



Revision Number: 002.2

Issue date: 04/16/2018

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: LOCTITE EA 9309.3NA AERO PART A
 QT known as EA 9309.3 NA PART A
 QUART

Product type: Molding Compound

Restriction of Use: None identified

Company address:
 Henkel Corporation
 One Henkel Way
 Rocky Hill, Connecticut 06067

IDH number: 1119614

Item number: AA9354016

Region: United States

Contact information:
 Telephone: +1 (860) 571-5100
 MEDICAL EMERGENCY Phone: Poison Control Center
 1-877-671-4608 (toll free) or 1-303-592-1711
 TRANSPORT EMERGENCY Phone: CHEMTREC
 1-800-424-9300 (toll free) or 1-703-527-3887
 Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

WARNING: CAUSES SKIN IRRITATION.
 MAY CAUSE AN ALLERGIC SKIN REACTION.
 CAUSES SERIOUS EYE IRRITATION.

HAZARD CLASS	HAZARD CATEGORY
SKIN IRRITATION	2
EYE IRRITATION	2A
SKIN SENSITIZATION	1

PICTOGRAM(S)



Precautionary Statements

Prevention: Avoid breathing vapors, mist, or spray. Wash affected area thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves, eye protection, and face protection.

Response: IF ON SKIN: Wash with plenty of water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If skin irritation or rash occurs: Get medical attention. If eye irritation persists: Get medical attention. Take off contaminated clothing.

Storage: Not prescribed

Disposal: Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Percentage*
Epichlorohydrin-4,4'-isopropylidene diphenol resin	25068-38-6	70 - 80
Bisphenol A - Epichlorohydrin Polymer	25085-99-8	10 - 20
Glass, oxide, chemicals	65997-17-3	1 - 5
Treated fumed silica	67762-90-7	1 - 5
Titanium dioxide	13463-67-7	0.1 - 1

* Exact percentages may vary or are trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

Inhalation:	If inhaled, immediately remove the affected person to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. If symptoms develop and persist, get medical attention.
Skin contact:	Immediately wash skin thoroughly with soap and water. If symptoms develop and persist, get medical attention.
Eye contact:	In case of contact with the eyes, rinse immediately with plenty of water for 15 minutes, and seek immediate medical attention.
Ingestion:	Get immediate medical attention. Do not induce vomiting. Never give anything by mouth to a victim who is unconscious or is having convulsions.
Symptoms:	See Section 11.
Notes to physician:	Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Extinguishing media:	Water spray (fog), foam, dry chemical or carbon dioxide.
Special firefighting procedures:	Wear full protective clothing. Wear self-contained breathing apparatus.
Unusual fire or explosion hazards:	May liberate large quantities of dense, foul-smelling smoke which may contain unidentified toxic gasses.
Hazardous combustion products:	Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons. Oxides of nitrogen.

6. ACCIDENTAL RELEASE MEASURES

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

Environmental precautions:	Prevent further leakage or spillage if safe to do so. Wear appropriate protective equipment and clothing during clean-up. Do not allow product to enter sewer or waterways.
Clean-up methods:	Scrape up spilled material and place in a closed container for disposal. Dispose of according to Federal, State and local governmental regulations.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Avoid breathing vapors or mists of this product. Do not take internally.

Storage: Keep container tightly closed and in a cool, well-ventilated place away from incompatible materials.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

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 Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Epichlorohydrin-4,4'-isopropylidene diphenol resin	None	None	None	None
Bisphenol A - Epichlorohydrin Polymer	None	None	None	None
Glass, oxide, chemicals	10 mg/m3 TWA Inhalable dust. 3 mg/m3 TWA Respirable fraction.	15 mg/m3 TWA Total dust. 5 mg/m3 TWA Respirable fraction.	None	None
Treated fumed silica	10 mg/m3 TWA Inhalable dust. 3 mg/m3 TWA Respirable fraction.	15 mg/m3 TWA Total dust. 5 mg/m3 TWA Respirable fraction.	None	None
Titanium dioxide	10 mg/m3 TWA	15 mg/m3 PEL Total dust. 15 MPPCF TWA Respirable fraction. 15 mg/m3 TWA Total dust. 50 MPPCF TWA Total dust. 5 mg/m3 TWA Respirable fraction.	None	None

Engineering controls: Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.

