

Section G: Conductive Systems

*U.S. Customary
[SI Metric]*



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Conductive Adhesives

ONE PART: SILVER-FILLED SILICONE RTV

U.S. Customary
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GENERAL DESCRIPTION

TECKNIT CON/RTV-I system is a pure silver loaded, one component RTV silicone adhesive-sealant. It is ready to use without mixing and cures quickly at room temperature on exposure to moisture in the air to form a flexible, resilient, conductive bond or seal.

APPLICATION INFORMATION

TECKNIT CON/RTV-I can be used in the following applications:

1. Bonding or installing various conductive silicone elastomer EMI gaskets. These include silver filled silicone (CONSIL®), silicone filled with stainless steel fiber. (TECKFELT™), silicone impregnated woven (DUOLASTIC™), expanded (TECKSPAN™), metal aluminum wire or silicone filled oriented wire (ELASTOMET®). It can also be used for attaching porous or wire mesh materials.
2. For joining strips of conductive elastomers to form continuous shield/seal rings or gaskets.
3. To form-in-place conductive gasketing to attach shielding windows to frames or bezels, and in turn, installing the framed window on a shielding enclosure; for in place EMI gasketing of shield penetrating components such as connectors or switches: conductively attaching small screens, honeycomb or metal shielding vents to enclosures.
4. For flow-in-place EMI gasketing for grooves in cast boxes or covers or as a conductive seam sealant. Generally, these are field repair or "fix" applications.

CURING CHARACTERISTICS

CON/RTV-I cures on exposure to moisture in the air. A skin forms on the surface of a .250 in. [6.35 mm] diameter bead in 3-4 minutes at standard room temperature conditions 72°F [23°C] and 50% RH. Lower temperature and humidity slow the cure, while higher temperature and humidity accelerate it. In all adhering and joining operations the adhesive must be spread and parts assembled before the adhesive becomes "tack free." Thin films (less than .005 in. [0.13 mm]) should be avoided as cure is rapid. Early in the cure stage an odor caused by acetic acid will be evident and will disappear after complete cure.



SPECIFICATIONS

MATERIAL DESCRIPTION

- **Number of Components:** One
- **Resin:** Silicone
- **Filler:** Ag

AS SUPPLIED

- **Color:** Silver-Tan
- **Consistency:** Thick paste
- **Final Condition:** Flexible
- **Volume:** 1.1 in.³
- **Weight:** 2 oz.
- **Pot Life @ 77°F [25°C]:** 5 minutes
- **Shelf Life, unopened container:** 5-1/2 months
- **Recommended Cure:** 24 hours @ 77°F [25°C] x 50% RH [for 1/8" dia bead]
- **Full Cure:** 72 hours @ 77°F [25°C] x 50% RH

CURED*

- **Volume Resistivity (QA-1038), max.:** 0.01 ohm-cm
- **Shear Strength, min. (ASTM D-1002):** 150 psi
- **Peel Strength, min. (ASTM D-1876) (silicone aluminum):** 2 ppi
- **Temperature Range:** -75°F to 400°F [-59°C to 204°C]

PART NUMBER

- **72-00002**
- **Transportation Class:** Combustable

*72 hours @ 25°C x 50% RH



A preliminary check of the affect of acetic acid on surfaces to be bonded is recommended. Cure is optimum in 24 hours in most cases. Parts may be handled 2 hours after assembly.

SURFACE PREPARATION AND BONDING TECHNIQUES

1. Roughen both surfaces to be bonded with Scotchbrite® or equivalent.
2. Degrease both surfaces with VM&P Naptha or an equivalent and then solvent wipe with acetone or methyl ethyl keytone. Allow to dry before applying adhesive.
3. Apply adhesive from tube directly to bond area in spots or as a bead. CAP TUBE TO KEEP OUT MOISTURE.
4. Spread adhesive to approximately twice the desired final film thickness. Work quickly. Remember assembly must be complete within 3-4 minutes! Large areas must be bonded in stages.
5. Place conductive gasket in position on top of adhesive and work into place with slight circular motion.
6. A hand roller is useful to evenly distribute adhesive if film is not spread to uniform thickness. This technique removes “lumps.”
7. Handle only after 2 hours. 24 hours will provide cure. Remember impermeable materials slow the moisture penetration necessary to obtain full cure.
8. Though not required, slight pressure applied during cure will increase bond strength.
9. Vertical bonds must be made with gasket materials held in place during cure.

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GASKET PREPARATION AND JOINING TECHNIQUES

1. Wipe cut ends of elastomer to be joined with clean isopropanol alcohol moistened cloth.
2. Apply adhesive to both faces to be joined.
3. Join ends together and hold in position with pins or other holding devices until cure is completed.

