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™ TB Quat Disinfectant Ready-To-Use Cleaner

1.2. Recommended use and restrictions on use

Recommended use
Disinfectant, Rinse-free, EPA registered hospital germicide for disinfecting and cleaning non-critical items. Proven effective in killing hepatitis B virus (HBV) and TB.

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
Serious Eye Damage/Irritation: Category 2.
Specific Target Organ Toxicity (repeated exposure): Category 2.

2.2. Label elements
Signal word
Warning

Symbols
Exclamation mark | Health Hazard |

Pictograms

Hazard Statements

H319	Causes serious eye irritation.
H373	May cause damage to organs through prolonged or repeated exposure: respiratory system |

Precautionary statements

General:

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

Prevention:

P260	Do not breathe dust/fume/gas/mist/vapors/spray.

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.

Disposal:

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

2.3. Other hazards

All or part of the classification is based on toxicity test data.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	C.A.S. No.	% by Wt
WATER	7732-18-5	60 - 90
DIETHYLENE GLYCOL BUTYL ETHER	112-34-5	5 - 10
TETRASODIUM ETHYLENEDIAMINETETRAACETATE	64-02-8	1 - 5
ETHOXYLATED C12-C15 ALCOHOLS	68131-39-5	0.5 - 0.9
SODIUM METASILICATE	6834-92-0	0.1 - 0.5
DIPENTENE	Trade Secret	<= 0.1
BENZYL-C12-18-ALKYLDIMETHYL AMMONIUM CHLORIDES	68391-01-5	<= 0.1105
Quaternary ammonium compounds, C12-14-alkyl[(ethylphenyl)methyl]dimethyl, chlorides	85409-23-0	<= 0.1105
Terpenes and terpenoids, sweet orange-oil	Trade Secret	<= 0.08
TERPENES AND TERPENOIDS, LIME-OIL	Trade Secret	<= 0.06
LINALYL ALCOHOL	78-70-6	<= 0.01
HEXYLENE GLYCOL	Trade Secret	<= 0.01
2-(PHENYLMETHYLENE)OCTANAL	101-86-0	<= 0.01

6-Octenenitrile, 3,7-dimethyl-	Trade Secret	<= 0.01
D-LIMONENE	5989-27-5	<= 0.002
Fragrance	Trade Secret	<= 0.002

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:
Wash with soap and water. If signs/symptoms develop, get medical attention.

Eye Contact:
Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, 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
Material will not burn. Use a fire fighting agent suitable for the surrounding fire.

5.2. Special hazards arising from the substance or mixture
None inherent in this product.

5.3. Special protective actions for fire-fighters
No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Evacuate area. 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. 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. 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. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with water. Seal the

container. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
For industrial/occupational use only. Not for consumer sale or use. NOTE: The above precautionary information presumes that this ready-to-use product has been diluted and dispensed from a chemical dispensing system. Keep out of reach of children. 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. Avoid release to the environment. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.)

7.2. Conditions for safe storage including any incompatibilities
Store away from acids. Store away from oxidizing agents.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
DIETHYLENE GLYCOL BUTYL ETHER	112-34-5	ACGIH	TWA(inhalable fraction and vapor):10 ppm	
HEXYLENE GLYCOL	Trade Secret	ACGIH	TWA(Vapor fraction):25 ppm;STEL(Inhalable aerosol):10 mg/m3;STEL(Vapor fraction):50 ppm	
HEXYLENE GLYCOL	Trade Secret	Malaysia OELs	CEIL:121 mg/m3(25 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.

