Safety Data Sheet

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

SECTION 1: Identification

1.1. Product identifier
3M(TM) Fritted Glass Primer P590, Black

Product Identification Numbers
62-5270-0255-4

1.2. Recommended use and restrictions on use

Recommended use
Primer

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

1.4. Emergency telephone number
+60 03-7884 2888

SECTION 2: Hazard identification

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

2.2. Label elements
Signal word
Danger

Symbols
Flame | Health Hazard |

Pictograms

Hazard Statements

H225	Highly flammable liquid and vapor.
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317	May cause an allergic skin reaction.
H371	May cause damage to organs: respiratory system |
H373	May cause damage to organs through prolonged or repeated exposure: respiratory system |
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements

General:

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

Prevention:

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233	Keep container tightly closed.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P285	In case of inadequate ventilation wear respiratory protection.
P280E	Wear protective gloves.

Response:

P304 + P341	IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P342 + P311	If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P370 + P378G	In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

Storage:

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

Disposal:

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

2.3. Other hazards
Persons previously sensitized to isocyanates may develop a cross-sensitization reaction to other isocyanates.

May cause drowsiness or dizziness.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	C.A.S. No.	% by Wt
Methyl Ethyl Ketone	78-93-3	45 - 60
n-Butyl Acetate	123-86-4	10 - 25
Aromatic-Aliphatic Polyisocyanate	63368-95-6	5 - 15
Aliphatic Polyisocyanate	28182-81-2	1 - 10
Carbon Black	1333-86-4	1 - 10
Polymethylene Polyphenylene Isocyanate	9016-87-9	1 - 10
1-Methoxy-2-Propyl Acetate	108-65-6	1 - 5
3-(Trimethoxysilyl)Propanethiol	4420-74-0	1 - 5
3-(Trimethoxysilyl)Propyl Glycidyl Ether	2530-83-8	1 - 5
Methylenediphenyl Diisocyanate (Isomers)	26447-40-5	1 - 5
Polyurethane resin (without isocyanates)	Trade Secret	1 - 5
p-Toluenesulfonamide	70-55-3	< 1
Dibutyltin Dichloride	683-18-1	< 0.1
HEXAMETHYLENE DIISOCYANATE	822-06-0	0.01 0.1
TOLUENE 2,4-DIISOCYANATE	584-84-9	0.01 - 0.1

SECTION 4: First aid measures

4.1. Description of first aid measures

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

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

Eye Contact:
Immediately flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. Get medical attention.

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

4.2. Most important symptoms and effects, both acute and delayed
See Section 11.1. Information on toxicological effects.

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

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

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

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

Hazardous Decomposition or By-Products

Substance	Condition
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Hydrogen Chloride	During Combustion
Hydrogen Cyanide	During Combustion
Irritant Vapors or Gases	During Combustion
Oxides of Nitrogen	During Combustion
Oxides of Sulfur	During Combustion

5.3. Special protective actions for fire-fighters
Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture. Wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Evacuate area. Eliminate all ignition sources if safe to do so. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

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

6.3. Methods and material for containment and cleaning up
Contain spill. Cover spill area with a fire-extinguishing foam designed for use on solvents, such as alcohols and acetone, that can dissolve in water. An AR - AFFF type foam is recommended. Pour isocyanate decontaminant solution (90% water, 8% concentrated ammonia, 2% detergent) on spill and allow to react for 10 minutes. Or pour water on spill and allow to react for more than 30 minutes. Cover with absorbent material. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible using non-sparking tools. Place in a metal container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. Cover, but do not seal for 48 hours. 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 use in a confined area with minimal air exchange. 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/vapors/spray. Do not get in eyes, on

skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) Wear low static or properly grounded shoes. 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 to prevent contamination with water or air. If contamination is suspected, do not reseal container. Protect from sunlight. Store away from heat. Store away from acids. Store away from strong bases. Store away from oxidizing agents. Store away from areas where product may come into contact with food or pharmaceuticals. Store away from amines.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

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

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
n-Butyl Acetate	123-86-4	ACGIH	TWA:50 ppm;STEL:150 ppm	
n-Butyl Acetate	123-86-4	Malaysia OELs	TWA(8 hours):713 mg/m3(150 ppm)	
TOLUENE 2,4-DIISOCYANATE	584-84-9	ACGIH	TWA(inhalable fraction and vapor):0.001 ppm;STEL(inhalable fraction and vapor):0.005 ppm	A3: Confirmed animal carcin., SKIN; Resp+Dermal sensitizer
TOLUENE 2,4-DIISOCYANATE	584-84-9	Malaysia OELs	TWA(8 hours):0.036 mg/m3(0.005 ppm)	
TIN, ORGANIC COMPOUNDS	683-18-1	ACGIH	TWA(as Sn):0.1 mg/m3;STEL(as Sn):0.2 mg/m3	SKIN, A4: Not class. as human carcin
TIN, ORGANIC COMPOUNDS	683-18-1	Malaysia OELs	TWA(as Sn)(8 hours):0.1 mg/m3	SKIN
Methyl Ethyl Ketone	78-93-3	ACGIH	TWA:200 ppm;STEL:300 ppm	
Methyl Ethyl Ketone	78-93-3	Malaysia OELs	TWA(8 hours):590 mg/m3(200 ppm)	
HEXAMETHYLENE DIISOCYANATE	822-06-0	ACGIH	TWA:0.005 ppm	
HEXAMETHYLENE DIISOCYANATE	822-06-0	Malaysia OELs	TWA(8 hours):0.034 mg/m3(0.005 ppm)	

