



Safety Data Sheet

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Document Group:	28-9386-5	Version Number:	3.00
Issue Date:	12/17/15	Supersedes Date:	07/30/14

SECTION 1: Identification

1.1. Product identifier

3M™ Roll Coat Color 4877C Opaque YS Green

Product Identification Numbers

42-0023-8231-7, 75-0301-8662-3

1.2. Recommended use and restrictions on use

Recommended use

Roll Coat

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Traffic Safety and Security Division
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification

Flammable Liquid: Category 3.
Serious Eye Damage/Irritation: Category 2A.
Skin Corrosion/Irritation: Category 2.
Skin Sensitizer: Category 1.
Carcinogenicity: Category 1A.
Specific Target Organ Toxicity (single exposure): Category 1.
Specific Target Organ Toxicity (central nervous system): Category 3.
Specific Target Organ Toxicity (repeated exposure): Category 1.

2.2. Label elements

Signal word

Danger

Symbols

Flame | Exclamation mark | Health Hazard |

Pictograms



Hazard Statements

Flammable liquid and vapor.

Causes serious eye irritation.

Causes skin irritation.

May cause an allergic skin reaction.

May cause drowsiness or dizziness.

May cause cancer.

Causes damage to organs:
sensory organs |

Causes damage to organs through prolonged or repeated exposure:
nervous system |

May cause damage to organs through prolonged or repeated exposure:
sensory organs |

Precautionary Statements

Prevention:

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Ground/bond container and receiving equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Keep container tightly closed.

Use explosion-proof electrical/ventilating/lighting equipment.

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

Use only outdoors or in a well-ventilated area.

Wear protective gloves and eye/face protection.

Do not eat, drink or smoke when using this product.

Wash thoroughly after handling.

Contaminated work clothing must not be allowed out of the workplace.

Response:

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

If skin irritation or rash occurs: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

IF exposed or concerned: Get medical advice/attention.

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

Storage:

Store in a well-ventilated place. Keep container tightly closed.
Keep cool.
Store locked up.

Disposal:

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

2.3. Hazards not otherwise classified

None.

17% of the mixture consists of ingredients of unknown acute oral toxicity.

23% of the mixture consists of ingredients of unknown acute dermal toxicity.

35% of the mixture consists of ingredients of unknown acute inhalation toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
1-Methoxy-2-propyl acetate	108-65-6	10 - 30
Cyclohexanone	108-94-1	10 - 30 Trade Secret *
Oligomer 17171	Trade Secret*	5 - 20
Heavy aromatic solvent naphtha (Petroleum)	64742-94-5	3 - 15 Trade Secret *
Vinyl polymer (NJ TSR # 04499600-5238P)	Trade Secret*	5 - 15
Propanol, 1(or 2)-(2-methoxymethylethoxy)-, acetate	88917-22-0	3 - 10
Titanium dioxide	13463-67-7	3 - 10 Trade Secret *
Alkyl amine polymer (New Jersey Trade Secret Registry # 04499600-5252P)	Trade Secret*	3 - 7
C.I. Pigment green 7	1328-53-6	1 - 5
Light aromatic solvent naphtha (Petroleum)	64742-95-6	1 - 5 Trade Secret *
Nickel, 5,5'-azobis-2,4,6(1H, 3H, 5H)-pyrimidinetrione complexes	68511-62-6	1 - 5 Trade Secret *
Xylene	1330-20-7	1 - 5 Trade Secret *
(3',4'-Epoxy cyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	2386-87-0	0.1 - 1.0 Trade Secret *
Diethylaminoethanol	100-37-8	0.1 - 1.0 Trade Secret *
2,3-Epoxypropyl neodecanoate	26761-45-5	< 0.4 Trade Secret *
Ethylbenzene	100-41-4	< 0.4 Trade Secret *
Formaldehyde	50-00-0	< 0.05 Trade Secret *

NJTS or NJTSRN: New Jersey Trade Secret Registry Number.