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

Respiratory protection

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

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Specific Physical Form:	Liquid
Color	Colorless
Odor	Lemon
Odor threshold	*No Data Available*
pH	11.9 - 12.9
Melting point/Freezing point	*Not Applicable*
Boiling point/Initial boiling point/Boiling range	> 100 ºC
Flash Point	No flash point
Evaporation rate	*No Data Available*
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	*No Data Available*
Flammable Limits(UEL)	*No Data Available*
Vapor Density	*No Data Available*
Density	*No Data Available*
Relative Density	1.007 - 1.019 [*Ref Std:*WATER=1]
Water solubility	Complete
Solubility- non-water	*No Data Available*
Partition coefficient: n-octanol/ water	*No Data Available*
Autoignition temperature	*Not Applicable*
Decomposition temperature	*No Data Available*
Viscosity	< 100 mPa-s
Volatile Organic Compounds	< 1 % weight [*Test Method:*calculated per CARB title 2]
Percent volatile	60 - 100 % weight
VOC Less H2O & Exempt Solvents	< 50 g/l [*Test Method:*calculated per CARB title 2]

SECTION 10: Stability and reactivity

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

10.2. Chemical stability
Stable.

10.3. Possibility of hazardous reactions
Hazardous polymerization will not occur.

10.4. Conditions to avoid
Not determined

10.5. Incompatible materials
Strong acids
Strong oxidizing agents

10.6. Hazardous decomposition products

Substance	Condition
Carbon monoxide	Not Specified
Carbon dioxide	Not Specified

SECTION 11: Toxicological information

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

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

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

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

Skin Contact:
Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness.

Eye Contact:
Moderate Eye Irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

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

Additional Health Effects:

Prolonged or repeated exposure may cause target organ effects:
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.

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-		No data available; calculated ATE >12.5 mg/l

	Dust/Mist(4 hr)		
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
DIETHYLENE GLYCOL BUTYL ETHER	Dermal	Rabbit	LD50 2,764 mg/kg
DIETHYLENE GLYCOL BUTYL ETHER	Ingestion	Rat	LD50 7,292 mg/kg
TETRASODIUM ETHYLENEDIAMINETETRAACETATE	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 1.5 mg/l
TETRASODIUM ETHYLENEDIAMINETETRAACETATE	Ingestion	Rat	LD50 1,658 mg/kg
ETHOXYLATED C12-C15 ALCOHOLS	Dermal	Rat	LD50 5,000 mg/kg
ETHOXYLATED C12-C15 ALCOHOLS	Ingestion	Rat	LD50 1,200 mg/kg
SODIUM METASILICATE	Dermal	Rabbit	LD50 > 4,640 mg/kg
SODIUM METASILICATE	Ingestion	Rat	LD50 500 mg/kg
DIPENTENE	Inhalation-Vapor (4 hours)	Mouse	LC50 > 3.14 mg/l
DIPENTENE	Dermal	Rabbit	LD50 > 5,000 mg/kg
DIPENTENE	Ingestion	Rat	LD50 4,400 mg/kg
BENZYL-C12-18-ALKYLDIMETHYL AMMONIUM CHLORIDES	Dermal	Not available	LD50 > 2,000 mg/kg
BENZYL-C12-18-ALKYLDIMETHYL AMMONIUM CHLORIDES	Ingestion	Not available	LD50 500 mg/kg
Terpenes and terpenoids, sweet orange-oil	Inhalation-Vapor (4 hours)	Mouse	LC50 > 3.14 mg/l
Terpenes and terpenoids, sweet orange-oil	Dermal	Rabbit	LD50 > 5,000 mg/kg
Terpenes and terpenoids, sweet orange-oil	Ingestion	Rat	LD50 4,400 mg/kg
LINALYL ALCOHOL	Dermal	Rabbit	LD50 5,610 mg/kg
LINALYL ALCOHOL	Ingestion	Rat	LD50 2,790 mg/kg
2-(PHENYLMETHYLENE)OCTANAL	Ingestion	Rat	LD50 3,100 mg/kg
D-LIMONENE	Inhalation-Vapor (4 hours)	Mouse	LC50 > 3.14 mg/l
D-LIMONENE	Dermal	Rabbit	LD50 > 5,000 mg/kg
D-LIMONENE	Ingestion	Rat	LD50 4,400 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
DIETHYLENE GLYCOL BUTYL ETHER	Rabbit	Minimal irritation
TETRASODIUM ETHYLENEDIAMINETETRAACETATE	Rabbit	No significant irritation
SODIUM METASILICATE	Rabbit	Corrosive
DIPENTENE	Rabbit	Mild irritant
BENZYL-C12-18-ALKYLDIMETHYL AMMONIUM CHLORIDES	Professional judgement	Corrosive
Terpenes and terpenoids, sweet orange-oil	Rabbit	Mild irritant
LINALYL ALCOHOL	Rabbit	Irritant
2-(PHENYLMETHYLENE)OCTANAL	Rabbit	Irritant
D-LIMONENE	Rabbit	Mild irritant

