



## Safety Data Sheet

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### SECTION 1: Identification

#### 1.1. Product identifier

3M™ Troubleshooter™ Finish Remover Concentrate (Product No. 21, Twist 'N Fill™ System)

#### Product Identification Numbers

ID Number	UPC	ID Number	UPC
61-0000-6345-5		70-0710-0957-8	00-48011-23358-6
70-0716-8292-9	000-48011-23358-1		

7010385257, 7010364129

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

##### Recommended use

Hard Floor Maintenance

#### 1.3. Supplier's details

<b>MANUFACTURER:</b>	3M
<b>DIVISION:</b>	Commercial Solutions 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

Corrosive to metal: Category 1.  
Serious Eye Damage/Irritation: Category 1.  
Skin Corrosion/Irritation: Category 1C.  
Specific Target Organ Toxicity (single exposure): Category 3.

#### 2.2. Label elements

##### Signal word

Danger

**Symbols**

Corrosion | Exclamation mark |

**Pictograms****Hazard Statements**

May be corrosive to metals.

Causes severe skin burns and eye damage.

May cause respiratory irritation.

May cause drowsiness or dizziness.

**Precautionary Statements****Prevention:**

Keep only in original container.

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

Use only outdoors or in a well-ventilated area.

Wear protective gloves, protective clothing, and eye/face protection.

Wash thoroughly after handling.

**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.

Immediately call a POISON CENTER or doctor/physician.

Wash contaminated clothing before reuse.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Absorb spillage to prevent material damage.

**Storage:**

Store in a corrosive resistant container with a resistant inner liner.

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**

May cause chemical gastrointestinal burns.

20% of the mixture consists of ingredients of unknown acute dermal toxicity.

18% of the mixture consists of ingredients of unknown acute inhalation toxicity.

**SECTION 3: Composition/information on ingredients**

Ingredient	C.A.S. No.	% by Wt
LAURYL DIMETHYLAMINE OXIDE	1643-20-5	5 - 15 Trade Secret *

DIMETHYLTETRADECYLAMINE OXIDE	3332-27-2	1 - 10 Trade Secret *
DECYL-N,N-DIMETHYLAMINE OXIDE	2605-79-0	0.1 - 2.5 Trade Secret *
TRIALKYL AMINE OXIDE	7128-91-8	0.1 - 2.5 Trade Secret *
ETHANOLAMINE	141-43-5	15 - 40 Trade Secret *
BENZYL ALCOHOL	100-51-6	10 - 30 Trade Secret *
WATER	7732-18-5	5 - 10 Trade Secret *
2-(2-ETHYLHEXYLOXY) ETHANOL	1559-35-9	1 - 5 Trade Secret *

\*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 flush with large amounts of water for at least 15 minutes. Remove contaminated clothing. Get immediate medical attention. Wash clothing before reuse.

#### 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. Do not induce vomiting. Get immediate 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 ordinary combustible material such as water or foam to extinguish.

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

None inherent in this product.

### Hazardous Decomposition or By-Products

#### Substance

Carbon monoxide  
Carbon dioxide

#### Condition

During Combustion  
During Combustion

### 5.3. Special protective actions for fire-fighters

Wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

### 6.2. Environmental precautions

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

### 6.3. Methods and material for containment and cleaning up

Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a metal container approved for use in transportation by appropriate authorities. The container must be lined with polyethylene plastic or contain a plastic drum liner made of polyethylene. Clean up residue with detergent and water. Cover, but do not seal for 48 hours. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

For industrial/occupational use only. Not for consumer sale or use. Do not use in a confined area with minimal air exchange. This product is not intended to be used without prior dilution as specified on the product label. Grounding or safety shoes with electrostatic dissipating soles (ESD) are not required with a chemical dispensing system. Keep out of reach of children. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.)

### 7.2. Conditions for safe storage including any incompatibilities

Store in a well-ventilated place. Keep container tightly closed. Keep cool. Keep only in original container. Store in a corrosive resistant container with a resistant inner liner. 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
BENZYL ALCOHOL	100-51-6	AIHA	TWA:44.2 mg/m <sup>3</sup> (10 ppm)	
ETHANOLAMINE	141-43-5	ACGIH	TWA:3 ppm;STEL:6 ppm	
ETHANOLAMINE	141-43-5	OSHA	TWA:6 mg/m <sup>3</sup> (3 ppm)	

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

NOTE: When used with a chemical dispensing system as directed, special ventilation is not required. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

### 8.2.2. Personal protective equipment (PPE)

#### Eye/face protection

NOTE: When used with a chemical dispensing system as directed, eye contact with the concentrate is not expected to occur. If the product is not used with a chemical dispensing system or if there is an accidental release, wear protective eye/face protection.

