MicroBlasting Nozzles and Abrasive Media
The abrasive media is the single most important variable in the MicroBlasting process. Working on a micro scale means particle size is important. Large variances in particle size or chemical composition deliver uneven results, therefore a tight classification center within a narrow distribution curve is essential.

Most industrial abrasives allow for a significant amount of drift in their average particle size. This can disrupt the flow of abrasive and cause unpredictable results. We keep our mean particles within a narrow band ensuring a stable flow of abrasive and consistent results.

**Consistent abrasive ensures consistent results.**

If particles are too fine, abrasive clumps and bursts instead of flowing in a uniform stream. If too coarse, abrasive clogs at the nozzle, or worse, damages your part.

We keep a tight classification on our abrasive sizing and remove more of the fine and coarse particles that can clump and clog in your blaster.

**Consistent sizing helps your system run clean.**
Micro-abrasives easily attract moisture due to their high ratio of surface area to volume. As water molecules stick to a particle’s surface, a natural bond forms. This bond causes abrasive particles to clump. Clumps interrupt the flow of an abrasive stream, or worse, clog a blaster.

**We employ proper moisture controls during every step of the manufacturing process.** Abrasive is packaged in heat-sealed bags and containers for protection against any contamination or moisture during shipment and storage.

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### The Comco Difference

A bottle of Comco sodium bicarbonate is not the same as supermarket baking soda or an industrial supply equivalent. Comco abrasive is specifically manufactured for micro-abrasive blasting. Each lot of Comco abrasive is tracked.

We take great care with our abrasive because we care about your investment. We want your Comco MicroBlasting system to last and deliver precise, repeatable results.
A Guide to Abrasive Media

Aluminum Oxide

The go-to cutting abrasive. The shape and hardness of its particle make it an excellent abrasive against metals or hard, brittle parts. Common uses include cutting, deburring, and texturing surfaces.

<table>
<thead>
<tr>
<th>Part #</th>
<th>Particle Size Micron</th>
<th>Particle Shape</th>
<th>Hardness (Mohs')</th>
</tr>
</thead>
<tbody>
<tr>
<td>PD1001</td>
<td>10</td>
<td>Blocky &amp; Sharp</td>
<td>9</td>
</tr>
<tr>
<td>PD1009</td>
<td>17.5</td>
<td>Blocky &amp; Sharp</td>
<td></td>
</tr>
<tr>
<td>PD1012</td>
<td>25</td>
<td>Blocky &amp; Sharp</td>
<td></td>
</tr>
<tr>
<td>PD1003</td>
<td>50</td>
<td>Blocky &amp; Sharp</td>
<td></td>
</tr>
<tr>
<td>PD1029</td>
<td>100</td>
<td>Blocky &amp; Sharp</td>
<td></td>
</tr>
<tr>
<td>PD1014</td>
<td>150</td>
<td>Blocky &amp; Sharp</td>
<td></td>
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</table>

Crushed Glass

Manufactured by crushing glass beads. The result is a mild abrasive media with lots of shard-like edges. Crushed glass delivers a light degree of abrading.

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<tbody>
<tr>
<td>PD1027</td>
<td>50</td>
<td>Blocky &amp; Sharp</td>
<td>5 - 6</td>
</tr>
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</table>

Glass Bead

Useful for applications where stress needs to be relieved but preservation of tight tolerances is critical. Can also lightly deburr or apply a satin-like finish on a part. The spherical shape of its particles prevent them from cutting into most surfaces. Relieves stresses by “pounding” a part surface.

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<tbody>
<tr>
<td>PD1030</td>
<td>35</td>
<td>Spherical</td>
<td>6</td>
</tr>
<tr>
<td>PD1004</td>
<td>50</td>
<td>Spherical</td>
<td></td>
</tr>
<tr>
<td>PD1033</td>
<td>100</td>
<td>Spherical</td>
<td></td>
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Plastic Media

Created by grinding and carefully sizing recycled plastic. Similar in size to walnut shell, it effectively deburrs machined plastic parts without causing dimensional changes to the part itself. Useful for removing conformal coatings.

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<tbody>
<tr>
<td>PD1035</td>
<td>50</td>
<td>Blocky</td>
<td>2 - 4</td>
</tr>
<tr>
<td>PD1013</td>
<td>200</td>
<td>Blocky</td>
<td></td>
</tr>
</tbody>
</table>

The effect of an abrasive material is caused by its three characteristics: particle size, shape and hardness.
### Sodium Bicarbonate
A soft abrasive. Needle-like or “monoclinic” shapes make it excellent for abrading polymers. Its particles cut through soft surfaces where a blockier particle would tend to bounce off. Great at selectively removing coating from wire without damaging the underlying part. Water soluble.

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<th>Hardness (Mohs’)</th>
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<tbody>
<tr>
<td>PD1007</td>
<td>50</td>
<td>Monoclinic</td>
<td>3 - 4</td>
</tr>
<tr>
<td>PD1031</td>
<td>100</td>
<td></td>
<td></td>
</tr>
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### Silicon Carbide
The most aggressive media used for micro-abrasive blasting, with a hardness just under that of diamond. Typically used where material removal must be fast. An excellent abrasive for deburring stainless steel and titanium parts.