ACGIH : American Conference of Governmental Industrial Hygienists
CMRG : Chemical Manufacturer's Recommended Guidelines
Malaysia OELs : Malaysia. Occupational Safety and Health (Use and Standards of Exposure of Chemicals Hazardous to Health) Regulations
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls

Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment. Use explosion-proof ventilation equipment. Provide local exhaust ventilation at transfer points.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

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

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

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
Half facepiece or full facepiece air-purifying respirator suitable for organic vapors and particulates

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Color	Black
Odor	Ketones
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point/Freezing point	*Not Applicable*
Boiling point/Initial boiling point/Boiling range	79 ºC
Flash Point	-8 ºC [*Test Method:*Closed Cup]
Evaporation rate	*No Data Available*
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	1.8 %
Flammable Limits(UEL)	11.5 %
Vapor Pressure	*No Data Available*
Vapor Density	2.9 [*Ref Std:*AIR=1]
Density	0.9 g/ml
Water solubility	Moderate
Solubility- non-water	*No Data Available*
Partition coefficient: n-octanol/ water	*No Data Available*
Autoignition temperature	> 200 ºC
Decomposition temperature	*No Data Available*
Viscosity	20 mPa-s
Molecular weight	*No Data Available*
VOC Less H2O & Exempt Solvents	660 g/l [*Test Method:*calculated SCAQMD rule 443.1]

VOC Less H2O & Exempt Solvents	74 % [*Test Method:*calculated per CARB title 2]
VOC Less H2O & Exempt Solvents	5.5 lb/gal [*Test Method:*calculated SCAQMD rule 443.1]
Solids Content	> 20 %

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 polymerization will not occur.

10.4. Conditions to avoid
Sparks and/or flames
Heat

10.5. Incompatible materials
Alcohols
Amines
Strong acids
Strong bases
Strong oxidizing agents
Water

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 labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

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

Inhalation:
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:
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.

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

Ingestion:
May be harmful if swallowed.
Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

May cause additional health effects (see below).

Additional Health Effects:

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

Respiratory Effects: Signs/symptoms may include cough, shortness of breath, chest tightness, wheezing, increased heart rate, bluish colored skin (cyanosis), sputum production, changes in lung function tests, and/or respiratory failure.

Additional Information:
Persons previously sensitized to isocyanates may develop a cross-sensitization reaction to other isocyanates.

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 ATE20 - 50 mg/l
Overall product	Ingestion		No data available; calculated ATE2,000 - 5,000 mg/kg
Methyl Ethyl Ketone	Dermal	Rabbit	LD50 > 8,050 mg/kg
Methyl Ethyl Ketone	Inhalation-Vapor (4 hours)	Rat	LC50 34.5 mg/l
Methyl Ethyl Ketone	Ingestion	Rat	LD50 2,737 mg/kg
n-Butyl Acetate	Dermal	Rabbit	LD50 > 5,000 mg/kg
n-Butyl Acetate	Inhalation-Dust/Mist (4 hours)	Rat	LC50 1.4 mg/l
n-Butyl Acetate	Inhalation-Vapor (4 hours)	Rat	LC50 > 20 mg/l
n-Butyl Acetate	Ingestion	Rat	LD50 > 8,800 mg/kg
Aromatic-Aliphatic Polyisocyanate	Dermal		LD50 estimated to be > 5,000 mg/kg
Aromatic-Aliphatic Polyisocyanate	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 3 mg/l
Aromatic-Aliphatic Polyisocyanate	Ingestion	Rat	LD50 > 5,000 mg/kg
Methylenediphenyl Diisocyanate (Isomers)	Dermal	Rabbit	LD50 > 5,000 mg/kg
Methylenediphenyl Diisocyanate (Isomers)	Inhalation-	Rat	LC50 0.368 mg/l

