Safety Data Sheet

This Safety Data Sheet has been prepared in accordance with the SS586 Specification for Hazard Communication for Hazardous Chemicals and Dangerous Goods.

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SECTION 1: Identification

1.1. Product identifier
3M Process Colour 882I, Red

Product Identification Numbers
42-0019-9653-9 75-0301-1086-2 75-0301-1818-8

1.2. Recommended use and restrictions on use

Recommended use
Ink

1.3. Supplier's details
Address: 3M Technologies (S) Pte Ltd,10 Ang Mo Kio Street 65, Singapore 569059
Telephone: +65 6450 8888
Website: www.3m.com.sg

1.4. Emergency telephone number
+65 6591 6601 (8.15am - 5.00pm, Monday - Friday)

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture
Flammable liquid: Category 3.
Serious Eye Damage/Irritation: Category 1.
Skin Sensitizer: Category 1A.
Carcinogenicity: Category 1A.
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.
H318	Causes serious eye damage.
H317	May cause an allergic skin reaction.
H350	May cause cancer.
H411	Toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS

Prevention:

P201	Obtain special instructions before use.
P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P280B	Wear protective gloves and eye/face protection.
P273	Avoid release to the environment.

Response:

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/physician.
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.

Disposal:

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

2.3. Other hazards

None known.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	CAS Nbr	% by Wt
Propanol, 1(or 2)-(2-methoxymethylethoxy)-, acetate	88917-22-0	30 - 60
2-Propenoic acid, 2-methyl-, polymer with butyl 2-methyl-2-propenoate and methyl 2-methyl-2-propenoate	28262-63-7	10 - 30
Acrylic polymers	Trade Secret	10 - 30
1-Methoxy-2-propyl acetate	108-65-6	3 - 7
Cyclohexanone	108-94-1	3 - 7
Vinyl polymer	Trade Secret	1 - 5
Organic pigment 2	Trade Secret	0.1 - 3
Organic pigment	Trade Secret	0.1 - 3
3-dodecyl-1-(2,2,6,6-tetramethyl-4-piperidyl)pyrrolidine-2,5-dione	79720-19-7	< 0.6

Ethylbenzene	100-41-4	< 0.3
Toluene	108-88-3	< 0.3
Butyl methacrylate	97-88-1	< 0.3
Nickel salts of naphthenic acids	61788-71-4	< 0.2
Naphthenic acid	1338-24-5	< 0.2
2,3-epoxypropyl neodecanoate	26761-45-5	< 0.2

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).

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. Exposure to extreme heat can give rise to thermal decomposition.

Hazardous Decomposition or By-Products

Substance	Condition
Hydrocarbons.	During combustion.
Carbon monoxide.	During combustion.
Carbon dioxide.	During combustion.
Hydrogen Chloride	During combustion.

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

SECTION 6: Accidental release measures

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

6.2. Environmental precautions
Avoid release to the environment. For larger spills, cover drains and build 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
Avoid inhalation of thermal decomposition products. For industrial/occupational use only. Not for consumer sale or use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidising agents (eg. chlorine, chromic acid etc.) Wear low static or properly grounded shoes. Use personal protective equipment (eg. gloves, respirators…) as required. To minimize the risk of ignition, determine applicable electrical classifications for the process using this product and select specific local exhaust ventilation equipment to avoid flammable 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 acids. Store away from oxidising agents.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

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

Ingredient	CAS Nbr	Agency	Limit type	Additional comments
Ethylbenzene	100-41-4	ACGIH	TWA:20 ppm	A3: Confirmed animal carcin., Ototoxicant
Ethylbenzene	100-41-4	Singapore PELs	TWA(8 hours):434 mg/m3(100 ppm);STEL(15 minutes):543 mg/m3(125 ppm)	

1-Methoxy-2-propyl acetate	108-65-6	AIHA	TWA:50 ppm	
Toluene	108-88-3	ACGIH	TWA:20 ppm	A4: Not class. as human carcin, Ototoxicant
Toluene	108-88-3	Singapore PELs	TWA(8 hours):188 mg/m3(50 ppm)	
Cyclohexanone	108-94-1	ACGIH	TWA:20 ppm;STEL:50 ppm	A3: Confirmed animal carcin., Danger of cutaneous absorption
Cyclohexanone	108-94-1	Singapore PELs	TWA(8 hours):100 mg/m3(25 ppm)	
NICKEL, SOLUBLE COMPOUNDS	61788-71-4	Singapore PELs	TWA(as Ni)(8 hours):0.1 mg/m3	

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
CMRG : Chemical Manufacturer's Recommended Guidelines
Singapore PELs : Singapore. Workplace Safety and Health (Permissible Exposure Levels of Toxic Substances) Order
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls
For those situations where the material might be exposed to extreme overheating due to misuse or equipment failure, use with appropriate local exhaust ventilation sufficient to maintain levels of thermal decomposition products below their exposure guidelines. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapours/spray. If ventilation is not adequate, use respiratory protection equipment. Use explosion-proof ventilation equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

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

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

If this product is used in a manner that presents a higher potential for exposure (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
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:
For those situations where the material might be exposed to extreme overheating due to misuse or equipment failure, use a positive pressure supplied-air respirator.

