Material Safety Data Sheet

Copyright, 2012, 3M Company All rights reserved. Copying and/or downloading of this information for the purpose of properly utilizing 3M products is allowed provided that: (1) the information is copied in full with no changes unless prior written agreement is obtained from 3M, and (2) neither the copy nor the original is resold or otherwise distributed with the intention of earning a profit thereon.

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 3M™ Scotch-Brite™ Products, Surface Conditioning Products, AMED: Sheets (Hookit™), Rolls, Discs (Roloc™, TN, TP, TR, TS, TSM), Belts, Scrim Belts
MANUFACTURER: 3M
DIVISION: Abrasive Systems Division
ADDRESS: 3M Center, St. Paul, MN 55144-1000

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

Issue Date: 11/08/12
Supercedes Date: 11/08/12

Product Use:
Intended Use: Abrasive Product

SECTION 2: INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>C.A.S. No.</th>
<th>% by Wt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum Oxide Mineral</td>
<td>1344-28-1</td>
<td>25 - 40</td>
</tr>
<tr>
<td>Filler</td>
<td>1317-65-3</td>
<td>3 - 8</td>
</tr>
<tr>
<td>Lubricant</td>
<td>64742-54-7</td>
<td>1 - 2</td>
</tr>
<tr>
<td>Titanium Dioxide</td>
<td>13463-67-7</td>
<td>0.2 - 1.5</td>
</tr>
<tr>
<td>Quartz Silica</td>
<td>14808-60-7</td>
<td>0.001 - 0.15</td>
</tr>
<tr>
<td>Cured Resin Mixture</td>
<td></td>
<td>20 - 40</td>
</tr>
<tr>
<td>Nylon Fiber Mixture</td>
<td></td>
<td>10 - 25</td>
</tr>
<tr>
<td>Nylon Scrim Mixture</td>
<td></td>
<td>5 - 15</td>
</tr>
<tr>
<td>Poly(Vinyl Chloride)</td>
<td>9002-86-2</td>
<td>0.5 - 1.75</td>
</tr>
<tr>
<td>Attachment Button</td>
<td>Mixture</td>
<td>0 - 5</td>
</tr>
<tr>
<td>Hookit™ Backing</td>
<td>Mixture</td>
<td>0 - 5</td>
</tr>
</tbody>
</table>

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Odor, Color, Grade: Solid Abrasive Product
General Physical Form: Solid

**Immediate health, physical, and environmental hazards:** This document covers only the 3M product. For complete assessment, when determining the degree of hazard, the material being abraded must also be considered.

### 3.2 POTENTIAL HEALTH EFFECTS

**Eye Contact:**
Mechanical eye irritation: Signs/symptoms may include pain, redness, tearing and corneal abrasion.

Dust created by cutting, grinding, sanding, or machining may cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

**Skin Contact:**
Mechanical Skin irritation: Signs/symptoms may include abrasion, redness, pain, and itching.

**Inhalation:**
Dust from cutting, grinding, sanding or machining may cause irritation of the respiratory system. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Prolonged or repeated exposure may cause:

Pneumoconiosis: Sign/symptoms may include persistent cough, breathlessness, chest pain, increased amounts of sputum, and changes in lung function tests.

**Ingestion:**
No health effects are expected.

This product contains titanium dioxide and quartz silica. Cancer of the lungs has been associated with titanium dioxide, and cancer of the lungs and silicosis have been associated with quartz (crystalline) silica. No exposure to titanium dioxide or quartz (crystalline) silica is anticipated during normal intended use of 3M Coated Abrasives and Surface Conditioning Products. No detectable levels of these materials were found when simulated grinding air sampling studies were conducted on analogous coated abrasive and surface conditioning constructions that contained similar to or greater concentrations of titanium dioxide and crystalline silica. Therefore, the health effects associated with titanium dioxide and quartz (crystalline) silica are not expected during the intended use of this product.