	Dust/Mist (4 hours)		
Methylenediphenyl Diisocyanate (Isomers)	Ingestion	Rat	LD50 31,600 mg/kg
Carbon Black	Dermal	Rabbit	LD50 > 3,000 mg/kg
Carbon Black	Ingestion	Rat	LD50 > 8,000 mg/kg
Aliphatic Polyisocyanate	Inhalation-Dust/Mist (4 hours)	Professional judgement	LC50 estimated to be 1 - 5 mg/l
Aliphatic Polyisocyanate	Dermal	Rabbit	LD50 > 5,000 mg/kg
Aliphatic Polyisocyanate	Ingestion	Rat	LD50 > 5,000 mg/kg
Polymethylene Polyphenylene Isocyanate	Dermal	Rabbit	LD50 > 5,000 mg/kg
Polymethylene Polyphenylene Isocyanate	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.368 mg/l
Polymethylene Polyphenylene Isocyanate	Ingestion	Rat	LD50 31,600 mg/kg
3-(Trimethoxysilyl)Propyl Glycidyl Ether	Dermal	Rabbit	LD50 4,000 mg/kg
3-(Trimethoxysilyl)Propyl Glycidyl Ether	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.3 mg/l
3-(Trimethoxysilyl)Propyl Glycidyl Ether	Ingestion	Rat	LD50 7,010 mg/kg
3-(Trimethoxysilyl)Propanethiol	Dermal	Rabbit	LD50 2,270 mg/kg
3-(Trimethoxysilyl)Propanethiol	Ingestion	Rat	LD50 770 mg/kg
1-Methoxy-2-Propyl Acetate	Dermal	Rabbit	LD50 > 5,000 mg/kg
1-Methoxy-2-Propyl Acetate	Inhalation-Vapor (4 hours)	Rat	LC50 > 28.8 mg/l
1-Methoxy-2-Propyl Acetate	Ingestion	Rat	LD50 8,532 mg/kg
p-Toluenesulfonamide	Dermal		LD50 estimated to be 2,000 - 5,000 mg/kg
p-Toluenesulfonamide	Ingestion	Rat	LD50 > 2,000 mg/kg
HEXAMETHYLENE DIISOCYANATE	Dermal	Rabbit	LD50 570 mg/kg
HEXAMETHYLENE DIISOCYANATE	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.12 mg/l
HEXAMETHYLENE DIISOCYANATE	Ingestion	Rat	LD50 710 mg/kg
TOLUENE 2,4-DIISOCYANATE	Inhalation-Vapor (4 hours)	Mouse	LC50 0.12 mg/l
TOLUENE 2,4-DIISOCYANATE	Dermal	Rabbit	LD50 > 9,400 mg/kg
TOLUENE 2,4-DIISOCYANATE	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.35 mg/l
TOLUENE 2,4-DIISOCYANATE	Ingestion	Rat	LD50 > 5,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Methyl Ethyl Ketone	Rabbit	Minimal irritation
n-Butyl Acetate	Rabbit	Minimal irritation
Aromatic-Aliphatic Polyisocyanate	Rabbit	Minimal irritation
Methylenediphenyl Diisocyanate (Isomers)	official classification	Irritant
Carbon Black	Rabbit	No significant irritation
Aliphatic Polyisocyanate	Rabbit	Minimal irritation
Polymethylene Polyphenylene Isocyanate	official classification	Irritant
3-(Trimethoxysilyl)Propyl Glycidyl Ether	Rabbit	Mild irritant
3-(Trimethoxysilyl)Propanethiol	Rabbit	No significant irritation
1-Methoxy-2-Propyl Acetate	Rabbit	No significant irritation
p-Toluenesulfonamide	Rabbit	No significant irritation
HEXAMETHYLENE DIISOCYANATE	Rabbit	Corrosive
TOLUENE 2,4-DIISOCYANATE	Rabbit	Irritant

Serious Eye Damage/Irritation

Name	Species	Value
Methyl Ethyl Ketone	Rabbit	Severe irritant
n-Butyl Acetate	Rabbit	Moderate irritant
Aromatic-Aliphatic Polyisocyanate	Rabbit	Moderate irritant
Methylenediphenyl Diisocyanate (Isomers)	official classification	Severe irritant
Carbon Black	Rabbit	No significant irritation
Aliphatic Polyisocyanate	Rabbit	Mild irritant
Polymethylene Polyphenylene Isocyanate	official classification	Severe irritant
3-(Trimethoxysilyl)Propyl Glycidyl Ether	Rabbit	Corrosive
3-(Trimethoxysilyl)Propanethiol	Rabbit	No significant irritation
1-Methoxy-2-Propyl Acetate	Rabbit	Mild irritant
p-Toluenesulfonamide	Rabbit	No significant irritation
HEXAMETHYLENE DIISOCYANATE	Rabbit	Corrosive
TOLUENE 2,4-DIISOCYANATE	Rabbit	Corrosive

Skin Sensitization

Name	Species	Value
n-Butyl Acetate	Multiple animal species	Not classified
Aromatic-Aliphatic Polyisocyanate	Guinea pig	Sensitizing
Methylenediphenyl Diisocyanate (Isomers)	official classification	Sensitizing
Aliphatic Polyisocyanate	Guinea pig	Sensitizing
Polymethylene Polyphenylene Isocyanate	official classification	Sensitizing
3-(Trimethoxysilyl)Propyl Glycidyl Ether	Guinea pig	Not classified
3-(Trimethoxysilyl)Propanethiol	Guinea pig	Sensitizing
1-Methoxy-2-Propyl Acetate	Guinea pig	Not classified
HEXAMETHYLENE DIISOCYANATE	Multiple animal species	Sensitizing
TOLUENE 2,4-DIISOCYANATE	Human and animal	Sensitizing

