Material Safety Data Sheet

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SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 3M™ Adhesion Promoter 4298UV
MANUFACTURER: 3M
DIVISION: Automotive Division
ADDRESS: 3M Center, St. Paul, MN 55144-1000

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

Issue Date: 06/05/13
Supercedes Date: 06/03/13
Document Group: 07-4047-2

Product Use:
   Intended 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>CYCLOHEXANE</td>
<td>110-82-7</td>
<td>45 - 50</td>
</tr>
<tr>
<td>XYLENE</td>
<td>1330-20-7</td>
<td>30 - 35</td>
</tr>
<tr>
<td>ETHYLBENZENE</td>
<td>100-41-4</td>
<td>&lt; 11</td>
</tr>
<tr>
<td>ETHYL ALCOHOL</td>
<td>64-17-5</td>
<td>5 - 10</td>
</tr>
<tr>
<td>ACRYLATE POLYMER (NJTSRN 04499600-5984P)</td>
<td>Trade Secret</td>
<td>1 - 5</td>
</tr>
<tr>
<td>CHLORINATED RUBBER</td>
<td>68609-36-9</td>
<td>1 - 5</td>
</tr>
<tr>
<td>ETHYL ACETATE</td>
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</tr>
<tr>
<td>EPOXY RESIN</td>
<td>25068-38-6</td>
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</tr>
<tr>
<td>METHYL ALCOHOL</td>
<td>67-56-1</td>
<td>&lt; 0.4</td>
</tr>
<tr>
<td>TOLUENE</td>
<td>108-88-3</td>
<td>&lt; 0.3</td>
</tr>
</tbody>
</table>

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Specific Physical Form: Liquid
Odor, Color, Grade: yellow, solvent odor
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 allergic skin reaction. May cause target organ effects. Contains a chemical or chemicals which can cause cancer. Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

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:
Moderate Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness.

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

May be absorbed through skin and cause target organ effects.

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.

Chemical (Aspiration) Pneumonitis: Signs/symptoms may include coughing, gasping, choking, burning of the mouth, difficulty breathing, bluish colored skin (cyanosis), and may be fatal.

May be absorbed following ingestion and cause target organ effects.

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

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

Prolonged or repeated exposure may cause:
Kidney/Bladder Effects: Signs/symptoms may include changes in urine production, abdominal or lower back pain, increased protein in urine, increased blood urea nitrogen (BUN), blood in urine, and painful urination.

Liver Effects: Signs/symptoms may include loss of appetite, weight loss, fatigue, weakness, abdominal tenderness and jaundice.

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

Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

Carcinogenicity:
NOTE: This product contains ethanol. Alcoholic beverages and ethanol in alcoholic beverages have been classified as human carcinogens by the International Agency for Research on Cancer, the U.S. National Toxicology Program, and the California Environmental Protection Agency (for purposes of Proposition 65). Exposure to ethanol during the foreseeable use of this product is not expected to cause cancer.

Contains a chemical or chemicals which can cause cancer.
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: Remove contaminated clothing and shoes. Immediately flush skin with large amounts of water. Get medical attention. Wash contaminated clothing and clean shoes before reuse.
Inhalation: Remove person to fresh air. If signs/symptoms develop, get medical attention.
If Swallowed: Do not induce vomiting. Give victim two glasses of water. Never give anything by mouth to an unconscious person. Get immediate medical attention.

SECTION 5: FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES

Autoignition temperature 500 °F [Test Method: Estimated]
Flash Point 34 °F [Test Method: SETAFIASH]
Flammable Limits(LEL) Approximately 1 % [Details: CONDITIONS: calculated]
Flammable Limits(UEL) 6 % [Details: CONDITIONS: calculated]
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

6.1. Personal precautions, protective equipment and emergency procedures
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. Remember, adding an absorbent material does not remove a toxic, corrosivity or flammability hazard.
6.2. Environmental precautions
For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water. Place in a metal container approved for transportation by appropriate authorities. Dispose of collected material as soon as possible.

Clean-up methods
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. Contain spill. 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 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 MSDS. Seal the container.

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 static discharge. Avoid eye contact with vapors, mists, or spray. For industrial or professional use only. Avoid contact with oxidizing agents.

