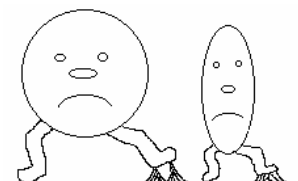


# 10 SEM, TEM, STM Supplies

## SEM Specimen/Stub Adhesives

A listing of many different adhesive methods for attaching specimens to SEM mounts.



### Colloidal Graphite

A suspension of pure, fine colloidal graphite in water or in isopropanol based solution. To form a conducting dry film of graphite on a variety of materials.

C107	Colloidal graphite - aqueous base	500g
C126	Colloidal graphite - isopropanol base	500g

### Silver Paint

An air drying paint containing silver flakes. Dries to form a conducting film that is ideal for sample mounting.

S269	Silver paint	10g
S270	Silver paint	50g

### Silver Paint Thinners

A thinner to reduce the thickness of our silver paint S066 to make thin conductive tracks on the specimen for microprobe work.

S271/1	Silver Paint Thinners	25ml
S271	Silver paint thinners	100ml

### Silver Epoxy Adhesive

A two part silver filled epoxy adhesive providing a conducting joint and bond. *Silver content 70%*. Information sheet provided with each pack.

S055	Silver epoxy adhesive	pack of 10g
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### Conducting Carbon Cement (Leit-C)

A suspension of very fine carbon particles in a volatile carrier. Suitable for forming a conducting film bond between specimen or carbon disc to stub.

C198	Carbon cement (Leit-C)	30g
C198/1	Thinners for Leit-C	30ml

### Leit-C Plast

A plasticine like material with low outgassing properties suitable for use in the high vacuum of the SEM. Leit-C Plast is a conductive material requiring no additional coating and is suitable for many applications in specimen preparation.

C199	Leit-C-Plast	15g
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### Tempfix

A thermoplastic adhesive that when applied to a heated stub at approximately +40°C yields a sticky surface suitable for holding specimens. It dries quickly to a very smooth surface and remains stable under the SEM.

T328	Tempfix	set
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### Microstik

A clear adhesive for mounting small particles. Provides an ultrathin base when applied to the SEM specimen mount. Dries quickly and is non-conductive

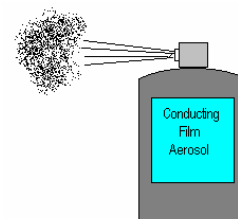
M167	Microstik solution	14ml
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# SEM, TEM, STM Supplies 10

## Conducting Film Aerosol

A rapid method of spraying a conductive film onto SEM specimens such as pieces of biological tissue. Effects are not permanent so it is ideal for rapid examination in the SEM.

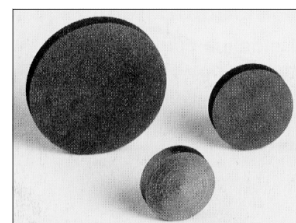
**C212** Conducting film aerosol 397ml can



## Carbon Discs

A range of discs 3mm thick with diameters of 12.5mm, 15mm or 25mm for mounting specimens in the SEM.

**C304/10** Carbon discs 12.5mm Ø pack of 10    **C305** Carbon disc 15mm Ø  
**C305/10** Carbon discs 15mm Ø pack of 10    **C306** Carbon disc 25mm Ø  
**C306/10** Carbon discs 25mm Ø pack of 10



## Conductive Carbon Adhesive Discs

For SEM stubs. An improvement on double sided tape. These new doubly adhesive carbon based discs ensure good electrical connection whilst retaining the benefits of a quick mounting method.