Respiratory Sensitization

Name	Species	Value
Aromatic-Aliphatic Polyisocyanate		Sensitizing
Methylenediphenyl Diisocyanate (Isomers)	Human	Sensitizing
Aliphatic Polyisocyanate	similar compounds	Not classified
Polymethylene Polyphenylene Isocyanate	Human	Sensitizing
HEXAMETHYLENE DIISOCYANATE	Human and animal	Sensitizing
TOLUENE 2,4-DIISOCYANATE	Human	Sensitizing

Germ Cell Mutagenicity

Name	Route	Value
Methyl Ethyl Ketone	In Vitro	Not mutagenic
n-Butyl Acetate	In Vitro	Not mutagenic
Methylenediphenyl Diisocyanate (Isomers)	In Vitro	Some positive data exist, but the data are not sufficient for classification
Carbon Black	In Vitro	Not mutagenic
Carbon Black	In vivo	Some positive data exist, but the data are not sufficient for classification
Aliphatic Polyisocyanate	In Vitro	Not mutagenic
Aliphatic Polyisocyanate	In vivo	Not mutagenic
Polymethylene Polyphenylene Isocyanate	In Vitro	Some positive data exist, but the data are not sufficient for classification
3-(Trimethoxysilyl)Propyl Glycidyl Ether	In vivo	Not mutagenic
3-(Trimethoxysilyl)Propyl Glycidyl Ether	In Vitro	Some positive data exist, but the data are not sufficient for classification
3-(Trimethoxysilyl)Propanethiol	In Vitro	Not mutagenic
1-Methoxy-2-Propyl Acetate	In Vitro	Not mutagenic
HEXAMETHYLENE DIISOCYANATE	In Vitro	Not mutagenic
HEXAMETHYLENE DIISOCYANATE	In vivo	Not mutagenic
TOLUENE 2,4-DIISOCYANATE	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Methyl Ethyl Ketone	Inhalation	Human	Not carcinogenic
Methylenediphenyl Diisocyanate (Isomers)	Inhalation	Rat	Some positive data exist, but the data are not sufficient for classification
Carbon Black	Dermal	Mouse	Not carcinogenic
Carbon Black	Ingestion	Mouse	Not carcinogenic
Carbon Black	Inhalation	Rat	Carcinogenic
Polymethylene Polyphenylene Isocyanate	Inhalation	Rat	Some positive data exist, but the data are not sufficient for classification
3-(Trimethoxysilyl)Propyl Glycidyl Ether	Dermal	Mouse	Not carcinogenic
HEXAMETHYLENE DIISOCYANATE	Inhalation	Rat	Not carcinogenic
TOLUENE 2,4-DIISOCYANATE	Inhalation	Human and animal	Not carcinogenic
TOLUENE 2,4-DIISOCYANATE	Ingestion	Multiple animal species	Carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Methyl Ethyl Ketone	Inhalation	Not classified for development	Rat	LOAEL 8.8 mg/l	during gestation
n-Butyl Acetate	Inhalation	Not classified for female reproduction	Rat	NOAEL 7.1 mg/l	premating & during gestation
n-Butyl Acetate	Inhalation	Not classified for development	Rat	NOAEL 7.1 mg/l	premating & during gestation
Methylenediphenyl Diisocyanate (Isomers)	Inhalation	Not classified for development	Rat	NOAEL 0.004 mg/l	during organogenesis
Polymethylene Polyphenylene Isocyanate	Inhalation	Not classified for development	Rat	NOAEL 0.004 mg/l	during organogenesis
3-(Trimethoxysilyl)Propyl Glycidyl Ether	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	1 generation
3-(Trimethoxysilyl)Propyl Glycidyl Ether	Ingestion	Not classified for male reproduction	Rat	NOAEL	1 generation

				1,000 mg/kg/day	
3-(Trimethoxysilyl)Propyl Glycidyl Ether	Ingestion	Not classified for development	Rat	NOAEL 3,000 mg/kg/day	during organogenesis
1-Methoxy-2-Propyl Acetate	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
1-Methoxy-2-Propyl Acetate	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
1-Methoxy-2-Propyl Acetate	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
1-Methoxy-2-Propyl Acetate	Inhalation	Not classified for development	Rat	NOAEL 21.6 mg/l	during organogenesis
p-Toluenesulfonamide	Ingestion	Not classified for reproduction and/or development	Rat	NOAEL 300 mg/kg/day	premating & during gestation
HEXAMETHYLENE DIISOCYANATE	Inhalation	Not classified for female reproduction	Rat	NOAEL 0.002 mg/l	7 weeks
HEXAMETHYLENE DIISOCYANATE	Inhalation	Not classified for development	Rat	NOAEL 0.002 mg/l	7 weeks
HEXAMETHYLENE DIISOCYANATE	Inhalation	Not classified for male reproduction	Rat	NOAEL 0.014 mg/l	4 weeks
TOLUENE 2,4-DIISOCYANATE	Inhalation	Not classified for female reproduction	Rat	NOAEL 0.002 mg/l	2 generation
TOLUENE 2,4-DIISOCYANATE	Inhalation	Not classified for male reproduction	Rat	NOAEL 0.002 mg/l	2 generation
TOLUENE 2,4-DIISOCYANATE	Inhalation	Not classified for development	Rat	NOAEL 0.004 mg/l	during organogenesis