TECKNIT P/N	UNIT DESCRIPTION
72-00002	2.0 oz.[56 g] CON/RTV-I packaged in collapsible aluminum tube, spreading tool, instructions.

ORDERING INFORMATION

When ordering TECKNIT CON/RTV-I, specify number of units and TECKNIT Part Number 72-00002. For assistance, contact your nearest TECKNIT area representative or factory location.



Conductive Adhesives

SILVER AND NICKEL FILLED RTV'S

U.S. Customary
[SI Metric]

GENERAL DESCRIPTION

Two RTV silicone adhesive-sealants comprise TECKNIT electrically conductive, medium viscosity adhesive-sealant systems. They are CON/RTV-II (silver-filled) and CON/RTV-Ni (nickel-filled). Each is formulated with a special conductive material producing its own unique advantages. Each system with its conductive material and volume resistivity is shown in Table 2. After full cure, the resultant bond or seal of each system is flexible, resilient and conductive.

APPLICATION INFORMATION

TECKNIT Conductive Adhesive-Sealants are recommended wherever an electrically conductive flexible bond and seal is required. The main consideration for selecting the correct adhesive should be based on the galvanic coupling of metallic (or conductive) materials. Excellent practices and recommendations can be obtained by reviewing MIL-STD-1250. The Adhesive-Sealants are also used to join and install a variety of conductive elastomers and porous or open wire mesh gaskets. Recommended applications and material combinations are given in Table 3.

PREPARATION OF TWO PART CONDUCTIVE SILICONE ADHESIVES

Mix Part 1 of the adhesive by stirring to disperse any material that has settled out. Stir in Part 2 (catalyst) and thoroughly mix with Part 1 to insure uniform dispersion. The Part 2 supplied is the correct amount to properly catalyze the entire content of the Part 1 container. It is recommended that the full amount of Part 1 be catalyzed. This avoids errors in mixing. However if less is required, use portions as recommended in Table 1, "Small Quantity Mixing Proportions."

SURFACE PREPARATION

To insure the best adhesive bond and electrical conductivity the following procedure should be used. Remove all grease, oil and dirt. Roughen all surfaces to be bonded with an abrasive material. After surface has been roughened, degrease with VM&P Naptha, then solvent wipe with acetone or methyl ethyl keytone. Allow to dry before applying adhesive.



SMALL QUANTITY MIXING PROPORTIONS

PART 1 oz. [g] Net Wt.	PART 2 (Catalyst) oz. [grams]	
	Nickel	Silver
.5 [14]	.01 [.29]	.01 [.29]
1.0 [28]	.02 [.57]	.02 [.57]
2.0 [57]	.04 [1.16]	.05 [1.16]
4.0 [113]	.08 [2.29]	.08 [2.29]

CURING CHARACTERISTICS

Curing two part conductive adhesives begins with the addition of the catalyst. 70% of maximum peel strength is reached in about 24 hours at room temperature, with maximum strength achieved after 7 days. The cure time can be shortened by exposing the applied adhesive to elevated temperatures in a circulating air oven. Four hours at 50°C will yield approximately 50% of full cure strength.

SAFETY AND USAGE CAUTIONS

Conductive Adhesives contain a flammable solvent and should be used in well ventilated areas. Avoid direct skin contact and inhalation of vapors. Prevent contact with eyes. Do not use near open flame. Industrial use only. Some individuals may observe skin irritation-wash with mild soap and rinse with clean water. Contact physician should irritation occur.



SPECIFICATIONS Table 2.

MATERIAL DESCRIPTION	CON/RTV-II 2 Part	CON/RTV-Ni 2 Part
• Number of Components:	Two	Two
• Resin:	Silicone	Silicone
• Filler:	Ag/Glass	Ni
AS SUPPLIED		
• Color:	Beige	Dark gray
• Consistency:	Paste	Thin paste
• Final Condition:	Flexible	Flexible
• Mix Ratio:	49:1	49:1
• Volume:	13.6 in. ³	7.0 in. ³
• Weight:	16 oz.	16 oz.
• Pot Life @ 25°C:	4 hours	4 hours
• Shelf Life, unopened container:	9 months	9 months
• Recommended Cure/Full Cure:	168 hours	168 hours
CURED*		
• Volume Resistivity, QAP-1017, max.	0.01 ohm-cm	0.1 ohm-cm
• Shear Strength, min. (ASTM D-1002):	60 psi	50 psi
• Peel Strength, min. (ASTM D-1876) (silicone aluminum):	3 ppi	3 ppi
• Shrinkage, max.:	31%	44%
• Temperature Range:	-67°F to 302°F [-55°C to 150°C]	-67° to 302°F [-55°C to 150°C]
PART NUMBER		
	72-00036	72-00035
• Transportation Class:	Part I: Flammable liquid Part II: Non Flammable	Part I: Flammable liquid Part II: Non Flammable

