



## Safety Data Sheet

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|------------------------|-----------|-------------------------|----------|
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### SECTION 1: Identification

#### 1.1. Product identifier

3M™ Process Color 882N Traffic Sign Red

#### Product Identification Numbers

42-0021-9012-4, 75-0301-3625-5

#### 1.2. Recommended use and restrictions on use

##### Recommended use

Ink

#### 1.3. Supplier's details

|                      |   |
|----------------------|---|
| <b>MANUFACTURER:</b> | 3M                                      |
| <b>DIVISION:</b>     | Transportation Safety Division          |
| <b>ADDRESS:</b>      | 3M Center, St. Paul, MN 55144-1000, USA |
| <b>Telephone:</b>    | 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.  
Reproductive Toxicity: Category 1B.  
Carcinogenicity: Category 1A.  
Specific Target Organ Toxicity (single exposure): Category 3.

#### 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 damage fertility or the unborn child.

May cause cancer.

**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.

Avoid breathing dust/fume/gas/mist/vapors/spray.

Use only outdoors or in a well-ventilated area.

Wear protective gloves and eye/face protection.

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

38% of the mixture consists of ingredients of unknown acute inhalation toxicity.

## SECTION 3: Composition/information on ingredients

| Ingredient   | C.A.S. No.    | % by Wt                |
|--|---------------|------------------------|
| Heavy aromatic solvent naphtha (Petroleum)                           | 64742-94-5    | 15 - 40 Trade Secret * |
| Acrylic polymers   | Trade Secret* | 15 - 40                |
| Pine oil   | 8002-09-3     | 7 - 13 Trade Secret *  |
| 1-Methoxy-2-propyl acetate   | 108-65-6      | 5 - 10                 |
| Cyclohexanone  | 108-94-1      | 5 - 10 Trade Secret *  |
| Light aromatic solvent naphtha (Petroleum)                           | 64742-95-6    | 3 - 7 Trade Secret *   |
| 1,2,4-Trimethylbenzene   | 95-63-6       | 1 - 5 Trade Secret *   |
| Organic pigment (NJ TSR # 04499600-5245P)                            | Trade Secret* | 1 - 5                  |
| Vinyl polymer (New Jersey Trade Secret Registry # 04499600-5238P)    | Trade Secret* | 1 - 5                  |
| 2,6-Dimethyl-4-heptanone   | 108-83-8      | < 0.6 Trade Secret *   |
| 3-Dodecyl-1-(2,2,6,6-tetramethyl-4-piperidiny) -2,5-pyrrolidinedione | 79720-19-7    | < 0.6                  |
| N-Butyl Methacrylate   | 97-88-1       | < 0.4                  |
| 2,3-Epoxypropyl neodecanoate   | 26761-45-5    | < 0.3 Trade Secret *   |
| Ethylbenzene   | 100-41-4      | < 0.3 Trade Secret *   |
| Naphthalene  | 91-20-3       | < 0.3 Trade Secret *   |
| Naphthenic Acid  | 1338-24-5     | < 0.3 Trade Secret *   |
| Oils, orange   | 8008-57-9     | < 0.3 Trade Secret *   |
| Toluene  | 108-88-3      | < 0.3 Trade Secret *   |
| Cumene   | 98-82-8       | < 0.2 Trade Secret *   |
| D-Limonene   | 5989-27-5     | < 0.2 Trade Secret *   |
| Glycolic acid, butyl ester   | 7397-62-8     | < 0.2 Trade Secret *   |
| Nickel salts of naphthenic acids                                     | 61788-71-4    | < 0.2 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. Remove contact lenses if easy to do. Continue rinsing. Get medical attention.

**If Swallowed:**

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

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

See Section 11.1. Information on toxicological effects.

**4.3. Indication of any immediate medical attention and special treatment required**

Not applicable

**SECTION 5: Fire-fighting measures****5.1. Suitable extinguishing media**

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

**5.2. Special hazards arising from the substance or mixture**

Closed containers exposed to heat from fire may build pressure and explode.

**Hazardous Decomposition or By-Products****Substance**

Hydrocarbons  
Carbon monoxide  
Carbon dioxide  
Hydrogen Chloride

**Condition**

During Combustion  
During Combustion  
During Combustion  
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. 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 in accordance with applicable local/regional/national/international regulations.

