Material Safety Data Sheet

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SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 3M™ Scotch-Weld™ Nitrile High Performance Plastic Adhesive 1099
MANUFACTURER: 3M
DIVISION: Industrial Adhesives and Tapes Division
ADDRESS: 3M Center
St. Paul, MN 55144-1000

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

Issue Date: 02/12/11
Supercedes Date: 01/25/11
Document Group: 10-2442-1

Product Use:
Specific Use: plastic adhesive
Intended Use: Industrial use

SECTION 2: INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>C.A.S. No.</th>
<th>% by Wt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>67-64-1</td>
<td>60 - 70</td>
</tr>
<tr>
<td>Acrylonitrile-Butadiene Polymer</td>
<td>9003-18-3</td>
<td>10 - 20</td>
</tr>
<tr>
<td>Phenolic Resin</td>
<td>25085-50-1</td>
<td>5 - 10</td>
</tr>
<tr>
<td>Phenolic Polymer</td>
<td>55185-45-0</td>
<td>5 - 10</td>
</tr>
<tr>
<td>Salicylic Acid</td>
<td>69-72-7</td>
<td>1 - 5</td>
</tr>
<tr>
<td>Zinc Oxide</td>
<td>1314-13-2</td>
<td>1 - 3</td>
</tr>
<tr>
<td>Antioxidant</td>
<td>68411-46-1</td>
<td>&lt; 0.4</td>
</tr>
<tr>
<td>Phenol</td>
<td>108-95-2</td>
<td>&lt; 0.4</td>
</tr>
</tbody>
</table>

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Odor, Color, Grade: White/pink to light tan liquid - ketone odor
General Physical Form: Liquid
Immediate health, physical, and environmental hazards: Closed containers exposed to heat from fire may build pressure and explode. Extremely flammable liquid and vapor. Vapors may travel long distances along the ground or floor to an ignition source and flash back. May cause severe eye irritation. May cause target organ effects. Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

3.2 POTENTIAL HEALTH EFFECTS

Eye Contact:
Severe Eye Irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired 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.

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

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: Immediately flush eyes with large amounts of water for at least 15 minutes. Get immediate 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 465 °C [Details: Acetone]
Flash Point -4 °F [Test Method: Closed Cup]
Flammable Limits(LEL) 2.6 % volume
Flammable Limits(UEL) 12.8 % 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: Closed containers exposed to heat from fire may build pressure and explode. Extremely flammable liquid and vapor. 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. Collect the resulting residue containing solution. 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. An aqueous film forming foam (AFFF) 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. Contents may be under pressure, open carefully. Ground containers securely when transferring contents. Wear low static or properly grounded shoes. No smoking while handling this material. Avoid breathing of vapors, mists or spray. Avoid static discharge. Avoid eye contact with vapors, mists, or spray. Keep out of the reach of children. Vapors may ignite explosively. May cause flash fire. Prevent build-up of vapors - open all windows and doors. Maintain vapor concentrations below recommended exposure limits. Use only with cross-ventilation. Without adequate ventilation, vapors may settle in low-lying areas. Keep away from heat, sparks, and open flame. Do not smoke or ignite matches, lighters, etc. Avoid contact with oxidizing agents.

7.2 STORAGE

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS
Use with appropriate local exhaust ventilation. Provide appropriate local exhaust ventilation on open containers. If exhaust ventilation is not available, use appropriate respiratory protection.

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
Indirect Vented Goggles

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:   Butyl Rubber
Polymer laminate

8.2.3 Respiratory Protection
Avoid breathing of vapors, mists or spray. Select one of the following NIOSH approved respirators based on airborne concentration of contaminants and in accordance with OSHA regulations: Half facepiece or fullface air-purifying respirator with organic vapor cartridges Consult the current 3M Respiratory Selection Guide for additional information or call 1-800-243-4630 for 3M technical assistance.

