Highly Flammable liquid as per MSIHC Rules, 1989.

SECTION 16: Other information

NFPA Hazard Classification
Health: 3 **Flammability:** 2 **Instability:** 0 **Special Hazards:** None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

Revision information:
Section 1: Product identification numbers information was modified.
Section 2: Hazard - Other information was modified.
Label: GHS Precautionary - Prevention information was modified.
Label: Graphic information was modified.
Label: Symbol information was modified.
Section 8: Occupational exposure limit table information was modified.
Section 08: Personal Protection - Apron Statement information was added.
Section 8: Personal Protection - Skin/body information information was deleted.
Section 8: Skin protection - protective clothing information information was deleted.
Section 8: Skin protection - recommended gloves information information was deleted.
Section 8: Skin protection - recommended gloves text information was deleted.
Section 11: Health Effects - Inhalation information information was modified.
Section 11: Skin Sensitization Table information was modified.
Section 11: Target Organs - Repeated Table information was modified.

Section 12: Component ecotoxicity information information was modified.
Section 12: Persistence and Degradability information information was modified.
Section 12:Bioccumulative potential information information was modified.
Section 14: Air Transport - Other Dangerous Goods Descriptions heading information was added.
Section 14: Marine Transport - Other Dangerous Goods Descriptions heading information was added.
Section 14: Other Dangerous Goods Descriptions (IATA) information was added.
Section 14: Other Dangerous Goods Descriptions (IMO) information was added.
Section 8: Prolonged Glove Statement information was added.
Section 8: Prolonged Glove Types information was added.
Section 8: Prolonged Gloves Suitable for Short Term (with gloves) information was added.

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