

## Material Safety Data Sheet



Revision Number: 002.1

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### 1. PRODUCT AND COMPANY IDENTIFICATION

**Product name:** 3491 Light Cure Adhesive  
**Product type:** Ultraviolet adhesive  
**Company address:**  
Henkel Corporation  
One Henkel Way  
Rocky Hill, Connecticut 06067

**IDH number:** 142886  
**Item number:** 17944  
**Region:** United States  
**Contact information:**  
Telephone: 860.571.5100  
Emergency telephone: 860.571.5100  
Internet: www.henkelna.com

### 2. HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

**Physical state:** Liquid  
**Color:** Clear  
**Odor:** Sharp

**HEALTH:** \*2  
**FLAMMABILITY:** 1  
**PHYSICAL HAZARD:** 1  
**Personal Protection:** See MSDS Section 8

**WARNING:** CAUSES EYE AND SKIN IRRITATION.  
MAY CAUSE ALLERGIC SKIN REACTION.  
MAY CAUSE RESPIRATORY TRACT IRRITATION.  
MAY BE HARMFUL IF SWALLOWED.

**Relevant routes of exposure:** Skin, Inhalation, Eyes

#### Potential Health Effects

**Inhalation:** May cause respiratory tract irritation.  
**Skin contact:** Causes skin irritation. May cause allergic skin reaction.  
**Eye contact:** Vapors may irritate eyes. Contact with eyes will cause irritation.  
**Ingestion:** May cause gastrointestinal tract irritation if swallowed.

**Existing conditions aggravated by exposure:** Eye, skin, and respiratory disorders. Acrylic acid: Respiratory disorders. Lung disease.

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

See Section 11 for additional toxicological information.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous components	CAS NUMBER	%
Isobornyl acrylate	5888-33-5	30 - 60
Polyurethane Methacrylate Resin	Proprietary	30 - 60
2-Hydroxyethyl methacrylate	868-77-9	5 - 10
High boiling methacrylate	7534-94-3	5 - 10
Acrylic acid	79-10-7	5 - 10
Hydroxyalkyl methacrylate	27813-02-1	1 - 5
Photoinitiator	947-19-3	1 - 5
Gamma-glycidoxypropyl trimethoxysilane	2530-83-8	1 - 5
Ethylene glycol	107-21-1	0.1 - 1

#### 4. FIRST AID MEASURES

<b>Inhalation:</b>	Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get immediate medical attention.
<b>Skin contact:</b>	Immediately wash skin thoroughly with soap and water. Remove contaminated clothing and footwear. If symptoms develop and persist, get medical attention. Wash clothing before reuse.
<b>Eye contact:</b>	Flush with copious amounts of water, preferably, lukewarm water for at least 15 minutes, holding eyelids open all the time. Get medical attention.
<b>Ingestion:</b>	Do not induce vomiting. Never give anything by mouth to an unconscious person. Keep individual calm. Get medical attention.

#### 5. FIRE FIGHTING MEASURES

<b>Flash point:</b>	> 93 °C (> 199.4 °F) Tagliabue closed cup
<b>Autoignition temperature:</b>	Not available
<b>Flammable/Explosive limits - lower:</b>	Not available
<b>Flammable/Explosive limits - upper:</b>	Not available
<b>Extinguishing media:</b>	Foam, dry chemical or carbon dioxide.
<b>Special firefighting procedures:</b>	Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear. Water may be unsuitable as an extinguishing media, but may be helpful in keeping adjacent containers cool.
<b>Unusual fire or explosion hazards:</b>	Uncontrolled polymerization may occur at high temperatures resulting in explosions or rupture of storage containers.
<b>Hazardous combustion products:</b>	Oxides of carbon. Oxides of nitrogen. Oxides of silicon. Isocyanates. Hydrogen cyanide. Amines. Formaldehyde. Irritating organic vapours.

#### 6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

<b>Environmental precautions:</b>	Do not allow product to enter sewer or waterways.
<b>Clean-up methods:</b>	Ensure adequate ventilation. Remove all sources of ignition. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Store in a partly filled, closed container until disposal. Refer to Section 8 "Exposure Controls / Personal Protection" prior to clean up.

#### 7. HANDLING AND STORAGE

<b>Handling:</b>	Use only with adequate ventilation. Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling. Do not taste or swallow. Refer to Section 8.
<b>Storage:</b>	For safe storage, store at or below 38 °C (100.4 °F) Keep in a cool, well ventilated area away from heat, sparks and open flame. Keep container tightly closed until ready for use.

For information on product shelf life contact Henkel Customer Service at (800) 243-4874.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous components	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Isobornyl acrylate	None	None	None	None
Polyurethane Methacrylate Resin	None	None	None	None
2-Hydroxyethyl methacrylate	None	None	None	3 ppm Ceiling <sup>1</sup>
High boiling methacrylate	None	None	None	None
Acrylic acid	2 ppm TWA (SKIN)	None	None	1 ppm TWA 3 ppm STEL (SKIN)
Hydroxyalkyl methacrylate	None	None	None	1 ppm TWA 3 ppm STEL
Photoinitiator	None	None	None	None
Gamma-glycidoxypropyl trimethoxysilane	None	None	None	None
Ethylene glycol	100 mg/m <sup>3</sup> Ceiling <sup>1</sup> Aerosol.	None	None	None

**Engineering controls:** Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits.

**Respiratory protection:** Use NIOSH approved respirator if there is potential to exceed exposure limit(s).

**Eye/face protection:** Safety goggles or safety glasses with side shields. Full face protection should be used if the potential for splashing or spraying of product exists. Safety showers and eye wash stations should be available.