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

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

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

<u>Substance</u>	<u>Condition</u>
Hydrocarbons	During Combustion
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Hydrogen Chloride	During Combustion
Oxides of Nitrogen	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.

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 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. An appropriate aqueous film forming foam (AFFF) is recommended. 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. Seal the container. Dispose of collected material as soon as possible.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

For industrial or professional use only. 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/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. Use personal protective equipment (gloves, respirators, etc.) 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 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
Diethylaminoethanol	100-37-8	ACGIH	TWA:2 ppm	Skin Notation
Diethylaminoethanol	100-37-8	OSHA	TWA:50 mg/m ³ (10 ppm)	Skin Notation
Ethylbenzene	100-41-4	ACGIH	TWA:20 ppm	A3: Confirmed animal carcin.
Ethylbenzene	100-41-4	CMRG	TWA:25 ppm;STEL:75 ppm	
Ethylbenzene	100-41-4	OSHA	TWA:435 mg/m ³ (100 ppm)	
1-Methoxy-2-propyl acetate	108-65-6	AIHA	TWA:50 ppm	
1-Methoxy-2-propyl acetate	108-65-6	CMRG	TWA:10 mg/m ³ ;STEL:90 ppm	
Cyclohexanone	108-94-1	ACGIH	TWA:20 ppm;STEL:50 ppm	A3: Confirmed animal carcin., Skin Notation
Cyclohexanone	108-94-1	OSHA	TWA:200 mg/m ³ (50 ppm)	
COPPER COMPOUNDS	1328-53-6	ACGIH	TWA(as Cu dust or mist):1 mg/m ³ ;TWA(as Cu, fume):0.2 mg/m ³	
Xylene	1330-20-7	ACGIH	TWA:100 ppm;STEL:150 ppm	A4: Not class. as human carcin
Xylene	1330-20-7	CMRG	TWA:50 ppm;STEL:75 ppm	
Xylene	1330-20-7	OSHA	TWA:435 mg/m ³ (100 ppm)	
Titanium dioxide	13463-67-7	ACGIH	TWA:10 mg/m ³	A4: Not class. as human carcin
Titanium dioxide	13463-67-7	CMRG	TWA(as respirable dust):5 mg/m ³	
Titanium dioxide	13463-67-7	OSHA	TWA(as total dust):15 mg/m ³	
Formaldehyde	50-00-0	ACGIH	CEIL:0.3 ppm	A2: Suspected human

				carcin., Dermal/Respiratory Sensitizer
Formaldehyde	50-00-0	CMRG	TWA:0.5 ppm	
Formaldehyde	50-00-0	OSHA	TWA:0.75 ppm;STEL:2 ppm	29 CFR 1910.1048
Heavy aromatic solvent naphtha (Petroleum)	64742-94-5	CMRG	TWA:17 ppm(100 mg/m3)	
Kerosine (petroleum)	64742-94-5	ACGIH	TWA(as total hydrocarbon vapor, non-aerosol):200 mg/m3	A3: Confirmed animal carcin., Skin Notation
Naphtha	64742-94-5	OSHA	TWA:400 mg/m3(100 ppm)	
Light aromatic solvent naphtha (Petroleum)	64742-95-6	CMRG	TWA:50 ppm(245 mg/m3)	
NICKEL, INSOLUBLE COMPOUNDS	68511-62-6	OSHA	TWA(as Ni):1 mg/m3	
Propanol, 1(or 2)-(2- methoxymethylethoxy)-, acetate	88917-22-0	Manufacturer determined	TWA:100 ppm;STEL:150 ppm	Skin Notation

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

OSHA : United States Department of Labor - Occupational Safety and Health Administration

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.

