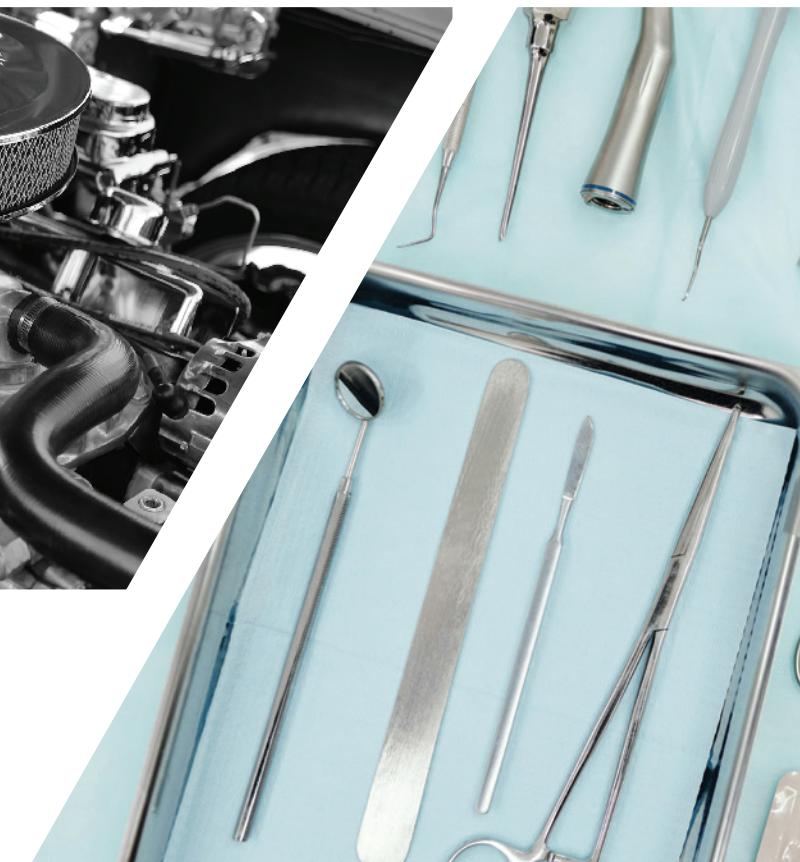
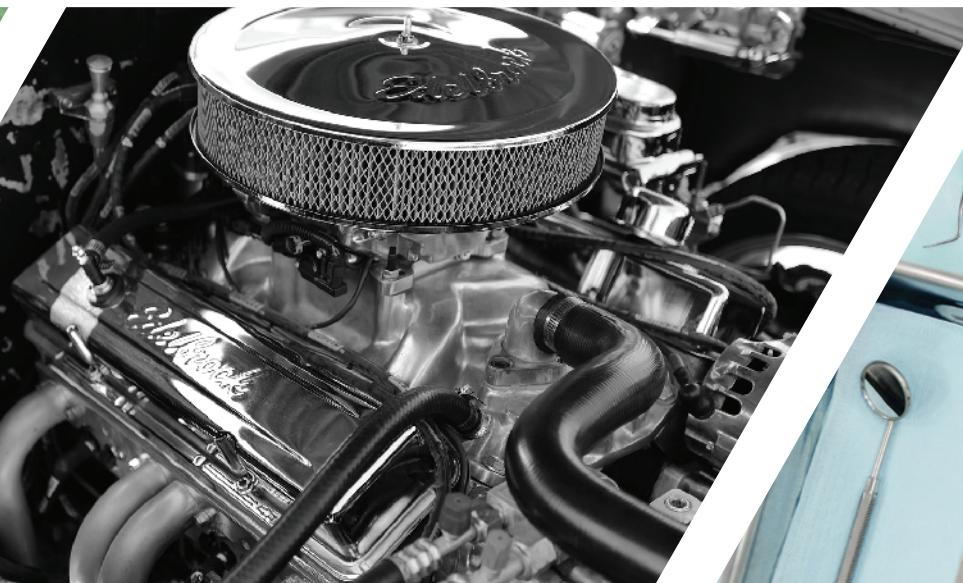
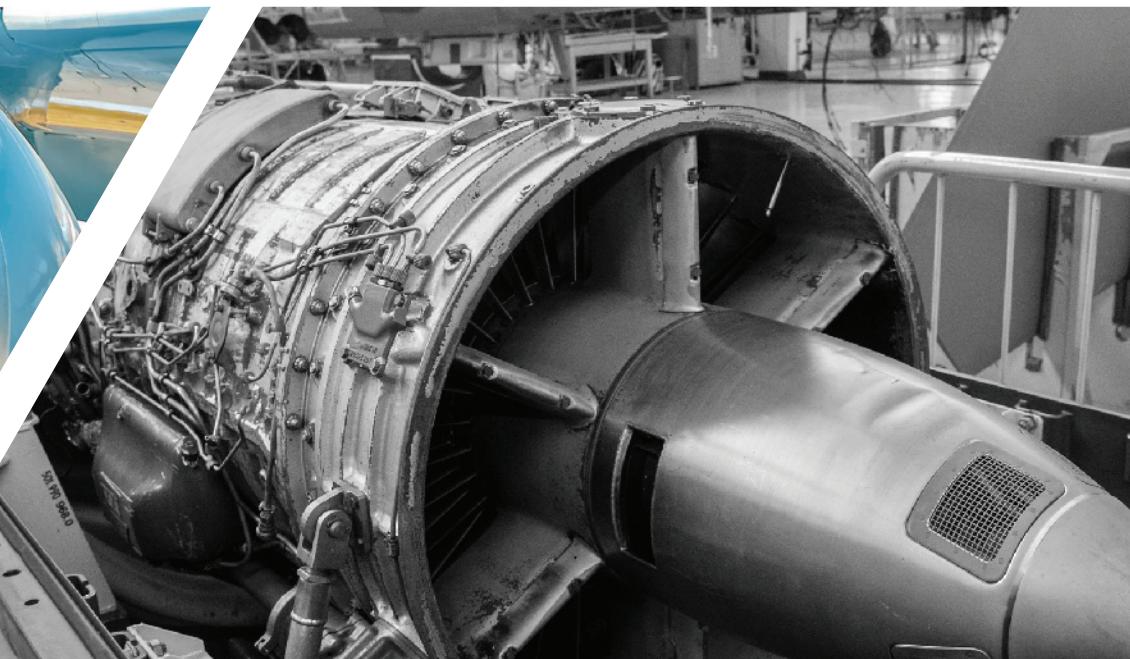