If product is not used with a chemical dispensing system or if there is an accidental release:

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

Full Face Shield  
Indirect Vented Goggles

#### Skin/hand protection

NOTE: When used with a chemical dispensing system as directed, skin contact with the concentrate is not expected to occur.

If product is not used with a chemical dispensing system or if there is an accidental release:

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: Neoprene

Nitrile Rubber  
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.

If product is not used with a chemical dispensing system or if there is an accidental release:

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 – Nitrile  
Apron - polymer laminate

#### Respiratory protection

NOTE: When used with a chemical dispensing system as directed, respiratory protection is not required.

If product is not used with a chemical dispensing system or if there is an accidental release:

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

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>Specific Physical Form:</b>	Liquid
<b>Odor, Color, Grade:</b>	Dark green color, strong amine (ammonia-like) odor
<b>Odor threshold</b>	<i>No Data Available</i>
<b>pH</b>	11.5 - 12.2
<b>Melting point</b>	<i>Not Applicable</i>
<b>Boiling Point</b>	> 95 °C
<b>Flash Point</b>	> 200 °F [Test Method: Tagliabue Closed Cup]
<b>Evaporation rate</b>	<i>No Data Available</i>
<b>Flammability (solid, gas)</b>	Not Applicable
<b>Flammable Limits(LEL)</b>	<i>No Data Available</i>
<b>Flammable Limits(UEL)</b>	<i>No Data Available</i>
<b>Vapor Pressure</b>	< 27 psia [@ 131 °F]
<b>Vapor Density</b>	<i>No Data Available</i>
<b>Specific Gravity</b>	1.01 [Ref Std: WATER=1]
<b>Solubility in Water</b>	Moderate
<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>	< 100 centipoise
<b>Average particle size</b>	<i>No Data Available</i>
<b>Bulk density</b>	<i>No Data Available</i>
<b>Volatile Organic Compounds</b>	40 - 50 % weight [Test Method: calculated per CARB title 2]
<b>Percent volatile</b>	<i>No Data Available</i>
<b>VOC Less H2O &amp; Exempt Solvents</b>	650 - 700 g/l [Test Method: calculated per CARB title 2]

## 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

Not determined

### 10.5. Incompatible materials

Strong acids

Strong oxidizing agents

### 10.6. Hazardous decomposition products

**Substance**

**Condition**

None known.

Refer to section 5.2 for hazardous decomposition products during combustion.

## SECTION 11: Toxicological information

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

Corrosive (Skin Burns): Signs/symptoms may include localized redness, swelling, itching, intense pain, blistering, ulceration, and tissue destruction.

##### Eye Contact:

Corrosive (Eye Burns): Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.

##### Ingestion:

May be harmful if swallowed.

Gastrointestinal Corrosion: Signs/symptoms may include severe mouth, throat and abdominal pain; nausea; vomiting; and diarrhea; blood in the feces and/or vomitus may also be seen.

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.

#### 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 <sub>2,000</sub> - 5,000 mg/kg
Overall product	Inhalation-Vapor(4 hr)		No data available; calculated ATE <sub>20</sub> - 50 mg/l
Overall product	Ingestion		No data available; calculated ATE <sub>2,000</sub> - 5,000 mg/kg
ETHANOLAMINE	Inhalation-Vapor	official classification	LC <sub>50</sub> estimated to be 10 - 20 mg/l
ETHANOLAMINE	Dermal	Rabbit	LD <sub>50</sub> 1,000 mg/kg

ETHANOLAMINE	Ingestion	Rat	LD50 1,720 mg/kg
BENZYL ALCOHOL	Inhalation-Dust/Mist (4 hours)	Rat	LC50 8.8 mg/l
BENZYL ALCOHOL	Ingestion	Rat	LD50 1,230 mg/kg
LAURYL DIMETHYLAMINE OXIDE	Ingestion	Mouse	LD50 2,700 mg/kg
LAURYL DIMETHYLAMINE OXIDE	Dermal	Rabbit	LD50 3,536 mg/kg
DIMETHYL TETRADECYLAMINE OXIDE	Dermal		LD50 estimated to be > 5,000 mg/kg
DIMETHYL TETRADECYLAMINE OXIDE	Ingestion	Rat	LD50 > 5,000 mg/kg
2-(2-ETHYLHEXYLOXY) ETHANOL	Dermal	Rabbit	LD50 2,120 mg/kg
2-(2-ETHYLHEXYLOXY) ETHANOL	Ingestion	Rat	LD50 3,080 mg/kg
DECYL-N,N-DIMETHYLAMINE OXIDE	Dermal		LD50 estimated to be > 5,000 mg/kg
DECYL-N,N-DIMETHYLAMINE OXIDE	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
TRIALKYL AMINE OXIDE	Ingestion		LD50 estimated to be 300 - 2,000 mg/kg