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 formaldehyde and particulates
 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

General Physical Form:	Liquid
Specific Physical Form:	Liquid
Odor, Color, Grade:	Solvent odor, yellow, liquid
Odor threshold	<i>No Data Available</i>
pH	<i>Not Applicable</i>
Melting point	<i>Not Applicable</i>
Boiling Point	>=243 °F
Flash Point	96 °F [<i>Test Method:</i> Tagliabue Closed Cup]
Evaporation rate	0.23 - 1 [<i>Ref Std:</i> BUOAC=1]
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	0.9 %
Flammable Limits(UEL)	11.7 %
Vapor Pressure	<=5.1 mmHg [@ 68 °F]
Vapor Density	2.6 - 4.8 [<i>Ref Std:</i> AIR=1]
Density	0.87 - 0.9 g/ml [@ 20 °C]
Specific Gravity	0.87 - 0.9 [<i>Ref Std:</i> WATER=1]
Solubility in Water	Negligible
Solubility- non-water	<i>No Data Available</i>
Partition coefficient: n-octanol/ water	<i>No Data Available</i>
Autoignition temperature	670 - 870 °F
Decomposition temperature	<i>No Data Available</i>
Viscosity	2,000 - 3,000 centipoise
Volatile Organic Compounds	600 - 700 g/l
Percent volatile	60.00 % weight

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

10.5. Incompatible materials

Strong oxidizing agents

10.6. Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
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.

May cause additional health effects (see below).

Skin Contact:

May be harmful in contact with skin.

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

May cause additional health effects (see below).

Eye Contact:

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

Ingestion:

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

May cause additional health effects (see below).

Additional Health Effects:

Single exposure may cause target organ effects:

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

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

Prolonged or repeated exposure may cause target organ effects:

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

Neurological Effects: Signs/symptoms may include personality changes, lack of coordination, sensory loss, tingling or numbness of the extremities, weakness, tremors, and/or changes in blood pressure and heart rate.

Carcinogenicity:

Contains a chemical or chemicals which can cause cancer.

Ingredient	CAS No.	Class Description	Regulation
NI CMPDS NOT ALLOYS	68511-62-6	Known human carcinogen	National Toxicology Program Carcinogens
NICKEL COMPOUNDS	68511-62-6	Grp. 1: Carcinogenic to humans	International Agency for Research on Cancer
Ethylbenzene	100-41-4	Grp. 2B: Possible human carc.	International Agency for Research on Cancer
Formaldehyde	50-00-0	Grp. 1: Carcinogenic to humans	International Agency for Research on Cancer
Formaldehyde	50-00-0	Known human carcinogen	National Toxicology Program Carcinogens
Formaldehyde	50-00-0	Cancer hazard	OSHA Carcinogens
Titanium dioxide	13463-67-7	Grp. 2B: Possible human carc.	International Agency for Research on 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 2,000 - 5,000 mg/kg
Overall product	Inhalation-Vapor(4 hr)		No data available; calculated ATE 20 - 50 mg/l
Overall product	Ingestion		No data available; calculated ATE > 5,000 mg/kg
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 (NJ TSR # 04499600-5238P)	Dermal	Rabbit	LD50 > 8,000 mg/kg
Vinyl polymer (NJ TSR # 04499600-5238P)	Ingestion	Rat	LD50 > 8,000 mg/kg
Heavy aromatic solvent naphtha (Petroleum)	Dermal	Rabbit	LD50 > 2,000 mg/kg
Heavy aromatic solvent naphtha (Petroleum)	Ingestion	Rat	LD50 > 5,000 mg/kg
Titanium dioxide	Dermal	Rabbit	LD50 > 10,000 mg/kg
Titanium dioxide	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 6.82 mg/l
Titanium dioxide	Ingestion	Rat	LD50 > 10,000 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
Light aromatic solvent naphtha (Petroleum)	Dermal	Rabbit	LD50 > 2,000 mg/kg
Light aromatic solvent naphtha (Petroleum)	Inhalation-Vapor (4 hours)	Rat	LC50 > 5.2 mg/l
Light aromatic solvent naphtha (Petroleum)	Ingestion	Rat	LD50 > 5,000 mg/kg
C.I. Pigment green 7	Ingestion	Rat	LD50 > 5,000 mg/kg
Nickel, 5,5'-azobis-2,4,6(1H, 3H, 5H)-pyrimidinetrione complexes	Ingestion	Rat	LD50 5,000 mg/kg
Xylene	Dermal	Rabbit	LD50 > 4,200 mg/kg
Xylene	Inhalation-Vapor (4 hours)	Rat	LC50 29 mg/l
Xylene	Ingestion	Rat	LD50 3,523 mg/kg
(3',4'-Epoxy cyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Dermal	Rabbit	LD50 > 23,400 mg/kg
(3',4'-Epoxy cyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Ingestion	Rat	LD50 5,000 mg/kg
Diethylaminoethanol	Dermal	Rabbit	LD50 880 mg/kg