**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                |
|--|------------|--------|--------------------------|------------------------------------|
| Ethylbenzene                               | 100-41-4   | ACGIH  | TWA:20 ppm               | A3: Confirmed animal carcin.       |
| Ethylbenzene                               | 100-41-4   | OSHA   | TWA:435 mg/m3(100 ppm)   |                                    |
| 1-Methoxy-2-propyl acetate                 | 108-65-6   | AIHA   | TWA:50 ppm               |                                    |
| 2,6-Dimethyl-4-heptanone                   | 108-83-8   | ACGIH  | TWA:25 ppm               |                                    |
| 2,6-Dimethyl-4-heptanone                   | 108-83-8   | OSHA   | TWA:290 mg/m3(50 ppm)    |                                    |
| Toluene                                    | 108-88-3   | ACGIH  | TWA:20 ppm               | A4: Not class. as human carcin     |
| Toluene                                    | 108-88-3   | OSHA   | TWA:200 ppm;CEIL:300 ppm |                                    |
| Cyclohexanone                              | 108-94-1   | ACGIH  | TWA:20 ppm;STEL:50 ppm   | A3: Confirmed animal carcin., SKIN |
| Cyclohexanone                              | 108-94-1   | OSHA   | TWA:200 mg/m3(50 ppm)    |                                    |
| Cyclohexene, 1-methyl-4-(1-methylethenyl)- | 5989-27-5  | AIHA   | TWA:165.5 mg/m3(30 ppm)  |                                    |
| NICKEL, SOLUBLE COMPOUNDS                  | 61788-71-4 | OSHA   | TWA(as Ni):1 mg/m3       |                                    |
| Naphtha                                    | 64742-94-5 | OSHA   | TWA:400 mg/m3(100 ppm)   |                                    |
| Naphtha                                    | 64742-95-6 | OSHA   | TWA:400 mg/m3(100 ppm)   |                                    |
| Naphthalene                                | 91-20-3    | ACGIH  | TWA:10 ppm               | A3: Confirmed animal carcin., SKIN |
| Naphthalene                                | 91-20-3    | OSHA   | TWA:50 mg/m3(10 ppm)     |                                    |
| Benzene, trimethyl-                        | 95-63-6    | ACGIH  | TWA:25 ppm               |                                    |
| Cumene                                     | 98-82-8    | ACGIH  | TWA:50 ppm               |                                    |
| Cumene                                     | 98-82-8    | OSHA   | TWA:245 mg/m3(50 ppm)    | SKIN                               |

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 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

|                                  |                                 |
|----------------------------------|---------------------------------|
| <b>General Physical Form:</b>    | Liquid                          |
| <b>Odor, Color, Grade:</b>       | Solvent odor, red, liquid       |
| <b>Odor threshold</b>            | No Data Available               |
| <b>pH</b>                        | Not Applicable                  |
| <b>Melting point</b>             | Not Applicable                  |
| <b>Boiling Point</b>             | >=284 °F                        |
| <b>Flash Point</b>               | 126 °F [Test Method:Closed Cup] |
| <b>Evaporation rate</b>          | <=0.05 [Ref Std:BUOAC=1]        |
| <b>Flammability (solid, gas)</b> | Not Applicable                  |
| <b>Flammable Limits(LEL)</b>     | No Data Available               |
| <b>Flammable Limits(UEL)</b>     | No Data Available               |
| <b>Vapor Pressure</b>            | <=3.7 mmHg [@ 68 °F]            |
| <b>Vapor Density</b>             | No Data Available               |
| <b>Density</b>                   | 0.99 g/ml                       |
| <b>Specific Gravity</b>          | 0.99 [Ref Std:WATER=1]          |
| <b>Solubility In Water</b>       | No Data Available               |

|  |  |
|--|--|
| <b>Solubility- non-water</b>                   | <i>No Data Available</i>                       |
| <b>Partition coefficient: n-octanol/ water</b> | <i>No Data Available</i>                       |
| <b>Autoignition temperature</b>                | <i>No Data Available</i>                       |
| <b>Decomposition temperature</b>               | <i>No Data Available</i>                       |
| <b>Viscosity</b>                               | 1,000 - 1,200 centipoise                       |
| <b>Volatile Organic Compounds</b>              | 500 - 700 g/l [ <i>Details: As Packaged.</i> ] |
| <b>Percent volatile</b>                        | 50 - 65 % 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

#### Substance

None known.