Serious Eye Damage/Irritation

Name	Species	Value
DIETHYLENE GLYCOL BUTYL ETHER	Rabbit	Corrosive
TETRASODIUM ETHYLENEDIAMINETETRAACETATE	Rabbit	Corrosive
ETHOXYLATED C12-C15 ALCOHOLS	Not available	Corrosive
SODIUM METASILICATE	Rabbit	Corrosive
DIPENTENE	Rabbit	Mild irritant
BENZYL-C12-18-ALKYLDIMETHYL AMMONIUM CHLORIDES	Professional	Corrosive

	judgement	
Terpenes and terpenoids, sweet orange-oil	Rabbit	Mild irritant
LINALYL ALCOHOL	Rabbit	Moderate irritant
D-LIMONENE	Rabbit	Mild irritant

Skin Sensitization

Name	Species	Value
TETRASODIUM ETHYLENEDIAMINETETRAACETATE	Human and animal	Not classified
SODIUM METASILICATE	Mouse	Not classified
DIPENTENE	Mouse	Sensitizing
Terpenes and terpenoids, sweet orange-oil	Mouse	Sensitizing
LINALYL ALCOHOL	Mouse	Sensitizing
2-(PHENYLMETHYLENE)OCTANAL	Multiple animal species	Sensitizing
D-LIMONENE	Mouse	Sensitizing

Respiratory Sensitization

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

Germ Cell Mutagenicity

Name	Route	Value
TETRASODIUM ETHYLENEDIAMINETETRAACETATE	In Vitro	Some positive data exist, but the data are not sufficient for classification
TETRASODIUM ETHYLENEDIAMINETETRAACETATE	In vivo	Some positive data exist, but the data are not sufficient for classification
SODIUM METASILICATE	In Vitro	Not mutagenic
SODIUM METASILICATE	In vivo	Not mutagenic
DIPENTENE	In Vitro	Not mutagenic
DIPENTENE	In vivo	Not mutagenic
Terpenes and terpenoids, sweet orange-oil	In Vitro	Not mutagenic
Terpenes and terpenoids, sweet orange-oil	In vivo	Not mutagenic
D-LIMONENE	In Vitro	Not mutagenic
D-LIMONENE	In vivo	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
TETRASODIUM ETHYLENEDIAMINETETRAACETATE	Ingestion	Multiple animal species	Not carcinogenic
DIPENTENE	Ingestion	Rat	Some positive data exist, but the data are not sufficient for classification
Terpenes and terpenoids, sweet orange-oil	Ingestion	Rat	Some positive data exist, but the data are not sufficient for classification
D-LIMONENE	Ingestion	Rat	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
TETRASODIUM ETHYLENEDIAMINETETRAACETATE	Ingestion	Not classified for female reproduction	Rat	NOAEL 250 mg/kg/day	4 generation
TETRASODIUM ETHYLENEDIAMINETETRAACETATE	Ingestion	Not classified for male reproduction	Rat	NOAEL 250 mg/kg/day	4 generation
TETRASODIUM ETHYLENEDIAMINETETRAACETATE	Ingestion	Not classified for development	Rat	LOAEL 1,000	during gestation

				mg/kg/day	
SODIUM METASILICATE	Ingestion	Not classified for development	Mouse	NOAEL 200 mg/kg/day	during gestation
DIPENTENE	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	premating & during gestation
DIPENTENE	Ingestion	Not classified for development	Multiple animal species	NOAEL 591 mg/kg/day	during organogenesis
Terpenes and terpenoids, sweet orange-oil	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	premating & during gestation
Terpenes and terpenoids, sweet orange-oil	Ingestion	Not classified for development	Multiple animal species	NOAEL 591 mg/kg/day	during organogenesis
D-LIMONENE	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	premating & during gestation
D-LIMONENE	Ingestion	Not classified for development	Multiple animal species	NOAEL 591 mg/kg/day	during organogenesis