Respiratory protection: If ventilation is not sufficient to effectively prevent buildup of aerosols, mists or vapors, appropriate NIOSH/MSHA respiratory protection must be provided.

Eye/face protection: Wear chemical goggles; face shield (if splashing is possible).

Skin protection: Wear impervious gloves for prolonged contact. Use of impervious apron and boots are recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid
Color:	Pink
Odor:	Epoxy
Odor threshold:	Not available.
pH:	Not applicable
Vapor pressure:	Not applicable
Boiling point/range:	Not applicable
Melting point/ range:	Not available.
Specific gravity:	1.54
Vapor density:	Not applicable
Flash point:	120 °C (248°F)
Flammable/Explosive limits - lower:	Not available.

Flammable/Explosive limits - upper: Not available.
Autoignition temperature: Not applicable
Flammability: Not applicable
Evaporation rate: Not applicable
Solubility in water: Negligible
Partition coefficient (n-octanol/water): Not available.
VOC content: < 10 g/l per SCAQMD Rule 1124 [EPA Test Method 24/304-91] (estimated)
Viscosity: Not available.
Decomposition temperature: Not available.

10. STABILITY AND REACTIVITY

Stability: Stable at normal conditions.
Hazardous reactions: May occur.
Hazardous decomposition products: Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons. Oxides of nitrogen.
Incompatible materials: This product may react with strong oxidizing agents.
Reactivity: Not available.
Conditions to avoid: Keep away from heat, ignition sources and incompatible materials.

11. TOXICOLOGICAL INFORMATION

Relevant routes of exposure: Skin, Inhalation, Eyes

Potential Health Effects/Symptoms

Inhalation: May cause respiratory tract irritation.
Skin contact: This product may cause irritation to the skin. May cause allergic skin reaction.
Eye contact: This product may cause irritation to the eyes.
Ingestion: Not expected under normal conditions of use.

Hazardous Component(s)	LD50s and LC50s	Immediate and Delayed Health Effects
Epichlorohydrin-4,4'-isopropylidene diphenol resin	None	Allergen, Irritant
Bisphenol A - Epichlorohydrin Polymer	None	Allergen, Irritant
Glass, oxide, chemicals	None	Allergen, Respiratory
Treated fumed silica	None	Irritant
Titanium dioxide	None	Irritant, Respiratory, Some evidence of carcinogenicity

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Epichlorohydrin-4,4'-isopropylidene diphenol resin	No	No	No
Bisphenol A - Epichlorohydrin Polymer	No	No	No
Glass, oxide, chemicals	No	No	No
Treated fumed silica	No	No	No
Titanium dioxide	No	Group 2B	No

12. ECOLOGICAL INFORMATION

Ecological information: Toxic to aquatic organisms

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: Material, if discarded, is not expected to be a characteristic hazardous waste under RCRA.

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any package/configuration.

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. (Bisphenol-A Epichlorhydrin resin)
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. (Bisphenol-A Epichlorhydrin resin)
Hazard class or division: 9
Identification number: UN 3082
Packing group: III
Marine pollutant: Bisphenol-A Epichlorhydrin resin
Exceptions: Classified per IMDG Amendment 34; Effective Jan 1, 2010.

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 minimis

CERCLA/SARA Section 302 EHS: None above reporting de minimis.
CERCLA/SARA Section 311/312: Immediate Health, Delayed Health
CERCLA/SARA Section 313: None above reporting de minimis.

California Proposition 65: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. This product contains a chemical known in the State of California to cause cancer.

Canada Regulatory Information

CEPA DSL/NDL Status: One or more components are not listed on, and are not exempt from listing on either the Domestic Substances List or the Non-Domestic Substances List.

16. OTHER INFORMATION

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

Prepared by: Regulatory Affairs

Issue date: 04/16/2018

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Revision Number: 001.6

Issue date: 04/16/2018

1. PRODUCT AND COMPANY IDENTIFICATION

Product name:	LOCTITE EA 9309.3NA AERO PART B 8OZ known as EA 9309.3 NA PART B 8 OZ	IDH number:	1119615
Product type:	Adhesive for the Aerospace Industry	Item number:	AB9354014
Restriction of Use:	None identified	Region:	United States
Company address:	Henkel Corporation One Henkel Way Rocky Hill, Connecticut 06067	Contact information:	Telephone: +1 (860) 571-5100 MEDICAL EMERGENCY Phone: Poison Control Center 1-877-671-4608 (toll free) or 1-303-592-1711 TRANSPORT EMERGENCY Phone: CHEMTREC 1-800-424-9300 (toll free) or 1-703-527-3887 Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER: CAUSES SEVERE SKIN BURNS AND EYE DAMAGE.
MAY CAUSE AN ALLERGIC SKIN REACTION.
MAY CAUSE ALLERGY OR ASTHMA SYMPTOMS OR BREATHING
DIFFICULTIES IF INHALED.