**Skin protection:** Use impermeable gloves and protective clothing as necessary to prevent skin contact. Neoprene gloves.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state:</b>	Liquid
<b>Color:</b>	Clear
<b>Odor:</b>	Sharp
<b>Odor threshold:</b>	Not available
<b>pH:</b>	Not applicable
<b>Vapor pressure:</b>	< 10 mm hg (24 °C (75.2 °F))
<b>Boiling point/range:</b>	> 149 °C (> 300.2 °F)
<b>Melting point/ range:</b>	Not available
<b>Specific gravity:</b>	1.02
<b>Vapor density:</b>	Not available
<b>Flash point:</b>	> 93 °C (> 199.4 °F) Tagliabue closed cup
<b>Flammable/Explosive limits - lower:</b>	Not available
<b>Flammable/Explosive limits - upper:</b>	Not available
<b>Autoignition temperature:</b>	Not available
<b>Evaporation rate:</b>	Not available
<b>Solubility in water:</b>	Slight
<b>Partition coefficient (n-octanol/water):</b>	Not available
<b>VOC content:</b>	1.65 %; 16.83 g/l ASTM D5403 Process volatiles 0.36 %; 3.67 g/l (potential) 2.01 %; 20.50 g/l (total)

## 10. STABILITY AND REACTIVITY

<b>Stability:</b>	Stable under normal conditions of storage and use.
<b>Hazardous reactions:</b>	May occur.
<b>Hazardous decomposition products:</b>	Oxides of carbon. Oxides of nitrogen. Oxides of silicon. Isocyanates. Hydrogen cyanide. Amines. Formaldehyde. Irritating organic vapours.
<b>Incompatible materials:</b>	Strong oxidizing agents. Strong reducing agents. Water. Humid air.
<b>Conditions to avoid:</b>	Heat, flames, sparks and other sources of ignition. Direct sunlight. Ultraviolet radiation. Freezing conditions. Store away from incompatible materials.

## 11. TOXICOLOGICAL INFORMATION

<b>Acute oral product toxicity:</b>	LD50 (rat) > 5,000 mg/kg (Estimated)
<b>Acute dermal product toxicity:</b>	LD50 (rabbit) > 2,000 mg/kg (Estimated)

Hazardous components	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Isobornyl acrylate	No	No	No
Polyurethane Methacrylate Resin	No	No	No
2-Hydroxyethyl methacrylate	No	No	No
High boiling methacrylate	No	No	No
Acrylic acid	No	No	No
Hydroxyalkyl methacrylate	No	No	No
Photoinitiator	No	No	No
Gamma-glycidoxypropyl trimethoxysilane	No	No	No
Ethylene glycol	No	No	No

Hazardous components	Health Effects/Target Organs
Isobornyl acrylate	Irritant, Allergen
Polyurethane Methacrylate Resin	Irritant, Allergen
2-Hydroxyethyl methacrylate	Irritant, Allergen
High boiling methacrylate	Irritant, Allergen
Acrylic acid	Allergen, Corrosive, Irritant, Kidney, Liver
Hydroxyalkyl methacrylate	Irritant, Allergen
Photoinitiator	No Records
Gamma-glycidoxypropyl trimethoxysilane	Irritant, Allergen
Ethylene glycol	Blood, Bone Marrow, Central nervous system, Developmental, Eyes, Irritant, Kidney, Liver, Metabolic

## 12. ECOLOGICAL INFORMATION

<b>Ecological information:</b>	Not available
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### 13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

**Recommended method of disposal:** Dispose of according to Federal, State and local governmental regulations.

**Hazardous waste number:** Not a RCRA hazardous waste.

### 14. TRANSPORT INFORMATION

#### U.S. Department of Transportation Ground (49 CFR)

**Proper shipping name:** Not regulated  
**Hazard class or division:** None  
**Identification number:** None  
**Packing group:** None

#### International Air Transportation (ICAO/IATA)

**Proper shipping name:** Environmentally hazardous substance, liquid, n.o.s. (Isobornyl acrylate)  
**Hazard class or division:** 9  
**Identification number:** UN 3082  
**Packing group:** III

#### Water Transportation (IMO/IMDG)

**Proper shipping name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Isobornyl acrylate)  
**Hazard class or division:** 9  
**Identification number:** UN 3082  
**Packing group:** III  
**Marine pollutant:** Isobornyl acrylate

### 15. REGULATORY INFORMATION

#### United States Regulatory Information

**TSCA 8 (b) Inventory Status:** All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.  
**TSCA 12(b) Export Notification:** None above reporting de minimus  
**CERCLA/SARA Section 302 EHS:** None above reporting de minimus  
**CERCLA/SARA Section 311/312:** Immediate Health, Delayed Health  
**CERCLA/SARA 313:** This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). Acrylic acid (CAS# 79-10-7).  
**California Proposition 65:** This product contains a chemical known in the State of California to cause cancer.

#### Canada Regulatory Information

**CEPA DSL/NDL Status:** All components are listed on or are exempt from listing on the Canadian Domestic Substances List.  
**WHMIS hazard class:** D.2.A, D.2.B

### 16. OTHER INFORMATION

**This material safety data sheet contains changes from the previous version in sections:** New Material Safety Data Sheet format.

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