**C263/N** 9mm Ø pack of 100  
**C249/N** 12mm Ø pack of 100  
**C252/N** 25mm Ø pack of 51



## Sulphur-Free Conductive Carbon Discs

Adhesive discs with low background for microanalysis

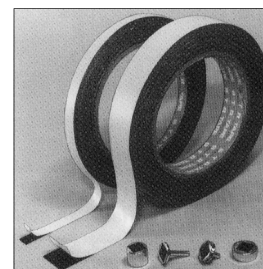
**C272** Sulphur-free conductive carbon tabs 12mm Ø pack of 120



## Double Sided Sticky Carbon Tape

Highly conductive tape for SEM and EDS applications. The double adhesive and conductive design permits quick mounting of samples without using liquid or colloidal adhesives. The tape is relatively solid and non-porous and does not absorb small samples. Thickness is 0.16mm.

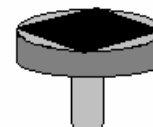
**C261** Carbon tape 8mm x 20m long each  
**C277** Carbon tape 12mm x 20m long each  
**C451** Carbon tape 20mm x 20m long each  
**C278** Carbon tape 50mm x 20m long each



## Conductive Carbon Adhesive Sheet

For SEM or EDS we have available double sided carbon sheet for eliminating background X-rays. When cut to size it is easy to place on SEM stubs and is contaminant free.

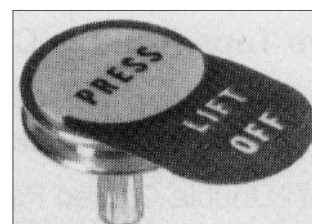
**C206** Carbon conductive adhesive sheet 5 x 12cm pack of 10



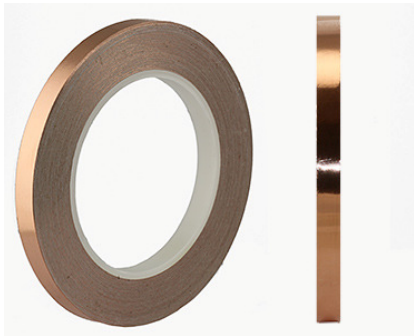
## Sticky Tabs

Sticky tabs may be affixed to most types of stubs. Once affixed to the top of a stub simply remove the peel-off tab to leave a 1/2" (12.7mm) Ø layer of adhesive to which small specimens can be fixed, or impressions such as fingerprints can be made in the adhesive for examination. Non-conducting and the strong silicone adhesive does not outgas in the vacuum. The adhesive can be removed with acetone.

**T199** Sticky tabs pack of 100



### Copper SEM Tape

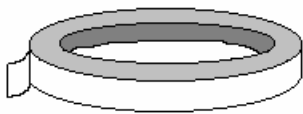


**Single sided** highly conductive copper strip with pressure sensitive adhesive backing. Ideal for static charging problems using SEM/FIB applications. Total tape thickness 0.06mm

**T617** Copper tape single sided 3mm x 30m    **T618** Copper tape single sided 6mm x 30m  
**T619** Copper tape single sided 10mm x 30m    **T188** Copper tape single sided 12mm x 16m  
**T620** Copper tape single sided 20mm x 30m

**Double sided** highly conductive copper tape with acrylic adhesive on both sides. Ideal for mounting samples directly on sample stubs and establishing an earthing path.

**T614** Double sided conductive copper SEM tape 6mm x 33m    Total tape thickness  
**T615** Double sided conductive copper SEM tape 12mm x 33m    0.085mm  
**T616** Double sided conductive copper SEM tape 20mm x 33m



### Aluminium Tape

Two sizes of aluminium strip with pressure sensitive adhesive backing. Ideal for conductive connections etc.

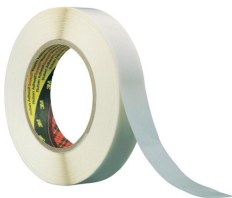
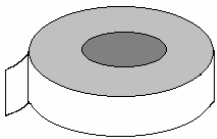
**T189** Al tape 12mm x 55m x 0.09mm per roll  
**T190** Al tape 25mm x 55m x 0.09mm per roll    **T190/1** As T190 but 0.13mm thick



### Magic Tape

This 3M tape is transparent when affixed to objects and makes amending and updating documents easy. It is ideal for making small labels being easy to type or write on and is invisible on photocopies.

