

LOCTITE CORPORATION

07/02/97

ROCKY HILL, CONNECTICUT 06067
EMERGENCY PHONE: (860) 571-5100

MATERIAL SAFETY DATA SHEET

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ADHESIVE 81669
ADHESIVE 81669

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Item No.: ADHESIVE 81669 Part of Kit: 81669
Part No.: 81669
Product Name: Form-A-Thread(TM) Stripped Thread Repair
Product Type: Adhesive

2. COMPOSITION, INFORMATION ON INGREDIENTS

Ingredients	CAS No.	%
Aromatic dimethacrylate ester	24448-20-2	35-40
Glass	65997-17-3	25-30
ALUMINUM	7429-90-5	20-25
ACRYLIC ACID*	79-10-7	3-5
Heterocyclic methacrylate	2455-24-5	1-3
SILICA, AMORPHOUS (FUMED)	7631-86-9	1-3
1-Acetyl-2-phenylhydrazine	114-83-0	0.1-1
CUMENE HYDROPEROXIDE*	80-15-9	0.1-1
2,6-DI-tert-BUTYL-p-CRESOL	128-37-0	0.1-0.5

* This component is listed as a SARA Section 313 Toxic Chemical.

Ingredients which have exposure limits

Exposure Limits (TWA) Ingredients	ACGIH (TLV)	OSHA (PEL)	OTHER
ALUMINUM	10 mg/m3 dust	15 mg/m3 dust 5 mg/m3 respir.	None
ACRYLIC ACID	2 ppm TWA skin 5.9 mg/m3 skin	10 ppm TWA skin 30 mg/m3 skin	1 ppm TWA skin 3 ppm STEL skin
SILICA, AMORPHOUS (FUMED)	10mg/m3 TWA	6mg/m3 TWA	None
2,6-DI-tert-BUTYL-p-CRESOL	None	None	10 mg/m3
Exposure Limits (STEL) Ingredients	ACGIH (TLV)	OSHA (PEL)	

3. HAZARDS IDENTIFICATION

Toxicity: Liquid is an eye and skin irritant.
Vapors may irritate eye, nose and throat.
Estimated oral LD50 more than 5000 mg/kg.
Estimated dermal LD50 more than 2000 mg/kg.

Primary Routes of Entry: None known

Signs and symptoms
of Exposure: Irritation of eyes, skin , nose or throat. May

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3. HAZARDS IDENTIFICATION

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cause dermatitis on,prolonged contact in sensitive individuals.

Existing Conditions

Aggravated by Exposure: Acrylic acid: Upper respiratory and lung diseases, dermatitis

Ingredients	Literature Referenced Target Organ and Other Health Effects	Carcinogen		
		NTP	IARC	OSHA
Aromatic dimethacrylate ester	ALG IRR	NO	NO	NO
Glass	No Data	NO	NO	NO
ALUMINUM	IRR LUN	NO	NO	NO
ACRYLIC ACID	AC4 ALG COR IRR	NO	N/A	NO
Heterocyclic methacrylate	ALG IRR	NO	NO	NO
SILICA, AMORPHOUS (FUMED)	NUI	NO	N/A	NO
1-Acetyl-2-phenylhydrazine	ALG	NO	NO	NO
CUMENE HYDROPEROXIDE	ALG CNS COR IRR MUT	NO	NO	NO
2,6-DI-tert-BUTYL-p-CRESOL	AC4 IRR MUT	NO	N/A	NO

Abbreviations

N/A Not Applicable
ALG Allergen
COR Corrosive
LUN Lung
NUI Nuisance dust

AC4 ACGIH-Unclassifiable as human carc.
CNS Central nervous system
IRR Irritant
MUT Mutagen

4. FIRST AID MEASURES

Ingestion: Do not induce vomiting. Keep individual calm. Obtain medical attention
Inhalation: Remove to fresh air. If symptoms persist, obtain medical attention.
Skin Contact: Wash with soap and water.
Eye Contact: Flush at least 15 minutes with water. Obtain medical attention.