*24 hrs. @ RT followed by 24 hrs @ 212°F [100°C]

BONDING:

1. Keep adhesive covered to minimize solvent evaporation and extend pot life.
2. Apply a uniform film .010 to .015 in. [0.25 to 0.38 mm] thick on both surfaces to be bonded.
3. Press surfaces firmly together avoiding formation of air bubbles in the bond area. For optimum bond strength pressure should be maintained during cure.
4. Allow to cure. Sufficient bond strength for normal handling develops in 24 hours.
5. Because curing relies on evaporation of solvent, surface area to be bonded is a determining factor in actual cure time. Solvent entrapment inhibits curing.
6. For non-permeable adherents, [rubber to rubber (solid) or metal to rubber (solid)], allow for some solvent evaporation before joining surfaces.

RECOMMENDED APPLICATIONS

Table 3:

CONDUCTIVE ADHESIVE-SEALANTS	CONDUCTIVE ELASTOMERS	OTHER METALLIC MATERIALS
CON/RTV-II (Silver)	Consil-E, -II, -R	Silver, Gold
CON/RTV-Ni (Nickel)	SC-Consil	Nickel, Monel, Aluminum, Tin, Copper

CLEAN UP:

Excessive adhesive may be removed by wiping with a clean cloth dampened in a solvent VM&P Naptha. This should be done immediately after bonding and before the adhesive cures.

ORDERING INFORMATION

When ordering TECKNIT 2-part adhesives, specify quantity and part number. For assistance contact your nearest TECKNIT representative or factory.



TeckBond™ -C

SILVER-PLATED COPPER-FILLED ADHESIVE

U.S. Customary
[SI Metric]

GENERAL DESCRIPTION

TECKBOND-C is a silicone rubber base filled with silver-plated copper particles to produce a highly conductive one-component adhesive sealant. The system is an RTV moisture-cured compound which is ready to use without additional preparation or mixing. The compound cures at room temperature to form a flexible resilient conductive bond or sealant.

APPLICATION INFORMATION

TECKBOND conductive adhesive-sealants are recommended wherever a flexible bond is required in a metal-to-silicone gasket application, such as TECKNIT CONSIL®-C. These adhesives are recommended in applications where the bond thickness is less than 0.016 in. [0.4 mm]. To ensure optimum bond performance, the surface of the metal may require priming.

CURING CHARACTERISTICS

TECKBOND one-part RTV cures on exposure to moisture in the air. The adhesive is tack free in 30 minutes. Parts can be handled after 2 hours and used after 72 hrs. Lower humidity will slow curing while higher humidity accelerates curing. Full cure is achieved in approximately 7 days.

SURFACE PREPARATION

To ensure maximum adhesive bond strength and electrical conductivity, surfaces should be free of grease, oil and dirt. Gaskets should be cleaned using denatured alcohol just prior to bonding and should be held in position under slight pressure to ensure continuous contact with the adhesive. Use of the one-part adhesive on metal surfaces requires the use of a primer supplied with the adhesive. Allow the primer to air dry 1 to 2 hours under normal room temperatures and humidity conditions. Low humidity will require a longer drying time. Surfaces to be bonded should be roughened with Scotchbrite, degreased with VM&P Naptha and wiped with acetone or methyl ethyl ketone. Allow to dry and then apply a thin, even layer of primer by wiping or brushing.

PART NUMBER	WEIGHT	VOLUME
72-00192	3.5 oz	1.6 cu in
72-00193	14 oz	6.4 cu in



SPECIFICATIONS

MATERIAL DESCRIPTION

- **Number of Components:** One + primer
- **Resin:** Silicone
- **Filler:** Ag/Cu

AS SUPPLIED

- **Color:** Gray
- **Consistency:** Thick paste
- **Final Condition:** Flexible
- **Mix Ratio:** N/A
- **Pot Life @ 77°F [25°C]:** N/A
- **Shelf Life, unopened container:** 9 months
- **Recommended Cure:** 72 hrs. @ 77°F [25°C] x 50% RH (1/8" dia. bead)
- **Full Cure:** 168 hours @ 77°F [25°C] x 50% RH

CURED*

- **Volume Resistivity, 77°F [25°C] & 50% RH (QA-1038), max.:** .04 ohm-cm
- **Shear Strength, min. (ASTM D-1002),:** 200 psi
- **Peel Strength, min. (ASTM D-1876) (silicone-aluminum):** 2.5 ppi
- **Shrinkage, max.:** 1.0%
- **Temperature Range:** -85°F to 360°F [-65°C to 182°C]
- **Transportation Class:** Adhesive - Non Flammable
Primer - Flammable

*168 hrs. @ 25°C x 50% RH

ORDERING INFORMATION

When ordering TECKBOND adhesives specify quantity and part number. For assistance contact your nearest TECKNIT area representative or factory location.