**T191** Magic tape 12mm x 66m    per roll  
**T523** Magic tape 25mm x 66m    per roll



### Double Sided Tape

A thin double sided sticky tape in two widths suitable for mounting specimens and for general SEM work.

**T063** Double sided tape 12mm x 66m    per roll  
**T064** Double sided tape 38mm x 66m    per roll

### Silver Conducting Adhesive Sheet

Highly electrically conductive sheet 5 x 12 x 0.16cm thick suitable for cutting and sizing to samples for SEM.

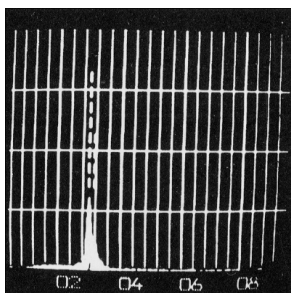
- Little outgassing under vacuum
- Doesn't absorb or penetrate specimens

**S331** Silver conductive sheet    pack of 5

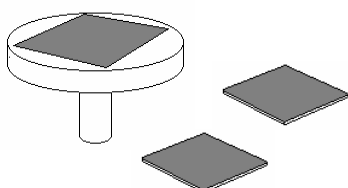
### Silicon Chip Specimen Supports

Si-chips are opaque, of low electrical resistance and have surface properties equal to glass. They are chemically inert and make good substrates for growing or mounting cells or ferritin particles. They are useful for determining resolution and contrast capabilities of the "in-the-lens" SEMs equipped with high brightness electron emitters. Si-chips are precleaned before packing.

**S332** 4" (10cm) silicon wafer diced into approx. 270 chips 5 x 5mm



EDS spectrum of silver sheet S331

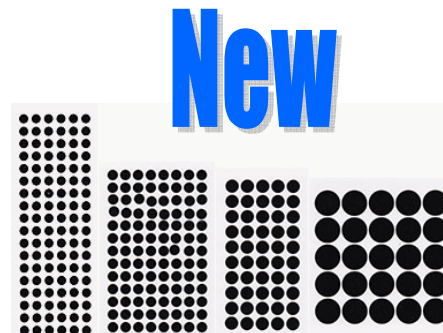


## High Purity Conductive Double-Sided Adhesive Carbon Tabs

These high purity carbon tabs are especially developed for **SEM/EDS applications**. The material used is fully transparent for EDS with only trace amounts of Al and Si. The material is constructed using a non-woven liner coated on both sides with a conductive, carbon filled pressure sensitive acrylic adhesive. Total thickness of the material is approximately 150µm with an adhesive thickness of 45µm on both sides. The adhesive used has a high adhesion strength to metals, plastics, ceramics, wafers, rubber, wood, glass, paper, and small particles or fibres. The conductivity of the carbon tabs is lower than the conductivity of double sided copper tape or the double sided conductive Lift-N-Press tabs, but it is still fully compatible with SEM/EDS applications. **Ideal for Gunshot Residue work.**

### Main Features and Benefits

- Thin material; 150µm total with 45µm on each side of a 35µm non-woven carrier
- Plastic liner on both sides
- Useable temperature range -20°C to + 60°C
- Low outgassing rates
- Fully EDS transparent with high purity for EDS applications
- High strength thin adhesive (2x45µm) combined with high tackiness
- Long shelf life and can be stored in a refrigerator
- Resistance 50K-200K



The tabs are supplied on a clear plastic sheet with a white plastic liner tab. Available as 6mm, 9mm, 12mm and 25mm diameter.

**To use**, lift the tab from the clear backing sheet, press the sticky surface to the mount, then peel away the white liner tab, leaving the adhesive exposed. Mount the sample on the exposed adhesive. **Alternatively**, the white liner tab can be removed, the stub pressed on the exposed carbon tab and the clear plastic lifted off. The use of sharp pointed tweezers helps to lift of the tabs and liner. The carbon tabs can be easily removed with isopropanol, ethyl acetate, ethanol or acetone.