*Value beyond measure*



**Consumables for  
Metallography**

# Metallography

## Abrasive and Polishing Options for Metallography

Alpha Resources® manufactures and sources the most comprehensive mix of consumables and certified reference materials offered by any aftermarket supplier in the spectroscopy marketplace. Our goal is to be your single source supplier for any spectroscopy consumable you need - including metallography. Our recent metallography line expansion includes more sizes and options for polishing cloths and abrasives (Aluminum Oxide, Silicone Carbide, Zirconium).

Alpha's "value beyond measure" tagline means that you will find Alpha's pricing competitive in the market and below OEM pricing, especially on consumables that may be difficult or cost prohibitive to source elsewhere.

Visit our website to review our Metallography options:

### Abrasives/Grinding

Materials used to prepare metal samples by grinding and polishing them to a mirror finish for microscopic examination.

Whether belt, disk, roll or strip - Alpha has a silicone carbide or zirconium option for your grinding needs.

### Polishing

Involves using progressively finer abrasives to create a flat, scratch-free, and highly reflective surface that reveals the material's true microstructure.

Alpha Resources offers a variety of polishing cloth options including: velvet, silk, nylon, felt and canvas. Additionally, Alpha offers several micron options of aluminum oxide for polishing.

### Diamond Polishing

Diamond Polishing is preparing metal and other material samples for microscopic analysis, using progressively finer diamond abrasives to create a smooth, scratch-free, and deformation-free surface

Alpha's diamond compound is made from the finest diamond bort and is prepared, graded, compounded, and guaranteed to conform to NIST Commercial Standard CS 261-61. We offer super heavy, heavy, and medium concentrations for use with your polishing cloths. Alpha also offers diamond slurry as well as diamond lubricant in both water-soluble and oil-soluble options.

### Sectioning

Sectioning is the initial step in preparing a metal sample for microscopic analysis, where a small, representative portion is cut from a larger piece. This process is crucial for examining a material's internal structure, such as grain size, crystal structure, and defects like porosity or inclusions, to ensure it meets quality specifications.