TeckBond™ -A

SILVER-PLATED ALUMINUM-FILLED ADHESIVE

GENERAL DESCRIPTION

TECKBOND-A conductive system is a silicone based, two-component RTV, filled with silver-plated aluminum particles. After cure, the resultant bond or seal is flexible, resilient, and conductive.

APPLICATION INFORMATION

TECKBOND-A conductive adhesive is recommended wherever a flexible bond is required in a metal to silicone gasket application, such as TECKNIT® CONSIL®-A. (Reference TECKNIT Data Sheet D-895.)

CURING CHARACTERISTICS

TECKBOND two-part RTV is a two-component adhesive which begins to cure immediately upon addition of the catalyst which is supplied as a separate vial. Full cure at room temperature is achieved after 7 days.

SURFACE PREPARATION

To ensure maximum adhesive bond strength and electrical conductivity, surfaces should be free of grease, oil and dirt. Gaskets should be cleaned using denatured alcohol just prior to bonding and should be held in position under slight pressure to ensure continuous contact with the adhesive. Metal surfaces should be roughened with Scotchbrite, degreased with toluene and then wiped with acetone prior to applying adhesive.

MIXING INSTRUCTIONS

Mix Part 1 of the adhesive by stirring to disperse any filler which has settled out. Stir in Part 2 (catalyst) and thoroughly mix with Part 1 until completely dispersed. The amount of Part 2 supplied is the correct amount to properly catalyze the entire contents of Part 1. The full amount should be catalyzed. This avoids errors in mixing. However, if less is required, a mix ratio by weight of 49:1 should be used.



SPECIFICATIONS

MATERIAL DESCRIPTION

- **Number of Components:** Two
- **Resin:** Silicone
- **Filler:** Ag/Al

AS SUPPLIED

- **Color:** Beige
- **Consistency:** Thick paste
- **Final Condition:** Flexible
- **Mix Ratio:** 49:1
- **Volume:** 14 in.³
- **Weight:** 16 oz.
- **Pot Life @ 77°F [25°C]:** N/A
- **Shelf Life, unopened container:** 9 months
- **Recommended Cure:** 24 hrs. @ RT followed by 24hrs. @ 212°F [100°C]

CURED*

- **Volume Resistivity (QAP-1017), max.:** 0.01 ohm cm
- **Shear Strength, min. (ASTM D-1002):** 100 psi
- **Peel Strength, min. (ASTM D-1876) (silicone-aluminum):** 2 ppi
- **Shrinkage, max.:** 40%
- **Temperature Range:** -67°F to 150°F [-55°C to 302°C]
- **Transportation Class:** Part I - Flammable
Part II - Non Flammable

*24 hrs. @ 77°F [25°C] followed by 24hrs. @ 212°F [100°C]

PART NUMBER

- **72-00236**

ORDERING INFORMATION

When ordering TECKBOND adhesives specify quantity and part number. For assistance contact your nearest TECKNIT area representative or factory location.

TECKNIT

TeckBond™ -NC

NICKEL COATED GRAPHITE-FILLED ADHESIVE

U.S. Customary
[SI Metric]

GENERAL DESCRIPTION

TECKBOND-NC is a silicone rubber base filled with nickel coated graphite particles to produce a highly conductive one-component adhesive sealant. The system is an RTV moisture-cured compound which is ready to use without additional preparation or mixing. The compound cures at room temperature to form a flexible resilient conductive bond or sealant.

APPLICATION INFORMATION

TECKBOND conductive adhesive-sealants are recommended wherever a flexible bond is required in a metal-to-silicone gasket application, such as TECKNIT NC-CONSIL®.

These adhesives are recommended in applications where the bond thickness is less than 0.016 in. [0.4 mm]. To ensure optimum bond performance, the surface of the metal may require priming.

CURING CHARACTERISTICS

TECKBOND one-part RTV cures on exposure to moisture in the air. The adhesive is tack free in 30 minutes. Parts can be handled after 2 hours and used after 72 hrs. Lower humidity will slow curing while higher humidity accelerates curing. Full cure is achieved in approximately 7 days.

