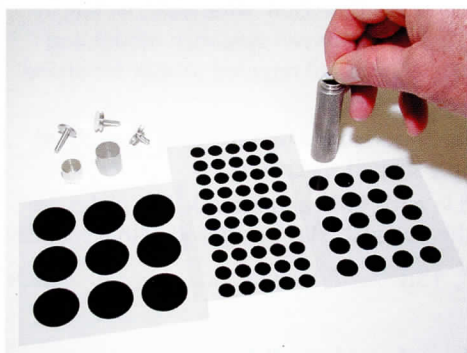


■ PELCO Tabs™ Carbon Conductive Tabs, Double Coated



The simplicity of application and smooth, clean surfaces of PELCO Tabs™ Carbon Conductive Tabs are a significant improvement compared to many of the other common adhesives that have been used in SEM mounting. Both tab

sides have a thick conductive adhesive (conductive inner tab is 35µm and the adhesive is 45µm on each side for a total thickness of 125µm [5 mils]) with a liner on both sides, a transparent liner and white liner respectively. They are ready for immediate use. The top protective liner does not have to be removed until the sample is ready to be mounted. This reduces possible contamination. Outgassing is negligible.

Application of the tab to a mount or surface should be done slowly and carefully to maintain surface smoothness.

The conductive adhesive is a carbon filled acrylic, free of solvents. It can be removed from the specimen mount with ethyl acetate, ethanol, isopropanol, alcohols or our 3M® Adhesive Remover 80924 which is solvent-free. Temperature maximum is 60°C (140°F). Small impurities of Si, Sb, S and very small impurities of Fe, Mg and Na can be found.

This product may also be used for gunshot residue analysis. Many laboratories use these tabs for SEM in a large diversity of applications. Refrigeration will increase shelf life but a warm up period of one hour is then required before use. **M**
(Use Spectro Tabs where a purer composition is required.)

- 16084-6** PELCO Tabs™ Carbon Conductive Tabs, 6mm ODpkg/112
- 16084-3** PELCO Tabs™ Carbon Conductive Tabs, 9mm ODpkg/98
- 16084-1** PELCO Tabs™ Carbon Conductive Tabs, 12mm ODpkg/100
- 16084-2** PELCO Tabs™ Carbon Conductive Tabs, 25mm ODpkg/54

■ “Spectro Tabs”

when you need higher purity carbon

A need existed for a tab with a purer composition in situations such as X-ray analysis. The EDX analysis shows a higher purity for those applications that require critical composition study. The graph is linked on our web site:

www.tedpella.com/SEMAdhes.htm

- 16084-4** Spectro Tabs™, Higher Purity Conductive Carbon Tabs, 12mm OD **M**pkg/120

For a table that compares the characteristics of our conductive adhesives, go to the Adhesive section of our web site.

■ PELCO® Image Tabs™, 260µm (10mil) Carbon Conductive Tabs, Double Coated

Back by popular demand, the thicker PELCO® Image Tab™ is a return to the stiff 260µm (10mil) thick smooth conductive tab. Though not as conductive or sticky as the current 10mil PELCO® Tabs™, PELCO® Image Tabs™ are suitable as a photographic background are repositionable. This tab is also suitable for Jet Scan applications where the tab must be removed and archived. The Image Tab's surface is less prone to bubbling and cracking when metal coated under vacuum and thus better than the 125µm (5mil) PELCO® Tab as a photographic background for small particles like pollen and insect parts.

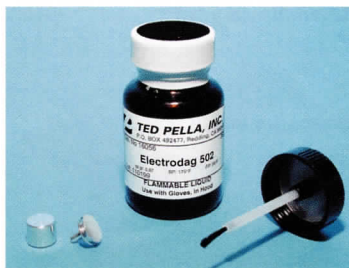
Both sides of the 200µm thick conductive polycarbonate base have 30µm thick conductive adhesive. Total thickness is 260µm with a liner on both sides. Protection for handling, storage and shipping is provided on one side by the transparent liner sheet and on the other side by the white liner cover.

The conductive adhesive is a carbon-filled acrylic, free of solvents. It can be removed from the specimen mount with ethyl acetate, ethanol, isopropanol, alcohols or our 3M® Adhesive Remover 80924 which is solvent-free. Temperature maximum is 60°C (140°F). Small impurities of Ni, Cu, Si, Sb, S, Na, P and very small impurities of Fe and Mg can be found. Refrigeration will increase shelf life but a warm-up time of 1 hour is then required before use.

- 16084-20** PELCO® Image Tabs™, Carbon Conductive Tabs, 12mm ODpkg/100

■ Dag T-502 Carbon Paint

(different name, same Product as Electrodag 502)



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.

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. **M** **F** **I**

- 16056** Dag T-502, 30geach

F = Flammable **I** = Irritant

M = MSDS on web page

■ PELCO® Conductive Graphite Paint

available in water or alcohol base



Conductive graphite paint is ideal for mounting conductive and non-conductive SEM specimens on stubs. Non-conductive specimens may require additional conductive paths. Supplied with convenient applicator brush in cap.

Water Base (Graphite Paint)

Water based graphite paint contains no hydrocarbons as solvents and will give less contamination. Flat surface texture. Average flake size 1µm. Service temperature: 149°C. **M ■ I**

16051 PELCO® Conductive Graphite, water base, 50geach

Isopropanol Base (Graphite Paint)

Average flake size 1µm. Service temperature: 200° C. **M ■ F, I**

16053 PELCO® Conductive Graphite, Isopropanol base, 30gmeach

16054 PELCO® Graphite Extender, 30mleach

■ Graphite Aerosol



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.

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.