ATE = acute toxicity estimate

### Skin Corrosion/Irritation

Name	Species	Value
ETHANOLAMINE	Rabbit	Corrosive
BENZYL ALCOHOL	Multiple animal species	Mild irritant

### Serious Eye Damage/Irritation

Name	Species	Value
ETHANOLAMINE	Rabbit	Corrosive
BENZYL ALCOHOL	Rabbit	Severe irritant

### Skin Sensitization

Name	Species	Value
ETHANOLAMINE	Guinea pig	Not classified
BENZYL ALCOHOL	Human and animal	Not classified

### 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
ETHANOLAMINE	In Vitro	Not mutagenic
ETHANOLAMINE	In vivo	Not mutagenic
BENZYL ALCOHOL	In vivo	Not mutagenic
BENZYL ALCOHOL	In Vitro	Some positive data exist, but the data are not sufficient for classification

### Carcinogenicity

Name	Route	Species	Value
BENZYL ALCOHOL	Ingestion	Multiple animal species	Not carcinogenic

### Reproductive Toxicity

### Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure
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					<b>Duration</b>
ETHANOLAMINE	Dermal	Not classified for development	Rat	NOAEL 225 mg/kg/day	during organogenesis
ETHANOLAMINE	Ingestion	Not classified for development	Rat	NOAEL 616 mg/kg/day	during organogenesis
BENZYL ALCOHOL	Ingestion	Not classified for development	Mouse	NOAEL 550 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
ETHANOLAMINE	Inhalation	respiratory irritation	May cause respiratory irritation	Human and animal	NOAEL Not available	
BENZYL ALCOHOL	Inhalation	central nervous system depression	May cause drowsiness or dizziness		NOAEL Not available	
BENZYL ALCOHOL	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
BENZYL ALCOHOL	Ingestion	central nervous system depression	May cause drowsiness or dizziness		NOAEL Not available	

#### Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
ETHANOLAMINE	Inhalation	liver   kidney and/or bladder   respiratory system	Not classified	Multiple animal species	NOAEL 0.656 mg/l	5 weeks
ETHANOLAMINE	Ingestion	hematopoietic system   liver   kidney and/or bladder   respiratory system	Not classified	Rat	NOAEL Not available	
BENZYL ALCOHOL	Ingestion	endocrine system   muscles   kidney and/or bladder	Not classified	Rat	NOAEL 400 mg/kg/day	13 weeks
BENZYL ALCOHOL	Ingestion	nervous system   respiratory system	Not classified	Mouse	NOAEL 645 mg/kg/day	8 days

### Aspiration Hazard

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

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

## SECTION 12: Ecological information

### Ecotoxicological information

A 3M Product Environmental Data Sheet (PED) is available.

### Chemical fate information

A 3M Product Environmental Data Sheet (PED) is available.

## 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. Proper destruction may require the use of additional fuel during incineration processes. 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):** D002 (Corrosive)

**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****EPCRA 311/312 Hazard Classifications:****Physical Hazards**

Corrosive to metal

**Health Hazards**

Hazard Not Otherwise Classified (HNOC)

Serious eye damage or eye irritation

Skin Corrosion or Irritation

Specific target organ toxicity (single or repeated exposure)

**15.2. State Regulations****15.3. Chemical Inventories**

The components of this product are in compliance with the new substance notification requirements of CEPA.

The components of this material are in compliance with the China "Measures on Environmental Management of New Chemical Substance". Certain restrictions may apply. Contact the selling division for additional information.

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

**15.4. International Regulations**

**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:** 3 **Flammability:** 1 **Instability:** 0 **Special Hazards:** None

**Acid/Base:** Alkaline **Corrosive:** Yes

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.

**HMIS Hazard Classification**

**Health: 3    Flammability: 1    Physical Hazard: 0    Personal Protection: X** - See PPE section.

Hazardous Material Identification System (HMIS® IV) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® IV ratings are to be used with a fully implemented HMIS® IV program. HMIS® is a registered mark of the American Coatings Association (ACA).

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