The 6mm Ø carbon tabs are for use with small samples on any size stub

The 9mm Ø carbon tabs are compatible with 9.5mm Ø JEOL stubs

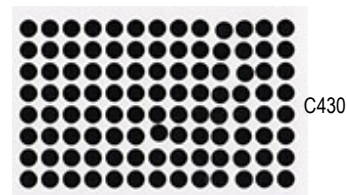
The 12mm Ø carbon tabs are compatible with 12.7mm Ø pin stubs, 12.2mm Ø JEOL stubs and 15mm Ø Hitachi stubs

The 25mm Ø carbon tabs are compatible with 25.4mm Ø pin stubs, 25mm Ø JEOL stubs and 25mm Ø Hitachi stubs

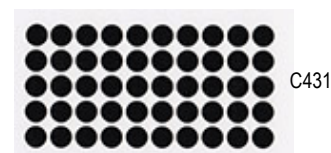
**C429** High purity conductive double-sided adhesive carbon tabs **6mm Ø** pack of 108



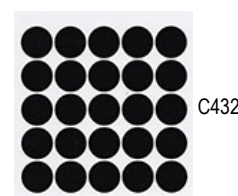
**C430** High purity conductive double-sided adhesive carbon tabs **9mm Ø** pack of 104



**C431** High purity conductive double-sided adhesive carbon tabs **12mm Ø** pack of 100



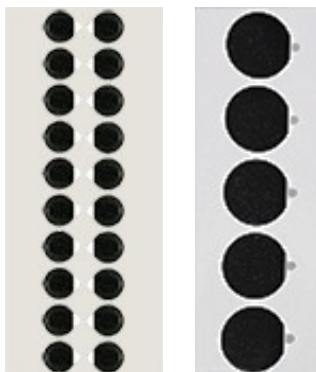
**C432** High purity conductive double-sided adhesive carbon tabs **25mm Ø** pack of 50





### Super Smooth Conductive Double Sided Adhesive Carbon Discs

High Purity tabs developed for imaging and analysis applications of particularly fine powder and fibre samples. The adhesive used is fully transparent for EDS analysis with only trace amounts of Al and Si. **Super smooth and highly conductive**. Total thickness of the material is 110µm with an adhesive thickness of 40µm on each side. Exhibits high adhesion to metals, plastics, ceramics, wafers, rubber, wood, glass, paper and small particles or fibres. Supplied on a clear plastic sheet with a white plastic liner tab.



C433

C434

- Low outgassing
- Temp range -20°C to +60°C
- Long shelf life and can be stored in a refrigerator

To use: lift the tab of the clear backing sheet, press the sticky surface to the mount, then peel away the white liner tab, leaving the adhesive exposed. Mount the sample on the exposed adhesive. Alternatively, the white liner tab can be removed, the stub pressed on the exposed carbon tab and the clear plastic lifted off. The use of sharp pointed tweezers helps to lift off the tabs and liner. The carbon tabs are easily removed with isopropanol, ethyl acetate, ethanol or acetone.

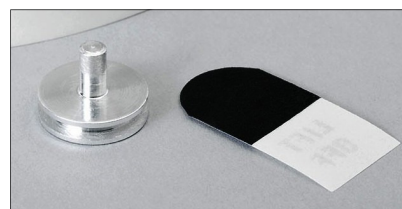
**C433** 12mm carbon tabs are compatible with 12.7mm Ø pin stubs, 12.2mm Ø JEOL stubs and Ø15mm Hitachi stubs. Pack of 100

**C434** 24mm Ø carbon tabs are compatible with 25.4mm Ø pin stubs, 25mm Ø JEOL stubs and 25mm Ø Hitachi stubs. Pack of 50



### Conductive Carbon Adhesive Discs

Conductive carbon adhesive tabs approximately 12.5mm diameter with a thin film of strong adhesive. Over 99% transparent to EDS with very small amounts of nickel (0.6%) and copper (<0.3%). For small samples, tabs can be cut to the desired size before removing the tab from the backing sheet.



