

**MATERIAL SAFETY DATA SHEET 3M™ Scotch-Weld™ High Performance Industrial Plastic Adhesive 4693, Clear 08/03/10**



**Material Safety Data Sheet**

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**SECTION 1: PRODUCT AND COMPANY IDENTIFICATION**

**PRODUCT NAME:** 3M™ Scotch-Weld™ High Performance Industrial Plastic Adhesive 4693, Clear  
**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:** 08/03/10  
**Supercedes Date:** 07/29/10

**Document Group:** 11-4283-5

**Product Use:**

Specific Use: Plastic Adhesive  
 Intended Use: Industrial use

**SECTION 2: INGREDIENTS**

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>% by Wt</u>
Cyclohexane	110-82-7	60 - 80
Styrene-Butadiene Polymer	Trade Secret	7 - 13
Polyterpene Resin	31393-98-3	5 - 10
Dipentene Polymer	9003-73-0	5 - 10
Acetone	67-64-1	0.1 - 1

**SECTION 3: HAZARDS IDENTIFICATION**

**3.1 EMERGENCY OVERVIEW**

**Odor, Color, Grade:** Light amber colored, solvent 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 target organ effects.

## 3.2 POTENTIAL HEALTH EFFECTS

### Eye Contact:

Mild Eye Irritation: Signs/symptoms may include redness, pain, and tearing.

### Skin Contact:

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

### 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 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:** 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 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	245 °C
Flash Point	-4 °F [ <i>Test Method:</i> Closed Cup]
Flammable Limits - LEL	1.1 % volume
Flammable Limits - UEL	8.0 % 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

#### Personal precautions

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.

#### Environmental procedures

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. Do not spray near flames or sources of ignition. 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. Do not breathe vapors. 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 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. Use in an enclosed process area is recommended. Use with functioning spray booth or local exhaust. If exhaust ventilation is not available, use appropriate respiratory protection. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below Occupational Exposure Limits and/or control mist, vapor, or spray. If ventilation is not adequate, use respiratory protection equipment.

### 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: Indirect Vented Goggles

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#### 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: Nitrile Rubber

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#### 8.2.3 Respiratory Protection

Avoid breathing of vapors, mists or spray. Do not breathe vapors.

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.

### 8.3 EXPOSURE GUIDELINES

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<u>Ingredient</u>	<u>Authority</u>	<u>Type</u>	<u>Limit</u>	<u>Additional Information</u>
Acetone	ACGIH	TWA	500 ppm	
Acetone	ACGIH	STEL	750 ppm	
Acetone	OSHA	TWA	2400 mg/m3	
Cyclohexane	ACGIH	TWA	100 ppm	
Cyclohexane	OSHA	TWA	1050 mg/m3	

**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**

<b>Odor, Color, Grade:</b>	Light amber colored, solvent odor.
<b>General Physical Form:</b>	Liquid
<b>Autoignition temperature</b>	245 °C
<b>Flash Point</b>	-4 °F [ <i>Test Method:</i> Closed Cup]
<b>Flammable Limits - LEL</b>	1.1 % volume
<b>Flammable Limits - UEL</b>	8.0 % volume
<b>Boiling point</b>	>=81 °C [ <i>Details:</i> Cyclohexane]
<b>Density</b>	0.82 g/ml
<b>Vapor Density</b>	0.8 [ <i>Ref Std:</i> AIR=1]
<b>Vapor Pressure</b>	<=95 mmHg [@ 68 °F]
<b>Specific Gravity</b>	0.82 [ <i>Ref Std:</i> WATER=1]
<b>pH</b>	<i>Not Applicable</i>
<b>Melting point</b>	<i>Not Applicable</i>
<b>Solubility in Water</b>	Slight (less than 10%)
<b>Evaporation rate</b>	>=2.0 [ <i>Ref Std:</i> WATER=1]
<b>Hazardous Air Pollutants</b>	0 % weight [ <i>Test Method:</i> Calculated]
<b>Volatile Organic Compounds</b>	<=594 g/l [ <i>Test Method:</i> calculated SCAQMD rule 443.1] [ <i>Details:</i> low solids less exempts]
<b>Volatile Organic Compounds</b>	<=4.96 lb/gal [ <i>Test Method:</i> calculated SCAQMD rule 443.1] [ <i>Details:</i> low solids less exempts]
<b>Kow - Oct/Water partition coef</b>	<i>No Data Available</i>
<b>Percent volatile</b>	70 - 80 % weight
<b>VOC Less H2O &amp; Exempt Solvents</b>	<=72.4 % [ <i>Test Method:</i> calculated per CARB title 2]
<b>Viscosity</b>	150 - 300 centipoise [@ 73.4 °F]
<b>Solids Content</b>	>=10.8 %

**SECTION 10: STABILITY AND REACTIVITY**

**Stability:** Stable.

**Materials and Conditions to Avoid:**

**10.1 Conditions to avoid**

Heat  
 Sparks and/or flames

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**10.2 Materials to avoid**

Reducing agents  
Strong oxidizing agents

**Hazardous Polymerization:** Hazardous polymerization will not occur.

**Hazardous Decomposition or By-Products**

**Substance**

Aldehydes  
Carbon monoxide  
Carbon dioxide

**Condition**

During Combustion  
During Combustion  
During Combustion

**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:** Incinerate in a permitted hazardous waste incinerator. 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**

<b>ID Number</b>	<b>UPC</b>	<b>ID Number</b>	<b>UPC</b>
62-4493-3330-1	00-21200-85842-0	62-4493-6530-3	00-21200-83759-3
62-4493-6535-2		62-4493-7530-2	00-21200-83760-9

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62-4493-8530-1

00-21200-83761-1

62-4493-9530-0

00-21200-83762-3

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

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

<u>Ingredient</u>	<u>C.A.S. No</u>	<u>% by Wt</u>
Cyclohexane	110-82-7	60 - 80

**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.

**WHMIS:** Hazardous

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**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 9: Property description for optional properties was modified.

Section 10: Materials to avoid physical property was modified.

Section 9: Property description for required properties was added.

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