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
TETRASODIUM ETHYLENEDIAMINETETRAACETATE	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	Irritation Positive	
SODIUM METASILICATE	Inhalation	respiratory irritation	May cause respiratory irritation	official classification	NOAEL Not available	
DIPENTENE	Ingestion	nervous system	Not classified		NOAEL Not available	
BENZYL-C12-18-ALKYLDIMETHYL AMMONIUM CHLORIDES	Inhalation	respiratory irritation	May cause respiratory irritation		NOAEL Not available	
Terpenes and terpenoids, sweet orange-oil	Ingestion	nervous system	Not classified		NOAEL Not available	
LINALYL ALCOHOL	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL not available	
D-LIMONENE	Ingestion	nervous system	Not classified		NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
TETRASODIUM ETHYLENEDIAMINETETRAACETATE	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	NOAEL 3 mg/m3	13 weeks
TETRASODIUM ETHYLENEDIAMINETETRAACETATE	Inhalation	liver | heart | skin | endocrine system | gastrointestinal tract | bone, teeth, nails, and/or hair | hematopoietic system | immune system | muscles | nervous system | eyes | kidney and/or bladder | vascular system	Not classified	Rat	NOAEL 15 mg/m3	13 weeks
TETRASODIUM ETHYLENEDIAMINETE	Ingestion	hematopoietic system | liver	Not classified	Rat	NOAEL 2,500	13 weeks

TRAACETATE					mg/kg/day	
TETRASODIUM ETHYLENEDIAMINETE TRAACETATE	Ingestion	heart | gastrointestinal tract | muscles | kidney and/or bladder | respiratory system	Not classified	Rat	NOAEL 5,000 mg/kg/day	13 weeks
SODIUM METASILICATE	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Dog	LOAEL 2,400 mg/kg/day	4 weeks
SODIUM METASILICATE	Ingestion	endocrine system | blood	Not classified	Rat	NOAEL 804 mg/kg/day	3 months
SODIUM METASILICATE	Ingestion	heart | liver	Not classified	Rat	NOAEL 1,259 mg/kg/day	8 weeks
DIPENTENE	Ingestion	kidney and/or bladder	Not classified	Rat	LOAEL 75 mg/kg/day	103 weeks
DIPENTENE	Ingestion	liver	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
DIPENTENE	Ingestion	heart | endocrine system | bone, teeth, nails, and/or hair | hematopoietic system | immune system | muscles | nervous system | respiratory system	Not classified	Rat	NOAEL 600 mg/kg/day	103 weeks
Terpenes and terpenoids, sweet orange-oil	Ingestion	kidney and/or bladder	Not classified	Rat	LOAEL 75 mg/kg/day	103 weeks
Terpenes and terpenoids, sweet orange-oil	Ingestion	liver	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
Terpenes and terpenoids, sweet orange-oil	Ingestion	heart | endocrine system | bone, teeth, nails, and/or hair | hematopoietic system | immune system | muscles | nervous system | respiratory system	Not classified	Rat	NOAEL 600 mg/kg/day	103 weeks
D-LIMONENE	Ingestion	kidney and/or bladder	Not classified	Rat	LOAEL 75 mg/kg/day	103 weeks
D-LIMONENE	Ingestion	liver	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
D-LIMONENE	Ingestion	heart | endocrine system | bone, teeth, nails, and/or hair | hematopoietic system | immune system | muscles | nervous system | respiratory system	Not classified	Rat	NOAEL 600 mg/kg/day	103 weeks

Aspiration Hazard

Name	Value
DIPENTENE	Aspiration hazard
Terpenes and terpenoids, sweet orange-oil	Aspiration hazard
D-LIMONENE	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 labeling, an ingredient is not expected to be available for exposure, or the data is considered not relevant to the material as a whole.