SURFACE PREPARATION

To ensure maximum adhesive bond strength and electrical conductivity, surfaces should be free of grease, oil and dirt. Gaskets should be cleaned using denatured alcohol just prior to bonding and should be held in position under slight pressure to ensure continuous contact with the adhesive. Use of the one-part adhesive on metal surfaces requires the use of a primer supplied with the adhesive. Allow the primer to air dry 1 to 2 hours under normal room temperatures and humidity conditions. Low humidity will require a longer drying time. Surfaces to be bonded should be roughened with Scotchbrite, degreased with VM&P Naptha and wiped with acetone or methyl ethyl ketone. Allow to dry and then apply a thin, even layer of primer by wiping or brushing.

PART NUMBER	WEIGHT	VOLUME
72-00350	2.5 oz tube	1.7 in ³
72-00355	10 oz cartridge	6.7 in ³

- **Transportation Class:** Adhesive - Combustable
Primer - Flammable



SPECIFICATIONS

MATERIAL DESCRIPTION

- **Number of Components:** One
- **Resin:** Silicone
- **Filler:** Nickel coated graphite

AS SUPPLIED

- **Color:** Dark gray
- **Consistency:** Thick paste
- **Final Condition:** Flexible
- **Pot Life @ 25°C:** N/A
- **Shelf Life, unopened container:** 9 months
- **Tack Free:** 1.5 hours
- **Recommended Cure:** 72 hrs. @ 77°F [25°C] x 50% RH (1/8 dia. bead)
- **Full Cure:** 168 hours @ 77°F [25°C] x 50% RH

CURED*

- **Volume Resistivity, (QA-1038), max.:** 0.5 ohm-cm
- **Shear Strength, min. (ASTM D-1002),:** 100 psi
- **Peel Strength, min. (ASTM D-1876) (silicone-aluminum):** 3 ppi
- **Shrinkage, max.:** 1.0%
- **Temperature Range:** -67°F to 392°F [-55°C to 200°C]

ORDERING INFORMATION

When ordering TECKBOND adhesives specify quantity and part number. For assistance contact your nearest TECKNIT area representative or factory location.

TECKNIT



Conductive Caulking

SILVER-FILLED FLEXIBLE RESIN CAULKING SYSTEM

U.S. Customary
[SI Metric]

GENERAL DESCRIPTION

TECKNIT standard electrically conductive caulks consist of four one-component resin systems filled with silver plated glass or copper particles. These systems are formulated to provide over 100 dB total shielding effectiveness across the RF spectrum. They may be used to improve joint or seam integrity for all types of electronic enclosures.

An outstanding feature of these one-component systems is the ease with which they may be applied with conventional caulking guns and dispensing equipment, such as small bead orifice syringes. Hand application with spatula or putty knife is also simple.

High yield per pound is another advantage offered in these conductive caulks. Proprietary formulation techniques result in lower density than most current state-of-the-art caulking compounds.

The systems are safe to handle, very easily applied and free of any corrosive binders. They contain silver plated glass or copper particles for electrical conductivity, assuring stable operation over wide temperature ranges not generally possible with carbon- black filled systems.

APPLICATION INFORMATION

72-00005 CAULKING, CONDUCTIVE. THERMOPLASTIC, FLEXIBLE — This thixotropic cream system, which remains permanently flexible after curing, is easy to apply with standard caulking equipment. It is a thermoplastic + solvent type, which dries quickly to a highly conductive seal. Small beads are easily drawn. It is safe to handle, non-exothermic and has excellent adhesion to metal. The system is watertight, ozone resistant, and non-corrosive to applied surfaces. Among the chief uses are caulking EMI tight cabinets and enclosures, fasteners, panels and handles. The system is extremely vibration and thermal shock resistant.

72-00014 CAULKING, CONDUCTIVE, SILICONE, FAST CURING, FLEXIBLE — This system is a conductive, fast room temperature curing silicone-silver caulking compound. Ease of application and high electrical conductivity are outstanding fea-



tures of this flexible system. It is used to fill gaps in shielded room joints, repair damaged conductive gaskets and shield/seal permanently mounted panels, components and hardware. This system will withstand shock vibration, seam warping and compensate for thermal expansion.

72-00151 CAULKING, CONDUCTIVE, RTV SILICONE FLEXIBLE — This silver plated, highly conductive, moisture curing RTV silicone caulking compound has excellent adhesion to metals and is ideal for permanent EMI shielding and fluid sealing. Primer is supplied in a separate vial. Allow the primer to dry 1 to 2 hours under normal room temperature and humidity conditions. This material is well suited for aerospace and military applications and is an ideal material where good conductivity, flexible and long life expectancy are required.

PREPARATION AND APPLICATION

To ensure the best electrical and mechanical reliability, it is highly recommended that the surfaces to be caulked be thoroughly cleaned of grease, oils, dirt and oxide coatings. Preparation should be in accordance with standard practice for preparing surfaces for adhesive bonding.