Diethylaminoethanol	Inhalation-Vapor (4 hours)	Rat	LC50 4.5 mg/l
Diethylaminoethanol	Ingestion	Rat	LD50 1,300 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
2,3-Epoxypropyl neodecanoate	Dermal	Rat	LD50 > 2,000 mg/kg
2,3-Epoxypropyl neodecanoate	Ingestion	Rat	LD50 > 2,000 mg/kg
Formaldehyde	Dermal	Rabbit	LD50 270 mg/kg
Formaldehyde	Inhalation-Gas (4 hours)	Rat	LC50 470 ppm
Formaldehyde	Ingestion	Rat	LD50 800 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
1-Methoxy-2-propyl acetate	Rabbit	No significant irritation
Cyclohexanone	Rabbit	Irritant
Vinyl polymer (NJ TSR # 04499600-5238P)	Professional judgement	No significant irritation
Heavy aromatic solvent naphtha (Petroleum)	Rabbit	Irritant
Titanium dioxide	Rabbit	No significant irritation
Propanol, 1(or 2)-(2-methoxymethylethoxy)-, acetate	Rabbit	No significant irritation
Light aromatic solvent naphtha (Petroleum)	Rabbit	Irritant
C.I. Pigment green 7	Rabbit	No significant irritation
Nickel, 5,5'-azobis-2,4,6(1H, 3H, 5H)-pyrimidinetrione complexes	Rabbit	No significant irritation
Xylene	Rabbit	Mild irritant
(3',4'-Epoxy cyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Rabbit	Minimal irritation
Diethylaminoethanol	Rabbit	Corrosive
Ethylbenzene	Rabbit	Mild irritant
2,3-Epoxypropyl neodecanoate	Rabbit	No significant irritation
Formaldehyde	official classification	Corrosive

Serious Eye Damage/Irritation

Name	Species	Value
1-Methoxy-2-propyl acetate	Rabbit	Mild irritant
Cyclohexanone	Rabbit	Severe irritant
Vinyl polymer (NJ TSR # 04499600-5238P)	Professional judgement	No significant irritation
Heavy aromatic solvent naphtha (Petroleum)	Rabbit	Mild irritant
Titanium dioxide	Rabbit	No significant irritation
Propanol, 1(or 2)-(2-methoxymethylethoxy)-, acetate	Rabbit	No significant irritation
Light aromatic solvent naphtha (Petroleum)	Rabbit	Mild irritant
C.I. Pigment green 7	Rabbit	No significant irritation
Nickel, 5,5'-azobis-2,4,6(1H, 3H, 5H)-pyrimidinetrione complexes	Rabbit	No significant irritation
Xylene	Rabbit	Mild irritant
(3',4'-Epoxy cyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Rabbit	Mild irritant
Diethylaminoethanol	Rabbit	Corrosive
Ethylbenzene	Rabbit	Moderate irritant
2,3-Epoxypropyl neodecanoate	Rabbit	No significant irritation
Formaldehyde	official classification	Corrosive