#### Condition

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:

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:

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:

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

#### 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.

| <b>Ingredient</b>   | <b>CAS No.</b> | <b>Class Description</b>       | <b>Regulation</b>                           |
|---------------------|----------------|--------------------------------|---|
| NI CMPDS NOT ALLOYS | 61788-71-4     | Known human carcinogen         | National Toxicology Program Carcinogens     |
| NICKEL COMPOUNDS    | 61788-71-4     | Grp. 1: Carcinogenic to humans | International Agency for Research on Cancer |
| Cumene              | 98-82-8        | Grp. 2B: Possible human carc.  | International Agency for Research on Cancer |
| Cumene              | 98-82-8        | Anticipated human carcinogen   | National Toxicology Program Carcinogens     |
| Ethylbenzene        | 100-41-4       | Grp. 2B: Possible human carc.  | International Agency for Research on Cancer |
| Naphthalene         | 91-20-3        | Grp. 2B: Possible human carc.  | International Agency for Research on Cancer |
| Naphthalene         | 91-20-3        | Anticipated human carcinogen   | National Toxicology Program Carcinogens     |

#### 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

| <b>Name</b>                                | <b>Route</b>               | <b>Species</b> | <b>Value</b>                                   |
|--|----------------------------|----------------|--|
| 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 |
| Heavy aromatic solvent naphtha (Petroleum) | Dermal                     | Rabbit         | LD50 > 2,000 mg/kg                             |
| Heavy aromatic solvent naphtha (Petroleum) | Ingestion                  | Rat            | LD50 > 5,000 mg/kg                             |
| Pine oil                                   | Dermal                     | Rabbit         | LD50 > 2,000 mg/kg                             |
| Pine oil                                   | Ingestion                  | Rat            | LD50 > 2,000 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                               |



|   |                                |        |  |
|---|--------------------------------|--------|--|
| 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                       |
| Vinyl polymer (New Jersey Trade Secret Registry # 04499600-5238P) | Dermal                         | Rabbit | LD50 > 8,000 mg/kg                       |
| Vinyl polymer (New Jersey Trade Secret Registry # 04499600-5238P) | Ingestion                      | Rat    | LD50 > 8,000 mg/kg                       |
| Organic pigment (NJ TSR # 04499600-5245P)                         | Dermal                         |        | LD50 estimated to be > 5,000 mg/kg       |
| Organic pigment (NJ TSR # 04499600-5245P)                         | Ingestion                      |        | LD50 estimated to be 2,000 - 5,000 mg/kg |
| 1,2,4-Trimethylbenzene  | Dermal                         | Rabbit | LD50 > 3,160 mg/kg                       |
| 1,2,4-Trimethylbenzene  | Inhalation-Vapor (4 hours)     | Rat    | LC50 18 mg/l                             |
| 1,2,4-Trimethylbenzene  | Ingestion                      | Rat    | LD50 3,400 mg/kg                         |
| 2,6-Dimethyl-4-heptanone  | Dermal                         | Rat    | LD50 > 2,000 mg/kg                       |
| 2,6-Dimethyl-4-heptanone  | Inhalation-Vapor (4 hours)     | Rat    | LC50 > 5 mg/l                            |
| 2,6-Dimethyl-4-heptanone  | Ingestion                      | Rat    | LD50 5,265 mg/kg                         |
| N-Butyl Methacrylate  | Dermal                         | Rabbit | LD50 > 2,000 mg/kg                       |
| N-Butyl Methacrylate  | Inhalation-Dust/Mist (4 hours) | Rat    | LC50 > 27 mg/l                           |
| N-Butyl Methacrylate  | 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                         |
| Oils, orange  | Inhalation-Vapor (4 hours)     | Mouse  | LC50 > 3.14 mg/l                         |
| Oils, orange  | Dermal                         | Rabbit | LD50 > 5,000 mg/kg                       |
| Oils, orange  | Ingestion                      | Rat    | LD50 4,400 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                       |
| Naphthalene   | Dermal                         | Human  | LD50 estimated to be 2,000 - 5,000 mg/kg |
| Naphthalene   | Inhalation-Vapor               | Human  | LC50 estimated to be 20 - 50 mg/l        |
| Naphthalene   | Ingestion                      | Human  | LD50 estimated to be 300 - 2,000 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                         |
| Cumene  | Dermal                         | Rabbit | LD50 > 3,160 mg/kg                       |
| Cumene  | Inhalation-Vapor (4 hours)     | Rat    | LC50 39.4 mg/l                           |
| Cumene  | Ingestion                      | Rat    | LD50 1,400 mg/kg                         |
| Glycolic acid, butyl ester  | Dermal                         |        | LD50 estimated to be 2,000 - 5,000 mg/kg |
| Glycolic acid, butyl ester  | Inhalation-Dust/Mist (4 hours) | Rat    | LC50 > 6.2 mg/l                          |
| Glycolic acid, butyl ester  | Ingestion                      | Rat    | LD50 4,595 mg/kg                         |
| Nickel salts of naphthenic acids                                  | Ingestion                      |        | LD50 estimated to be 50 - 300 mg/kg      |