HAZARD CLASS	HAZARD CATEGORY
SKIN CORROSION	1B
SERIOUS EYE DAMAGE	1
RESPIRATORY SENSITIZATION	1
SKIN SENSITIZATION	1

PICTOGRAM(S)



Precautionary Statements

Prevention:	Do not breathe vapors, mist, or spray. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves, eye protection, and face protection. In case of inadequate ventilation wear respiratory protection.
Response:	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison control center or physician. If skin irritation or rash occurs: Get medical attention. If experiencing respiratory symptoms: Call a poison center or physician. Wash contaminated clothing before reuse.
Storage:	Store locked up.
Disposal:	Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Percentage*
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	80 - 90
N-Aminoethylpiperazine	140-31-8	10 - 20
Diethylenetriamine	111-40-0	1 - 5
N-(3-(Trimethoxysilyl)propyl)ethylenediamine	1760-24-3	1 - 5

* Exact percentages may vary or are trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

Inhalation:	If inhaled, immediately remove the affected person to fresh air. If symptoms develop and persist, get medical attention.
Skin contact:	Immediately wash skin thoroughly with soap and water. Remove contaminated clothing and footwear. If symptoms develop and persist, get medical attention.
Eye contact:	In case of contact with the eyes, rinse immediately with plenty of water for 15 minutes, and seek immediate medical attention.
Ingestion:	Get immediate medical attention. Do not induce vomiting.
Symptoms:	See Section 11.
Notes to physician:	Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Extinguishing media:	Water spray (fog), foam, dry chemical or carbon dioxide.
Special firefighting procedures:	Wear full protective clothing. Wear self-contained breathing apparatus.
Unusual fire or explosion hazards:	May liberate large quantities of dense, foul-smelling smoke which may contain unidentified toxic gasses.
Hazardous combustion products:	Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons. Oxides of nitrogen.

6. ACCIDENTAL RELEASE MEASURES

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

Environmental precautions:	Prevent further leakage or spillage if safe to do so. Wear appropriate protective equipment and clothing during clean-up. Do not allow product to enter sewer or waterways.
Clean-up methods:	Scrape up spilled material and place in a closed container for disposal. Dispose of according to Federal, State and local governmental regulations.

7. HANDLING AND STORAGE

Handling: For the Part A plus Part B adhesive mixture, follow curing schedule as recommended in product literature. Do not heat Part B at temperatures greater than 100 °C (212 °F). This material may self-react at higher temperatures and cause an exotherm. The exotherm has the potential for release of excessive energy and toxic gasses. Empty containers retain product residue, so obey hazard warnings and handle empty containers as if they were full. Do not cut, grind, weld, or drill on or near this container.

Storage: For safe storage, store between 0 °C (32°F) and 25 °C (77°F)
Keep container tightly closed and in a cool, well-ventilated place away from incompatible materials.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

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 Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	None	None	None	None
N-Aminoethylpiperazine	None	None	None	None
Diethylenetriamine	(SKIN) 1 ppm TWA	None	None	None
N-(3-(Trimethoxysilyl)propyl)ethylenediamine	None	None	None	None

Engineering controls: Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.

Respiratory protection: If ventilation is not sufficient to effectively prevent buildup of aerosols, mists or vapors, appropriate NIOSH/MSHA respiratory protection must be provided.

Eye/face protection: Safety goggles or safety glasses with side shields.

Skin protection: Wear impervious gloves for prolonged contact. Use of impervious apron and boots are recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Gel
Color:	Blue
Odor:	Ammoniacal
Odor threshold:	Not available.
pH:	Not applicable
Vapor pressure:	Not determined
Boiling point/range:	Not applicable
Melting point/ range:	Not determined
Specific gravity:	1
Vapor density:	8.45
Flash point:	> 93 °C (> 199.4 °F) ; Estimated
Flammable/Explosive limits - lower:	Not determined
Flammable/Explosive limits - upper:	Not determined
Autoignition temperature:	Not applicable
Flammability:	Not applicable
Evaporation rate:	Not determined
Solubility in water:	Negligible
Partition coefficient (n-octanol/water):	Not determined
VOC content:	< 10 g/l per SCAQMD Rule 1124 [EPA Test Method 24/304-91] (estimated)
Viscosity:	Not available.
Decomposition temperature:	Not available.