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Methyl Ethyl Ketone	Inhalation	central nervous system depression	May cause drowsiness or dizziness	official classification	NOAEL Not available	
Methyl Ethyl Ketone	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Methyl Ethyl Ketone	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
Methyl Ethyl Ketone	Ingestion	liver	Not classified	Rat	NOAEL Not available	not applicable
Methyl Ethyl Ketone	Ingestion	kidney and/or bladder	Not classified	Rat	LOAEL 1,080 mg/kg	not applicable
n-Butyl Acetate	Inhalation	respiratory system	May cause damage to organs	Rat	LOAEL 2.6 mg/l	4 hours
n-Butyl Acetate	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	not available
n-Butyl Acetate	Inhalation	respiratory irritation	May cause respiratory irritation	Human	NOAEL Not available	not available
n-Butyl Acetate	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
Aromatic-Aliphatic Polyisocyanate	Inhalation	respiratory irritation	May cause respiratory irritation		NOAEL Not available	
Methylenediphenyl Diisocyanate (Isomers)	Inhalation	respiratory irritation	May cause respiratory irritation	official classification	NOAEL Not available	

Aliphatic Polyisocyanate	Inhalation	respiratory irritation	May cause respiratory irritation		NOAEL Not available	
Polymethylene Polyphenylene Isocyanate	Inhalation	respiratory irritation	May cause respiratory irritation	official classification	NOAEL Not available	
1-Methoxy-2-Propyl Acetate	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
HEXAMETHYLENE DIISOCYANATE	Inhalation	respiratory irritation	May cause respiratory irritation	Human and animal	NOAEL Not available	
HEXAMETHYLENE DIISOCYANATE	Inhalation	blood	Not classified	Human	NOAEL Not available	occupational exposure
TOLUENE 2,4-DIISOCYANATE	Inhalation	respiratory irritation	May cause respiratory irritation	Human	NOAEL Not available	occupational exposure

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Methyl Ethyl Ketone	Dermal	nervous system	Not classified	Guinea pig	NOAEL Not available	31 weeks
Methyl Ethyl Ketone	Inhalation	liver | kidney and/or bladder | heart | endocrine system | gastrointestinal tract | bone, teeth, nails, and/or hair | hematopoietic system | immune system | muscles	Not classified	Rat	NOAEL 14.7 mg/l	90 days
Methyl Ethyl Ketone	Ingestion	liver	Not classified	Rat	NOAEL Not available	7 days
Methyl Ethyl Ketone	Ingestion	nervous system	Not classified	Rat	NOAEL 173 mg/kg/day	90 days
n-Butyl Acetate	Inhalation	olfactory system	Not classified	Rat	NOAEL 2.4 mg/l	14 weeks
n-Butyl Acetate	Inhalation	liver | kidney and/or bladder	Not classified	Rabbit	NOAEL 7.26 mg/l	13 days
Methylenediphenyl Diisocyanate (Isomers)	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.004 mg/l	13 weeks
Carbon Black	Inhalation	pneumoconiosis	Not classified	Human	NOAEL Not available	occupational exposure
Aliphatic Polyisocyanate	Inhalation	immune system | blood	Not classified	Rat	NOAEL 0.084 mg/l	2 weeks
Polymethylene Polyphenylene Isocyanate	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.004 mg/l	13 weeks
3-(Trimethoxysilyl)Propyl Glycidyl Ether	Ingestion	heart | endocrine system | bone, teeth, nails, and/or hair | hematopoietic system | liver | immune system | nervous system | kidney and/or bladder | respiratory system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
1-Methoxy-2-Propyl Acetate	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 16.2 mg/l	9 days
1-Methoxy-2-Propyl Acetate	Inhalation	olfactory system	Not classified	Mouse	LOAEL 1.62 mg/l	9 days
1-Methoxy-2-Propyl Acetate	Inhalation	blood	Not classified	Multiple animal species	NOAEL 16.2 mg/l	9 days
1-Methoxy-2-Propyl Acetate	Ingestion	endocrine system	Not classified	Rat	NOAEL 1,000 mg/kg/day	44 days
HEXAMETHYLENE	Inhalation	liver | kidney and/or	Not classified	Rat	NOAEL	3 weeks

DIISOCYANATE		bladder			0.002 mg/l	
HEXAMETHYLENE DIISOCYANATE	Inhalation	endocrine system	Not classified	Rat	NOAEL 0.0014 mg/l	4 weeks
HEXAMETHYLENE DIISOCYANATE	Inhalation	blood	Not classified	Rat	NOAEL 0.0012 mg/l	2 years
HEXAMETHYLENE DIISOCYANATE	Inhalation	nervous system	Not classified	Rat	NOAEL 0.002 mg/l	7 weeks
HEXAMETHYLENE DIISOCYANATE	Inhalation	heart	Not classified	Rat	NOAEL 0.001 mg/l	90 days
TOLUENE 2,4-DIISOCYANATE	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL 0 mg/l	occupational exposure