Half facepiece or 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.
Specific Physical Form:	Liquid.
Color	Red
Odor	Sweet Ether
Odour threshold	*No data available.*
pH	*Not applicable.*
Melting point/Freezing point	*Not applicable.*
Boiling point/Initial boiling point/Boiling range	>=140 ºC
Flash point	42.2 ºC [*Test Method:*Tagliabue closed cup]
Evaporation rate	<=0.4 [*Ref Std:*BUOAC=1]
Flammability (solid, gas)	Not applicable.
Flammable Limits(LEL)	1.1 % volume
Flammable Limits(UEL)	8.6 % volume
Vapour pressure	<=493.3 Pa [@ 20 ºC]
Vapor Density and/or Relative Vapor Density	*No data available.*
Density	0.95 g/ml
Relative density	0.95 [*Ref Std:*WATER=1]
Water solubility	*No data available.*
Solubility- non-water	*No data available.*
Partition coefficient: n-octanol/water	*No data available.*
Autoignition temperature	*No data available.*
Decomposition temperature	*No data available.*
Viscosity/Kinematic Viscosity	1,000 - 1,200 mPa-s [*Details:*DTM - 300 (#3 @ 30 rpm)]
Volatile organic compounds (VOC)	600 - 800 g/l [*Details:*As packaged.]
Percent volatile	65 - 75 %
VOC less H2O & exempt solvents	*No data available.*
Molecular weight	*No data available.*

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
Sparks and/or flames.

10.5 Incompatible materials
Strong acids.
Strong oxidising agents.

10.6 Hazardous decomposition products

Substance	Condition
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

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

11.1 Information on Toxicological effects

Signs and Symptoms of Exposure

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

Inhalation
Respiratory tract irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. 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
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:

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 >50 mg/l

Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
Propanol, 1(or 2)-(2-methoxymethylethoxy)-, acetate	Dermal	Rat	LD50 > 2,000 mg/kg
Propanol, 1(or 2)-(2-methoxymethylethoxy)-, acetate	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.7 mg/l
Propanol, 1(or 2)-(2-methoxymethylethoxy)-, acetate	Ingestion	Rat	LD50 > 5,000 mg/kg
2-Propenoic acid, 2-methyl-, polymer with butyl 2-methyl-2-propenoate and methyl 2-methyl-2-propenoate	Dermal		LD50 estimated to be > 5,000 mg/kg
2-Propenoic acid, 2-methyl-, polymer with butyl 2-methyl-2-propenoate and methyl 2-methyl-2-propenoate	Ingestion		LD50 estimated to be 2,000 - 5,000 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
Cyclohexanone	Dermal	Rabbit	LD50 >794, <3160 mg/kg
Cyclohexanone	Inhalation-Vapor (4 hours)	Rat	LC50 > 6.2 mg/l
Cyclohexanone	Ingestion	Rat	LD50 1,296 mg/kg
Vinyl polymer	Dermal	Rabbit	LD50 > 8,000 mg/kg
Vinyl polymer	Ingestion	Rat	LD50 > 8,000 mg/kg
Organic pigment	Dermal		LD50 estimated to be > 5,000 mg/kg
Organic pigment	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
Organic pigment 2	Dermal		LD50 estimated to be > 5,000 mg/kg
Organic pigment 2	Inhalation-Dust/Mist		LC50 estimated to be > 12.5 mg/l
Organic pigment 2	Ingestion		LD50 estimated to be > 5,000 mg/kg
3-dodecyl-1-(2,2,6,6-tetramethyl-4-piperidyl)pyrrolidine-2,5-dione	Dermal	Rabbit	LD50 > 2,000 mg/kg
3-dodecyl-1-(2,2,6,6-tetramethyl-4-piperidyl)pyrrolidine-2,5-dione	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5 mg/l
3-dodecyl-1-(2,2,6,6-tetramethyl-4-piperidyl)pyrrolidine-2,5-dione	Ingestion	Rat	LD50 > 2,000 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
Butyl methacrylate	Dermal	Rabbit	LD50 > 2,000 mg/kg
Butyl methacrylate	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 27 mg/l
Butyl methacrylate	Ingestion	Rat	LD50 > 2,000 mg/kg
Naphthenic acid	Dermal	Rabbit	LD50 > 20,000 mg/kg
Naphthenic acid	Ingestion	Rat	LD50 5,880 mg/kg
Nickel salts of naphthenic acids	Ingestion	Rat	LD50 419 mg/kg
2,3-epoxypropyl neodecanoate	Dermal	Rat	LD50 > 2,000 mg/kg
2,3-epoxypropyl neodecanoate	Ingestion	Rat	LD50 > 2,000 mg/kg
Toluene	Dermal	Rat	LD50 12,000 mg/kg
Toluene	Inhalation-Vapor (4 hours)	Rat	LC50 30 mg/l
Toluene	Ingestion	Rat	LD50 5,550 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Propanol, 1(or 2)-(2-methoxymethylethoxy)-, acetate	Rabbit	No significant irritation
1-Methoxy-2-propyl acetate	Rabbit	No significant irritation
Cyclohexanone	Rabbit	Irritant
Vinyl polymer	Professio	No significant irritation