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>C.A.S. No.</th>
<th>Class Description</th>
<th>Regulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quartz Silica</td>
<td>14808-60-7</td>
<td>Grp. 1: Carcinogenic to humans</td>
<td>International Agency for Research on Cancer</td>
</tr>
<tr>
<td>SILICA, CRYSTALLINE (AIRBORNE PARTICLES OF RESPIRABLE SIZE)</td>
<td>SEQ77</td>
<td>Grp. 1: Carcinogenic to humans</td>
<td>International Agency for Research on Cancer</td>
</tr>
<tr>
<td>SILICA, CRYSTALLINE (AIRBORNE PARTICLES OF RESPIRABLE SIZE)</td>
<td>SEQ77</td>
<td>Known human carcinogen</td>
<td>National Toxicology Program Carcinogens</td>
</tr>
<tr>
<td>Titanium Dioxide</td>
<td>13463-67-7</td>
<td>Grp. 2B: Possible human carc.</td>
<td>International Agency for Research on Cancer</td>
</tr>
</tbody>
</table>

### SECTION 4: FIRST AID MEASURES

#### 4.1 FIRST AID PROCEDURES

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed.

**Eye Contact:** Flush eyes with large amounts of water. If signs/symptoms persist, get medical attention.

**Skin Contact:** Wash affected area with soap and water. If signs/symptoms develop, get medical attention.

**Inhalation:** Remove person to fresh air. If signs/symptoms develop, get medical attention.

**If Swallowed:** No need for first aid is anticipated.
SECTION 5: FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autoignition temperature</td>
<td></td>
</tr>
<tr>
<td>Flash Point</td>
<td></td>
</tr>
<tr>
<td>Flammable Limits(LEL)</td>
<td></td>
</tr>
<tr>
<td>Flammable Limits(UEL)</td>
<td></td>
</tr>
</tbody>
</table>

5.2 EXTINGUISHING MEDIA

Ordinary combustible material. Use fire extinguishers with class A extinguishing agents (e.g., water, foam).

5.3 PROTECTION OF FIRE FIGHTERS

Special Fire Fighting Procedures: Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

Unusual Fire and Explosion Hazards: None inherent in this product.

Note: See STABILITY AND REACTIVITY (SECTION 10) for hazardous combustion and thermal decomposition information.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Not applicable.

6.2. Environmental precautions

Not applicable.

Clean-up methods

Not applicable.

In the event of a release of this material, the user should determine if the release qualifies as reportable according to local, state, and federal regulations.

SECTION 7: HANDLING AND STORAGE

7.1 HANDLING

For industrial or professional use only. Avoid breathing of dust created by sanding, grinding or machining. Avoid eye contact with dust or airborne particles. Damaged product can break apart during use and cause serious injury to face or eyes. Check product for damage such as cracks or nicks prior to use. Replace if damaged. Always wear eye and face protection when working at sanding or grinding operations or when near such operations. Sparks and particles flying from the product during sanding or grinding can cause injury and fire.

7.2 STORAGE

Store in a cool, dry place.
SECTION 8: EXPOSURE CONTROLS/PERSOCNAL PROTECTION

8.1 ENGINEERING CONTROLS
Provide ventilation adequate to control dust concentrations below recommended exposure limits and/or control dust. Warning: Excessive operating speed or generation of extreme heat may result in harmful emissions. Use local exhaust ventilation. Provide appropriate local exhaust ventilation for sanding, grinding or machining. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below Occupational Exposure Limits and/or control dust, fume, or airborne particles. If ventilation is not adequate, use respiratory protection equipment.

8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

8.2.1 Eye/Face Protection
Avoid eye contact. To minimize the risk of injury to face and eyes, always wear eye and face protection when working at sanding or grinding operations or when near such operations. The following eye protection(s) are recommended: Safety Glasses with side shields.

8.2.2 Skin Protection
Avoid skin contact. Wear appropriate gloves to minimize risk of injury to skin from contact with dust or physical abrasion from grinding or sanding.