Skin Sensitization

Name	Species	Value
1-Methoxy-2-propyl acetate	Guinea pig	Not sensitizing
Cyclohexanone	Guinea pig	Not sensitizing
Heavy aromatic solvent naphtha (Petroleum)	Guinea pig	Not sensitizing
Titanium dioxide	Human and animal	Not sensitizing
Propanol, 1(or 2)-(2-methoxymethylethoxy)-, acetate	Guinea pig	Not sensitizing
Light aromatic solvent naphtha (Petroleum)	Guinea pig	Not sensitizing
C.I. Pigment green 7	Guinea pig	Not sensitizing
Nickel, 5,5'-azobis-2,4,6(1H, 3H, 5H)-pyrimidinetrione complexes	similar compounds	Sensitizing
(3',4'-Epoxy cyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Guinea pig	Sensitizing
Diethylaminoethanol	Guinea pig	Not sensitizing
Ethylbenzene	Human	Not sensitizing
2,3-Epoxypropyl neodecanoate	Guinea pig	Sensitizing
Formaldehyde	Guinea pig	Sensitizing

Respiratory Sensitization

Name	Species	Value
Formaldehyde	Human	Some positive data exist, but the data are not sufficient for classification

Germ Cell Mutagenicity

Name	Route	Value
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
Titanium dioxide	In Vitro	Not mutagenic
Titanium dioxide	In vivo	Not mutagenic
Propanol, 1(or 2)-(2-methoxymethylethoxy)-, acetate	In Vitro	Not mutagenic
Propanol, 1(or 2)-(2-methoxymethylethoxy)-, acetate	In vivo	Not mutagenic
C.I. Pigment green 7	In Vitro	Some positive data exist, but the data are not sufficient for classification
Xylene	In Vitro	Not mutagenic
Xylene	In vivo	Not mutagenic
(3',4'-Epoxy cyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	In vivo	Not mutagenic
(3',4'-Epoxy cyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	In Vitro	Some positive data exist, but the data are not sufficient for classification
Diethylaminoethanol	In Vitro	Not mutagenic
Diethylaminoethanol	In vivo	Not mutagenic
Ethylbenzene	In vivo	Not mutagenic
Ethylbenzene	In Vitro	Some positive data exist, but the data are not sufficient for classification
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
Formaldehyde	In Vitro	Some positive data exist, but the data are not sufficient for classification

Formaldehyde	In vivo	Mutagenic
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Carcinogenicity

Name	Route	Species	Value
Cyclohexanone	Ingestion	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
Heavy aromatic solvent naphtha (Petroleum)	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Titanium dioxide	Ingestion	Multiple animal species	Not carcinogenic
Titanium dioxide	Inhalation	Rat	Carcinogenic
Light aromatic solvent naphtha (Petroleum)	Inhalation	Mouse	Some positive data exist, but the data are not sufficient for classification
Nickel, 5,5'-azobis-2,4,6(1H, 3H, 5H)-pyrimidinetrione complexes	Not Specified	similar compounds	Carcinogenic
Xylene	Dermal	Rat	Not carcinogenic
Xylene	Ingestion	Multiple animal species	Not carcinogenic
Xylene	Inhalation	Human	Some positive data exist, but the data are not sufficient for classification
(3',4'-Epoxy cyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Dermal	Mouse	Not carcinogenic
Ethylbenzene	Inhalation	Multiple animal species	Carcinogenic
Formaldehyde	Not Specified	Human and animal	Carcinogenic