TECKNIT

APPLICATION OF CAULKING SYSTEMS

72-00005 — Stir well in original container to assure uniformity before using. Apply to surface with caulking or dispensing equipment, putty knife or spatula. Cover unused contents to prevent solvent evaporation.

72-00014 — This caulk is solvent evaporating, air curing and is supplied in a standard 1 lb. can. Thoroughly stir contents of original container before application or loading into dispensing equipment.

72-00151, 72-00152 — 2 oz. tube and 1 lb. tube respectively. No mixing required.

ORDERING INFORMATION

When ordering CONDUCTIVE CAULKING SYSTEMS, specify quantity and TECKNIT Part Number. Special packaging in 5 lb. [2.25 kg] cans is also available for 72-00005 and 72-00014. For assistance, contact your nearest TECKNIT area representative or factory location.

SPECIFICATIONS

MATERIAL DESCRIPTION

• Number of Components:	One	One	One
• Resin:	Polyolefin	Silicone	Silicone
• Filler:	Ag/Glass	Ag/Glass	Ag/Copper

AS SUPPLIED

• Color:	Tan	Tan	Gray
• Consistency:	Liquid	Self-Leveling	Paste
• Final Condition:	Flexible	Flexible	Flexible
• Mix Ratio:	N/A	N/A	N/A
• Volume:	16.0 in. ³	13.8 in. ³	1.0 in. ³ / 7.7 in. ³
• Weight:	16 oz.	16 oz.	2 oz. / 16 oz.
• Pot Life @ 25°C:	N/A	N/A	N/A
• Shelf Life, unopened container:	9 months	9 months	9 months
• Recommended Cure:	72 hours @ 25°C	24 hours @ 25°C	72 hours @ 25°C x 50% RH
• Full Cure:	72 hours @ 25°C	24 hours @ 25°C	168 hours @ 25°C x 50% RH

CURED	QAP-1017	QAP-1017	QAP-1038
• Volume Resistivity, max.*:	.005	.01	.01
• Shear Strength, min.: (ASTM D-1002), silicone-aluminum	4 psi	25 psi	150 psi
• Peel Strength, min.(ASTM D-1876):	N/A	N/A	3.0 ppi
• Shrinkage, max.:	46%	26%	1%
• Temperature Range:	-65°F to + 200°F [-54°C to + 94°C]	-80°F to + 400°F [-63°C to + 204°C]	-67° to + 257°F [-55°C to + 125°C]

PART NUMBERS	72-00005	72-00014	72-00151 72-00152
• Transportation Class:	Nonflammable	Flammable	Flammable (Adhesive & Primer)



Conductive Epoxy

SILVER-FILLED EPOXY SYSTEMS

U.S. Customary
[SI Metric]

GENERAL DESCRIPTION

72-00008 - EPOXY ADHESIVE, CONDUCTIVE TWOCOMPONENT - This commercial grade, conductive epoxy is designed for use in bonding applications where good conductivity is required. When mixed in a ratio of 1:1.4 by volume or weight, the two components produce a light colored creamy paste which can be easily applied.

72-08116 - EPOXY SOLDER, CONDUCTIVE, HIGH SILVER CONTENT, TWO-COMPONENT - This is a silver filled epoxy system designed for maximum performance and lowest volume resistivity. It is easily mixed 1:1 by volume or weight, from the two one-ounce jars. Its consistency is that of a thick paste, making it easy to dispense and apply.

PREPARATION AND CLEANING

To ensure the best electrical and mechanical reliability, it is highly recommended that the surfaces to be bonded are thoroughly cleaned of grease, oils, dirt and oxide coatings. Preparation should be in accordance with standard practice for preparing surfaces for adhesive bonding.

APPLICATION OF EPOXY SYSTEMS

72-00008 - Epoxy Adhesive, Conductive, Two-Component.

Stir parts 1 and 2 thoroughly, then mix together one unit of part 1 and 1.4 units of part 2. They may be mixed either by volume or weight. Apply with dispensing equipment, syringe or spatula. May be cured at room temperature or elevated temperature. See Table for cure time and temperature.

72-08116 - Epoxy Solder, Conductive, High Silver Content, Two Component.

Stir Part 1 and Part 2 thoroughly, then mix together one unit of Part 1 and one unit of Part 2. They may be mixed either by volume or weight. Since each jar is half filled, there is sufficient room to mix Part 1 and Part 2 together in either jar. May be cured at room temperature or elevated temperature. For solvent cleaning of surface or material cleaning use Xylene.