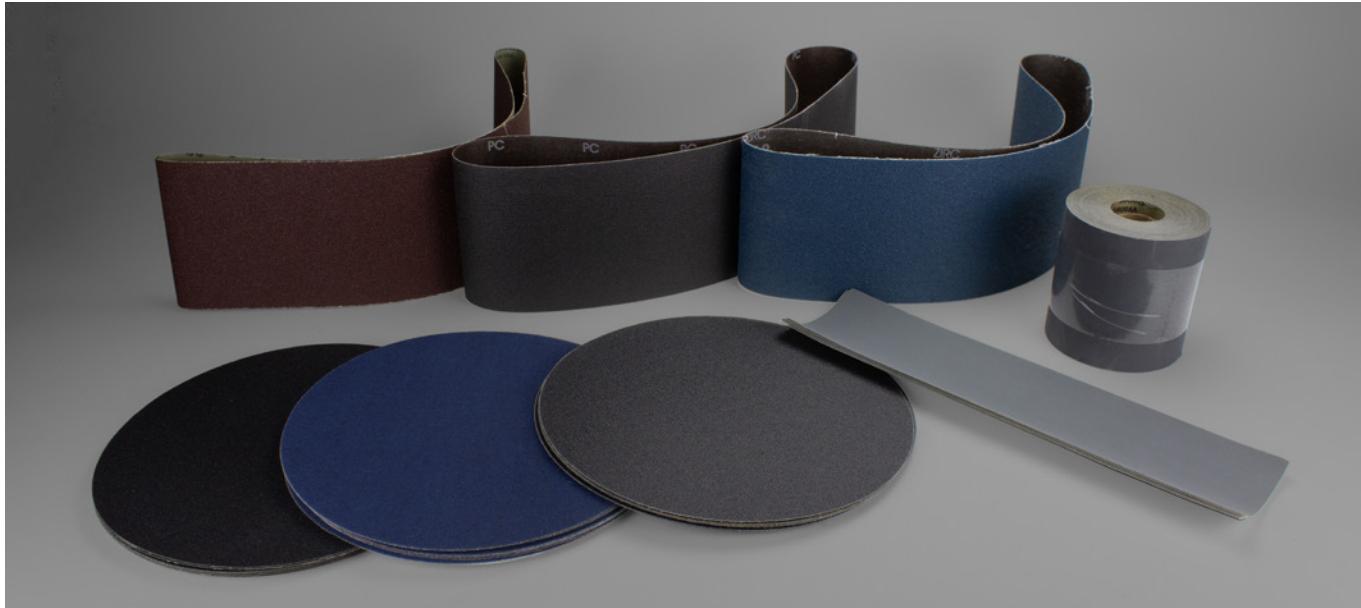
Alpha Resources offers a variety of metallographic sectioning supplies including abrasive wheels in many size options.

### Mounting

Cold mounting is ideal for use when you want to observe the orientation of the specimen or for mounting fragile specimens.

Alpha Resources offers a variety of acrylic, epoxy, and molding powder options as well as preforms for mounting.

# Abrasives for Grinding



If you are looking for clean, bright polishing with a metallography abrasive that offers a high melting point and hardness, but low fracture toughness - Alpha offers Silicone Carbide water-proof discs, rolls, strips, and plain-back belts. Grit options range from 60-1200 with sizing from 1 inch to 24 inches. (*Custom sizes available, contact us.*) Backing options include plain back, plastic back (foil) and PSA.

If you need a metallography grinding option with good heat resistance and toughness that you can use in high pressure machining and grinding, stainless steel applications and general steel fabrication - Alpha offers zirconium water-proof PSA backed disks or zirconium plain back belts. Grit options range from 80-320 with sizing from 8 inches to 14 inches. (*Custom sizes available, contact us.*)

If you need a hardy, durable final polishing abrasive - Alpha offers aluminum oxide options.

Shop our wide selection of abrasives for one-stop convenience at a great price:

## **Silicone Carbide**

- PSA Disc
- Plain Back Disc
- Belt
- Strips
- Rolls

## **Aluminum Oxide**

- PSA Disc
- Plain Back Disc
- Belt

## **Zirconium**

- PSA Disc
- Plain Back Disc
- Belt

# Diamond Polishing



Alpha's diamond compound is made from the finest diamond bort and is prepared, graded, compounded, and guaranteed to conform to NIST Commercial Standard CS 261-61. We offer super heavy, heavy, and medium concentrations for use with your polishing cloths. Alpha also offers diamond slurry as well as diamond lubricant in both water-soluble and oil-soluble options.

## Polishing Lubricants

Both water-soluble and oil-soluble options available

### Pump Spray

Super heavy spray in a variety of concentrations

### Slurry

Several color options

### Syringe Compounds

For when you need a small amount of diamond compound

# Diamond Polishing

## Syringe Compounds and Gels

Alpha has developed a comprehensive range of compounds to meet all the variables involved in lapping and polishing including:

- Speed of equipment
- Hardness of the laps
- Material being processed
- Working pressure applied to parts
- Amount of stock to be removed
- Size of area involved

Types	Material					Application			
	Oil Based	Water Based	Carbide	Tool Steel	Ceramic	Aluminum	Performance/ Luster	Toolroom	Universal
Compound-U	X		X	X		X	X		X
Compound-L	X		X			X	X		X
Compound-C		X	X					X	

**Compound-U:** Universal compound used in virtually all applications. Excellent cutting characteristics. Eliminates polishing steps, resulting in a better-quality finish produced in less time.

