Material Safety Data Sheet

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SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 3M(TM) Adhesion Promoter 111
MANUFACTURER: 3M
DIVISION: Industrial Adhesives and Tapes
ADDRESS: 3M Center
St. Paul, MN 55144-1000

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

Issue Date: 12/15/2005
Supercedes Date: 09/09/2005
Document Group: 19-9940-8

Product Use:
Specific Use: adhesion promoter

SECTION 2: INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>C.A.S. No.</th>
<th>% by Wt</th>
</tr>
</thead>
<tbody>
<tr>
<td>isopropyl alcohol</td>
<td>67-63-0</td>
<td>90 - 99.5</td>
</tr>
<tr>
<td>active ingredients</td>
<td>Mixture</td>
<td>0.5 - 2</td>
</tr>
</tbody>
</table>

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Odor, Color, Grade: mild odor, clear/colorless liquid
General Physical Form: Liquid
Immediate health, physical, and environmental hazards: Flammable liquid and vapor. Closed containers exposed to heat from fire may build pressure and explode. Vapors may travel long distances along the ground or floor to an ignition source and flash back. May cause target organ effects.

3.2 POTENTIAL HEALTH EFFECTS

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

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

May be absorbed following inhalation and cause target organ effects.

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

May be absorbed following ingestion and cause target organ effects.

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.

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: Do not induce vomiting unless instructed to do so by medical personnel. Give victim two glasses of water. Never give anything by mouth to an unconscious person. Get medical attention.

SECTION 5: FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES

- Autoignition temperature: 425 ºC
- Flash Point: 11 ºC [Test Method: Closed Cup]
- Flammable Limits - LEL: 2 % volume
- Flammable Limits - UEL: 12.7 % volume
- OSHA Flammability Classification: Class IB Flammable Liquid

5.2 EXTINGUISHING MEDIA

Use fire extinguishers with class B extinguishing agents (e.g., dry chemical, carbon dioxide).
5.3 PROTECTION OF FIRE FIGHTERS

Special Fire Fighting Procedures: Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture. Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

Unusual Fire and Explosion Hazards: Flammable liquid and vapor. Closed containers exposed to heat from fire may build pressure and explode. Vapors may travel long distances along the ground or floor to an ignition source and flash back.

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

SECTION 6: ACCIDENTAL RELEASE MEASURES

Accidental Release Measures: Refer to other sections of this MSDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment. Call 3M-HELPS line (1-800-364-3577) for more information on handling and managing the spill. Evacuate unprotected and untrained personnel from hazard area. The spill should be cleaned up by qualified personnel. Remove all ignition sources such as flames, smoking materials, and electrical spark sources. 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. Contain spill. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water. Cover spill area with a fire-extinguishing foam designed for use on solvents, such as alcohols and acetone, that can dissolve in water. An AR - AFFF type foam is recommended. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Collect as much of the spilled material as possible using non-sparking tools. Clean up residue with detergent and water. Collect the resulting residue containing solution. Place in a metal container approved for transportation by appropriate authorities. Seal the container. Dispose of collected material as soon as possible.

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
Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. Keep away from heat, sparks, open flame, pilot lights and other sources of ignition. Ground containers securely when transferring contents. Wear low static or properly grounded shoes. Avoid breathing of vapors, mists or spray. Avoid prolonged or repeated skin contact. Avoid static discharge. Avoid eye contact with vapors, mists, or spray. Keep out of the reach of children. For industrial or professional use only. Avoid contact with oxidizing agents.

7.2 STORAGE

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS
Provide appropriate local exhaust ventilation on open containers.
8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

8.2.1 Eye/Face Protection
Avoid eye contact with vapors, mists, or spray.

8.2.2 Skin Protection
Avoid prolonged or repeated skin contact.

Select and use gloves and/or protective clothing to prevent skin contact based on the results of an exposure assessment. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible materials. Gloves made from the following material(s) are recommended: Butyl Rubber, Neoprene, Nitrile Rubber.

8.2.3 Respiratory Protection
Avoid breathing of vapors, mists or spray.

8.2.4 Prevention of Swallowing
Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water.

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>isopropyl alcohol</td>
<td>ACGIH</td>
<td>TWA</td>
<td>200 ppm</td>
<td>Table A4</td>
</tr>
<tr>
<td>isopropyl alcohol</td>
<td>ACGIH</td>
<td>STEL</td>
<td>400 ppm</td>
<td>Table A4</td>
</tr>
<tr>
<td>isopropyl alcohol</td>
<td>OSHA</td>
<td>TWA</td>
<td>400 ppm</td>
<td>Table Z-1A</td>
</tr>
<tr>
<td>isopropyl alcohol</td>
<td>OSHA</td>
<td>STEL</td>
<td>500 ppm</td>
<td>Table Z-1A</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>mild odor, clear/colorless liquid</td>
</tr>
<tr>
<td>General Physical Form:</td>
<td>Liquid</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>425 °C</td>
</tr>
<tr>
<td>Flash Point</td>
<td>11 °C [Test Method: Closed Cup]</td>
</tr>
<tr>
<td>Flammable Limits - LEL</td>
<td>2 % volume</td>
</tr>
<tr>
<td>Flammable Limits - UEL</td>
<td>12.7 % volume</td>
</tr>
<tr>
<td>Boiling point</td>
<td>82.4 °C</td>
</tr>
<tr>
<td>Density</td>
<td>0.789 g/ml</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>2.1</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>33 mmHg [@ 68 °F]</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.789</td>
</tr>
<tr>
<td>pH</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Melting point</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>
Solubility in Water: Complete
Volatile Organic Compounds: 780 g/l
Percent volatile: 99 % weight
VOC Less H2O & Exempt Solvents: 780 g/l

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable.
Materials and Conditions to Avoid: Sparks and/or flames
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>

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


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

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

SECTION 14: TRANSPORT INFORMATION
ID Number(s):
70-0064-0398-7, 70-0064-0673-3

Please contact the emergency numbers listed on the first page of the MSDS for Transportation Information for this material.

SECTION 15: REGULATORY INFORMATION

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 - No

STATE REGULATIONS
Contact 3M for more information.

CHEMICAL INVENTORIES
The components of this product are in compliance with the chemical notification requirements of TSCA.
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: 2  Flammability: 3  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 2: Ingredient table was modified.

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3M MSDSs are available at www.3M.com
DATE: 05/01/08
3M ID NUMBER: 70-0064-0398-7
PRODUCT DESC: 411 ADHESION PROMOTER 4 EACH 250 MILLILITER BOTTLES/CASE
PROTECTIVE SERVICE DURING TRANSIT: PROTECTIVE SERVICE NOT REQUIRED
NMFC DESCRIPTION: ALCOHOLS, O/T ALCOHOLIC BEVERAGES, IN CONTAINERS IN BOXES
NMFC ITEM NUMBER: 042690 SUB: 02 CLASS: 65.0

AGENCY: DOTG - DEPARTMENT OF TRANSPORTATION - GROUND (UNITED STATES)
CONSUMER COMMODITY, ORM-D

AGENCY: DOTW - DEPARTMENT OF TRANSPORTATION - VESSEL (UNITED STATES)
CONSUMER COMMODITY, ORM-D

AGENCY: IATA - INTERNATIONAL AIR TRANSPORT ASSOCIATION (UNITED NATIONS)
UN1219, ISOPROPANOL, 3, II

AGENCY: IMO - INTERNATIONAL MARITIME ORGANIZATION (UNITED NATIONS)
UN1219, ISOPROPANOL, 3, II, LIMITED QUANTITY, +011C

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