7.2 Storage
Store away from acids. Store away from heat. Store out of direct sunlight. Keep container in well-ventilated area. Keep container tightly closed. Store away from areas where product may come into contact with food or pharmaceuticals. Store away from oxidizing agents.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Engineering Controls
Use with appropriate local exhaust ventilation. Provide local exhaust ventilation at transfer points. Provide appropriate local exhaust ventilation on open containers. Do not use in a confined area or areas with little or no air movement.

8.2 Personal Protective Equipment (PPE)

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

The following eye protection(s) are recommended: Safety Glasses with side shields.

8.2.2 Skin Protection
Avoid 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: Polyvinyl Alcohol (PVA).
8.2.3 Respiratory Protection
Avoid breathing of vapors, mists or spray.
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.

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>CYCLOHEXANE</td>
<td>ACGIH</td>
<td>TWA</td>
<td>100 ppm</td>
<td></td>
</tr>
<tr>
<td>CYCLOHEXANE</td>
<td>OSHA</td>
<td>TWA</td>
<td>1050 mg/m3</td>
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</tr>
<tr>
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<td>ACGIH</td>
<td>TWA</td>
<td>400 ppm</td>
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<tr>
<td>ETHYL ACETATE</td>
<td>OSHA</td>
<td>TWA</td>
<td>1400 mg/m3</td>
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<tr>
<td>ETHYL ALCOHOL</td>
<td>ACGIH</td>
<td>STEL</td>
<td>1000 ppm</td>
<td></td>
</tr>
<tr>
<td>ETHYL ALCOHOL</td>
<td>OSHA</td>
<td>TWA</td>
<td>1900 mg/m3</td>
<td></td>
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<tr>
<td>ETHYLBENZENE</td>
<td>ACGIH</td>
<td>TWA</td>
<td>20 ppm</td>
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</tr>
<tr>
<td>ETHYLBENZENE</td>
<td>CMRG</td>
<td>TWA</td>
<td>25 ppm</td>
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</tr>
<tr>
<td>ETHYLBENZENE</td>
<td>CMRG</td>
<td>STEL</td>
<td>75 ppm</td>
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<tr>
<td>ETHYLBENZENE</td>
<td>OSHA</td>
<td>TWA</td>
<td>435 mg/m3</td>
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<tr>
<td>METHYL ALCOHOL</td>
<td>ACGIH</td>
<td>TWA</td>
<td>200 ppm</td>
<td>Skin Notation*</td>
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<tr>
<td>METHYL ALCOHOL</td>
<td>CMRG</td>
<td>STEL</td>
<td>250 ppm</td>
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<td>METHYL ALCOHOL</td>
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<td>TWA</td>
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<tr>
<td>TOLUENE</td>
<td>ACGIH</td>
<td>TWA</td>
<td>20 ppm</td>
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</tr>
<tr>
<td>TOLUENE</td>
<td>CMRG</td>
<td>STEL</td>
<td>75 ppm</td>
<td>Skin Notation*</td>
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<tr>
<td>TOLUENE</td>
<td>OSHA</td>
<td>TWA</td>
<td>200 ppm</td>
<td></td>
</tr>
<tr>
<td>TOLUENE</td>
<td>OSHA</td>
<td>CEIL</td>
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<td>ACGIH</td>
<td>TWA</td>
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<td></td>
</tr>
<tr>
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<td>CMRG</td>
<td>STEL</td>
<td>150 ppm</td>
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<tr>
<td>XYLENE</td>
<td>CMRG</td>
<td>STEL</td>
<td>50 ppm</td>
<td></td>
</tr>
<tr>
<td>XYLENE</td>
<td>OSHA</td>
<td>TWA</td>
<td>435 mg/m3</td>
<td></td>
</tr>
</tbody>
</table>

* Substance(s) refer to the potential contribution to the overall exposure by the cutaneous route including mucous membrane and eye, either by airborne or, more particularly, by direct contact with the substance. Vehicles can alter skin absorption.

