

Description

SPEC

one component, ready to use.

Provides conductivity for SEM non-conductive samples which require grounding.

502 is a combination of specially processed carbon particles in a fluoroelastomer resin system. It remains flexible over a temperature range of -40 °C to 260 °C and cures at room temperature. 502 resists oxidation and has good adhesion qualities. The diluent is methyl ethyl ketone (MEK) and has fluid consistency. Solids content is 12.6%. Service temperature range is -40 °C to 260 °C.

DAG-T-502

The specimen mount surface should be clean and dry before application. Keep the container tightly capped when not in use and avoid breathing the vapor.

Water based graphite paint contains no hydrocarbons as solvents and will give less contamination in high vacuum. Good choice for mounting samples for FE-SEM applications. Flat surface texture. Average flake size 1µm. Service temperature: 149 °C.

PELCOR Conductive Graphite, water base

Conductive graphite paint, primarily designed for SEM sample preparation. The graphite flakes, with an average size of 1µm, are bonded by a cellulose resin with isopropanol as diluent. Good bonding properties on most materials.

Graphite content is 20%. Ideal to mount samples on sample stubs or to make a conductive path to the sample surface. Let fully dry before using in the SEM. Maximum service temperature: 200 °C.

PELCO® Conductive Graphite, Isopropanol base
Graphite Paint Extender

Forms a thin, uniform conductive surface when sprayed on the sample. Dries very quickly; can be used for low magnification imaging of non-conductive samples.

Graphite Aerosol

Excellent adhesion to most plastics, glass and metals. Other applications are for use as a lubricant (use dry in vacuum systems) and for plating non-conductors.

carbon base, good conductivity, large specimens

LEIT-C-Plast™ is a conductive adhesive paste that can be molded to provide conductive paths to larger non-conductive samples when mounted on a specimen holder for SEM studies. The plasticity is permanent. It is not affected by high vacuum conditions and shows no peaks in energy dispersive X-ray microanalysis.

Heavy specimens may also be prepared for viewing in a SEM using Tempfix™ (or the Glue Gun - see details in our non-conductive section) and LEIT-C-Plast™. First the specimen is fixed into place with Tempfix™ or the Glue Gun.

Leit C Plast™

Afterward, an electrically conductive bridge is made between specimen mount and specimen using LEIT-C-Plast™. It is not required to wait for drying because neither adhesive outgasses.

LEIT-C-Plast™ was originally developed for holding specimens on angled specimen holders.

The adhesive is offered in a roll form and is black. Flat plates are provided for working the material. May be applied with a spatula.

a reliable conductive ground path for SEM specimens

Leitsilber is fast drying and has a flat surface texture.

Silver content 45%, Resistance: 0.02 - 0.04ohms/square. Drying time ~10 minutes at 20 °C. Application can be by brush, dipping or spraying.

Maximum grain size: 16µm

Maximum service temperature: 120 °C

Consumption rate: 0.6 - 2g per 100cm²

Refrigerate for best life. Bring to room temperature gradually

Leitsilber 200 Silver Paint

a reliable conductive ground path for SEM specimens

Air drying silver paint to make effective ground. Curable at room temperature and has high adhesion to any material. Surfaces do not have to be prepared prior to application and will adhere to such materials as polymer (phenolic) boards, ceramic, glass, metal, plastic and fiberglass. It should be mixed well with a spatula before using. RoHS compliant.

The container is offered in two sizes (15g and 30g) and is provided with an applicator brush. Silver flake grain size is an average of 80%, <1.0µm. Sheet resistance is 0.02 ohms per square @ 1 mil (0.001" = 0.025mm) thickness and is a function of the coating. Service temperature range is -40°C to 260°C

PELCO® Colloidal Silver
PELCO® Colloidal Silver
PELCO® SEM-Gold/Silver Extender

PELCO® Conductive Silver 187 is a dispersion of finely divided silver in an acrylic resin. It is specially formulated for applications demanding the use of low VOC products. It provides high conductivity at very thin dry film thickness on plastic and other nonconductive substrates. Its sheet resistance is 0.015 ohms/sq/mil (25µm). It exhibits excellent environmental aging stability with superior scratch/mar resistance while providing excellent long-term shielding and grounding properties. Surfaces to be coated should be clean and dry.

Typical Properties (as supplied)

Pigment: Silver

Binder: Acrylic

Diluent: Acetone (Caution: Flammable and Irritant, use with adequate ventilation)

Solids content by weight: 50.8% ±0.5%

Density: 1.67 g/ml

Theoretical coverage: 74.4 cm²/ml @ 25µm (46.9 cm²/g @ 25µm)

Low VOC - 59.6 g/l.

Excellent adhesion and cohesion - Passes ASTM D3359-93 crosshatch tape test required to meet UL approval.

Excellent mar and scratch resistance - Coating integrity and conductivity stays intact at seams and grounding points.