ATE = acute toxicity estimate

**Skin Corrosion/Irritation**

| Name  | Species                | Value                     |
|---|------------------------|---------------------------|
| Heavy aromatic solvent naphtha (Petroleum)                        | Rabbit                 | Irritant                  |
| Pine oil  | Not available          | Irritant                  |
| 1-Methoxy-2-propyl acetate  | Rabbit                 | No significant irritation |
| Cyclohexanone   | Rabbit                 | Irritant                  |
| Light aromatic solvent naphtha (Petroleum)                        | Rabbit                 | Irritant                  |
| Vinyl polymer (New Jersey Trade Secret Registry # 04499600-5238P) | Professional judgement | No significant irritation |
| 1,2,4-Trimethylbenzene  | Rabbit                 | Irritant                  |
| 2,6-Dimethyl-4-heptanone  | Rabbit                 | Minimal irritation        |
| N-Butyl Methacrylate  | Rabbit                 | Irritant                  |
| Toluene   | Rabbit                 | Irritant                  |
| Oils, orange  | Rabbit                 | Mild irritant             |
| Ethylbenzene  | Rabbit                 | Mild irritant             |
| 2,3-Epoxypropyl neodecanoate                                      | Rabbit                 | No significant irritation |
| Naphthalene   | Rabbit                 | Minimal irritation        |
| D-Limonene  | Rabbit                 | Mild irritant             |
| Cumene  | Rabbit                 | Minimal irritation        |
| Glycolic acid, butyl ester  | Rabbit                 | No significant irritation |
| Nickel salts of naphthenic acids                                  | Professional judgement | Minimal irritation        |

**Serious Eye Damage/Irritation**

| Name  | Species                | Value                     |
|---|------------------------|---------------------------|
| Heavy aromatic solvent naphtha (Petroleum)                        | Rabbit                 | Mild irritant             |
| Pine oil  | Rabbit                 | Severe irritant           |
| 1-Methoxy-2-propyl acetate  | Rabbit                 | Mild irritant             |
| Cyclohexanone   | Rabbit                 | Severe irritant           |
| Light aromatic solvent naphtha (Petroleum)                        | Rabbit                 | Mild irritant             |
| Vinyl polymer (New Jersey Trade Secret Registry # 04499600-5238P) | Professional judgement | No significant irritation |
| 1,2,4-Trimethylbenzene  | Rabbit                 | Mild irritant             |
| 2,6-Dimethyl-4-heptanone  | Rabbit                 | No significant irritation |
| N-Butyl Methacrylate  | Rabbit                 | Mild irritant             |
| Toluene   | Rabbit                 | Moderate irritant         |
| Oils, orange  | Rabbit                 | Mild irritant             |
| Ethylbenzene  | Rabbit                 | Moderate irritant         |
| 2,3-Epoxypropyl neodecanoate                                      | Rabbit                 | No significant irritation |
| Naphthalene   | Rabbit                 | No significant irritation |
| D-Limonene  | Rabbit                 | Mild irritant             |
| Cumene  | Rabbit                 | Mild irritant             |
| Glycolic acid, butyl ester  | Rabbit                 | Corrosive                 |
| Nickel salts of naphthenic acids                                  | Professional judgement | Mild irritant             |

**Skin Sensitization**

| Name                                       | Species    | Value          |
|--|------------|----------------|
| Heavy aromatic solvent naphtha (Petroleum) | Guinea pig | Not classified |
| Pine oil                                   | Guinea pig | Not classified |
| 1-Methoxy-2-propyl acetate                 | Guinea     | Not classified |