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

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

SECTION 12: Ecological information

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

12.1. Toxicity

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

No product test data available

Material	Cas #	Organism	Type	Exposure	Test Endpoint	Test Result
Methyl Ethyl Ketone	78-93-3	Water flea	Experimental	48 hours	Effect Concentration 50%	308 mg/l
Methyl Ethyl Ketone	78-93-3	Fathead Minnow	Experimental	96 hours	Lethal Concentration 50%	2,993 mg/l
Methyl Ethyl Ketone	78-93-3	Green algae	Experimental	96 hours	Effect Concentration 50%	2,029 mg/l
Methyl Ethyl Ketone	78-93-3	Water flea	Experimental	21 days	No obs Effect Conc	100 mg/l
Methyl Ethyl Ketone	78-93-3	Green Algae	Experimental	96 hours	Effect Concentration 10%	1,289 mg/l
n-Butyl Acetate	123-86-4	Green algae	Experimental	72 hours	Effect Concentration 50%	674.7 mg/l
n-Butyl Acetate	123-86-4	Fathead Minnow	Experimental	96 hours	Lethal Concentration 50%	18 mg/l
n-Butyl Acetate	123-86-4	Crustacea	Experimental	48 hours	Lethal Concentration 50%	32 mg/l

n-Butyl Acetate	123-86-4	Water flea	Experimental	24 hours	Effect Concentration 50%	72.8 mg/l
Aromatic-Aliphatic Polyisocyanate	63368-95-6		Data not available or insufficient for classification			
Aliphatic Polyisocyanate	28182-81-2	Zebra Fish	Experimental	96 hours	Lethal Level 50%	>100 mg/l
Aliphatic Polyisocyanate	28182-81-2	Green algae	Experimental	72 hours	Effect Concentration 50%	>1,000 mg/l
Aliphatic Polyisocyanate	28182-81-2	Green algae	Experimental	72 hours	Effect Concentration 10%	370 mg/l
Carbon Black	1333-86-4		Data not available or insufficient for classification			
Polymethylene Polyphenylene Isocyanate	9016-87-9	Water flea	Estimated	24 hours	Effect Concentration 50%	>100 mg/l
1-Methoxy-2-Propyl Acetate	108-65-6	Green algae	Experimental	72 hours	Effect Concentration 50%	>1,000 mg/l
1-Methoxy-2-Propyl Acetate	108-65-6	Water flea	Experimental	48 hours	Effect Concentration 50%	370 mg/l
1-Methoxy-2-Propyl Acetate	108-65-6	Rainbow Trout	Experimental	96 hours	Lethal Concentration 50%	134 mg/l
1-Methoxy-2-Propyl Acetate	108-65-6	Green algae	Experimental	72 hours	No obs Effect Conc	1,000 mg/l
1-Methoxy-2-Propyl Acetate	108-65-6	Water flea	Experimental	21 days	No obs Effect Conc	100 mg/l
3-(Trimethoxysilyl)Propanethiol	4420-74-0	Water flea	Experimental	48 hours	Effect Concentration 50%	6.7 mg/l
3-(Trimethoxysilyl)Propanethiol	4420-74-0	Zebra Fish	Experimental	96 hours	Lethal Concentration 50%	439 mg/l
3-(Trimethoxysilyl)Propanethiol	4420-74-0	Green algae	Experimental	72 hours	Effect Concentration 50%	267 mg/l
3-(Trimethoxysilyl)Propyl Glycidyl Ether	2530-83-8	Crustecea other	Experimental	48 hours	Lethal Concentration 50%	324 mg/l
3-(Trimethoxysilyl)Propyl Glycidyl Ether	2530-83-8	Common Carp	Experimental	96 hours	Lethal Concentration 50%	55 mg/l
3-(Trimethoxysilyl)Propyl	2530-83-8	Green algae	Experimental	96 hours	Effect Concentration 50%	350 mg/l