**C445** Conductive carbon adhesive discs  
Roll of 250

### Super Smooth Double Sided Adhesive Carbon Tapes



C436

C435

C437

The material is identical to the material used for the super smooth carbon tabs with one difference; the tapes are self-wound with a thin white liner on one side. The tape can be shaped into custom forms, strips and cut-outs. Available with 5mm, 8mm, 12mm and 20mm width by 20m long. To use: Cut the required length of carbon tape. Cut to shape if needed. Remove the white liner from one side and adhere to tape to the sample support. The use of sharp pointed tweezers helps to lift the liner of the adhesive. Remove the top liner and stick sample to the tape. The carbon tape can be removed with isopropanol, ethyl acetate, ethanol or acetone.

- C435** Super smooth conductive double sided adhesive carbon tape 5mm x 20m  
**C436** Super smooth conductive double sided adhesive carbon tape 8mm x 20m  
**C437** Super smooth conductive double sided adhesive carbon tape 12mm x 20m  
**C438** Super smooth conductive double sided adhesive carbon tape 20mm x 20m

# SEM, TEM, STM Supplies 10

## Non-conductive Double Sided Adhesive Discs

Non-conductive double sided tabs are useful for AFM, LM and SEM applications where conductivity is not a requirement. We offer **two types**:

- 1) **C679** Lift-N-Press **premium** adhesive tabs 12.5mm Ø with a thin film of strong adhesive. To use simply lift the tab off the backing sheet, press the sticky surface to the mount and peel back the tag. The adhesive can be removed with isopropanol or acetone Compatible with 12 and 15mm Ø AFM discs, 12mm mica discs, 12.7mm pin stubs. 12.2mm JEOL stubs and 15mm Hitachi stubs. Pack of 100
  - These stubs have a super-strength thin adhesive (50µm)
  - Smoother surface for better particle adhesion
  - Lower outgassing and longer shelf life
- 2) **C680** D12 **economy** 12mm Ø adhesive non-conductive adhesive tabs, effective and cost efficient. To use lift the protective tab to lift off the sheet and press onto sample stub. Compatible with 12 and 15mm Ø AFM discs, 12mm mica discs, 12.7mm pin stubs. 12.2mm JEOL stubs and 15mm Hitachi stubs. Pack of 100

1 C679 Premium 12.5mm adhesive tab



2 C680 D12 Economy 12mm adhesive tab



## A New Range of Conductive and Non-Conductive Liquid Adhesives for SEM & FIB Mounts

Conductive paints are indispensable for SEM and FIB specimen preparation and specimen mounting. They enable quick sample mounting and deliver the conductivity needed for SEM and FIB applications.

**C30** is a **premium, water based conductive carbon cement** with fine dispersed graphite flakes (~3µm). It does not contain any hydro-carbon based solvents (VOC's) and is fully compatible with high vacuum (HV) systems and even UHV systems when dry. Due to its low viscosity, cracks and small gaps are easily filled. C30 shows good conductivity when dry. Ideal for mounting SEM specimens and making earthing paths. Allows easy removal of samples afterwards due to its low mechanical strength. Good bonding properties on a wide variety of sample materials such as metals, rocks, concrete, ceramics, epoxies, wood and textiles. C30 contains approx. 20% graphite in the solution. On hydrophobic materials, we advise the use of the solvent based carbon paints. Keep container above 0°C; do not freeze!

**C447/40** C30 water based conductive carbon cement, supplied in a 60ml glass bottle with **40g** contents and a cap with brush.