10 oz. (283.5g) **M T ■ F, I H ◆**

16058 Graphite Aerosol; 283.5g each

■ Leit C Plast™

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 an SEM using Tempfix™ (or the Glue Gun - see details in our non-conductive section page 00) and LEIT-C-Plast™. First the specimen is fixed into place with Tempfix™ or the Glue Gun. 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 providing conductive paths on large awkwardly shaped specimens.

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.

16046 Leit C Plast™, 15geach

■ Leitsilber Conductive Silver Cement

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. **M ■ F, I**

16035 Leitsilber 200 Silver Paint, 30geach

■ PELCO® Conductive Liquid Silver Paint

a reliable conductive ground path for SEM specimens



Air drying silver 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.

The container is offered in two sizes (15g and 30g) with an applicator brush in cap. 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. **■ F, I**

16031 PELCO® Colloidal Silver, 30g **M T**each

16034 PELCO® Colloidal Silver, 15geach

16021 PELCO® SEM-Gold/Silver Extender, 25mleach

■ PELCO® Conductive Silver 187



16045 PELCO® Silver 187 and 15012 Specimen Preparation Stand

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) ■ F, I

Solids content by weight: 50.8% ±0.5%

Density: 1.67 g/ml

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)

16045 PELCO® Conductive Silver 187, 30g ■ M ■ Teach

■ PELCO® High Performance Silver Paste

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

- High temperature up to 927°C (1700°F)
- Ultra high vacuum - no hydrocarbons, no VOC's
- Cryogenic temperatures (suitability depends on matching properties)



The excellent thermal and electrical conductivity, coupled with the absence of hydrocarbons, make this product ideal for demanding preparations in FESEM, XPS, ESCA, SIMS, and Auger applications. Silver particle size 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.

16047 PELCO® High Performance Silver Paste, 50g ■ M ■ Teach

■ M = MSDS on web page
■ T = Tech Note on web page
■ H = Hazard Fee may apply

■ PELCO® Colloidal Silver Paste, Conductive



16032 PELCO® Colloidal Silver Paste and 15012 Specimen Preparation Stand

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. Service temperature 200°C. Approximate specific gravity 2.25g/cm³. ■ F, I

16032 PELCO® Colloidal Silver Paste, 25g ■ M ■ Teach

16021 PELCO® SEM-Gold/Silver Extender, 25ml ■ Meach

■ Fast Drying Silver Paint



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. ■ F, I

- 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 (25µm)

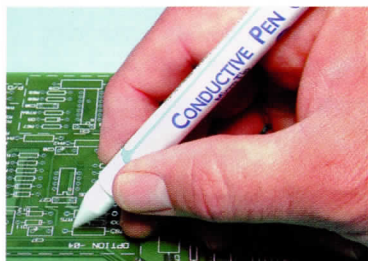
16040-30 Fast Drying Silver Paint, 30g ■ M ■ Teach

16048-25 Silver Paint Diluent, 25ml ■ M ■ Teach

■ Cg = Suspected Carcinogen	■ O = Oxidizing
■ C = Corrosive	■ R = Radioactive
■ F = Flammable	■ T = Toxic
■ I = Irritant	□ U = Unlisted
■ L = Lachrymator	

■ Circuit Repair

with handy Silver Conductive Pens



Draws highly conductive silver traces, jumpers and shielding with high precision. **M** **T**

- Instantly creates conductive silver traces
- Dries in minutes at room temperature
- Valved pen tip for easy application
- Can be soldered at low temperature
- Speeds prototype and design
- Choice of tip sizes

16041 Silver Conductive Pen, Standard Tipeach

16042 Silver Conductive Pen, Micro Tipeach

■ PELCO® Conductive Gold Paste

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. 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.

16022 PELCO® Conductive Gold Paste, 2g **M**each

16021 PELCO® SEM-Gold/Silver Extender, 25ml **M** . . .each

■ Conducting Ink Pen



Leaves a mark which can be read in the electron beam in the SEM; can be used for marking or identifying objects. The mark is a high-resistance carbon conductive coating that would remove charge.

16044 Conductive Ink Peneach

■ Conductive Lift-N-Press Adhesive Tabs, Double Sided



Composed of a thin film of strong conductive adhesive approx. 1/2" (12.7mm) dia.; >99% transparent to EDS, with 0.6% nickel and <0.3% copper content. To apply, place "Press" portion of tab on SEM mount surface, lift "Lift Off" tab and peel, slightly rotating tab when lifting. Can be cut to size as desired.

16083 Conductive Lift-N-Press, roll/250each

■ SEM Specimen Preparation Station



PELCO® Specimen Preparation Station Side 1



PELCO® Specimen Preparation Station Side 2

Place the Specimen Preparation Station, with your freshly prepared specimens, under the Infra-Red Dryer to quickly dry them.

Solid aluminum support holds 10 specimen mounts in an upright position for mounting or adjusting specimens. Each station is 3" (7.5cm) diameter by 1" (2.5cm) thick and can hold 10mm (.394") or 15mm (.591") diameter mounts on one side or 10 of the 3.1mm (1/8") pin mounts on the other side. Therefore, each preparation station will accommodate three different specimen mount types. Each mount cavity is numbered for easy identification and the station itself is impervious to most organic solvents.

15012 PELCO® SEM Specimen Preparation Station . . .each

See our Conductive and Non-Conductive Tapes pp. 585-593.

M = MSDS on web page; **T** = Tech Note on web page

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|------------------------------------|--------------------------|
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| ■ C = Corrosive | ■ R = Radioactive |
| ■ F = Flammable | ■ T = Toxic |
| ■ I = Irritant | □ U = Unlisted |
| ■ L = Lachrymator | |