	nal judgemen t	
Organic pigment 2	Professio nal judgemen t	No significant irritation
3-dodecyl-1-(2,2,6,6-tetramethyl-4-piperidyl)pyrrolidine-2,5-dione	Rabbit	Corrosive
Ethylbenzene	Rabbit	Mild irritant
Butyl methacrylate	Rabbit	Irritant
Naphthenic acid	Rabbit	Mild irritant
Nickel salts of naphthenic acids	Professio nal judgemen t	Minimal irritation
2,3-epoxypropyl neodecanoate	Rabbit	No significant irritation
Toluene	Rabbit	Irritant

Serious Eye Damage/Irritation

Name	Species	Value
Propanol, 1(or 2)-(2-methoxymethylethoxy)-, acetate	Rabbit	No significant irritation
1-Methoxy-2-propyl acetate	Rabbit	Mild irritant
Cyclohexanone	In vitro data	Corrosive
Vinyl polymer	Professio nal judgemen t	No significant irritation
Organic pigment 2	Professio nal judgemen t	No significant irritation
3-dodecyl-1-(2,2,6,6-tetramethyl-4-piperidyl)pyrrolidine-2,5-dione	Rabbit	Corrosive
Ethylbenzene	Rabbit	Moderate irritant
Butyl methacrylate	Rabbit	Mild irritant
Naphthenic acid	Rabbit	Moderate irritant
Nickel salts of naphthenic acids	Professio nal judgemen t	Mild irritant
2,3-epoxypropyl neodecanoate	Rabbit	No significant irritation
Toluene	Rabbit	Moderate irritant

Sensitization:

Skin Sensitisation

Name	Species	Value
Propanol, 1(or 2)-(2-methoxymethylethoxy)-, acetate	Guinea pig	Not classified
1-Methoxy-2-propyl acetate	Guinea pig	Not classified
Cyclohexanone	Guinea pig	Not classified
Ethylbenzene	Human	Not classified
Butyl methacrylate	Guinea pig	Sensitising
Naphthenic acid	Guinea pig	Sensitising
Nickel salts of naphthenic acids	similar compoun ds	Sensitising
2,3-epoxypropyl neodecanoate	Guinea pig	Sensitising

Toluene	Guinea pig	Not classified

Respiratory Sensitisation

Name	Species	Value
Nickel salts of naphthenic acids	Professional judgement	Sensitising

Germ Cell Mutagenicity

Name	Route	Value
Propanol, 1(or 2)-(2-methoxymethylethoxy)-, acetate	In Vitro	Not mutagenic
Propanol, 1(or 2)-(2-methoxymethylethoxy)-, acetate	In vivo	Not mutagenic
1-Methoxy-2-propyl acetate	In Vitro	Not mutagenic
Cyclohexanone	In vivo	Not mutagenic
Cyclohexanone	In Vitro	Some positive data exist, but the data are not sufficient for classification
3-dodecyl-1-(2,2,6,6-tetramethyl-4-piperidyl)pyrrolidine-2,5-dione	In Vitro	Not mutagenic
Ethylbenzene	In vivo	Not mutagenic
Ethylbenzene	In Vitro	Some positive data exist, but the data are not sufficient for classification
Butyl methacrylate	In Vitro	Not mutagenic
Butyl methacrylate	In vivo	Not mutagenic
Naphthenic acid	In vivo	Not mutagenic
Naphthenic acid	In Vitro	Some positive data exist, but the data are not sufficient for classification
Nickel salts of naphthenic acids	In Vitro	Some positive data exist, but the data are not sufficient for classification
Nickel salts of naphthenic acids	In vivo	Mutagenic
2,3-epoxypropyl neodecanoate	In Vitro	Some positive data exist, but the data are not sufficient for classification
2,3-epoxypropyl neodecanoate	In vivo	Mutagenic
Toluene	In Vitro	Not mutagenic
Toluene	In vivo	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Cyclohexanone	Ingestion	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
Ethylbenzene	Inhalation	Multiple animal species	Carcinogenic.
Butyl methacrylate	Inhalation	Multiple animal species	Carcinogenic.
Nickel salts of naphthenic acids	Inhalation	similar compounds	Carcinogenic.
Toluene	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Toluene	Ingestion	Rat	Some positive data exist, but the data are not sufficient for classification
Toluene	Inhalation	Mouse	Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration

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
Cyclohexanone	Inhalation	Not classified for female reproduction	Rat	NOAEL 4 mg/l	2 generation
Cyclohexanone	Inhalation	Not classified for male reproduction	Rat	NOAEL 2 mg/l	2 generation
Cyclohexanone	Ingestion	Not classified for development	Mouse	LOAEL 1,100 mg/kg/day	during organogenesis
Cyclohexanone	Inhalation	Not classified for development	Rat	NOAEL 2 mg/l	2 generation
Ethylbenzene	Inhalation	Not classified for development	Rat	NOAEL 4.3 mg/l	premating & during gestation
Butyl methacrylate	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	44 days
Butyl methacrylate	Ingestion	Not classified for female reproduction	Rat	NOAEL 300 mg/kg/day	premating & during gestation
Butyl methacrylate	Ingestion	Not classified for development	Rabbit	NOAEL 300 mg/kg/day	during gestation
Butyl methacrylate	Inhalation	Not classified for development	Rat	NOAEL 1.8 mg/l	during gestation
Naphthenic acid	Ingestion	Not classified for female reproduction	Rat	NOAEL 900 mg/kg/day	premating into lactation
Naphthenic acid	Ingestion	Not classified for male reproduction	Rat	NOAEL 900 mg/kg/day	28 days
Naphthenic acid	Ingestion	Toxic to development	Rat	NOAEL 100 mg/kg/day	premating into lactation
Nickel salts of naphthenic acids	Ingestion	Toxic to development	similar compounds	NOAEL not available	2 generation
Toluene	Inhalation	Not classified for female reproduction	Human	NOAEL Not available	occupational exposure
Toluene	Inhalation	Not classified for male reproduction	Rat	NOAEL 2.3 mg/l	1 generation
Toluene	Ingestion	Toxic to development	Rat	LOAEL 520 mg/kg/day	during gestation
Toluene	Inhalation	Toxic to development	Human	NOAEL Not available	poisoning and/or abuse

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
1-Methoxy-2-propyl acetate	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
1-Methoxy-2-propyl acetate	Ingestion	central nervous system depression	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL not available	
Cyclohexanone	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Guinea pig	LOAEL 16.1 mg/l	6 hours
Cyclohexanone	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for	Human	NOAEL Not available	

			classification			
Cyclohexanone	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
3-dodecyl-1-(2,2,6,6-tetramethyl-4-piperidyl)pyrrolidine-2,5-dione	Inhalation	respiratory irritation	May cause respiratory irritation	similar health hazards	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	
Butyl methacrylate	Inhalation	respiratory irritation	May cause respiratory irritation		NOAEL Not available	
Naphthenic acid	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Toluene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Toluene	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Toluene	Inhalation	immune system	Not classified	Mouse	NOAEL 0.004 mg/l	3 hours
Toluene	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Propanol, 1(or 2)-(2-methoxymethylethoxy)-, acetate	Ingestion	liver | heart | endocrine system | hematopoietic system | kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	4 weeks
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
Cyclohexanone	Inhalation	liver | kidney and/or bladder	Not classified	Rabbit	NOAEL 0.76 mg/l	50 days
Cyclohexanone	Ingestion	liver	Not classified	Mouse	NOAEL 4,800 mg/kg/day	90 days
Ethylbenzene	Inhalation	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1.1 mg/l	2 years
Ethylbenzene	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 1.1 mg/l	103 weeks
Ethylbenzene	Inhalation	hematopoietic system	Not classified	Rat	NOAEL 3.4 mg/l	28 days
Ethylbenzene	Inhalation	auditory system	Not classified	Rat	NOAEL 2.4 mg/l	5 days
Ethylbenzene	Inhalation	endocrine system	Not classified	Mouse	NOAEL 3.3 mg/l	103 weeks
Ethylbenzene	Inhalation	gastrointestinal tract	Not classified	Rat	NOAEL 3.3 mg/l	2 years
Ethylbenzene	Inhalation	bone, teeth, nails,	Not classified	Multiple	NOAEL 4.2	90 days