**C447/100** C30 water based conductive carbon cement, **100g** and a cap with brush

**C32** is a **novel, water based conductive graphene cement** with fine dispersed graphene sheets (~1-5µm). C32 graphene carbon paint is free off any hydro-carbon based solvents and is fully compatible with high vacuum (HV) systems and even UHV systems when dry. Due to its low viscosity, cracks and small gaps are easily filled. C32 shows high conductivity when dry. Ideal for mounting SEM specimens and making earthing paths. Allows easy removal of samples afterwards due to its low mechanical strength. Excellent bonding properties on a wide variety of sample materials such as metals, rocks, concrete, ceramics, epoxies, plastics, wood and textiles. C32 contains approx. 10% graphene in the solution. Supplied in a 30cc glass bottle with 25g contents and a cap with brush. Keep container above 0°C; do not freeze!

**C448** C32 water based conductive graphene-carbon paint, no VOC, 25g bottle



## New Conductive &amp; Non-Conductive SEM Adhesives cont...



**C33** is an **extremely fast drying thin carbon solvent based adhesive**. C33 has been developed to cover large areas quickly with a thin conductive layer. Ideal for making earthing paths and for covering parts of non-conductive epoxy mounts. Due to its low viscosity it easily fills cracks and narrow gaps. C33 is one of the fastest drying carbon cements on the market. Samples can be removed relatively easily due to its low bonding strength. C33 dries very quickly but is less suitable for flexible surfaces. Solvent is isopropanol, solution contains approximately 10% graphite with a polymer based binder. **Moderate conductivity**.



**C449** C33 fast drying solvent based conductive carbon cement. Supplied in a 30ml glass bottle with 15g contents and a separate brush.

**I012/30** STC33 Isopropanol thinner and cleaner for C33 above in 30ml glass bottle



**C38** is a strong **conductive carbon cement** based on fine carbon black and graphite flakes with an acrylic binder. C38 exhibits excellent bonding properties on a large variety of materials such as metals, plastics, ceramics, epoxies, rubber, glass, wood and textiles. Ideally suited for making earthing paths and to bond SEM samples on sample stubs. The tough acrylic binder reduces material loss and can be used to make permanent bonds. It has the consistency of a thin paste. Dries relatively quickly, depending on thickness; drying is quicker with moderate heat up to 65°C. Can be used on flexible surfaces. **Solvent is acetone**, solution contains approximately 15% carbon black and graphite, acrylic based binder. C38 shows **enhanced conductivity** when dry. Supplied in a 30ml glass bottle with 25g contents and separate brush.

**C450** C38 Strong conductive carbon cement with acrylic binder 25g



**AG15** is a **conductive silver paint** based on very fine silver flakes with a thermoplastic resin binder with MEK/acetone as the carrier. AG15 is fully comparable to EDAG 1415M and DAG 915 from Acheson/Henkel. An excellent conductive glue for SEM samples, or used in electronic and shielding applications. Achieves good bonding properties on a wide variety of materials including, plastics, ceramics, glass, metals, wood, rubber, epoxies and textiles. The low viscosity silver paint is ideal for making earthing tracks and to bond SEM samples on sample stubs. Samples can be easily removed. This silver cement has the consistency of a paint. Dries relatively quickly, depending on thickness. Drying time can be reduced with moderate heat up to 70°C. Solution contains 57.5 – 59 % silver. **AG15 exhibits excellent conductivity**. Supplied in a 15ml glass bottle with a brush, 15 gram.

**C269** AG15 conductive silver paint 15g

**S271/1** MEK extender, thinner and cleaner for AG15 silver paint. 30ml



**AG42** is a **strong conductive silver cement** based on fine silver flakes (10-1µm) with an acrylic binder. Achieves excellent bonding properties on a wide variety of materials including, plastics, ceramics, glass, metals, wood, rubber, epoxies and textiles. The strong and tough acrylic binder reduces material loss and the silver flakes ensure excellent conductivity. **Use when highest conductivity is needed**. Ideal for bonding SEM samples onto stubs. This silver cement has the consistency of a paste. Dries relatively quickly, depending on thickness but drying time can be reduced with moderate heat up to 65°C. Can be used on flexible surfaces. Solvent is acetone, solution contains approximately 73% silver, acrylic based binder. Excellent conductivity.