12.1. Toxicity

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

Chronic aquatic hazard:
Not chronically toxic to aquatic life by GHS criteria.

No product test data available

Material	Cas #	Organism	Type	Exposure	Test Endpoint	Test Result
DIETHYLENE GLYCOL BUTYL ETHER	112-34-5	Atlantic Silverside	Experimental	96 hours	Lethal Concentration 50%	2,000 mg/l
DIETHYLENE GLYCOL BUTYL ETHER	112-34-5	Bluegill	Experimental	96 hours	Lethal Concentration 50%	1,300 mg/l
DIETHYLENE GLYCOL BUTYL ETHER	112-34-5	Green Algae	Experimental	96 hours	Effect Concentration 50%	1,101 mg/l
DIETHYLENE GLYCOL BUTYL ETHER	112-34-5	Water flea	Experimental	48 hours	Effect Concentration 50%	4,950 mg/l
DIETHYLENE GLYCOL BUTYL ETHER	112-34-5	Green algae	Experimental	96 hours	No obs Effect Conc	100 mg/l
TETRASODIUM ETHYLENEDIAMINETETRAACETATE	64-02-8	Bluegill	Experimental	96 hours	Lethal Concentration 50%	1,030 mg/l
TETRASODIUM ETHYLENEDIAMINETETRAACETATE	64-02-8	Water flea	Experimental	24 hours	Effect Concentration 50%	1,033 mg/l
TETRASODIUM ETHYLENEDIAMINETETRAACETATE	64-02-8	Water flea	Estimated	21 days	No obs Effect Conc	29 mg/l
ETHOXYLATED C12-C15 ALCOHOLS	68131-39-5	Diatom	Experimental	72 hours	Effect Concentration 50%	1 mg/l
ETHOXYLAT	68131-39-5	Fathead	Experimental	96 hours	Lethal	0.48 mg/l

ED C12-C15 ALCOHOLS		Minnow			Concentration 50%	
ETHOXYLATED C12-C15 ALCOHOLS	68131-39-5	Green algae	Experimental	72 hours	Effect Concentration 50%	0.85 mg/l
ETHOXYLATED C12-C15 ALCOHOLS	68131-39-5	Water flea	Experimental	48 hours	Effect Concentration 50%	0.14 mg/l
ETHOXYLATED C12-C15 ALCOHOLS	68131-39-5	Diatom	Experimental	72 hours	No obs Effect Conc	0.32 mg/l
ETHOXYLATED C12-C15 ALCOHOLS	68131-39-5	Green algae	Experimental	72 hours	No obs Effect Conc	0.5 mg/l
ETHOXYLATED C12-C15 ALCOHOLS	68131-39-5	Water flea	Experimental	21 days	No obs Effect Conc	0.083 mg/l
SODIUM METASILICATE	6834-92-0	Green algae	Estimated	72 hours	Effect Concentration 50%	>345.4 mg/l
SODIUM METASILICATE	6834-92-0	Zebra Fish	Experimental	96 hours	Lethal Concentration 50%	210 mg/l
SODIUM METASILICATE	6834-92-0	Green algae	Estimated	72 hours	Effect Concentration 10%	34.5 mg/l
DIPENTENE	Trade Secret	Fathead Minnow	Estimated	96 hours	Lethal Concentration 50%	0.7 mg/l
DIPENTENE	Trade Secret	Water flea	Estimated	48 hours	Effect Concentration 50%	0.421 mg/l
DIPENTENE	Trade Secret	Algae other	Experimental	96 hours	No obs Effect Conc	4.08 mg/l
DIPENTENE	Trade Secret	Water flea	Experimental	21 days	No obs Effect Conc	0.27 mg/l
BENZYL-C12-18-ALKYLDIMETHYL AMMONIUM CHLORIDES	68391-01-5	Bluegill	Estimated	96 hours	Lethal Concentration 50%	0.515 mg/l
BENZYL-C12-18-ALKYLDIMETHYL AMMONIUM CHLORIDES	68391-01-5	Green Algae	Estimated	72 hours	Effect Concentration 50%	0.049 mg/l
BENZYL-C12-18-ALKYLDIMETHYL AMMONIUM CHLORIDES	68391-01-5	Water flea	Estimated	48 hours	Effect Concentration 50%	0.0058 mg/l
BENZYL-C12-	68391-01-5	Fathead	Estimated	28 days	No obs Effect	0.0322 mg/l