CAUTIONS

The conductive systems are safe, non-volatile and non-toxic; however, the following precautions must be observed:

Avoid direct skin contact, as the systems may cause irritation to some individuals. If this should occur, wash with mild soap and rinse with clean water. Contact physician should irritation occur ... Avoid inhalation of vapors by working in ventilated area ... Prevent contact with the eyes ... Do not use near open flame ... This material is for industrial use only.

ORDERING INFORMATION

When ordering CONDUCTIVE EPOXY, specify number of kits and TECKNIT Part Number. For assistance, contact your nearest TECKNIT area representative or factory location.



SPECIFICATIONS

MATERIAL DESCRIPTION

• Number of Components:	Two	Two
• Resin:	Epoxy	Epoxy
• Filler:	Ag/Glass	Ag

AS SUPPLIED

• Color:	Silver gray	Bright silver
• Consistency:	Thick paste	Thick paste
• Final Condition:	Rigid	Rigid
• Mix Ratio:	1:1.4	1:1
• Volume:	14.7 in. ³	1.5 in. ³
• Weight:	16 oz.	2 oz.
• Pot Life @ 25°C:	45 minutes	45 minutes
• Shelf Life, unopened container:	15 months	15 months
• Recommended Cure:	30 minutes @ 212°F [100°C]	30 minutes @ 212°F [100°C]

CURED*

• Volume Resistivity, QAP-1017 max.:	0.02 ohm-cm	.001 ohm-cm
• Shear Strength, min. (ASTM D-1002):	1000 psi	1400 psi
• Shrinkage, max.:	1%	1%
• Temperature Range:	-80° to 300°F [-62°C to 149°C]	-80° to 300°F [-62°C to 149°C]

PART NUMBER

	72-00008	72-08116
• Transportation Class:	Part I-Nonflammable Part II-Nonflammable	Combustable Combustable

*30 mins. @ 212°F [100°C] followed by 24 hrs @ RT



Conductive Grease

CONDUCTIVE SILVER-FILLED SILICONE GREASE

U.S. Customary
[SI Metric]

GENERAL DESCRIPTION

TECKNIT CONDUCTIVE GREASE is a highly conductive silver-filled silicone grease which contains no carbon or graphite. The material will maintain its electrical and lubricating properties over a broad environmental range. These conditions and properties include high and low temperatures, excellent resistance to moisture and humidity, inertness to many chemicals, ozone and radiation. TECKNIT CONDUCTIVE GREASE is a viscous paste which can be applied to vertical or overhead surfaces without dripping or running at elevated operating temperatures.

APPLICATIONS INFORMATION

TECKNIT CONDUCTIVE GREASE is used on power substation switches and in suspension insulators to reduce EMI noise. It also reduces make-break arcing and pitting of the sliding metal contact surfaces of switches and fills in existing pitted areas with silver/ silicone. In addition, normally closed switches are prevented from sticking due to corrosion or icing. The grease is effective in maintaining a continuous electrical path between contact surfaces which connections of power insulators, which if allowed to arc, can give rise to EMI noise. TECKNIT CONDUCTIVE GREASE is designed to maintain low resistance electrical contact and thereby maintain equipment operation over extended harsh environmental conditions, helping to deliver continuous electrical service.

OTHER APPLICATIONS

TECKNIT CONDUCTIVE GREASE is used on the contacting surfaces of circuit breakers and knife blade switches. It reduces localized overheating or "hot spots" in turn maintaining the blade spring properties and current rating of the switch or breaker at original equipment level. Lubricating conductively prevents "freeze up" in operating equipment and permits restoration of marginal or discarded breakers to rated capacity.

METHODS OF APPLICATION

Apply TECKNIT CONDUCTIVE GREASE to both contact surfaces of the switch. To ensure complete coating, apply the grease to the pivoting



blade and operate the switch several times. These switch surfaces may be wiped smooth with your finger to achieve a thin layer. Do not wipe off the grease with a rag. With ball and socket insulators a sufficient quantity of grease must be applied to fill the clearance gap between the ball and socket contact surfaces. TECKNIT CONDUCTIVE GREASE is reapplied as required during scheduled maintenance either by wiping or brushing with stiff-bristled brush.

Before applying to contact surfaces, it is recommended that the desired quantity of grease be kneaded to guarantee proper dispersion of silver. For solvent cleaning, use Toluene.

ORDERING INFORMATION

TECKNIT CONDUCTIVE GREASE is available in standard packages of 1 lb. [0.45 kg] jars (Part Number 72-00015) and 2 oz. [0.06 kg] jars (Part Number 72-00016) and should be ordered by specifying the part number and the total quantity required. Custom packaging and other size containers are available on request by contacting your nearest TECKNIT Area Representative or factory location.