Reproductive Toxicity**Reproductive and/or Developmental Effects**

Name	Route	Value	Species	Test Result	Exposure Duration
1-Methoxy-2-propyl acetate	Ingestion	Not toxic to female reproduction	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
1-Methoxy-2-propyl acetate	Ingestion	Not toxic to male reproduction	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
1-Methoxy-2-propyl acetate	Ingestion	Not toxic to development	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
1-Methoxy-2-propyl acetate	Inhalation	Not toxic to development	Rat	NOAEL 21.6 mg/l	during organogenesis
Cyclohexanone	Inhalation	Not toxic to female reproduction	Rat	NOAEL 4 mg/l	2 generation
Cyclohexanone	Inhalation	Some positive male reproductive data exist, but the data are not sufficient for classification	Rat	NOAEL 2 mg/l	2 generation
Cyclohexanone	Ingestion	Some positive developmental data exist, but the data are not sufficient for classification	Mouse	LOAEL 1,100 mg/kg/day	during organogenesis
Cyclohexanone	Inhalation	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 2 mg/l	2 generation
Light aromatic solvent naphtha (Petroleum)	Inhalation	Not toxic to female reproduction	Rat	NOAEL 1,500 ppm	2 generation
Light aromatic solvent naphtha (Petroleum)	Inhalation	Not toxic to male reproduction	Rat	NOAEL 1,500 ppm	2 generation
Light aromatic solvent naphtha (Petroleum)	Inhalation	Some positive developmental data exist, but the data are not sufficient for	Rat	NOAEL 500 ppm	2 generation

		classification			
Xylene	Inhalation	Some positive female reproductive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
Xylene	Ingestion	Some positive developmental data exist, but the data are not sufficient for classification	Mouse	NOAEL Not available	during organogenesis
Xylene	Inhalation	Some positive developmental data exist, but the data are not sufficient for classification	Multiple animal species	NOAEL Not available	during gestation
(3',4'-Epoxy cyclohexylmethyl) 3,4-epoxycyclohexanecarboxylate	Ingestion	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 125 mg/kg/day	during gestation
Diethylaminoethanol	Inhalation	Not toxic to development	Rat	NOAEL 0.49 mg/l	during organogenesis
Diethylaminoethanol	Ingestion	Some positive male reproductive data exist, but the data are not sufficient for classification	Rat	LOAEL 11 mg/kg/day	2 years
Diethylaminoethanol	Ingestion	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 100 mg/kg/day	during gestation
Ethylbenzene	Inhalation	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 4.3 mg/l	prematuring & during gestation
Formaldehyde	Ingestion	Some positive male reproductive data exist, but the data are not sufficient for classification	Rat	NOAEL 100 mg/kg	not applicable
Formaldehyde	Inhalation	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 10 ppm	during gestation

Lactation

Name	Route	Species	Value
Xylene	Ingestion	Mouse	Does not cause effects on or via lactation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
1-Methoxy-2-propyl acetate	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		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 classification	Human	NOAEL Not available	
Cyclohexanone	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgment	NOAEL Not available	
Heavy aromatic solvent naphtha (Petroleum)	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
Heavy aromatic solvent naphtha (Petroleum)	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Professional judgment	NOAEL Not available	
Heavy aromatic solvent naphtha (Petroleum)	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgment	NOAEL Not available	
Light aromatic solvent	Inhalation	central nervous	May cause drowsiness or	Professional	NOAEL Not	

naphtha (Petroleum)		system depression	dizziness	nal judgement	available	
Light aromatic solvent naphtha (Petroleum)	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Professional judgement	NOAEL Not available	
Light aromatic solvent naphtha (Petroleum)	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
Xylene	Inhalation	auditory system	Causes damage to organs	Rat	LOAEL 6.3 mg/l	8 hours
Xylene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Xylene	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Xylene	Inhalation	eyes	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 3.5 mg/l	not available
Xylene	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Multiple animal species	NOAEL Not available	
Xylene	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Multiple animal species	NOAEL Not available	
Xylene	Ingestion	eyes	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 250 mg/kg	not applicable
Diethylaminoethanol	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Diethylaminoethanol	Inhalation	respiratory irritation	May cause respiratory irritation	Rat	NOAEL 0.05 mg/l	14 weeks
Ethylbenzene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Ethylbenzene	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human and animal	NOAEL Not available	
Ethylbenzene	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
Formaldehyde	Inhalation	respiratory system	Causes damage to organs	Rat	LOAEL 128 ppm	6 hours
Formaldehyde	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
1-Methoxy-2-propyl acetate	Inhalation	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 16.2 mg/l	9 days
1-Methoxy-2-propyl acetate	Inhalation	olfactory system	Some positive data exist, but the data are not sufficient for classification	Mouse	LOAEL 1.62 mg/l	9 days
1-Methoxy-2-propyl acetate	Inhalation	blood	All data are negative	Multiple animal species	NOAEL 16.2 mg/l	9 days
1-Methoxy-2-propyl acetate	Ingestion	endocrine system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1,000 mg/kg/day	44 days
Cyclohexanone	Inhalation	liver kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rabbit	NOAEL 0.76 mg/l	50 days