		and/or hair | muscles		animal species	mg/l	
Ethylbenzene	Inhalation	heart | immune system | respiratory system	Not classified	Multiple animal species	NOAEL 3.3 mg/l	2 years
Ethylbenzene	Ingestion	liver | kidney and/or bladder	Not classified	Rat	NOAEL 680 mg/kg/day	6 months
Butyl methacrylate	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 11 mg/l	28 days
Butyl methacrylate	Inhalation	olfactory system	Not classified	Rat	NOAEL 1.8 mg/l	28 days
Butyl methacrylate	Inhalation	heart | endocrine system | hematopoietic system | liver | nervous system | respiratory system	Not classified	Rat	NOAEL 11 mg/l	28 days
Butyl methacrylate	Ingestion	olfactory system	Not classified	Rat	NOAEL 60 mg/kg/day	90 days
Butyl methacrylate	Ingestion	endocrine system | hematopoietic system | liver | nervous system | kidney and/or bladder | heart | immune system	Not classified	Rat	NOAEL 360 mg/kg/day	90 days
Naphthenic acid	Ingestion	endocrine system | liver | heart | skin | gastrointestinal tract | bone, teeth, nails, and/or hair | hematopoietic system | immune system | muscles | nervous system | eyes | kidney and/or bladder | respiratory system | vascular system	Not classified	Rat	NOAEL 881 mg/kg/day	90 days
Nickel salts of naphthenic acids	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	similar compoun ds	NOAEL not available	13 weeks
2,3-epoxypropyl neodecanoate	Ingestion	hematopoietic system | liver	Not classified	Rat	NOAEL 400 mg/kg/day	5 weeks
2,3-epoxypropyl neodecanoate	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 40 mg/kg/day	5 weeks
Toluene	Inhalation	auditory system | eyes | olfactory system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
Toluene	Inhalation	nervous system	May cause damage to organs though prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
Toluene	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 2.3 mg/l	15 months
Toluene	Inhalation	heart | liver | kidney and/or bladder	Not classified	Rat	NOAEL 11.3 mg/l	15 weeks
Toluene	Inhalation	endocrine system	Not classified	Rat	NOAEL 1.1 mg/l	4 weeks
Toluene	Inhalation	immune system	Not classified	Mouse	NOAEL Not available	20 days
Toluene	Inhalation	bone, teeth, nails, and/or hair	Not classified	Mouse	NOAEL 1.1 mg/l	8 weeks
Toluene	Inhalation	hematopoietic system | vascular system	Not classified	Human	NOAEL Not available	occupational exposure
Toluene	Inhalation	gastrointestinal tract	Not classified	Multiple animal	NOAEL 11.3 mg/l	15 weeks

				species		
Toluene	Ingestion	nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 625 mg/kg/day	13 weeks
Toluene	Ingestion	heart	Not classified	Rat	NOAEL 2,500 mg/kg/day	13 weeks
Toluene	Ingestion	liver | kidney and/or bladder	Not classified	Multiple animal species	NOAEL 2,500 mg/kg/day	13 weeks
Toluene	Ingestion	hematopoietic system	Not classified	Mouse	NOAEL 600 mg/kg/day	14 days
Toluene	Ingestion	endocrine system	Not classified	Mouse	NOAEL 105 mg/kg/day	28 days
Toluene	Ingestion	immune system	Not classified	Mouse	NOAEL 105 mg/kg/day	4 weeks

Aspiration Hazard

Name	Value
Ethylbenzene	Aspiration hazard
Toluene	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
Propanol, 1(or 2)-(2-methoxymethylethoxy)-, acetate	88917-22-0	Activated sludge	Experimental	3 hours	EC50	>1,000 mg/l
Propanol, 1(or 2)-(2-methoxymethylethoxy)-, acetate	88917-22-0	Green algae	Experimental	72 hours	ErC50	>1,000 mg/l
Propanol, 1(or 2)-(2-methoxymethylethoxy)-, acetate	88917-22-0	Rainbow trout	Experimental	96 hours	LC50	111 mg/l
Propanol, 1(or 2)-(2-methoxymethylethoxy)-, acetate	88917-22-0	Water flea	Experimental	48 hours	LC50	1,090 mg/l
Propanol, 1(or 2)-(2-	88917-22-0	Green algae	Experimental	72 hours	NOEC	1,000 mg/l