**Compound-L:** For use on harder materials, such as tungsten carbide and ceramics. Withstands frictional heat generated during use.

**Compound-C:** For use on harder materials, such as tungsten carbide and ceramics. Cleans easily with mild detergent and water.



# Diamond Polishing

## Polishing Lubricants

When selecting a lubricant for your application, care should be taken that it is chemically compatible with the compound formulation that you intend to use.

**Diamond Lubricant, Synthetic, Water/Oil Soluble:** is a synthetic based lubricant formulated to be used with either our diamond compounds U or C. This superior lubricant, with its penetrating qualities and oil or water solubility, not only increases the cutting action, but assures superior lubrication of every diamond particle throughout the polishing cycle.

**E-Diamond Lubricant, Oil Soluble:** This low-viscosity, oil-based lubricant is compatible with Compound-L and other oil-based diamond compounds.

**E-Diamond Lubricant, Water Soluble:** This water-based lubricant is compatible with Compound-U and other water-based compounds.



## Diamond Pump Spray

Diamond spray is particularly suitable for large surfaces. Our spray is a pre-mixed and ready-to-use suspension of fine diamond powder in a liquid vehicle, designed for convenient application.



## Precision Diamond Slurries

Alpha offers full line of precision-graded diamond slurries, colloidal silica polishing slurries and aluminum oxide powder with lapping oil for achieving flatness control and excellent surface finish on a wide variety of materials.

Slurry Formula	Low Viscosity	Med Viscosity	Environmentally Friendly
Diamond Slurry, Oil Based	X		
Diamond Slurry, Water Based	X		
E-Diamond, Oil Based		X	X
E-Diamond Slurry, Water Based		X	X

**Oil Based Slurries** – Recognized as the workhorse slurry for a broad range of lapping applications. It provides superior plate wetting and highly reflective finishes.

**Water Based Slurries** – When part clean-up is a concern, water-based slurries are widely used. Water based slurry is available in a wide range of abrasive sizes and offers superior results in finishing a myriad of materials.

**E-Diamond Slurries** – Our biodegradable slurries provide excellent performance on a wide variety of materials such as hard ceramics, metals and plastics.

## WHY DIAMOND FOR LAPPING & POLISHING?

- Reduce lapping times from hours to minutes
- Reduce slurry usage and waste from gallons to pints
- Achieve a reflective finish in a single step, eliminate hand polishing
- Cleaner process, cleaner part
- Process a wide variety of materials

# Mounting and Sectioning



## Mounting

When preparing metallography specimens, cold mounting is ideal for use when you want to observe the orientation of the specimen or for mounting fragile or porous specimens. Alpha Resources offers a variety of acrylic, epoxy, and molding powder options as well as preforms for mounting.

### Cold mounting supplies

Epoxy resin and hardeners

### Silicone mold cups

### Powders for specimens

### Preforms

For cold mounting specimens

### Supplies

Including lab supplies, for cold mounting specimens

## Sectioning

Whatever your metallographic sectioning supply need, Alpha can help. We have abrasive wheels in numerous size options (aluminum oxide, silicon carbide, and diamond) as well as coolant concentrate, nitrite free coolant, and ultrasonic cleaner solution.



# Polishing Cloths

Alpha Resources is your source for high quality polishing cloths for metallography specimens whether your application is ferrous, non-ferrous, ceramic, glass, electronic, cement, or plastic. Alpha offers a wide variety of metallography polishing cloth types: woven, non-woven, short or long-napped, synthetic pad, wool, satin or flock. And your choices don't stop there! Our backing options include: plain-back, PSA, metal-backed, and magnetic rubber backed. Sizing options start at 1 inch and range to 48 inches with custom sizes available on request.

This extensive selection of metallography polishing cloths is part of Alpha Resources's commitment to be your one-stop home for consumables.

Shop Alpha's selection of metallography polishing cloths and suspensions:

## Cloths

- PSA
- Plain Back
- Magnetic
- Metal Back
- Stainless Steel Disc

## Suspensions





Alpha Resources is here to help with sales, product and technical inquiries. Let us know how we can serve you better.

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