Glycidyl Ether						
3-(Trimethoxysilyl)Propyl Glycidyl Ether	2530-83-8	Water flea	Experimental	21 days	No obs Effect Conc	>=100 mg/l
3-(Trimethoxysilyl)Propyl Glycidyl Ether	2530-83-8	Green Algae	Experimental	96 hours	No obs Effect Conc	130 mg/l
Methylenediphenyl Diisocyanate (Isomers)	26447-40-5	Water flea	Estimated		Effect Concentration 50%	>100 mg/l
p-Toluenesulfonamide	70-55-3	Green Algae	Estimated	72 hours	Effect Concentration 50%	170 mg/l
p-Toluenesulfonamide	70-55-3	Water flea	Estimated	48 hours	Effect Concentration 50%	210 mg/l
p-Toluenesulfonamide	70-55-3	Water flea	Estimated	21 days	No obs Effect Conc	49 mg/l
p-Toluenesulfonamide	70-55-3	Green Algae	Estimated	72 hours	No obs Effect Conc	7.7 mg/l
Dibutyltin Dichloride	683-18-1	Water flea	Experimental	48 hours	Effect Concentration 50%	0.84 mg/l
Dibutyltin Dichloride	683-18-1	Algae	Experimental	96 hours	Effect Concentration 50%	0.043 mg/l
Dibutyltin Dichloride	683-18-1	Water flea	Experimental	21 days	No obs Effect Conc	0.015 mg/l
Dibutyltin Dichloride	683-18-1	Ricefish	Experimental	28 days	No obs Effect Conc	1.8 mg/l
HEXAMETHYLENE DIISOCYANATE	822-06-0	Water flea	Estimated	48 hours	Effect Concentration 50%	27 mg/l
HEXAMETHYLENE DIISOCYANATE	822-06-0	Green Algae	Estimated	96 hours	Effect Concentration 50%	14.8 mg/l
HEXAMETHYLENE DIISOCYANATE	822-06-0	Ricefish	Estimated	96 hours	Lethal Concentration 50%	71 mg/l
HEXAMETHYLENE DIISOCYANATE	822-06-0	Water flea	Estimated	21 days	No obs Effect Conc	4.2 mg/l
HEXAMETHYLENE DIISOCYANATE	822-06-0	Green Algae	Estimated	72 hours	No obs Effect Conc	10 mg/l

TOLUENE 2,4-DIISOCYANATE	584-84-9	Zebra Fish	Estimated	96 hours	Lethal Concentration 50%	392 mg/l
TOLUENE 2,4-DIISOCYANATE	584-84-9	Water flea	Estimated	48 hours	Effect Concentration 50%	1.6 mg/l
TOLUENE 2,4-DIISOCYANATE	584-84-9	Green algae	Estimated	96 hours	Effect Concentration 50%	9.54 mg/l
TOLUENE 2,4-DIISOCYANATE	584-84-9	Ricefish	Estimated	28 days	No obs Effect Conc	40.3 mg/l
TOLUENE 2,4-DIISOCYANATE	584-84-9	Crustacea	Estimated	14 days	No obs Effect Conc	0.8 mg/l

12.2. Persistence and degradability

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
Methyl Ethyl Ketone	78-93-3	Experimental Biodegradation	28 days	Biological Oxygen Demand	98 % BOD/ThBOD	OECD 301D - Closed Bottle Test
n-Butyl Acetate	123-86-4	Experimental Biodegradation	28 days	Biological Oxygen Demand	98 % weight	OECD 301D - Closed Bottle Test
Aromatic-Aliphatic Polyisocyanate	63368-95-6	Data not availbl-insufficient			N/A	
Aliphatic Polyisocyanate	28182-81-2	Experimental Hydrolysis		Hydrolytic half-life	7.7 hours (t 1/2)	Other methods
Aliphatic Polyisocyanate	28182-81-2	Experimental Biodegradation	28 days	Biological Oxygen Demand	1 % weight	Other methods
Carbon Black	1333-86-4	Data not availbl-insufficient			N/A	
Polymethylene Polyphenylene Isocyanate	9016-87-9	Experimental Hydrolysis		Hydrolytic half-life	<2 hours (t 1/2)	Other methods
Polymethylene Polyphenylene Isocyanate	9016-87-9	Estimated Biodegradation	28 days	Biological Oxygen Demand	0 % weight	OECD 301C - MITI (I)
1-Methoxy-2-Propyl Acetate	108-65-6	Experimental Biodegradation	28 days	Biological Oxygen Demand	87.2 % BOD/ThBOD	OECD 301C - MITI (I)
3-(Trimethoxysilyl)Propanethiol	4420-74-0	Estimated Hydrolysis		Hydrolytic half-life	53.3 minutes (t 1/2)	Other methods
3-(Trimethoxysil	2530-83-8	Experimental Hydrolysis		Hydrolytic half-life	6.5 hours (t 1/2)	Other methods