18-ALKYLDIMETHYL AMMONIUM CHLORIDES		Minnow			Conc	
BENZYL-C12-18-ALKYLDIMETHYL AMMONIUM CHLORIDES	68391-01-5	Green Algae	Estimated	72 hours	Effect Concentration 10%	0.009 mg/l
BENZYL-C12-18-ALKYLDIMETHYL AMMONIUM CHLORIDES	68391-01-5	Water flea	Estimated	21 days	No obs Effect Conc	0.00415 mg/l
Quaternary ammonium compounds, C12-14-alkyl[(ethylphenyl)methyl]dimethyl, chlorides	85409-23-0		Data not available or insufficient for classification			
Terpenes and terpenoids, sweet orange-oil	Trade Secret		Data not available or insufficient for classification			
TERPENES AND TERPENOIDS, LIME-OIL	Trade Secret		Data not available or insufficient for classification			
LINALYL ALCOHOL	78-70-6	Green Algae	Experimental	72 hours	Effect Concentration 50%	>34 mg/l
LINALYL ALCOHOL	78-70-6	Rainbow Trout	Experimental	96 hours	Lethal Concentration 50%	27.8 mg/l
LINALYL ALCOHOL	78-70-6	Water flea	Experimental	48 hours	Effect Concentration 50%	20 mg/l
LINALYL ALCOHOL	78-70-6	Green Algae	Experimental	72 hours	No obs Effect Conc	5.6 mg/l
LINALYL ALCOHOL	78-70-6	Water flea	Experimental	21 days	No obs Effect Conc	9.5 mg/l
HEXYLENE GLYCOL	Trade Secret	Green Algae	Estimated	72 hours	Effect Concentration 50%	>100 mg/l
HEXYLENE GLYCOL	Trade Secret	Fathead Minnow	Experimental	96 hours	Lethal Concentration 50%	>100 mg/l
HEXYLENE GLYCOL	Trade Secret	Water flea	Experimental	48 hours	Effect Concentration 50%	>100 mg/l
HEXYLENE	Trade Secret	Green Algae	Experimental	72 hours	No obs Effect	>100 mg/l