|  |                   |                |
|--|-------------------|----------------|
| Cyclohexanone                              | pig<br>Guinea pig | Not classified |
| Light aromatic solvent naphtha (Petroleum) | Guinea pig        | Not classified |
| 1,2,4-Trimethylbenzene                     | Guinea pig        | Not classified |
| 2,6-Dimethyl-4-heptanone                   | Guinea pig        | Not classified |
| N-Butyl Methacrylate                       | Guinea pig        | Sensitizing    |
| Toluene                                    | Guinea pig        | Not classified |
| Oils, orange                               | Mouse             | Sensitizing    |
| Ethylbenzene                               | Human             | Not classified |
| 2,3-Epoxypropyl neodecanoate               | Guinea pig        | Sensitizing    |
| D-Limonene                                 | Mouse             | Sensitizing    |
| Cumene                                     | Guinea pig        | Not classified |
| Glycolic acid, butyl ester                 | Guinea pig        | Not classified |
| Nickel salts of naphthenic acids           | similar compounds | 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  |
|------------------------------|----------|--|
| Pine oil                     | In Vitro | Not mutagenic  |
| Pine oil                     | 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 |
| 1,2,4-Trimethylbenzene       | In Vitro | Not mutagenic  |
| 2,6-Dimethyl-4-heptanone     | In Vitro | Not mutagenic  |
| N-Butyl Methacrylate         | In Vitro | Not mutagenic  |
| N-Butyl Methacrylate         | In vivo  | Not mutagenic  |
| Toluene                      | In Vitro | Not mutagenic  |
| Toluene                      | In vivo  | Not mutagenic  |
| Oils, orange                 | In Vitro | Not mutagenic  |
| Oils, orange                 | 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  |
| D-Limonene                   | In Vitro | Not mutagenic  |
| D-Limonene                   | In vivo  | Not mutagenic  |
| Cumene                       | In Vitro | Not mutagenic  |
| Cumene                       | In vivo  | Not mutagenic  |

### Carcinogenicity

| Name                                       | Route     | Species                 | Value  |
|--|-----------|-------------------------|--|
| Heavy aromatic solvent naphtha (Petroleum) | Dermal    | Mouse                   | Some positive data exist, but the data are not sufficient for classification |
| Cyclohexanone                              | Ingestion | Multiple animal species | Some positive data exist, but the data are not sufficient for classification |

|  |               |                         |  |
|--|---------------|-------------------------|--|
| Light aromatic solvent naphtha (Petroleum) | Inhalation    | Mouse                   | Some positive data exist, but the data are not sufficient for classification |
| 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 |
| Oils, orange                               | Ingestion     | Rat                     | Some positive data exist, but the data are not sufficient for classification |
| Ethylbenzene                               | Inhalation    | Multiple animal species | Carcinogenic   |
| Naphthalene                                | Inhalation    | Multiple animal species | Carcinogenic   |
| D-Limonene                                 | Ingestion     | Rat                     | Some positive data exist, but the data are not sufficient for classification |
| Cumene                                     | Inhalation    | Multiple animal species | Carcinogenic   |
| Nickel salts of naphthenic acids           | Not Specified | similar compounds       | Carcinogenic   |

## Reproductive Toxicity

### Reproductive and/or Developmental Effects

| Name                                       | Route      | Value                                  | Species | Test Result           | Exposure Duration            |
|--|------------|--|---------|-----------------------|------------------------------|
| Pine oil                                   | Ingestion  | Not classified for development         | Rat     | NOAEL 600 mg/kg/day   | during gestation             |
| 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                 |
| Light aromatic solvent naphtha (Petroleum) | Inhalation | Not classified for female reproduction | Rat     | NOAEL 1,500 ppm       | 2 generation                 |
| Light aromatic solvent naphtha (Petroleum) | Inhalation | Not classified for male reproduction   | Rat     | NOAEL 1,500 ppm       | 2 generation                 |
| Light aromatic solvent naphtha (Petroleum) | Inhalation | Not classified for development         | Rat     | NOAEL 500 ppm         | 2 generation                 |
| 1,2,4-Trimethylbenzene                     | Inhalation | Not classified for female reproduction | Rat     | NOAEL 1.2 mg/l        | 3 months                     |
| 1,2,4-Trimethylbenzene                     | Inhalation | Not classified for male reproduction   | Rat     | NOAEL 1.2 mg/l        | 3 months                     |
| 1,2,4-Trimethylbenzene                     | Inhalation | Not classified for development         | Rat     | NOAEL 1.5 mg/l        | during gestation             |
| 2,6-Dimethyl-4-heptanone                   | Ingestion  | Not classified for female reproduction | Rat     | NOAEL 1,000           | premating &                  |