5. FIRE FIGHTING MEASURES

Flash Point: More than 200°F Method: Tag Closed Cup
Recommended
Extinguishing Agents: Carbon dioxide, foam, dry chemical
Hazardous Products formed by Fire or Thermal Decomp Irritating organic vapors
Unusual Fire or Explosion Hazards: If ignited, burns with unusual heat evolution. In a fire, reaction with water is possible.

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5. FIRE FIGHTING MEASURES

(continued)

Explosive Limits:
(% by volume in air) Lower 2.0% Acrylic acid
30% Aluminum metal
(% by volume in air) Upper 8.0% Acrylic acid
Unknown Aluminum metal

6. ACCIDENTAL RELEASE MEASURES

Steps to be taken in case
of spill or leak: Soak up with an inert absorbent. Store in a partly
filled, closed container until disposal.

7. HANDLING AND STORAGE

Safe Storage: Store below 100°F
(Contact Loctite Customer Service 1-800-243-4874 for shelf Life information)
Handling: Avoid prolonged skin contact. Keep away from eyes.
Avoid breathing of vapors.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

Eyes: Safety glasses or goggles.
Skin: Rubber or plastic gloves.
Ventilation: Sufficient to maintain vapor concentration below
TLV.

See Section 2 for Exposure Limits.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Grey Liquid
Odor: Mild
Boiling Point: More than 300°F
pH: Does not apply
Solubility in Water: Low
Specific Gravity 1.57
Volatile Organic Compound
(EPA Method 24) 9.9%
Vapor Pressure: Less than 5mm at 80°C
Vapor Density: Not available
Evaporation Rate
(Ether = 1) Not available

10. STABILITY AND REACTIVITY

Stability: Stable
Hazardous Polymerization: Will not occur
Incompatibility: None
Conditions to Avoid: Not available

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10. STABILITY AND REACTIVITY

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Hazardous Decomposition

Products (non-thermal): None

11. TOXICOLOGICAL INFORMATION

See Section 3.

12. ECOLOGICAL INFORMATION

No data available

13. DISPOSAL CONSIDERATIONS

Recommended methods of

disposal: Incinerate following EPA and local regulations.

EPA Hazardous Waste

Number NH - Not a RCRA Hazardous Waste Material

14. TRANSPORTATION INFORMATION

DOT (49 CFR 172)

Domestic Ground Transport

Proper Shipping Name: Unrestricted

Hazard Class or

Division: Unrestricted

Identification Number: None

Marine Pollutant: None

IATA

Proper Shipping Name: Unrestricted

Class or Division: Unrestricted

UN or ID Number: None

15. REGULATORY INFORMATION

CA Proposition 65: No Prop65 chemicals are known to be present.

16. OTHER INFORMATION

Estimated NFPA(R) Code:

Health Hazard: 2

Fire Hazard: 1

Reactivity Hazard: 1

Specific Hazard: Does not apply

Estimated HMIS(R) Code:

Health Hazard: 2

Flammability Hazard: 1

Reactivity Hazards: 1

Personal Protection: See Section 8.

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16. OTHER INFORMATION

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NFPA is a registered trademark of the National Fire Protection Assn.
HMIS is a registered trademark of the National Paint and Coatings Assn.

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Revision Date: April 15, 1997 Revision: 0029

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ACTIVATOR 81669
ACTIVATOR 81669

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Item No.: ACTIVATOR 81669 Part of Kit: 81669
Part No.: 81669
Product Name: Form-A-Thread(TM) Stripped Thread Repair
Product Type: Activator

2. COMPOSITION, INFORMATION ON INGREDIENTS

Ingredients	CAS No.	%
Aromatic dimethacrylate ester	24448-20-2	40-45
Glass	65997-17-3	25-30
ALUMINUM	7429-90-5	20-25
Heterocyclic methacrylate	2455-24-5	1-3
SILICA, AMORPHOUS (FUMED)	7631-86-9	1-3
Organo-copper compound	1338-02-9	0.1-0.5

Ingredients which have exposure limits

Exposure Limits (TWA) Ingredients	ACGIH (TLV)	OSHA (PEL)	OTHER
ALUMINUM	10 mg/m3 dust	15 mg/m3 dust 5 mg/m3 respir.	None
SILICA, AMORPHOUS (FUMED)	10mg/m3 TWA	6mg/m3 TWA	None
Organo-copper compound	Cu 0.2mg/m3fume Cu 1 mg/m3 dust	Cu 0.1mg/m3fume Cu 1 mg/m3 dust	None
Exposure Limits (STEL) Ingredients	ACGIH (TLV)	OSHA (PEL)	

3. HAZARDS IDENTIFICATION

Toxicity: Estimated oral LD50 more than 5000 mg/kg.
Estimated dermal LD50 more than 2000 mg/kg.