Cyclohexanone	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 4,800 mg/kg/day	90 days
Titanium dioxide	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 0.01 mg/l	2 years
Titanium dioxide	Inhalation	pulmonary fibrosis	All data are negative	Human	NOAEL Not available	occupational exposure
Propanol, 1(or 2)-(2-methoxymethylethoxy)-, acetate	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1,000 mg/kg/day	4 weeks
Propanol, 1(or 2)-(2-methoxymethylethoxy)-, acetate	Ingestion	heart endocrine system hematopoietic system kidney and/or bladder	All data are negative	Rat	NOAEL 1,000 mg/kg/day	4 weeks
Xylene	Inhalation	nervous system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.4 mg/l	4 weeks
Xylene	Inhalation	auditory system	May cause damage to organs through prolonged or repeated exposure	Rat	LOAEL 7.8 mg/l	5 days
Xylene	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Multiple animal species	NOAEL Not available	
Xylene	Inhalation	heart endocrine system hematopoietic system muscles kidney and/or bladder respiratory system	All data are negative	Multiple animal species	NOAEL 3.5 mg/l	13 weeks
Xylene	Ingestion	auditory system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 900 mg/kg/day	2 weeks
Xylene	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1,500 mg/kg/day	90 days
Xylene	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Multiple animal species	NOAEL Not available	
Xylene	Ingestion	heart skin endocrine system bone, teeth, nails, and/or hair hematopoietic system immune system nervous system respiratory system	All data are negative	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
(3',4'-Epoxyoctahydro-2H-chromene-2-carboxylic acid)	Ingestion	olfactory system	May cause damage to organs through prolonged or repeated exposure	Rat	NOAEL 5 mg/kg/day	90 days
(3',4'-Epoxyoctahydro-2H-chromene-2-carboxylic acid)	Ingestion	liver kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 500 mg/kg/day	90 days
(3',4'-Epoxyoctahydro-2H-chromene-2-carboxylic acid)	Ingestion	hematopoietic system	All data are negative	Rat	NOAEL 500 mg/kg/day	90 days
(3',4'-Epoxyoctahydro-2H-chromene-2-carboxylic acid)	Ingestion	endocrine system respiratory system	All data are negative	Rat	NOAEL 1,113 mg/kg/day	14 days