GLYCOL					Conc	
HEXYLENE GLYCOL	Trade Secret	Water flea	Experimental	21 days	No obs Effect Conc	25 mg/l
2-(PHENYLMETHYLENE)OCTANAL	101-86-0	Green Algae	Estimated	72 hours	Effect Concentration 50%	>1.5 mg/l
2-(PHENYLMETHYLENE)OCTANAL	101-86-0	Ricefish	Estimated	96 hours	Lethal Concentration 50%	0.91 mg/l
2-(PHENYLMETHYLENE)OCTANAL	101-86-0	Water flea	Estimated	48 hours	Effect Concentration 50%	0.28 mg/l
2-(PHENYLMETHYLENE)OCTANAL	101-86-0	Green Algae	Estimated	72 hours	No obs Effect Conc	0.21 mg/l
2-(PHENYLMETHYLENE)OCTANAL	101-86-0	Water flea	Estimated	21 days	No obs Effect Conc	0.014 mg/l
6-Octenenitrile, 3,7-dimethyl-	Trade Secret	Golden Orfe	Experimental	96 hours	Lethal Concentration 50%	31.58 mg/l
6-Octenenitrile, 3,7-dimethyl-	Trade Secret	Water flea	Experimental	48 hours	Effect Concentration 50%	12.1 mg/l
6-Octenenitrile, 3,7-dimethyl-	Trade Secret	Green Algae	Unknown	72 hours	Effect Concentration 50%	14.5 mg/l
D-LIMONENE	5989-27-5	Fathead Minnow	Experimental	96 hours	Lethal Concentration 50%	0.702 mg/l
D-LIMONENE	5989-27-5	Green Algae	Experimental	72 hours	Effect Concentration 50%	0.32 mg/l
D-LIMONENE	5989-27-5	Water flea	Experimental	48 hours	Effect Concentration 50%	0.307 mg/l
D-LIMONENE	5989-27-5	Green Algae	Experimental	72 hours	Effect Concentration 10%	0.174 mg/l
D-LIMONENE	5989-27-5	Water flea	Experimental	21 days	No obs Effect Conc	0.08 mg/l
Fragrance	Trade Secret	Green Algae	Experimental	72 hours	Effect Concentration 50%	>0.854 mg/l
Fragrance	Trade Secret	Ricefish	Experimental	96 hours	Lethal Concentration 50%	0.95 mg/l
Fragrance	Trade Secret	Water flea	Experimental	48 hours	Effect Concentration 50%	0.3 mg/l

Fragrance	Trade Secret	Fathead Minnow	Experimental	36 days	No obs Effect Conc	0.068 mg/l
Fragrance	Trade Secret	Green Algae	Experimental	72 hours	No obs Effect Conc	0.201 mg/l
Fragrance	Trade Secret	Water flea	Experimental	21 days	No obs Effect Conc	0.111 mg/l

12.2. Persistence and degradability

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
DIETHYLENE GLYCOL BUTYL ETHER	112-34-5	Experimental Biodegradation	28 days	Biological Oxygen Demand	92 % BOD/ThBOD	OECD 301C - MITI (I)
TETRASODIUM ETHYLENEDIAMINETETRAACETATE	64-02-8	Estimated Biodegradation	28 days	Biological Oxygen Demand	0 % BOD/ThBOD	OECD 301D - Closed Bottle Test
ETHOXYLATED C12-C15 ALCOHOLS	68131-39-5	Experimental Biodegradation	28 days	Carbon dioxide evolution	64-79 % weight	Other methods
SODIUM METASILICATE	6834-92-0	Data not availbl-insufficient			N/A	
DIPENTENE	Trade Secret	Experimental Biodegradation	14 days	Biological Oxygen Demand	73 % BOD/ThBOD	OECD 301C - MITI (I)
BENZYL-C12-18-ALKYLDIMETHYL AMMONIUM CHLORIDES	68391-01-5	Estimated Biodegradation	28 days	Carbon dioxide evolution	95.5 % weight	OECD 301B - Mod. Sturm or CO2
Quaternary ammonium compounds, C12-14-alkyl[(ethylphenyl)methyl]dimethyl, chlorides	85409-23-0	Data not availbl-insufficient			N/A	
Terpenes and terpenoids, sweet orange-oil	Trade Secret	Data not availbl-insufficient			N/A	
TERPENES AND TERPENOIDS, LIME-OIL	Trade Secret	Data not availbl-insufficient			N/A	
LINALYL ALCOHOL	78-70-6	Experimental Biodegradation	28 days	Biological Oxygen Demand	80 % weight	OECD 301C - MITI (I)
HEXYLENE GLYCOL	Trade Secret	Estimated Photolysis		Photolytic half-life (in air)	2.1 days (t 1/2)	Other methods
HEXYLENE	Trade Secret	Experimental	15 days	Percent	75 % weight	Other methods