10. STABILITY AND REACTIVITY

Stability:	Stable at normal conditions.
Hazardous reactions:	May occur.
Hazardous decomposition products:	Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons. Oxides of nitrogen.
Incompatible materials:	Keep away from strong oxidizing agents, strong Lewis or mineral acids.
Reactivity:	Not available.
Conditions to avoid:	Avoid mixing resin (Part A) and curing agent (Part B) unless you plan to use immediately. Do not heat mixed adhesive unless curing surfaces to be bonded. Failure to observe these precautions may result in excessive heat build-up causing an exotherm.

11. TOXICOLOGICAL INFORMATION

Relevant routes of exposure: Skin, Inhalation, Eyes

Potential Health Effects/Symptoms

Inhalation:	Mists, vapors or liquid may cause severe irritation or burns.
Skin contact:	This product is severely irritating to the skin and may cause burns. May cause allergic skin reaction in susceptible individuals.
Eye contact:	This product is severely irritating to the eyes and may cause irreversible damage including burns and blindness.
Ingestion:	Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract. May be harmful if swallowed.

Hazardous Component(s)	LD50s and LC50s	Immediate and Delayed Health Effects
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	None	Corrosive
N-Aminoethylpiperazine	None	Irritant, Corrosive, Allergen
Diethylenetriamine	Oral LD50 (Rat) Approximate 1,140 mg/kg Oral LD50 (Rat) = 1,080 mg/kg Oral LD50 (Rat) = 2.33 g/kg	Allergen, Irritant, Eyes
N-(3-(Trimethoxysilyl)propyl)ethylenediamine	None	Irritant, Allergen

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	No	No	No
N-Aminoethylpiperazine	No	No	No
Diethylenetriamine	No	No	No
N-(3-(Trimethoxysilyl)propyl)ethylenediamine	No	No	No

12. ECOLOGICAL INFORMATION

Ecological information: Not available.

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: Material, if discarded, is not expected to be a characteristic hazardous waste under RCRA.

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any package/configuration.

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

Proper shipping name: Amines, liquid, corrosive, n.o.s. (Diethylene glycol di-(3-aminopropyl) ether, Substituted piperazine)

Hazard class or division: 8

Identification number: UN 2735

Packing group: II

International Air Transportation (ICAO/IATA)

Proper shipping name: Amines, liquid, corrosive, n.o.s. (Diethylene glycol di-(3-aminopropyl) ether, Substituted piperazine)

Hazard class or division: 8

Identification number: UN 2735

Packing group: II

Water Transportation (IMO/IMDG)

Proper shipping name: AMINES, LIQUID, CORROSIVE, N.O.S. (Diethylene glycol di-(3-aminopropyl) ether, Substituted piperazine)

Hazard class or division: 8

Identification number: UN 2735

Packing group: II

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 minimis

CERCLA/SARA Section 302 EHS: None above reporting de minimis.

CERCLA/SARA Section 311/312: Immediate Health, Delayed Health

CERCLA/SARA Section 313: None above reporting de minimis.

California Proposition 65: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Canada Regulatory Information

CEPA DSL/NDSL Status: Contains one or more components listed on the Non-Domestic Substances List. All other components are listed on or are exempt from listing on the Domestic Substances List. Components listed on the NDSL must be tracked by all Canadian Importers of Record as required by Environment Canada. They may be imported into Canada in limited quantities. Please contact Regulatory Affairs for additional details.

16. OTHER INFORMATION

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

Prepared by: Regulatory Affairs

Issue date: 04/16/2018

DISCLAIMER: The data contained herein are furnished for information only and are believed to be reliable. However, Henkel Corporation and its affiliates ("Henkel") does not assume responsibility for any results obtained by persons over whose methods Henkel has no control. It is the user's responsibility to determine the suitability of Henkel's products or any production methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any Henkel's products. In light of the foregoing, Henkel specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of Henkel's products. Henkel further disclaims any liability for consequential or incidental damages of any kind, including lost profits.