Primary Routes of Entry: None known

Signs and symptoms
of Exposure: May cause dermatitis on prolonged contact in
sensitive individuals. Liquid may be an eye
irritant

Existing Conditions

Aggravated by Exposure: None known

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Item No.: ACTIVATOR 81669

3. HAZARDS IDENTIFICATION

(continued)

Ingredients	Literature Referenced Target Organ and Other Health Effects	Carcinogen		
		NTP	IARC	OSHA
Aromatic dimethacrylate ester	ALG IRR	NO	NO	NO
Glass	No Data	NO	NO	NO
ALUMINUM	IRR LUN	NO	NO	NO
Heterocyclic methacrylate	ALG IRR	NO	NO	NO
SILICA, AMORPHOUS (FUMED)	NUI	NO	N/A	NO
Organo-copper compound	BLO IRR	NO	NO	NO

Abbreviations

N/A Not Applicable	ALG Allergen
BLO Blood	IRR Irritant
LUN Lung	NUI Nuisance dust

4. FIRST AID MEASURES

Ingestion:	Do not induce vomiting. Keep individual calm. Obtain medical attention
Inhalation:	Remove to fresh air. If symptoms persist, obtain medical attention.
Skin Contact:	Wash with soap and water.
Eye Contact:	Flush at least 15 minutes with water. Obtain medical attention.

5. FIRE FIGHTING MEASURES

Flash Point:	More than 200°F	Method: Tag Closed Cup
Recommended Extinguishing Agents:	Carbon dioxide, foam, dry chemical	
Hazardous Products formed by Fire or Thermal Decomp	Irritating organic vapors	
Unusual Fire or Explosion Hazards:	If ignited, burns with unusual heat evolution. In a fire, reaction with water is possible.	

Explosive Limits:	
(% by volume in air) Lower	30% Aluminum metal
(% by volume in air) Upper	Unknown Aluminum metal

6. ACCIDENTAL RELEASE MEASURES

Steps to be taken in case

of spill or leak: Soak up with an inert absorbent. Store in a partly filled, closed container until disposal. Residue

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6. ACCIDENTAL RELEASE MEASURES

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may be cleaned with solvent.

7. HANDLING AND STORAGE

Safe Storage: Store below 110°F.
Observe normal safety precautions.
(Contact Loctite Customer Service 1-800-243-4874 for shelf Life information)
Handling: Avoid prolonged skin contact. Keep away from eyes.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

Eyes: Safety glasses or goggles.
Skin: Rubber or plastic gloves.
Ventilation: Does not apply

See Section 2 for Exposure Limits.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Blue-grey liquid
Odor: Mild
Boiling Point: More than 300°F
pH: Does not apply
Solubility in Water: Low
Specific Gravity: 1.57
Volatile Organic Compound
(EPA Method 24): 3.6%
Vapor Pressure: Less than 5mm at 80°C
Vapor Density: Not available
Evaporation Rate
(Ether = 1): Not available

10. STABILITY AND REACTIVITY

Stability: Stable
Hazardous Polymerization: Will not occur
Incompatibility: Strong oxidizers.
Conditions to Avoid: Not available
Hazardous Decomposition
Products (non-thermal): None

11. TOXICOLOGICAL INFORMATION

See Section 3.

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12. ECOLOGICAL INFORMATION

No data available

13. DISPOSAL CONSIDERATIONS

Recommended methods of
disposal: Incinerate following EPA and local regulations.
EPA Hazardous Waste
Number NH - Not a RCRA Hazardous Waste Material

14. TRANSPORTATION INFORMATION

DOT (49 CFR 172)

Domestic Ground Transport

Proper Shipping Name: Unrestricted
Hazard Class or
Division: Unrestricted
Identification Number: None
Marine Pollutant: None

IATA

Proper Shipping Name: Unrestricted
Class or Division: Unrestricted
UN or ID Number: None

15. REGULATORY INFORMATION

CA Proposition 65: No Prop65 chemicals are known to be present.