GLYCOL		Biodegradation		degraded		
2-(PHENYLMETHYLENE)OCTANAL	101-86-0	Estimated Photolysis		Photolytic half-life (in air)	7 hours (t 1/2)	Other methods
2-(PHENYLMETHYLENE)OCTANAL	101-86-0	Experimental Biodegradation	28 days	Biological Oxygen Demand	97 % BOD/ThBOD	OECD 301F - Manometric Respiro
6-Octenenitrile, 3,7-dimethyl-	Trade Secret	Experimental Biodegradation	28 days	Biological Oxygen Demand	69 % BOD/ThBOD	OECD 301F - Manometric Respiro
D-LIMONENE	5989-27-5	Experimental Biodegradation	14 days	Biological Oxygen Demand	98 % BOD/ThBOD	OECD 301C - MITI (I)
Fragrance	Trade Secret	Experimental Photolysis		Photolytic half-life (in air)	1.12 days (t 1/2)	Other methods
Fragrance	Trade Secret	Experimental Biodegradation	28 days	Carbon dioxide evolution	0 % weight	OECD 301B - Mod. Sturm or CO2

12.3. Bioaccumulative potential

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
DIETHYLENE GLYCOL BUTYL ETHER	112-34-5	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	1	Other methods
TETRASODIUM ETHYLENEDIAMINETETRAACETATE	64-02-8	Estimated BCF - Bluegill	28 days	Bioaccumulation Factor	1.8	Bioconcentration: Flow-through
ETHOXYLATED C12-C15 ALCOHOLS	68131-39-5	Experimental BCF-Carp	72 hours	Bioaccumulation Factor	310	Other methods
SODIUM METASILICATE	6834-92-0	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
DIPENTENE	Trade Secret	Estimated Bioconcentration		Bioaccumulation Factor	1500	Est: Bioconcentration factor
BENZYL-C12-18-ALKYLDIMETHYL AMMONIUM CHLORIDES	68391-01-5	Estimated BCF - Bluegill	60 days	Bioaccumulation Factor	33	Other methods
Quaternary ammonium compounds, C12-14-alkyl[(ethylphenyl)methyl]dimethyl, chlorides	85409-23-0	Data not available or insufficient for classification	N/A	N/A	N/A	N/A

Terpenes and terpenoids, sweet orange-oil	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
TERPENES AND TERPENOIDS, LIME-OIL	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
LINALYL ALCOHOL	78-70-6	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	2.97	Other methods
HEXYLENE GLYCOL	Trade Secret	Estimated Bioconcentration		Log of Octanol/H2O part. coeff	0.58	Est: Octanol-water part. coeff
2-(PHENYLMETHYLENE)OCTANAL	101-86-0	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	5.3	Other methods
6-Octenenitrile, 3,7-dimethyl-	Trade Secret	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	3.1	Other methods
D-LIMONENE	5989-27-5	Estimated Bioconcentration		Bioaccumulation Factor	2100	Est: Bioconcentration factor
Fragrance	Trade Secret	Experimental BCF - Bluegill	28 days	Bioaccumulation Factor	1584	OECD 305E-Bioaccum Fl-thru fis

12.4. Mobility in soil
Please contact manufacturer for more details

12.5 Other adverse effects
No information available

SECTION 13: Disposal considerations

13.1. Disposal methods

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

SECTION 14: Transport Information

Marine Transport (IMDG)

UN Number: None assigned.
Proper Shipping Name: None assigned.
Technical Name: None assigned.
Hazard Class/Division: None assigned.
Subsidiary Risk: None assigned.
Packing Group: None assigned.
Limited Quantity: None assigned.
Marine Pollutant: None assigned.

Marine Pollutant Technical Name: None assigned.
Other Dangerous Goods Descriptions:
None assigned.

Air Transport (IATA)

UN Number: None assigned.
Proper Shipping Name: None assigned.
Technical Name: None assigned.
Hazard Class/Division: None assigned.
Subsidiary Risk: None assigned.
Packing Group: None assigned.
Limited Quantity: None assigned.
Marine Pollutant: None assigned.
Marine Pollutant Technical Name: None assigned.
Other Dangerous Goods Descriptions:
None assigned.

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

SECTION 15: Regulatory information

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

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