Low ohms at thin film build - Eliminates problems with film-build on vertical walls

Good flow characteristics - Wet paint flows around corners and into hard to reach

Excellent aging stability - Conductive film integrity stays intact in harsh environments

Advantages:

Typical Properties (as applied)

VOC: 56.9 g/l

Drying time: 5 minutes air dry to touch/ 10 minutes to handle

Typical Properties (when dried)

Recommended thickness: 0.5-1.5 mils dried (12.5-37.5µm)

Sheet resistance: 0.015 ohms/sq/mil (25µm)

PELCO® Conductive Silver 187

Silver flakes in an inorganic silicate aqueous solution, specially formulated adhesive for demanding bonding applications such as:

High temperature up to 927°C (1700°F)

Ultra high vacuum - no hydrocarbon, no VOC's

Cryogenic temperatures (suitability depends on matching properties)

The excellent thermal and electrical conductivity, coupled with the absence of hydrocarbons, makes this product ideal for demanding specimen preparation in

FESEM, XPS, ESCA, SIMS, Auger and other applications. PELCO® High Performance Silver Paste provides both high and thermal conductivity with a

silver particle size of 20µm. Silver content >60% by weight. Cures at room temperature, but requires a 2 hour cure at 93°C (200°F) to achieve high

conductivity and strong bond. Must be fully cured before using this product at cryogenic temperatures. Soluble in water to 260°C (500°F). Above this

temperature it becomes almost insoluble.

PELCO® High Performance Silver Paste

Ideal where a nonflowing paste is needed for special applications. Particle size:

0.4-1.0µm, 80% are below 1.0µm. Cures in 16-20 hours, or 30 minutes @125-

150°C. Clear lacquer base. Approximate Specific Gravity 2.25g/cc³. Service temperature = 200°C

PELCO® Colloidal Silver Paste
PELCO® SEM-Gold/Silver Extender

This very fine flake silver is suspended in iso-butyl methyl ketone (4-methylpentan-2-one) and forms a thin, smooth, highly conductive silver film which is both adherent and flexible. 30g. Fast drying silver suspension has been specifically designed to give increased coverage while maintaining a very high conductivity.

Service Temperature: 105 °C (225 °F)

Solids content (silver): 57.5 to 59%

Binder: Thermoplastic resin

Carrier: methyl iso-butylketone

Sheet resistance (on Lexan panels, dried 30 min/70 °C): <0.015 ohms/sq/mil (25 μm)

Fast Drying Silver Paint
Silver Paint Diluent

Silver Conductive Epoxy, H-22 Epo-Tek®

Two component, silver-filled epoxy system, consisting of a silver resin paste and a liquid hardener (100:4.5). It is a free flowing paste, 100% solids system characterized by outstanding high temperature properties as well as excellent solvent, chemical and moisture resistance. It has a long pot life and is fast curing at relatively low temperatures. Containing no solvents or thinners; it will not outgas. It can be applied by brush, spatula or hypodermic needle. H-22 can be useful for small angle cleavage in material science and semi-conductor applications.

Epo-Tek® silver content is 60% by weight of composition. Note: Mixing ratio for this product is 100 parts silver resin paste to 4.5 parts liquid hardener.

Cure Schedule (minimum bond temperature/time)

150 °C5 minutes

120 °C10 minutes

100 °C20 minutes

80 °C45 minutes

Properties:

Color: silver

Consistency: smooth, flowing paste

Sheet resistance 2 ohms/sq/mil

Refrigeration: not required.

Higher Viscosity (20,000cps)

Silver Conductive Epoxy, H22 Epo-Tek®

Two component, silver filled, epoxy system consisting of a silver resin paste and a silver resin hardener (1:1). It is a smooth, thixotropic paste, 100% solids system characterized by outstanding high temperature properties and excellent solvent, chemical and moisture resistance. It has a long pot life and is fast curing at relatively low temperatures.

Will withstand 200 °C for 1,000 hours. Containing no solvents or thinners, it will not outgas. H20E is ideal for electronic applications. Cures rapidly. Easy to use; the pure silver powder is dispersed in both the resin and the hardener so that it can be used in a convenient 1:1 mixing ratio. Non-toxic – complies with USP Class VI Biocompatibility standards. NASA approved.

Cure Schedule (minimum bond temperature/time)

175 °C45 seconds

150 °C5 minutes

120 °C15 minutes

80 °C.....90 minutes

Properties:

- Color: bright silver

- Consistency: smooth, thixotropic paste

- Sheet resistance: .16 ohms/sq/mil

- Continuous Operating temperature: 200 °C

- Degradation Temperature: 410 °C

- Refrigeration not required.

- Low Viscosity (2000cps)

Silver Conductive Epoxy, H20E Epo-Tek®

Strong, highly conductive solderless connections and repairs. Circuit boards.

Static discharge shielding and grounding.

Can be used for repairs of circuit boards, static discharge shielding, grounding and conductive paths for specimens.

Cure Schedule (Minimum bond temperature/time)

65 to 121 °C (150 to 250 °F) for 5 to 10 min.

25 °C (75 °F) for 4 hours

Properties:

Bonding surface mount components

High strength conductive bonds

Quick, low or no heat cure – air dries

Rework or remove with hot soldering iron

Excellent electrical conductivity

2-part epoxy, reusable applicator with stir stick, 7g each

Service temperature range -91 °C to 100 °C (-132 °F to 212 °F) permanent bond.

0.4 ohms/sq/mil (25µm)

Silver Conductive Epoxy

resistant to oxidation and retains measurement integrity over time

Gold paste is fast drying and useful for analytical analysis over time where a high signal is desired. The gold is in microfine form and contains organic binders and a solvent. Dries at room temperature. Not intended for permanent use, but for testing and temporary work. Sheet resistance is .02 to .05 ohm/sq @ 1 mil thickness. Contacts hold down to very low temperatures (<-200 °C), but are not permanent since this type of product has low mechanical strength. 75% gold content; sphere size <2µm, flake size <10µm. Maximum service temperature is 65 °C.

Refrigerate for best life. Bring to room temperature gradually. Approximate calculated specific gravity 3.18g/cm³.

PELCO® Conductive Gold Paste
PELCO® SEM-Gold/Silver Extender