8.2.3 Respiratory Protection
Avoid breathing of dust created by sanding, grinding or machining. Assess exposure concentrations of all materials involved in the work process. Consider material being abraded when determining the appropriate respiratory protection. Select and use appropriate respirators to prevent inhalation overexposure.

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 particulates

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

8.2.4 Prevention of Swallowing
Not an expected route of exposure. Wash hands after handling and before eating.

8.3 EXPOSURE GUIDELINES

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Authority</th>
<th>Type</th>
<th>Limit</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum Oxide Mineral</td>
<td>CMRG</td>
<td>TWA</td>
<td>1 fiber/cc</td>
<td></td>
</tr>
<tr>
<td>Aluminum Oxide Mineral</td>
<td>OSHA</td>
<td>TWA, respirable fraction</td>
<td>5 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Aluminum Oxide Mineral</td>
<td>OSHA</td>
<td>TWA, as total dust</td>
<td>15 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Filler</td>
<td>OSHA</td>
<td>TWA, respirable fraction</td>
<td>5 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Filler</td>
<td>OSHA</td>
<td>TWA, as total dust</td>
<td>15 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Quartz Silica</td>
<td>ACGIH</td>
<td>TWA, respirable fraction</td>
<td>0.025 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Quartz Silica</td>
<td>OSHA</td>
<td>TWA concentration, respirable</td>
<td>0.1 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Quartz Silica</td>
<td>OSHA</td>
<td>TWA concentration, as total dust</td>
<td>0.3 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Titanium Dioxide</td>
<td>ACGIH</td>
<td>TWA</td>
<td>10 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Titanium Dioxide</td>
<td>CMRG</td>
<td>TWA, as respirable dust</td>
<td>5 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Titanium Dioxide</td>
<td>OSHA</td>
<td>TWA, as total dust</td>
<td>15 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>
SOURCE OF EXPOSURE LIMIT DATA:
ACGIH: American Conference of Governmental Industrial Hygienists
CMRG: Chemical Manufacturer Recommended Guideline
OSHA: Occupational Safety and Health Administration
AIHA: American Industrial Hygiene Association Workplace Environmental Exposure Level (WEEL)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odor, Color, Grade:</td>
<td>Solid Abrasive Product</td>
</tr>
<tr>
<td>General Physical Form:</td>
<td>Solid</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Flash Point</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Flammable Limits(LEL)</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Flammable Limits(UEL)</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>pH</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Melting point</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Solubility In Water</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Kow - Oct/Water partition coef</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable.

Materials and Conditions to Avoid:
10.1 Conditions to avoid
None known

10.2 Materials to avoid
None known

Hazardous Polymerization: Hazardous polymerization will not occur.

Hazardous Decomposition or By-Products

<table>
<thead>
<tr>
<th>Substance</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon monoxide</td>
<td>During Combustion</td>
</tr>
<tr>
<td>Carbon dioxide</td>
<td>During Combustion</td>
</tr>
</tbody>
</table>

Hazardous Decomposition: Under recommended usage conditions, hazardous decomposition products are not expected. Hazardous decomposition products may occur as a result of oxidation, heating, or reaction with another material.
SECTION 11: TOXICOLOGICAL INFORMATION

Please contact the address listed on the first page of the MSDS for Toxicological Information on this material and/or its components.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

Not determined.

CHEMICAL FATE INFORMATION

Not determined.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Method: The substrate that was abraded must be considered as a factor in the disposal method for this product. Dispose of waste product in a sanitary landfill. As a disposal alternative, incinerate in an industrial or commercial facility in the presence of a combustible material. Combustion products will include HCl. Facility must be capable of handling halogenated materials.

EPA Hazardous Waste Number (RCRA): Not regulated

Since regulations vary, consult applicable regulations or authorities before disposal.

SECTION 14: TRANSPORT INFORMATION

Not regulated per U.S. DOT, IATA or IMO.