methoxymethyleth oxy)-, acetate						
2-Propenoic acid, 2-methyl-, polymer with butyl 2-methyl-2-propenoate and methyl 2-methyl-2-propenoate	28262-63-7	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
1-Methoxy-2-propyl acetate	108-65-6	Activated sludge	Experimental	30 minutes	EC10	>1,000 mg/l
1-Methoxy-2-propyl acetate	108-65-6	Green algae	Experimental	72 hours	ErC50	>1,000 mg/l
1-Methoxy-2-propyl acetate	108-65-6	Rainbow trout	Experimental	96 hours	LC50	134 mg/l
1-Methoxy-2-propyl acetate	108-65-6	Water flea	Experimental	48 hours	EC50	370 mg/l
1-Methoxy-2-propyl acetate	108-65-6	Green algae	Experimental	72 hours	NOEC	1,000 mg/l
1-Methoxy-2-propyl acetate	108-65-6	Water flea	Experimental	21 days	NOEC	100 mg/l
Cyclohexanone	108-94-1	Activated sludge	Experimental	30 minutes	EC50	>1,000 mg/l
Cyclohexanone	108-94-1	Algae or other aquatic plants	Experimental	72 hours	ErC50	32.9 mg/l
Cyclohexanone	108-94-1	Fathead minnow	Experimental	96 hours	LC50	527 mg/l
Cyclohexanone	108-94-1	Water flea	Experimental	24 hours	EC50	800 mg/l
Cyclohexanone	108-94-1	Algae or other aquatic plants	Experimental	72 hours	ErC10	3.56 mg/l
Vinyl polymer	Trade Secret	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
Organic pigment	Trade Secret	Activated sludge	Experimental	30 minutes	EC50	>1,000 mg/l
Organic pigment	Trade Secret	Golden Orfe	Experimental	96 hours	LC50	>10,000 mg/l
Organic pigment	Trade Secret	Green algae	Experimental	72 hours	ErC50	>100 mg/l
Organic pigment	Trade Secret	Water flea	Experimental	48 hours	EC50	>100 mg/l
Organic pigment	Trade Secret	Green algae	Experimental	72 hours	EC50	100 mg/l
Organic pigment 2	Trade Secret	Green algae	Analogous Compound	72 hours	ErC50	>100 mg/l
Organic pigment 2	Trade Secret	Water flea	Analogous Compound	48 hours	EC50	>100 mg/l
Organic pigment 2	Trade Secret	Activated sludge	Experimental	30 minutes	EC20	>700 mg/l
Organic pigment 2	Trade Secret	Zebra Fish	Experimental	96 hours	LC50	>5,000 mg/l
Organic pigment 2	Trade Secret	Green algae	Analogous Compound	72 hours	NOEC	>=100 mg/l
3-dodecyl-1-(2,2,6,6-tetramethyl-4-piperidyl)pyrrolidine-2,5-dione	79720-19-7	Common Carp	Experimental	96 hours	LC50	0.097 mg/l
3-dodecyl-1-(2,2,6,6-tetramethyl-4-piperidyl)pyrrolidine-2,5-dione	79720-19-7	Green algae	Experimental	72 hours	ErC50	0.374 mg/l
3-dodecyl-1-(2,2,6,6-tetramethyl-4-piperidyl)pyrrolidine-2,5-dione	79720-19-7	Water flea	Experimental	48 hours	EC50	0.501 mg/l
3-dodecyl-1-(2,2,6,6-tetramethyl-4-piperidyl)pyrrolidine-2,5-dione	79720-19-7	Green algae	Experimental	72 hours	ErC10	0.236 mg/l
3-dodecyl-1-(2,2,6,6-tetramethyl-4-	79720-19-7	Activated sludge	Experimental	3 hours	EC50	58.9 mg/l