16. OTHER INFORMATION

Estimated NFPA(R) Code:

Health Hazard: 2
Fire Hazard: 1
Reactivity Hazard: 1
Specific Hazard: Does not apply

Estimated HMIS(R) Code:

Health Hazard: 2
Flammability Hazard: 1
Reactivity Hazards: 1
Personal Protection: See Section 8.

NFPA is a registered trademark of the National Fire Protection Assn.
HMIS is a registered trademark of the National Paint and Coatings Assn.

Prepared By: Stephen Repetto

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REL.AGENT 81669

REL.AGENT 81669

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Item No.: REL.AGENT 81669 Part of Kit: 81669
 Part No.: 81669
 Product Name: Form-A-Thread(TM) Stripped Thread Repair
 Product Type: Release agent

2. COMPOSITION, INFORMATION ON INGREDIENTS

Ingredients	CAS No.	%
Light aliphatic solvent naphtha	64742-89-8	25-35
XYLENES*	1330-20-7	20-30
ISOBUTANE	75-28-5	10-20
PROPANE	74-98-6	5-10
ACETONE	67-64-1	3-10
Distillates (petroleum), hydrotreated light	64742-47-8	3-10
Poly(tetrafluoroethylene)	9002-84-0	3-10

* This component is listed as a SARA Section 313 Toxic Chemical.

Ingredients which have exposure limits

Exposure Limits (TWA) Ingredients	ACGIH (TLV)	OSHA (PEL)	OTHER
Light aliphatic solvent naphtha	5mg/m3 TWA mist	5mg/m3 TWA mist	None
XYLENES	100 ppm TWA 434 mg/m3	100 ppm TWA 435 mg/m3	None
PROPANE	Asphyxiant	1000 ppm 1800 mg/m3	None
ACETONE	750 ppm TWA 1780 mg/m3	750 ppm TWA 1800 mg/m3	None
Distillates (petroleum), hydrotreated light	None	None	200 ppm
Exposure Limits (STEL) Ingredients	ACGIH (TLV)	OSHA (PEL)	
Light aliphatic			

solvent naphtha	10 mg/m3	None
XYLENES	150 ppm	150 ppm
	651 mg/m3	655 mg/m3
ACETONE	1000 ppm	1000 ppm
	2380 mg/m3	2400 mg/m3

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Item No.: REL.AGENT 81669

3. HAZARDS IDENTIFICATION

Toxicity: Eye, skin, and respiratory irritant.
High vapor concentrations may cause dizziness or headache.

Primary Routes of Entry: Skin and inhalation.

Signs and symptoms of Exposure: Headache, nausea, dizziness. Narcosis at high concentrations. Skin dryness. Skin, eye, or respiratory irritation.

Existing Conditions

Aggravated by Exposure: None known

Ingredients	Literature Referenced	Carcinogen		
	Target Organ and Other Health Effects	NTP	IARC	OSHA
Light aliphatic solvent naphtha	No Data	NO	NO	NO
XYLENES	AC4 CAR CNS IRR KID LIV	NO	NO	NO
ISOBUTANE	CAR CNS LUN	NO	NO	NO
PROPANE	CAR CNS IRR	NO	NO	NO
ACETONE	BLO CNS IRR	NO	NO	NO
Distillates (petroleum), hydrotreated light	No Data	NO	NO	NO
Poly(tetrafluoroethylene)	No Data	NO	N/A	NO

Abbreviations

N/A Not Applicable	AC4 ACGIH-Unclassifiable as human carc.
BLO Blood	CAR Cardiac
CNS Central nervous system	IRR Irritant
KID Kidney	LIV Liver
LUN Lung	

4. FIRST AID MEASURES

Ingestion: Do not induce vomiting. Keep individual calm.
Call a physician.

Inhalation: Remove to fresh air if not breathing. Give mouth to mouth resuscitation, If breathing is difficult, give oxygen. Call a physician.

Skin Contact: Wash with detergent and water.