**S780** AG42 strong conducting silver cement 15g in glass bottle with brush

**S780/25** AG42 strong conducting silver cement 25g in glass bottle with brush



**AG44** is a conductive silver paint based on fine silver flakes (10-1µm size) with a low VOC acrylic binder. Achieves **excellent bonding properties** on a wide variety of materials including, plastics, ceramics, glass, metals, wood, rubber, epoxies and textiles. The tough, low VOC acrylic binder reduces material loss and the silver flakes ensure excellent conductivity. **Use when highest conductivity is needed**. Ideal for bonding SEM samples onto stubs. Samples can be easily removed. This silver cement has the consistency of a thin paste. Dries relatively quickly, depending on thickness. Drying time can be reduced with moderate heat up to 65°C. Can be used on flexible surfaces. **Solvent is acetone**, solution contains 61% silver, acrylic based binder. AG44 exhibits excellent conductivity.

**S781** AG44 strong conductive silver cement 15g in glass bottle with brush

**S781/25** AG44 strong conductive silver cement 25g in glass bottle with brush

**AG46** is a **conductive silver paint** based on fine silver flakes (10-1um size) with a **water based urethane binder**. It does not contain VOC's, is solvent-free and is non-flammable. Achieves excellent bonding properties on a wide variety of materials including, plastics, ceramics, glass, metals, wood, paper and paints. Safe to use on even the most delicate plastics. The water-based urethane binder reduces material loss and the silver flakes ensure excellent conductivity. Ideal for bonding SEM samples onto stubs. Samples can be easily removed. This silver cement has the consistency of a paint. Dries relatively quickly, depending on thickness. Drying time can be reduced with moderate heat up to 65°C. Solvent is water, solution contains 60% silver, urethane based binder. **AG46 exhibits excellent conductivity**. Keep container above 0°C; do not freeze!

- S782** AG46 water based conductive silver cement no VOC's in glass bottle with brush 15g  
**S782/25** AG46 water based conductive silver cement no VOC's in glass bottle with brush 25g

**AC29** is a **conductive paint with silver coated copper flakes**. It is an acrylic based thin paint with good bonding properties, good conductivity and affordable pricing. Conductivity with 0.015 ohm.sq is comparable to silver paints. Ideal for making earthing paths and coating non-conductive surfaces and can be used for **permanent bonding of SEM samples to stubs**. It has the consistency of a thin paint. AC29 dries relatively quickly, depending on thickness but can be speeded with moderate heat up to 65°C. Solvent is acetone, solution contains approximately 31% silver coated copper flakes, acrylic based binder. Density is 1.1g/cm3, Service temperature range is -40 to +120°C. Touch dry in 3 min. **AC29 exhibits very good conductivity when dry**.

- S783** AC29 conductive silver coated copper paint. 25g in 30ml bottle with brush

**NI41** Conductive glue with nickel is an excellent alternative when silver or carbon cement are not required. It is a strong acrylic based glue with excellent bonding properties, good conductivity and affordable pricing. Same tough acrylic binder used for the carbon and silver cement. Conductivity is between silver and carbon conductive cements. Can be used for permanent bonding of SEM samples to sample stubs. It has the consistency of a paste. Dries relatively quickly, depending on thickness. Drying goes quicker with moderate heat up to 65°C. Can be used on flexible surfaces. Solvent is acetone, solution contains approximately 50% nickel, acrylic based binder. NI41 shows very good conductivity when dry. Supplied in a 30ml glass bottle with 25g contents and separate brush.

- N062** NI41 strong, conductive nickel cement. 25g in 30ml bottle with brush

**STC39** STC39 **Acetone thinner and cleaner** for the acrylic based carbon, silver and nickel paints and cements. 99.99% pure Acetone. Supplied in a 30ml glass bottle.

- A018/30** **Acetone thinner and cleaner** for silver & nickel paints/cements 30ml bottle