|                            |            |  |                         | mg/kg                 | during gestation               |
|----------------------------|------------|--|-------------------------|-----------------------|--------------------------------|
| 2,6-Dimethyl-4-heptanone   | Ingestion  | Not classified for male reproduction   | Rat                     | NOAEL 1,000 mg/kg/day | 2 weeks                        |
| 2,6-Dimethyl-4-heptanone   | Ingestion  | Not classified for development         | Rat                     | NOAEL 1,000 mg/kg/day | prematuring & during gestation |
| N-Butyl Methacrylate       | Ingestion  | Not classified for male reproduction   | Rat                     | NOAEL 1,000 mg/kg/day | 44 days                        |
| N-Butyl Methacrylate       | Ingestion  | Not classified for female reproduction | Rat                     | NOAEL 300 mg/kg/day   | prematuring & during gestation |
| N-Butyl Methacrylate       | Ingestion  | Not classified for development         | Rabbit                  | NOAEL 300 mg/kg/day   | during gestation               |
| N-Butyl Methacrylate       | Inhalation | Not classified for development         | Rat                     | NOAEL 1.8 mg/l        | during gestation               |
| 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         |
| Oils, orange               | Ingestion  | Not classified for female reproduction | Rat                     | NOAEL 750 mg/kg/day   | prematuring & during gestation |
| Oils, orange               | Ingestion  | Not classified for development         | Multiple animal species | NOAEL 591 mg/kg/day   | during organogenesis           |
| Ethylbenzene               | Inhalation | Not classified for development         | Rat                     | NOAEL 4.3 mg/l        | prematuring & during gestation |
| D-Limonene                 | Ingestion  | Not classified for female reproduction | Rat                     | NOAEL 750 mg/kg/day   | prematuring & during gestation |
| D-Limonene                 | Ingestion  | Not classified for development         | Multiple animal species | NOAEL 591 mg/kg/day   | during organogenesis           |
| Cumene                     | Inhalation | Not classified for development         | Rabbit                  | NOAEL 11.3 mg/l       | during organogenesis           |
| Glycolic acid, butyl ester | Ingestion  | Toxic to development                   | Rat                     | NOAEL 250 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 |
|--|------------|-----------------------------------|--|-----------------------|---------------------|-------------------|
| 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 |                   |
| Pine oil                                   | Inhalation | respiratory irritation            | Some positive data exist, but the data are not sufficient for classification | Not available         | NOAEL Not available |                   |
| Pine oil                                   | Ingestion  | central nervous                   | Not classified   |                       | NOAEL Not           |                   |

|  |            |                                   |  |                         |                     |                        |
|--|------------|-----------------------------------|--|-------------------------|---------------------|------------------------|
|  |            | system depression                 |  |                         | available           |                        |
| 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 |                        |
| Light aromatic solvent naphtha (Petroleum) | Inhalation | central nervous system depression | May cause drowsiness or dizziness  | Professional judgment   | NOAEL Not available |                        |
| Light aromatic solvent naphtha (Petroleum) | Inhalation | respiratory irritation            | Some positive data exist, but the data are not sufficient for classification | Professional judgment   | NOAEL Not available |                        |
| Light aromatic solvent naphtha (Petroleum) | Ingestion  | central nervous system depression | May cause drowsiness or dizziness  | Professional judgment   | NOAEL Not available |                        |
| 1,2,4-Trimethylbenzene                     | Inhalation | central nervous system depression | May cause drowsiness or dizziness  | Human and animal        | NOAEL Not available |                        |
| 1,2,4-Trimethylbenzene                     | Inhalation | respiratory irritation            | May cause respiratory irritation   | official classification | NOAEL Not available |                        |
| 1,2,4-Trimethylbenzene                     | Ingestion  | central nervous system depression | May cause drowsiness or dizziness  | Professional judgment   | NOAEL Not available |                        |
| 2,6-Dimethyl-4-heptanone                   | Inhalation | central nervous system depression | May cause drowsiness or dizziness  | Rat                     | NOAEL Not available |                        |
| 2,6-Dimethyl-4-heptanone                   | Inhalation | respiratory irritation            | May cause respiratory irritation   | Human                   | NOAEL Not available |                        |
| 2,6-Dimethyl-4-heptanone                   | Ingestion  | central nervous system depression | May cause drowsiness or dizziness  | Rat                     | NOAEL Not available |                        |
| N-Butyl Methacrylate                       | Inhalation | respiratory irritation            | May cause respiratory irritation   |                         | 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 |
| Oils, orange                               | Ingestion  | nervous system                    | Not classified   |                         | NOAEL Not available |                        |
| Ethylbenzene                               | Inhalation | central nervous system depression | May cause drowsiness or dizziness  | Human                   | NOAEL Not available |                        |
| Ethylbenzene                               | Inhalation | respiratory irritation            | Some positive data exist, but the data are not sufficient for classification | Human and animal        | NOAEL Not available |                        |
| Ethylbenzene                               | Ingestion  | central nervous system depression | May cause drowsiness or dizziness  | Professional judgment   | NOAEL Not available |                        |
| Naphthalene                                | Ingestion  | blood                             | Causes damage to organs  | Human                   | NOAEL Not available | poisoning and/or abuse |
| D-Limonene                                 | Ingestion  | nervous system                    | Not classified   |                         | NOAEL Not available |                        |