yl)Propyl Glycidyl Ether						
3-(Trimethoxysilyl)Propyl Glycidyl Ether	2530-83-8	Experimental Biodegradation	28 days	Dissolv. Organic Carbon Deplet	37 % weight	Other methods
Methylenediphenyl Diisocyanate (Isomers)	26447-40-5	Estimated Hydrolysis		Hydrolytic half-life	<2 hours (t 1/2)	Other methods
Methylenediphenyl Diisocyanate (Isomers)	26447-40-5	Estimated Biodegradation	28 days	Biological Oxygen Demand	0 % weight	OECD 301C - MITI (I)
p-Toluenesulfonamide	70-55-3	Experimental Biodegradation	28 days	Biological Oxygen Demand	86 % weight	OECD 301D - Closed Bottle Test
Dibutyltin Dichloride	683-18-1	Modeled Photolysis		Photolytic half-life (in air)	12.7 hours (t 1/2)	Other methods
Dibutyltin Dichloride	683-18-1	Experimental Biodegradation	28 days	Carbon dioxide evolution	5.5 % weight	OECD 301B - Mod. Sturm or CO2
HEXAMETHYLENE DIISOCYANATE	822-06-0	Experimental Hydrolysis		Hydrolytic half-life	5 minutes (t 1/2)	Other methods
HEXAMETHYLENE DIISOCYANATE	822-06-0	Estimated Biodegradation	28 days	Biological Oxygen Demand	82 % BOD/ThBOD	OECD 301D - Closed Bottle Test
TOLUENE 2,4-DIISOCYANATE	584-84-9	Estimated Photolysis		Photolytic half-life (in air)	4.27 days (t 1/2)	Other methods
TOLUENE 2,4-DIISOCYANATE	584-84-9	Experimental Hydrolysis		Hydrolytic half-life	5 days (t 1/2)	Other methods
TOLUENE 2,4-DIISOCYANATE	584-84-9	Estimated Biodegradation	14 days	Biological Oxygen Demand	0 % weight	OECD 301C - MITI (I)

12.3. Bioaccumulative potential

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
Methyl Ethyl Ketone	78-93-3	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	0.29	Other methods
n-Butyl Acetate	123-86-4	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	1.78	Other methods
Aromatic-Aliphatic Polyisocyanate	63368-95-6	Data not available or insufficient for classification	N/A	N/A	N/A	N/A

Aliphatic Polyisocyanate	28182-81-2	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Carbon Black	1333-86-4	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Polymethylene Polyphenylene Isocyanate	9016-87-9	Estimated BCF-Carp	28 days	Bioaccumulation Factor	200	Other methods
1-Methoxy-2-Propyl Acetate	108-65-6	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	0.36	Other methods
3-(Trimethoxysilyl)Propanethiol	4420-74-0	Estimated Bioconcentration		Log of Octanol/H2O part. coeff	0.25	Est: Octanol-water part. coeff
3-(Trimethoxysilyl)Propyl Glycidyl Ether	2530-83-8	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Methylenediphenyl Diisocyanate (Isomers)	26447-40-5	Estimated BCF-Carp	28 days	Bioaccumulation Factor	200	Other methods
p-Toluenesulfonamide	70-55-3	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	0.6	Other methods
Dibutyltin Dichloride	683-18-1	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
HEXAMETHYLENE DIISOCYANATE	822-06-0	Estimated Bioconcentration		Log of Octanol/H2O part. coeff	0.02	Other methods
TOLUENE 2,4-DIISOCYANATE	584-84-9	Estimated BCF-Carp	42 days	Bioaccumulation Factor	<50	OECD 305C-Bioaccum degree fish

12.4. Mobility in soil
Please contact manufacturer for more details

12.5 Other adverse effects

Material	CAS No.	Ozone Depletion Potential	Global Warming Potential
3-(trimethoxysilyl)propanethiol	4420-74-0	0	

SECTION 13: Disposal considerations

13.1. Disposal methods

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

SECTION 14: Transport Information

Marine Transport (IMDG)

UN Number:UN1993
Proper Shipping Name:COMBUSTIBLE LIQUID, N.O.S.
Technical Name:(Methyl ketone and n-butyl acetate)
Hazard Class/Division:3
Subsidiary Risk: None assigned.
Packing Group:II
Limited Quantity: Yes
Marine Pollutant: None assigned.
Marine Pollutant Technical Name: None assigned.
Other Dangerous Goods Descriptions:
None assigned.

Air Transport (IATA)

UN Number:UN1993
Proper Shipping Name:COMBUSTIBLE LIQUID, N.O.S.
Technical Name:(Methyl ketone and n-butyl acetate)
Hazard Class/Division:3
Subsidiary Risk: None assigned.
Packing Group:II
Limited Quantity: None assigned.
Marine Pollutant: None assigned.
Marine Pollutant Technical Name: None assigned.
Other Dangerous Goods Descriptions:
None assigned.

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

SECTION 15: Regulatory information

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

Global inventory status
Contact manufacturer for more information The components of this material are in compliance with the provisions of the Korea Chemical Control Act. Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Japan Chemical Substance Control Law. Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Philippines RA 6969 requirements. Certain restrictions may apply. Contact the selling

division for additional information. The components of this product are in compliance with the new substance notification requirements of CEPA. This product complies with Measures on Environmental Management of New Chemical Substances. All ingredients are listed on or exempt from on China IECSC inventory. The components of this product are in compliance with the chemical notification requirements of TSCA. All required components of this product are listed on the active portion of the TSCA Inventory.

SECTION 16: Other information

DISCLAIMER: The information on this Safety Data Sheet is based on our experience and is correct to the best of our knowledge at the date of publication, but we do not accept any liability for any loss, damage or injury resulting from its use (except as required by law). The information may not be valid for any use not referred to in this Data Sheet or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own test to satisfy themselves as to the suitability of the product for their own intended applications.

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