LOCTITE EA 9309NA AERO Epoxy Paste Adhesive (KNOWN AS Hysol EA 9309NA)

INTRODUCTION

LOCTITE EA 9309NA AERO is a toughened adhesive ideal for bonding metal, wood, plastics and glass. Bonds are flexible and resist water, salt spray and most common fluids. Its outstanding feature is excellent peel strength to aluminum.

FEATURES

- High Peel Strength
- Bonds Many Surfaces
- Room Temperature Cure
- Two Component

Uncured Properties

	<u>Part A</u>	<u>Part B</u>	<u>Mixed</u>
Color	Beige	Red	Red
Viscosity @ 77°F Brookfield, HBT	1,500 - 6,000 Poise Spdl 7 @ 20 rpm	0.2-0.5 Poise Spdl 1 @ 100 rpm	120 Poise Spdl 4 @ 20 rpm
Viscosity @ 25°C Brookfield, HBT	150 - 600 Pa•s Spdl 7 @ 2.1 rad/s	0.02-0.05 Pa•s Spdl 1 @ 10.5 rad/s	12 Pa•s Spdl 4 @ 2.1 rad/s
Density (g/ml)	1.15	1.00	1.1
Shelf life @ <77°F/25°C	1 year	1 year	

This material will normally be shipped at ambient conditions, which will not alter our standard warranty, provided that the material is placed into its intended storage upon receipt. Premium shipment is available upon request.

Handling

Mixing - This product requires mixing two components together just prior to application to the parts to be bonded. Complete mixing is necessary. The temperature of the separate components prior to mixing is not critical, but should be close to room temperature (77°F/25°C).

Mix Ratio	<u>Part A</u>	<u>Part B</u>
By Weight	100	23

Note: Volume measurement is not recommended for structural applications unless special precautions are taken to assure proper ratios.

Pot Life (450 gram mass) 40 minutes @ 77°F/25°C
Method - ASTM D2471 in water bath.





LOCTITE EA 9309NA AERO Epoxy Paste Adhesive (KNOWN AS Hysol EA 9309NA)

Application

Mixing - Combine Part A and Part B in the correct ratio and mix thoroughly. THIS IS IMPORTANT! Heat buildup during or after mixing is normal. Do not mix quantities greater than 1 pound/ 450 grams as dangerous heat buildup can occur causing uncontrolled decomposition of the mixed adhesive. TOXIC FUMES CAN OCCUR, RESULTING IN PERSONAL INJURY. Mixing smaller quantities will minimize the heat buildup.

Applying - Bonding surfaces should be clean, dry and properly prepared. For optimum surface preparation consult the BONDERITE Surface Preparation Guide. The bonded parts should be held in contact until the adhesive is set. Handling strength for this adhesive will occur in 12 hours @ >77°F/25°C, after which the support tooling or pressure used during cure may be removed. Since full bond strength has not yet been attained, load application should be small at this time.

Curing - This adhesive may be cured for 3 - 5 days @ 77°F/25°C to achieve normal performance. Accelerated cures up to 200°F/93°C (for small masses only) may be used as an alternative. For example, 1 hour @ 180°F/82°C will give complete cure.

Cleanup - It is important to remove excess adhesive from the work area and application equipment before it hardens. Denatured alcohol and many common industrial solvents are suitable for removing uncured adhesive. Consult with your supplier's information pertaining to the safe and proper use of solvents.

Bond Strength Performance

Tensile Lap Shear Strength - tested per ASTM D1002. Adherends are aluminum as referenced and treated with Phosphoric Acid Anodizing (PAA) per ASTM D3933.

Typical Results

<u>Test Temperature, °F/°C</u>	7075-T3 Alclad / PAA 3 days @ 77°F/25°C		2024-T3 Alclad / PAA 1 hour @ 180°F/82°C	
	<u>psi</u>	<u>MPa</u>	<u>psi</u>	<u>MPa</u>
-67/-55	4,000	27.6	6700	46.2
77/25	5,000	34.5	6100	42.1
180/82	600	4.1	1300	9.0
77/25 (Hot/Wet)	-	-	5700	39.3
750 hours @ 160°F/71°C & 85% RH	-	-	-	-

Floating Roller (Bell) Peel Strength - tested per ASTM D3167. Adherends are aluminum as referenced and treated with Phosphoric Acid Anodizing (PAA) per ASTM D3933. Bondline line thickness 10 mils.