|                            |            |                                   |                                   |                         |                     |                       |
|----------------------------|------------|-----------------------------------|-----------------------------------|-------------------------|---------------------|-----------------------|
| Cumene                     | Inhalation | central nervous system depression | May cause drowsiness or dizziness | Multiple animal species | NOAEL Not available | not available         |
| Cumene                     | Inhalation | respiratory irritation            | May cause respiratory irritation  | Human                   | LOAEL 0.2 mg/l      | occupational exposure |
| Cumene                     | Ingestion  | central nervous system depression | May cause drowsiness or dizziness | Multiple animal species | NOAEL Not available | not available         |
| Glycolic acid, butyl ester | Inhalation | respiratory irritation            | May cause respiratory irritation  | Rat                     | NOAEL 0.4 mg/l      | 4 hours               |

#### 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  | 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               |
| 1,2,4-Trimethylbenzene     | Inhalation | hematopoietic system   | Some positive data exist, but the data are not sufficient for classification | Rat                     | NOAEL 0.5 mg/l        | 3 months              |
| 1,2,4-Trimethylbenzene     | Inhalation | nervous system   | Some positive data exist, but the data are not sufficient for classification | Rat                     | LOAEL 0.1 mg/l        | 3 months              |
| 1,2,4-Trimethylbenzene     | Inhalation | respiratory system   | Some positive data exist, but the data are not sufficient for classification | Human                   | NOAEL Not available   | occupational exposure |
| 1,2,4-Trimethylbenzene     | Inhalation | liver   kidney and/or bladder   heart   endocrine system   immune system | Not classified   | Rat                     | NOAEL 1.2 mg/l        | 3 months              |
| 1,2,4-Trimethylbenzene     | Ingestion  | hematopoietic system   | Not classified   | Rat                     | NOAEL 600 mg/kg/day   | 14 days               |
| 1,2,4-Trimethylbenzene     | Ingestion  | liver   immune system   kidney and/or bladder                            | Not classified   | Rat                     | NOAEL 1,000 mg/kg/day | 28 days               |
| 2,6-Dimethyl-4-heptanone   | Inhalation | liver   kidney and/or bladder   respiratory system                       | Not classified   | Rat                     | NOAEL 5.4 mg/l        | 6 weeks               |
| 2,6-Dimethyl-4-heptanone   | Inhalation | blood  | Not classified   | Rat                     | NOAEL 5.3 mg/l        | 9 days                |
| 2,6-Dimethyl-4-heptanone   | Inhalation | endocrine system   hematopoietic system                                  | Not classified   | Rat                     | NOAEL 9.6 mg/l        | 6 weeks               |
| 2,6-Dimethyl-4-heptanone   | Ingestion  | heart   endocrine system   liver   nervous system                        | Not classified   | Rat                     | NOAEL 2,000 mg/kg/day | 90 days               |
| 2,6-Dimethyl-4-heptanone   | Ingestion  | kidney and/or bladder  | Not classified   | Rat                     | NOAEL 2,000 mg/kg     | 90 days               |
| 2,6-Dimethyl-4-heptanone   | Ingestion  | blood  | Not classified   | Rat                     | NOAEL 4,000 mg/kg/day | 3 weeks               |
| N-Butyl Methacrylate       | Inhalation | kidney and/or bladder  | Not classified   | Rat                     | NOAEL 11 mg/l         | 28 days               |
| N-Butyl Methacrylate       | Inhalation | olfactory system   | Not classified   | Rat                     | NOAEL 1.8 mg/l        | 28 days               |

|                      |            |   |  |                         |                       |                        |
|----------------------|------------|---|--|-------------------------|-----------------------|------------------------|
| N-Butyl Methacrylate | Inhalation | heart   endocrine system   hematopoietic system   liver   nervous system   respiratory system   | Not classified   | Rat                     | NOAEL 11 mg/l         | 28 days                |
| N-Butyl Methacrylate | Ingestion  | olfactory system  | Not classified   | Rat                     | NOAEL 60 mg/kg/day    | 90 days                |
| N-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                |
| Toluene              | Inhalation | auditory system   nervous system   eyes   olfactory system  | Causes damage to organs through 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              | 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                |
| Oils, orange         | Ingestion  | kidney and/or bladder   | Not classified   | Rat                     | LOAEL 75 mg/kg/day    | 103 weeks              |
| Oils, orange         | Ingestion  | liver   | Not classified   | Mouse                   | NOAEL 1,000 mg/kg/day | 103 weeks              |
| Oils, orange         | 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              |
| 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   | Not classified   | Rat                     | NOAEL 3.4             | 28 days                |