Diethylaminoethanol	Inhalation	liver kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 0.36 mg/l	14 weeks
Diethylaminoethanol	Inhalation	heart endocrine system bone, teeth, nails, and/or hair hematopoietic system immune system nervous system respiratory system	All data are negative	Rat	NOAEL 0.36 mg/l	14 weeks
Diethylaminoethanol	Ingestion	nervous system	Some positive data exist, but the data are not sufficient for classification	Dog	NOAEL 20 mg/kg/day	1 years
Diethylaminoethanol	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 400 mg/kg/day	6 months
Diethylaminoethanol	Ingestion	heart endocrine system hematopoietic system liver respiratory system	All data are negative	Rat	NOAEL 400 mg/kg/day	2 years
Diethylaminoethanol	Ocular	eyes	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 0.36 mg/l	14 weeks
Ethylbenzene	Inhalation	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1.1 mg/l	2 years
Ethylbenzene	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 1.1 mg/l	103 weeks
Ethylbenzene	Inhalation	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 3.4 mg/l	28 days
Ethylbenzene	Inhalation	auditory system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 2.4 mg/l	5 days
Ethylbenzene	Inhalation	endocrine system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 3.3 mg/l	103 weeks
Ethylbenzene	Inhalation	bone, teeth, nails, and/or hair muscles	All data are negative	Multiple animal species	NOAEL 4.2 mg/l	90 days
Ethylbenzene	Inhalation	heart immune system respiratory system	All data are negative	Multiple animal species	NOAEL 3.3 mg/l	2 years
Ethylbenzene	Ingestion	liver kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 680 mg/kg/day	6 months
2,3-Epoxypropyl neodecanoate	Ingestion	hematopoietic system liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 400 mg/kg/day	5 weeks
2,3-Epoxypropyl neodecanoate	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 40 mg/kg/day	5 weeks
Formaldehyde	Dermal	respiratory system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 80 mg/kg/day	60 weeks
Formaldehyde	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	NOAEL 0.3 ppm	28 months
Formaldehyde	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 20 ppm	13 weeks
Formaldehyde	Inhalation	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 15 ppm	3 weeks
Formaldehyde	Inhalation	nervous system	Some positive data exist, but the data are not sufficient for	Mouse	NOAEL 10 ppm	13 weeks

			classification			
Formaldehyde	Inhalation	endocrine system immune system muscles kidney and/or bladder	All data are negative	Rat	NOAEL 15 ppm	28 months
Formaldehyde	Inhalation	eyes vascular system	All data are negative	Rat	NOAEL 14.3 ppm	2 years
Formaldehyde	Inhalation	heart	All data are negative	Mouse	NOAEL 14.3 ppm	2 years
Formaldehyde	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 300 mg/kg/day	2 years
Formaldehyde	Ingestion	immune system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 20 mg/kg/day	4 weeks
Formaldehyde	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 15 mg/kg/day	24 months
Formaldehyde	Ingestion	nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 109 mg/kg/day	2 years
Formaldehyde	Ingestion	heart endocrine system hematopoietic system respiratory system vascular system	All data are negative	Rat	NOAEL 300 mg/kg/day	2 years
Formaldehyde	Ingestion	skin muscles eyes	All data are negative	Rat	NOAEL 109 mg/kg/day	2 years

Aspiration Hazard

Name	Value
Heavy aromatic solvent naphtha (Petroleum)	Aspiration hazard
Light aromatic solvent naphtha (Petroleum)	Aspiration hazard
Xylene	Aspiration hazard
Ethylbenzene	Aspiration hazard

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

SECTION 12: Ecological information**Ecotoxicological information**

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

Chemical fate information

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

SECTION 13: Disposal considerations**13.1. Disposal methods**

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

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

EPA Hazardous Waste Number (RCRA): D001 (Ignitable)

SECTION 14: Transport Information

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. US Federal Regulations

Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - Yes Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - Yes

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

<u>Ingredient</u>	<u>C.A.S. No</u>	<u>% by Wt</u>
Nickel, 5,5'-azobis-2,4,6(1H, 3H, 5H)-pyrimidinetrione complexes (NICKEL COMPOUNDS)	68511-62-6	1 - 5
Xylene	1330-20-7	Trade Secret 1 - 5
Ethylbenzene	100-41-4	Trade Secret < 0.4

15.2. State Regulations

Contact 3M for more information.

15.3. Chemical Inventories

The components of this product are in compliance with the chemical notification requirements of TSCA.

Contact 3M for more information.

15.4. International Regulations

Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification

Health: 2 **Flammability:** 3 **Instability:** 0 **Special Hazards:** None

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

Document Group: 28-9386-5

Version Number: 3.00

Issue Date: 12/17/15

Supersedes Date: 07/30/14

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