Typical Results

<u>Test Temperature, °F/°C</u>	2024-T3 Alclad / PAA 24 hours @ 77°F/25°C under 28 in-Hg		2024-T3 Bare / PAA 1 hour @ 180°F/82°C under 10 psi	
	<u>lbf/in</u>	<u>N/25mm</u>	<u>lbf/in</u>	<u>N/25mm</u>
77/25	89	396	85	378



LOCTITE EA 9309NA AERO

Epoxy Paste Adhesive

(KNOWN AS Hysol EA 9309NA)

T-Peel Strength - tested per ASTM D1876 after curing for 24 hours @ 77°F/25°C under 28 in-Hg. Adherends are 2024-T3 Alclad aluminum treated with phosphoric acid anodizing per ASTM D3933. Bondline line thickness 10 mils.

<u>Test Temperature, °F/°C</u>	Typical Results	
	<u>lbf/in</u>	<u>N/25mm</u>
77/25	46	205

Service Temperature

Service temperature is defined as that temperature at which this adhesive still retains 1000 psi/6.9 MPa using test method ASTM D1002 and is approximately 160°F/71°C.

Bulk Resin Properties

Tensile Properties - tested using 0.125 inch/3.18 mm castings per ASTM D638.

Shore D Hardness - Durometer Model D ASTM D2240.

Tensile Properties: Cure 72 hours @ 77°F/25°C & Tested @ 77°F/25°C

▪ Tensile Strength	4,500 psi	31.0 MPa
▪ Tensile Modulus	338 ksi	2,331 MPa
▪ Shear Modulus	122 ksi	841 MPa
▪ Poisson's Ratio	0.38	
▪ Elongation at Break	10%	
▪ Shore D Hardness	80	

Thermal Property

Glass Transition Temperature (T_g) - Rheometric Scientific DMTA IV - Single Cantilever,

Heat-up rate: 5°C/min., Frequency: 1 Hz, Strain: 0.1%

Specimen Dimensions: 1 inch/25.4 mm x 0.49 inch/12.4 mm x 0.063 inch/1.6 mm

Cure: 72 hours @ 77°F/25°C

▪ T _g dry (DMTA)	127°F	53°C
▪ T _g wet (DMTA)	147°F	64°C

Cure: 1 hour @ 180°F/82°C

▪ T _g dry (DMTA)	162°F	72°C
▪ T _g wet (DMTA)	145°F	63°C

*Wet: 160°F/71°C & 85% RH until saturation. Moisture uptake was 2.5%.



LOCTITE EA 9309NA AERO Epoxy Paste Adhesive (KNOWN AS Hysol EA 9309NA)

Compressive Properties - tested using 0.5 inch/12.7mm castings per ASTM D695.

Compressive Strength @ 77°F/25°C	7,000 psi	48.2 MPa
Compressive Modulus @ 77°F/25°C	249 ksi	1,716 MPa

Electrical Properties - tested per ASTM D149, D150.

Dielectric Constant, 1 KHz, 77°F/25°C	4.29
Dissipation Factor, 1 KHz, 77°F/25°C	0.016

Handling Precautions

Do not handle or use until the Material Safety Data Sheet has been read and understood.
For industrial use only.

DISPOSAL INFORMATION

Dispose of spent remover and paint residue per local, state and regional regulations. Refer to HENKEL TECHNOLOGIES MATERIAL SAFETY DATA SHEET for additional disposal information.

PRECAUTIONARY INFORMATION

General:

As with most epoxy based systems, use this product with adequate ventilation. Do not get in eyes or on skin. Avoid breathing the vapors. Wash thoroughly with soap and water after handling. Empty containers retain product residue and vapors so obey all precautions when handling empty containers.

PART A

CAUTION! This material may cause eye and skin irritation or allergic dermatitis. It contains epoxy resins.

PART B

WARNING! This material causes eye and skin irritation or allergic dermatitis. It contains amines.

Before using this product refer to container label and HENKEL TECHNOLOGIES MATERIAL SAFETY DATA SHEET for additional precautionary, handling and first aid information.





Technical Process Bulletin

LOCTITE EA 9309NA AERO Epoxy Paste Adhesive (KNOWN AS Hysol EA 9309NA)

Note

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