|                              |            |   |  |                         |                       |                        |
|------------------------------|------------|---|--|-------------------------|-----------------------|------------------------|
|                              |            | system  |  |                         | mg/l                  |                        |
| 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 | bone, teeth, nails, and/or hair   muscles   | Not classified   | Multiple animal species | NOAEL 4.2 mg/l        | 90 days                |
| 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               |
| 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                |
| Naphthalene                  | Dermal     | blood   | Causes damage to organs through prolonged or repeated exposure               | Human                   | NOAEL Not available   | poisoning and/or abuse |
| Naphthalene                  | Dermal     | eyes  | Not classified   | Human                   | NOAEL Not available   | occupational exposure  |
| Naphthalene                  | Inhalation | respiratory system  | Causes damage to organs through prolonged or repeated exposure               | Rat                     | LOAEL 0.01 mg/l       | 13 weeks               |
| Naphthalene                  | Inhalation | blood   | Causes damage to organs through prolonged or repeated exposure               | Human                   | NOAEL Not available   | poisoning and/or abuse |
| Naphthalene                  | Inhalation | eyes  | Not classified   | Human                   | NOAEL Not available   | occupational exposure  |
| Naphthalene                  | Ingestion  | blood   | Causes damage to organs through prolonged or repeated exposure               | Human                   | NOAEL Not available   | poisoning and/or abuse |
| Naphthalene                  | Ingestion  | eyes  | May cause damage to organs through prolonged or repeated exposure            | Rabbit                  | LOAEL 500 mg/kg/day   | 15 days                |
| 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              |
| Cumene                       | Inhalation | auditory system   endocrine system   hematopoietic system   liver   nervous system   eyes   | Not classified   | Rat                     | NOAEL 59 mg/l         | 13 weeks               |
| Cumene                       | Inhalation | kidney and/or bladder   | Not classified   | Rat                     | NOAEL 4.9 mg/l        | 13 weeks               |
| Cumene                       | Inhalation | respiratory system  | Not classified   | Rat                     | NOAEL 59 mg/l         | 13 weeks               |
| Cumene                       | Ingestion  | kidney and/or bladder   heart   endocrine system   hematopoietic system   liver   respiratory system  | Not classified   | Rat                     | NOAEL 769 mg/kg/day   | 6 months               |
| Glycolic acid, butyl ester   | Ingestion  | blood   kidney and/or bladder   | Some positive data exist, but the data are not sufficient for classification | Rat                     | NOAEL 100 mg/kg/day   | 90 days                |

**Aspiration Hazard**

| Name | Value |
|------|-------|
|------|-------|

|  |  |
|--|--|
| Heavy aromatic solvent naphtha (Petroleum) | Aspiration hazard  |
| Light aromatic solvent naphtha (Petroleum) | Aspiration hazard  |
| 1,2,4-Trimethylbenzene                     | Aspiration hazard  |
| 2,6-Dimethyl-4-heptanone                   | Some positive data exist, but the data are not sufficient for classification |
| Toluene                                    | Aspiration hazard  |
| Oils, orange                               | Aspiration hazard  |
| Ethylbenzene                               | Aspiration hazard  |
| D-Limonene                                 | Aspiration hazard  |
| Cumene                                     | 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

**EPCRA 311/312 Hazard Classifications (effective January 1, 2018):**

**Physical Hazards**

Flammable (gases, aerosols, liquids, or solids)

**Health Hazards**

Carcinogenicity

Reproductive toxicity

Respiratory or Skin Sensitization

Serious eye damage or eye irritation

Skin Corrosion or Irritation

Specific target organ toxicity (single or repeated exposure)

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

| <b><u>Ingredient</u></b>                            | <b><u>C.A.S. No</u></b> | <b><u>% by Wt</u></b> |
|---|-------------------------|-----------------------|
| 1,2,4-Trimethylbenzene                              | 95-63-6                 | Trade Secret 1 - 5    |
| Naphthalene   | 91-20-3                 | Trade Secret < 0.3    |
| Ethylbenzene  | 100-41-4                | Trade Secret < 0.3    |
| Nickel salts of naphthenic acids (NICKEL COMPOUNDS) | 61788-71-4              | < 0.2                 |

**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:** 2 **Instability:** 1 **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.

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