TECKNIT

SPECIFICATIONS

MATERIAL DESCRIPTION

- **Number of Components:** One
 - **Resin:** Silicone
 - **Filler:** Ag/Glass
-

AS SUPPLIED

- **Color:** Silver Gray
 - **Consistency:** Light Paste
 - **Final Condition:** Non-Setting
 - **Pot Life @ 25°C:** Indefinite
 - **Shelf Life, unopened container:** Indefinite
 - **Volume Resistivity, (QAP-1017), max.:** .20 ohm-cm
 - **Temperature Range:** -67°F to +400°F
[-55°C to +190°C]
-

PART NUMBER

- **72-00015:** 1lb. Jar - Volume 10.7 cm in
 - **72-00016:** 2 oz. Jar - Volume 1.4 cm in
 - **Transportation Class:** Nonflammable
-

The logo for TECKNIT, featuring a stylized blue triangle above the word "TECKNIT" in a bold, blue, sans-serif font. The letters are slightly shadowed to give a 3D effect.

Conductive Coatings

ELECTRICALLY CONDUCTIVE ACRYLIC AND POLYURETHANE PAINTS

U.S. Customary
[SI Metric]

GENERAL DESCRIPTION

TECKNIT manufactures a highly conductive acrylic and polyurethane paints filled with silver. These coatings provide a cost effective method for shielding and grounding plastic enclosures, which are susceptible to EMI, and other applications requiring a flexible protective shield.

SHELF LIFE AND STORAGE RECOMMENDATIONS

It is recommended the ACRYLIC-1 paint be used within six months of the manufactured date and the POLYURETHANE paints be used within nine months of the manufactured date. All conductive coating containers should be stored in the "upside-down" position and at a temperature between 50°F and 86°F [10°C and 30°C]. **DO NOT FREEZE CONDUCTIVE COATINGS.**

PAINT PREPARATION

Before and during use, CONDUCTIVE COATINGS should be thoroughly stirred. Each component of the two and three part polyurethane coatings should be stirred prior to combining. The components of the two and three part systems are supplied as a premeasured kit.

SAFETY AND USAGE CAUTIONS

TECKNIT CONDUCTIVE ACRYLIC AND POLYURETHANE PAINTS contain a flammable solvent and should be used in a well ventilated area. Avoid direct skin contact and inhalation of vapors. Prevent contact with eyes. Do not use near open flame. Industrial use only. Some individuals may experience skin irritation - wash with mild soap and rinse with clear water. Contact physician should irritation occur.

SURFACE PREPARATION

To ensure the best electrical and mechanical reliability, remove all grease, oils, dirt, mold releases and foreign matter. Preparation should be in accordance with standard practice for one-coat painting. Recommended cleaning agent is alcohol.



RECOMMENDED THINNING

THINNING IS REQUIRED FOR THE ACRYLIC-1 PAINT to achieve the proper consistency when using spray equipment. Thinning increases drying time by two or three fold but assures "wetting out" of the ACRYLIC-1 paint offering optimum electrical properties. Thinner should never exceed 25% by volume. The POLYURETHANE coatings can be used with spray equipment as supplied. It is not recommended to thin the POLYURETHANE COATINGS. Toluene can be used for solvent cleaning the ACRYLIC-1.

ORDERING INFORMATION

Small quantities can be shipped within one week after receipt of order. To order TECKNIT conductive paint, specify quantity and part number. For additional assistance, or for scheduling large quantity shipments, contact your nearest TECKNIT area representative or factory location.



SPECIFICATIONS

MATERIAL DESCRIPTION

• Number of Components	One	Two
• Resin	Acrylic	Polyurethane
• Filler	Ag/Glass	Ag

AS SUPPLIED

• Color	Silver Gray	Metalic Gray
• Consistency	Thin Paint	Thin Paint
• Final Condition	Durable Film	Flexible Film
• Mix Ratio	N/A	75.5 : 24.5
• Volume	16.4 in. ³ /115 in. ³	11.4 in. ³
• Weight	16 oz./128 oz. (1 gallon)	12 oz.
• Pot Life @ 25°C	30 minutes	30 minutes
• Shelf Life, unopened container	6 months	9 months
• Full Cure	168 hours @ RT	7-21 days @ RT

CURED*

• Surface Resistivity, (QA-1074), max. OMS	1.0 per square	.06 per square
• Coverage (Approx.) at Recommended 0.002" thick	56 sq. ft./400 sq. ft.	39 sq. ft.
• Temperature Range	-65°F to +298°F [-54°C to +134°C]	-67°F to +347°F [-55°C to +161°C]

PART NUMBERS

• Transportation Class	73-00025/73-00081 Flammable	73-00008 Flammable
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* 7 days @ 25°C