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

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Authority</th>
<th>Type</th>
<th>Limit</th>
<th>Additional Information</th>
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</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>ACGIH</td>
<td>TWA</td>
<td>500 ppm</td>
<td></td>
</tr>
<tr>
<td>Acetone</td>
<td>ACGIH</td>
<td>STEL</td>
<td>750 ppm</td>
<td></td>
</tr>
<tr>
<td>Acetone</td>
<td>OSHA</td>
<td>TWA</td>
<td>2400 mg/m3</td>
<td></td>
</tr>
<tr>
<td>Phenol</td>
<td>ACGIH</td>
<td>TWA</td>
<td>5 ppm</td>
<td>Skin Notation*</td>
</tr>
<tr>
<td>Phenol</td>
<td>OSHA</td>
<td>TWA</td>
<td>19 mg/m3</td>
<td>Skin Notation*</td>
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<tr>
<td>Zinc Oxide</td>
<td>ACGIH</td>
<td>TWA, respirable fraction</td>
<td>2 mg/m3</td>
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<tr>
<td>Zinc Oxide</td>
<td>ACGIH</td>
<td>STEL, respirable fraction</td>
<td>10 mg/m3</td>
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<tr>
<td>Zinc Oxide</td>
<td>OSHA</td>
<td>TWA, as fume</td>
<td>5 mg/m3</td>
<td></td>
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<tr>
<td>Zinc Oxide</td>
<td>OSHA</td>
<td>TWA, respirable fraction</td>
<td>5 mg/m3</td>
<td></td>
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<tr>
<td>Zinc Oxide</td>
<td>OSHA</td>
<td>TWA, as total dust</td>
<td>15 mg/m3</td>
<td></td>
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</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

- **Odor, Color, Grade:** White/pink to light tan liquid - ketone odor
- **General Physical Form:** Liquid
- **Autoignition temperature**
  - 465 ºC [Details: Acetone]
- **Flash Point**
  - -4 ºF [Test Method: Closed Cup]
- **Flammable Limits(LEL)**
  - 2.6 % volume
- **Flammable Limits(UEL)**
  - 12.8 % volume
- **Boiling Point**
  - >=56 ºC
- **Density**
  - 0.89 g/ml
- **Vapor Density**
  - 2.0 [Ref Std: AIR=1]
- **Vapor Pressure**
  - <=185 mmHg [@ 68 ºF]
- **Specific Gravity**
  - 0.89 [Ref Std: WATER=1]
- **pH**
  - Not Applicable
- **Melting point**
  - Not Applicable
- **Solubility in Water**
  - Slight (less than 10%)
- **Evaporation rate**
  - 1.9 [Ref Std: ETHER=1]
- **Hazardous Air Pollutants**
  - <=0.5 % weight [Test Method: Calculated]
- **Volatile Organic Compounds**
  - 568 g/l [Details: EU VOC content]
- **Kow - Oct/Water partition coef**
  - No Data Available
- **Percent volatile**
  - 60 - 70 % weight
- **VOC Less H2O & Exempt Solvents**
  - 4 g/l [Test Method: calculated SCAQMD rule 443.1]
- **VOC Less H2O & Exempt Solvents**
  - 0.04 lb/gal [Test Method: calculated SCAQMD rule 443.1]
- **VOC Less H2O & Exempt Solvents**
  - 0.5 % [Test Method: tested per SCAQMD method 305]
Viscosity: 2150 centipoise [@ 73.4 °F]
Solids Content: >=36.1 %

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
Strong oxidizing agents

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>Aldehydes</td>
<td>During Combustion</td>
</tr>
<tr>
<td>Hydrocarbons</td>
<td>During Combustion</td>
</tr>
<tr>
<td>Carbon monoxide</td>
<td>During Combustion</td>
</tr>
<tr>
<td>Carbon dioxide</td>
<td>During Combustion</td>
</tr>
<tr>
<td>Hydrogen Cyanide</td>
<td>During Combustion</td>
</tr>
<tr>
<td>Ketones</td>
<td>During Combustion</td>
</tr>
<tr>
<td>Oxides of Nitrogen</td>
<td>During Combustion</td>
</tr>
<tr>
<td>Oxides of Zinc</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

<table>
<thead>
<tr>
<th>ID Number</th>
<th>UPC</th>
<th>ID Number</th>
<th>UPC</th>
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<tr>
<td>62-1099-2631-1</td>
<td>00-21200-19808-3</td>
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<td>00-21200-19813-7</td>
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<tr>
<td>62-1099-6530-1</td>
<td>00-21200-19811-3</td>
<td>62-1099-7530-0</td>
<td>00-21200-19815-1</td>
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<tr>
<td>62-1099-8530-9</td>
<td>00-21200-19814-4</td>
<td>62-1099-9530-8</td>
<td>00-21200-30007-3</td>
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<tr>
<td>62-1099-9532-4</td>
<td>00-48011-58552-9</td>
<td>62-1099-9535-7</td>
<td>00-21200-30007-3</td>
</tr>
</tbody>
</table>

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

STATE REGULATIONS
Contact 3M for more information.

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: Potential effects from skin contact information was modified.
Section 4: First aid for skin contact - decontamination - was modified.
Section 4: First aid for skin contact - medical assistance - was modified.
Section 2: Ingredient table was modified.
Section 3: Immediate skin hazard(s) was deleted.
Section 4: First aid for skin contact - termination of exposure - was deleted.
Section 4: First aid for skin contact - handling - was deleted.

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