piperidyl)pyrrolidine-2,5-dione						
Ethylbenzene	100-41-4	Green algae	Estimated	73 hours	EC50	4.36 mg/l
Ethylbenzene	100-41-4	Rainbow trout	Estimated	96 hours	LC50	2.6 mg/l
Ethylbenzene	100-41-4	Water flea	Estimated	48 hours	EC50	3.82 mg/l
Ethylbenzene	100-41-4	Activated sludge	Experimental	49 hours	EC50	130 mg/l
Ethylbenzene	100-41-4	Green algae	Estimated	73 hours	NOEC	0.44 mg/l
Ethylbenzene	100-41-4	Rainbow trout	Estimated	56 days	NOEC	>1.3 mg/l
Ethylbenzene	100-41-4	Water flea	Estimated	7 days	NOEC	0.96 mg/l
Butyl methacrylate	97-88-1	Bacteria	Experimental	18 hours	EC50	>254 mg/l
Butyl methacrylate	97-88-1	Green algae	Experimental	72 hours	EC50	31.2 mg/l
Butyl methacrylate	97-88-1	Medaka	Experimental	96 hours	LC50	5.6 mg/l
Butyl methacrylate	97-88-1	Water flea	Experimental	48 hours	EC50	25 mg/l
Butyl methacrylate	97-88-1	Green algae	Experimental	72 hours	NOEC	24.8 mg/l
Butyl methacrylate	97-88-1	Water flea	Experimental	21 days	NOEC	1.1 mg/l
Toluene	108-88-3	Coho Salmon	Experimental	96 hours	LC50	5.5 mg/l
Toluene	108-88-3	Grass Shrimp	Experimental	96 hours	LC50	9.5 mg/l
Toluene	108-88-3	Green algae	Experimental	72 hours	EC50	12.5 mg/l
Toluene	108-88-3	Leopard frog	Experimental	9 days	LC50	0.39 mg/l
Toluene	108-88-3	Pink Salmon	Experimental	96 hours	LC50	6.41 mg/l
Toluene	108-88-3	Water flea	Experimental	48 hours	EC50	3.78 mg/l
Toluene	108-88-3	Coho Salmon	Experimental	40 days	NOEC	1.39 mg/l
Toluene	108-88-3	Diatom	Experimental	72 hours	NOEC	10 mg/l
Toluene	108-88-3	Water flea	Experimental	7 days	NOEC	0.74 mg/l
Toluene	108-88-3	Activated sludge	Experimental	12 hours	IC50	292 mg/l
Toluene	108-88-3	Bacteria	Experimental	16 hours	NOEC	29 mg/l
Toluene	108-88-3	Bacteria	Experimental	24 hours	EC50	84 mg/l
Toluene	108-88-3	Redworm	Experimental	28 days	LC50	>150 mg per kg of bodyweight
Toluene	108-88-3	Soil microbes	Experimental	28 days	NOEC	<26 mg/kg (Dry Weight)
2,3-epoxypropyl neodecanoate	26761-45-5	Activated sludge	Experimental	3 hours	NOEC	500 mg/l
2,3-epoxypropyl neodecanoate	26761-45-5	Green algae	Experimental	72 hours	ErC50	2.9 mg/l
2,3-epoxypropyl neodecanoate	26761-45-5	Rainbow trout	Experimental	96 hours	LC50	5 mg/l
2,3-epoxypropyl neodecanoate	26761-45-5	Water flea	Experimental	48 hours	EC50	4.8 mg/l
2,3-epoxypropyl neodecanoate	26761-45-5	Green algae	Experimental	96 hours	NOEC	1 mg/l
Naphthenic acid	1338-24-5	Copepod	Analogous Compound	96 hours	LC50	4.8 mg/l
Naphthenic acid	1338-24-5	Fathead minnow	Experimental	96 hours	LC50	5.62 mg/l
Naphthenic acid	1338-24-5	Water flea	Experimental	48 hours	EC50	20 mg/l
Naphthenic acid	1338-24-5	Fathead minnow	Experimental	7 days	NOEC	0.4 mg/l
Naphthenic acid	1338-24-5	Water flea	Experimental	7 days	NOEC	1.5 mg/l
Nickel salts of naphthenic acids	61788-71-4	Fathead minnow	Estimated	96 hours	LC50	2.5 mg/l
Nickel salts of naphthenic acids	61788-71-4	Fish	Estimated	96 hours	LC50	9.5 mg/l
Nickel salts of naphthenic acids	61788-71-4	Green algae	Estimated	72 hours	ErC50	0.44 mg/l
Nickel salts of naphthenic acids	61788-71-4	Water flea	Estimated	48 hours	LC50	0.083 mg/l
Nickel salts of naphthenic acids	61788-71-4	African clawed frog	Estimated	101 hours	EC10	0.54 mg/l
Nickel salts of naphthenic acids	61788-71-4	Green algae	Estimated	72 hours	ErC10	0.031 mg/l
Nickel salts of naphthenic acids	61788-71-4	Scud	Estimated	28 days	EC10	522 mg/l
Nickel salts of naphthenic acids	61788-71-4	Water flea	Estimated	7 days	EC10	0.007 mg/l
Nickel salts of naphthenic acids	61788-71-4	Zebra Fish	Estimated	8 days	NOEC	0.25 mg/l
Nickel salts of naphthenic acids	61788-71-4	Activated sludge	Estimated	30 minutes	EC50	210 mg/l

Nickel salts of naphthenic acids	61788-71-4	Mallard Duck	Estimated	90 days	NOEC	1,274 ppm diet
Nickel salts of naphthenic acids	61788-71-4	Redworm	Estimated	28 days	EC10	303 mg/kg (Dry Weight)
Nickel salts of naphthenic acids	61788-71-4	Soil microbes	Estimated	28 days	EC10	102 mg/kg (Dry Weight)
Nickel salts of naphthenic acids	61788-71-4	Springtail	Estimated	28 days	NOEC	232 mg/kg (Dry Weight)
Nickel salts of naphthenic acids	61788-71-4	Tomato	Estimated	21 days	NOEC	70 mg/kg (Dry Weight)

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Propanol, 1(or 2)-(2-methoxymethylethoxy)-, acetate	88917-22-0	Analogous Compound Biodegradation	28 days	Dissolv. Organic Carbon Deplet	90 %removal of DOC	OECD 301F - Manometric respirometry
2-Propenoic acid, 2-methyl-, polymer with butyl 2-methyl-2-propenoate and methyl 2-methyl-2-propenoate	28262-63-7	Data not available-insufficient	N/A	N/A	N/A	N/A
1-Methoxy-2-propyl acetate	108-65-6	Experimental Biodegradation	28 days	BOD	87.2 %BOD/ThOD	OECD 301C - MITI test (I)
1-Methoxy-2-propyl acetate	108-65-6	Experimental Aquatic Inherent Biodegrad.		Dissolv. Organic Carbon Deplet	>100 %removal of DOC	similar to OECD 302B
Cyclohexanone	108-94-1	Experimental Biodegradation	14 days	BOD	87 %BOD/ThOD	OECD 301C - MITI test (I)
Vinyl polymer	Trade Secret	Data not available-insufficient	N/A	N/A	N/A	N/A
Organic pigment	Trade Secret	Experimental Biodegradation	28 days	BOD	0-10 %BOD/ThOD	OECD 301F - Manometric respirometry
Organic pigment 2	Trade Secret	Analogous Compound Biodegradation	28 days	BOD	<10 %BOD/ThOD	OECD 301F - Manometric respirometry
3-dodecyl-1-(2,2,6,6-tetramethyl-4-piperidyl)pyrrolidine-2,5-dione	79720-19-7	Experimental Biodegradation	28 days	CO2 evolution	0 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2
3-dodecyl-1-(2,2,6,6-tetramethyl-4-piperidyl)pyrrolidine-2,5-dione	79720-19-7	Experimental Aquatic Inherent Biodegrad.	28 days	BOD	3 %BOD/ThOD	OECD 302C - Modified MITI (II)
3-dodecyl-1-(2,2,6,6-tetramethyl-4-piperidyl)pyrrolidine-2,5-dione	79720-19-7	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	>1 years (t 1/2)	OECD 111 Hydrolysis func of pH
Ethylbenzene	100-41-4	Experimental Biodegradation	28 days	BOD	90-98 %BOD/ThOD	OECD 301F - Manometric respirometry
Butyl methacrylate	97-88-1	Experimental Biodegradation	28 days	BOD	88 %BOD/ThOD	OECD 301C - MITI test (I)
Toluene	108-88-3	Experimental Biodegradation	20 days	BOD	80 %BOD/ThOD	APHA Std Meth Water/Wastewater
Toluene	108-88-3	Experimental Photolysis		Photolytic half-life (in air)	5.2 days (t 1/2)	