Eye Contact: Immediately flush with liberal amounts of water

for at least 15 minutes. Obtain medical attention.

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5. FIRE FIGHTING MEASURES

Flash Point: Less than 77°F Method: Cleveland Open Cup

Recommended

Extinguishing Agents: Carbon dioxide, foam, dry chemical, water fog.

Hazardous Products formed

by Fire or Thermal Decomp Hydrogen fluoride and carbonyl fluoride above 750°F

Unusual Fire or

Explosion Hazards: Aerosol cans may rupture in fires

Explosive Limits:

(% by volume in air)Lower Acetone: 2.5%
Naphtha: 0.9%
Xylene: 0.9%
Propellant: 1.8%
(% by volume in air)Upper Acetone: 12.8%
Naphtha: 6.7%
Xylene: 7%
Propellant: 9.5%

6. ACCIDENTAL RELEASE MEASURES

Steps to be taken in case

of spill or leak: Eliminate all sources of ignition. Maintain adequate ventilation. Soak up with an inert absorbent. Store in a closed container until disposal.

7. HANDLING AND STORAGE

Safe Storage:

Store in a cool dry area. Avoid high heat sources, open flame and welding areas. Do not store near strong oxidants such as liquid chlorine, concentrated oxygen, permanganates or dichromates.

(Contact Loctite Customer

Handling:

Service 1-800-243-4874 for shelf Life information)
Avoid prolonged breathing of vapor. Avoid eye and skin contact. Do not consume food, drink or tobacco in areas where they may be contaminated by this material. Wash hands well before eating or smoking.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

Eyes: Safety glasses or chemical goggles.
Skin: Impervious rubber or plastic gloves.
Ventilation: Sufficient to maintain vapor concentration below TLV. Local exhaust is preferable. Mechanical exhaust is acceptable.

See Section 2 for Exposure Limits.

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Item No.: REL.AGENT 81669

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Blue liquid
Odor: Aliphatic
Boiling Point: 160-180°F (Base)
-43.7°F (Propellant)
pH: Does not apply
Solubility in Water: Insoluble
Specific Gravity: 0.84 at 70°F (Base)
0.5354 (Propellant)
Volatile Organic Compound
(EPA Method 24) Not available
Vapor Pressure: Not available
Vapor Density: More than 1.5 (Propellant)
Evaporation Rate
(Ether = 1) Not available

10. STABILITY AND REACTIVITY

Stability: Stable
Hazardous Polymerization: Will not occur
Incompatibility: Strong oxidants such as liquid chlorine
concentrated oxygen, permanganates or dichromates.
Conditions to Avoid: High temperatures or sources of ignition.
Hazardous Decomposition
Products (non-thermal): None

11. TOXICOLOGICAL INFORMATION

See Section 3.

12. ECOLOGICAL INFORMATION

No data available

13. DISPOSAL CONSIDERATIONS

Recommended methods of
disposal: Incinerate following EPA and local regulations.
Do not incinerate cans still under pressure.
EPA Hazardous Waste
Number D001 - Hazardous waste per 40CFR 261.21

14. TRANSPORTATION INFORMATION

DOT (49 CFR 172)

Domestic Ground Transport

Proper Shipping Name: Consumer Commodity

Hazard Class or

Division: ORM-D

Identification Number: None

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Item No.: REL.AGENT 81669

14. TRANSPORTATION INFORMATION

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Marine Pollutant: None

IATA

Proper Shipping Name: Consumer Commodity

Class or Division: Class 9

UN or ID Number: ID 8000

15. REGULATORY INFORMATION

CA Proposition 65: No Prop65 chemicals are known to be present.

16. OTHER INFORMATION

Estimated NFPA(R) Code:

Health Hazard: 2
Fire Hazard: 4
Reactivity Hazard: 0
Specific Hazard: Does not apply

Estimated HMIS(R) Code:

Health Hazard: 2
Flammability Hazard: 4
Reactivity Hazards: 0
Personal Protection: See Section 8.NFPA is a registered trademark of the National Fire Protection Assn.
HMIS is a registered trademark of the National Paint and Coatings Assn.Prepared By: Stephen Repetto
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Revision Date: April 15, 1997 Revision: 0024