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>Specific Physical Form:</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odor, Color, Grade:</td>
<td>yellow, solvent odor</td>
</tr>
<tr>
<td>General Physical Form:</td>
<td>Liquid</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>500 °F [Test Method: Estimated]</td>
</tr>
<tr>
<td>Flash Point</td>
<td>34 °F [Test Method: SETAFLASH]</td>
</tr>
<tr>
<td>Flammable Limits(LEL)</td>
<td>Approximately 1 % [Details: CONDITIONS: calculated]</td>
</tr>
<tr>
<td>Flammable Limits(UEL)</td>
<td>6 % [Details: CONDITIONS: calculated]</td>
</tr>
</tbody>
</table>
Boiling Point  
>=170 °F [Details: (initial)]
Density  
6.8 lb/gal
Vapor Density  
1.7 [Test Method: Estimated] [Ref Std: AIR=1]
Vapor Pressure  
129 mmHg [@ 20 ºC] [Details: CONDITIONS: calculated]
Specific Gravity  
0.82 [Ref Std: WATER=1]
pH  
Approximately 5.5
Melting point  
Not Applicable
Solubility In Water  
Approximately 10 %
Evaporation rate  
Approximately 6.4 [Ref Std: XYLENE=1] [Details: CONDITIONS: calculated]
Hazardous Air Pollutants  
<=45.4 % weight
Volatile Organic Compounds  
780 g/l [Test Method: calculated SCAQMD rule 443.1]
Kow - Oct/Water partition coef  
No Data Available
Percent volatile  
93 %
VOC Less H2O & Exempt Solvents  
780 g/l [Test Method: calculated SCAQMD rule 443.1]
Viscosity  
<=25 centipoise [@ 20 ºC] [Details: (Typically 5 cps)]

**SECTION 10: STABILITY AND REACTIVITY**

Stability: Stable.

Materials and Conditions to Avoid:
10.1 Conditions to avoid
Heat
Sparks and/or flames

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>

**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
CHEMICAL FATE INFORMATION

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Method: Incinerate in a permitted hazardous waste incinerator. Combustion products will include HCl. Facility must be capable of handling halogenated materials. As a disposal alternative, dispose of waste product in a permitted hazardous waste facility.

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

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

SECTION 14: TRANSPORT INFORMATION

ID Number(s):
70-0706-9724-1, 70-0706-9725-8, 70-0706-9727-4, 70-0711-0137-5, 75-3472-0925-8

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

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 - 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>CYCLOHEXANE</td>
<td>110-82-7</td>
<td>45 - 50</td>
</tr>
<tr>
<td>XYLENE</td>
<td>1330-20-7</td>
<td>30 - 35</td>
</tr>
<tr>
<td>XYLENE (Benzene, 1,2-dimethyl-)</td>
<td>1330-20-7</td>
<td>30 - 35</td>
</tr>
<tr>
<td>XYLENE (Benzene, 1,3-dimethyl-)</td>
<td>1330-20-7</td>
<td>30 - 35</td>
</tr>
<tr>
<td>XYLENE (Benzene, 1,4-dimethyl-)</td>
<td>1330-20-7</td>
<td>30 - 35</td>
</tr>
<tr>
<td>XYLENE (Benzene, dimethyl-)</td>
<td>1330-20-7</td>
<td>30 - 35</td>
</tr>
<tr>
<td>ETHYLBENZENE</td>
<td>100-41-4</td>
<td>&lt; 11</td>
</tr>
</tbody>
</table>

STATE REGULATIONS
Contact 3M for more information.

CALIFORNIA PROPOSITION 65

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>C.A.S. No</th>
<th>Classification</th>
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<tbody>
<tr>
<td>ETHYLBENZENE</td>
<td>100-41-4</td>
<td>**Carcinogen</td>
</tr>
<tr>
<td>METHYL ALCOHOL</td>
<td>67-56-1</td>
<td>*Developmental Toxin</td>
</tr>
<tr>
<td>TOLUENE</td>
<td>108-88-3</td>
<td>*Female reproductive toxin</td>
</tr>
<tr>
<td>TOLUENE</td>
<td>108-88-3</td>
<td>*Developmental Toxin</td>
</tr>
</tbody>
</table>

* WARNING: contains a chemical or chemicals which can cause birth defects or other reproductive harm.
** WARNING: contains a chemical which can cause cancer.

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

All applicable chemical ingredients in this material are listed on the European Inventory of Existing Chemical Substances (EINECS), or are exempt polymers whose monomers are listed on EINECS. 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 3: Other health effects information (reproductive hazards) was modified.

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