2,3-epoxypropyl neodecanoate	26761-45-5	Experimental Biodegradation	28 days	BOD	11.6 %BOD/ThOD	OECD 301F - Manometric respirometry
2,3-epoxypropyl neodecanoate	26761-45-5	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	9.9 days (t 1/2)	OECD 111 Hydrolysis func of pH
Naphthenic acid	1338-24-5	Data not available-insufficient	N/A	N/A	N/A	N/A
Nickel salts of naphthenic acids	61788-71-4	Data not available-insufficient	N/A	N/A	N/A	N/A

12.3 : Bioaccumulative potential

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Propanol, 1(or 2)-(2-methoxymethylethoxy)-, acetate	88917-22-0	Experimental Bioconcentration		Log Kow	0.61	EC A.8 Partition Coefficient
2-Propenoic acid, 2-methyl-, polymer with butyl 2-methyl-2-propenoate and methyl 2-methyl-2-propenoate	28262-63-7	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
1-Methoxy-2-propyl acetate	108-65-6	Experimental Bioconcentration		Log Kow	0.36	OECD 107 log Kow shke flsk mtd
Cyclohexanone	108-94-1	Experimental Bioconcentration		Log Kow	0.86	OECD 107 log Kow shke flsk mtd
Vinyl polymer	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Organic pigment	Trade Secret	Modeled Bioconcentration		Bioaccumulation factor	6.8	Catalogic™
Organic pigment 2	Trade Secret	Estimated Bioconcentration		Log Kow	1.3	
3-dodecyl-1-(2,2,6,6-tetramethyl-4-piperidyl)pyrrolidine-2,5-dione	79720-19-7	Experimental Bioconcentration		Log Kow	≥5.7	EC A.8 Partition Coefficient
Ethylbenzene	100-41-4	Experimental BCF - Fish	56 days	Bioaccumulation factor	25.9	
Butyl methacrylate	97-88-1	Experimental Bioconcentration		Log Kow	2.88	
Toluene	108-88-3	Experimental BCF - Other	72 hours	Bioaccumulation factor	90	
Toluene	108-88-3	Experimental Bioconcentration		Log Kow	2.73	
2,3-epoxypropyl neodecanoate	26761-45-5	Modeled Bioconcentration		Bioaccumulation factor	28	Catalogic™
Naphthenic acid	1338-24-5	Experimental BCF - Fish	10 days	Bioaccumulation factor	4	
Nickel salts of naphthenic acids	61788-71-4	Analogous Compound Bioconcentration	180 days	Bioaccumulation factor	4	

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.

Dispose of waste product in a permitted industrial waste 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

International Regulations

UN No.: UN1210
UN Proper shipping name: PRINTING INK

Transportation Class (IMO): 3-3 Flammable liquid
Transportation Class (IATA): 3-3 Flammable liquid
Other Dangerous Goods Descriptions (IMO): None assigned
Other Dangerous Goods Descriptions (IATA): None assigned
Packing Group: III
Marine pollutant: None assigned

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. 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.

This product may contain component(s) that are regulated by the following:
Workplace Safety and Health Act & Workplace Safety and Health (General Provisions) Regulations: this product is subject to SDS, labelling, PEL and other requirements in the Act/Regulations.
Fire Safety (Petroleum and Flammable Materials) Regulations: This product is subject to the requirements in the Regulations
Sewerage & Drainage Act and Sewerage and Drainage (Trade Effluent) Regulations: This product is subject to the requirements in the act/regulation.
Environmental Protection and Management (Hazardous Substances) Regulations: This product is subject to the requirements in the Regulations

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.

3M Singapore SDSs are available at www.3m.com.sg