These transportation classifications are provided as a customer service. As the shipper YOU remain responsible for complying with all applicable laws and regulations, including proper transportation classification and packaging. 3M transportation classifications are based on product formulation, packaging, 3M policies and 3M understanding of applicable current regulations. 3M does not guarantee the accuracy of this classification information. This information applies only to transportation classification and not the packaging, labeling, or marking requirements. The original 3M package is certified for U.S. ground shipment only. If you are shipping by air or ocean, the package may not meet applicable regulatory requirements.

SECTION 15: REGULATORY INFORMATION

US FEDERAL REGULATIONS

Contact 3M for more information.
311/312 Hazard Categories:
Fire Hazard - No  Pressure Hazard - No  Reactivity Hazard - No  Immediate Hazard - Yes  Delayed Hazard - Yes

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

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>C.A.S. No</th>
<th>% by Wt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum Oxide Mineral</td>
<td>1344-28-1</td>
<td>25 - 40</td>
</tr>
</tbody>
</table>

STATE REGULATIONS
Contact 3M for more information.

CHEMICAL INVENTORIES
This product is an article as defined by TSCA regulations, and is exempt from TSCA Inventory listing requirements.
Contact 3M for more information.

INTERNATIONAL REGULATIONS
Contact 3M for more information.

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

SECTION 16: OTHER INFORMATION

NFPA Hazard Classification
Health: 1  Flammability: 1  Reactivity: 0  Special Hazards: None

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

Revision Changes:
Section 8: Exposure guidelines ingredient information was modified.
Section 8: Exposure guideline note was deleted.
Section 1: Product name was modified.
Section 1: Product use information was modified.
Section 3: Carcinogenicity comment was added.
Section 1: Division name was modified.
Section 5: Extinguishing media information was modified.
Section 5: Unusual fire and explosion hazard information was modified.
Section 7: Handling information was modified.
Section 8: Engineering controls information was modified.
Section 10: Hazardous decomposition or by-products table was modified.
Section 13: Waste disposal method information was modified.
Section 8: Respiratory protection - recommended respirators information was modified.
Section 15: WHMIS regulations heading was deleted.
Section 15: WHMIS regulations information was deleted.
Section 8: Respiratory protection - recommended respirators was modified.
Page Heading: Product name was modified.
Section 9: Vapor density value was modified.
Section 9: Vapor pressure value was modified.
Section 9: Boiling point information was modified.
Sections 3 and 9: Specific physical form information was deleted.
Section 5: Flammable limits (UE) information was modified.
Sections 3 and 9: Specific physical form heading was deleted.
Section 5: Flammable limits (LEL) information was modified.
Section 5: Autoignition temperature information was modified.
Section 5: Flash point information was modified.
Sections 3 and 9: Odor, color, grade information was modified.
Section 9: Property description for optional properties was modified.
Section 9: Specific gravity information was modified.
Section 9: pH information was modified.
Section 9: Melting point information was modified.
Section 9: Solubility in water value was modified.
Section 8: Respiratory protection - recommended respirators guide was modified.
Section 9: Flash point information was modified.
Section 9: Flammable limits (LEL) information was modified.
Section 9: Flammable limits (UEL) information was modified.
Section 9: Autoignition temperature information was modified.
Section 8: Respiratory protection - recommended respirators punctuation was deleted.
Section 2: Ingredient table was modified.
Section 15: EPCRA 313 information was added.
Section 15: EPCRA 313 text was added.
Section 8: Exposure guidelines ingredient information was modified.
Section 8: Exposure guideline note was added.
Section 3: Carcinogenicity table was added.
Section 6: Environmental procedures information was modified.
Section 8: Hand protection information was modified.
Copyright was modified.

DISCLAIMER: The information in this Material Safety Data Sheet (MSDS) is believed to be correct as of the date issued. 3M MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application of a 3M product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

3M provides information in electronic form as a service to its customers. Due to the remote possibility that electronic transfer may have resulted in errors, omissions or alterations in this information, 3M makes no representations as to its completeness or accuracy. In addition, information obtained from a database may not be as current as the information in the MSDS available directly from 3M

3M USA MSDSs are available at www.3M.com