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<tbody>
<tr>
<td>PD1005</td>
<td>20</td>
<td>Blocky &amp; Sharp</td>
<td>9+</td>
</tr>
<tr>
<td>PD1006</td>
<td>50</td>
<td>Blocky &amp; Sharp</td>
<td></td>
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### Wheat Starch
One of the softest abrasives. Excellent for abrading pliable materials. Cuts through soft surfaces where a blockier particle tends to bounce off. It is used to selectively remove coatings on circuit boards without damaging components.

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<tbody>
<tr>
<td>PD1017</td>
<td>100</td>
<td>Needle-like</td>
<td>2</td>
</tr>
</tbody>
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### Pumice
Volcanic ash that is formed when lava is permeated with glass bubbles. Lava has similar properties and chemical make-up as glass, which helps make pumice a mild abrasive. Useful on applications when aluminum oxide is too aggressive.

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<tr>
<td>PD1015</td>
<td>75</td>
<td>Blocky &amp; Sharp</td>
<td>6</td>
</tr>
</tbody>
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### Walnut Shell
Manufactured by grinding nut shells. Particles are much larger in size than most micro-abrasives. It is used to deburr polymer coatings and deflash molded plastic parts.

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<tbody>
<tr>
<td>PD1008</td>
<td>250</td>
<td>Blocky</td>
<td>3 - 4</td>
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### Pumice
Volcanic ash that is formed when lava is permeated with glass bubbles. Lava has similar properties and chemical make-up as glass, which helps make pumice a mild abrasive. Useful on applications when aluminum oxide is too aggressive.
A Nozzle with 3-5x More Life

Nozzles are an integral part of the MicroBlasting process. Nozzles provide focus and acceleration to the blasting stream. However, abrasive erodes all that it touches—including its primary conduit, the nozzle.

Our exclusive Hi/Performance nozzles are specifically engineered to withstand micro-abrasive blasting. These nozzles feature superior blasting characteristics and increased wear resistance. Hi/Performance nozzles last 3 to 5 times longer than conventional nozzles.

Hi/Performance nozzles are designed to compliment our AccuFlo® and MicroBlaster® model blasters in manual and automated applications.

Hi/Performance AccuFlo Nozzles

- MB2520-18  Violet  .018"  0.46mm
- MB2520-30  Green  .030"  0.76mm
- MB2520-46  Yellow  .046"  1.20mm
- MB2520-60  Red  .060"  1.50mm

Hi/Performance MicroBlaster Nozzles

- MB1520-18  Violet  .018"  0.46mm
- MB1520-30  Green  .030"  0.76mm
- MB1520-46  Yellow  .046"  1.20mm
- MB1520-60  Red  .060"  1.50mm

Customers report up to 10x the efficiency with Hi/Performance nozzles.

30% More Focus

The design of the Hi/Performance nozzle reduces overspray by 30%. Proper focus of the abrasive increases the efficiency of abrasive use and ensures every particle strikes the targeted area of a part.

30% More Velocity

The internal geometry of the Hi/Performance nozzle speeds up particle velocities by 30%. Higher velocities remove unwanted material faster, meaning less time blasting and faster production times overall.

Comparison of spot size, shape, and depth from standard vs. Hi/Performance nozzles.
Comfort at Your Fingertips

Long hours blasting need not be hard on your hands! Hi/Performance AccuFlo® nozzles come with the bonus of a well-designed holder. Our ComfortGrip® Handpiece eliminates the need for a nosepiece and locks directly to the nozzle. Plus, it is more comfortable to hold and maneuver for long periods of time.

What makes the ComfortGrip® Handpiece such an asset?

- Patented design provides the ultimate in comfort and performance.
- New ergonomic shape and cushioned grip for a natural feel that’s easier for operators to hold.
- Less resistance to motion for enhanced control and reduced fatigue.
- Fewer parts of this design come into contact with abrasive, which means less parts replacement.
- Compatible with most popular nozzle sizes: 0.018", 0.030", 0.046", 0.060" ID.
Thinking about Automation?
Using the Comco MB2520 series Hi/Performance AccuFlo® nozzles now will save time when you are ready to automate. These nozzles are ideal for both manual and automation and are specifically designed to help you make the transition smoothly.

Quicknut Compatible
All AccuFlo nozzles are Quicknut compatible, which means installation is quick! The Quicknut need only be finger-tight to lock the abrasive hose onto the back of the nozzle. There's no need for an additional nosepiece, handpiece, or o-ring.

Maintains Nozzle-to-Target Distance
The Hi/Performance AccuFlo nozzle is designed to be held at the base of its carbide tip, which keeps nozzle-to-target distance consistent through hose and nozzle replacements.

Longer Life
Hi/Performance AccuFlo nozzle threads are designed to sit away from the abrasive path in our fixtures. Guarding this significant wear point from the abrasive stream dramatically extends the life of the nozzle.

AccuFlo nozzles are designed to grow with your production.
Our standard nozzles are available in extended, rectangular and extended right-angle designs. Standard nozzles are:

- Manufactured with premium grade Tungsten Carbide for longer life
- Color-coded system for quick & easy identification
- Subject to strict quality control to ensure repeatability with every blast
- Available in a wide variety of shapes, sizes and custom designs

**Quality & Performance with Comco Nozzles**

Although the process seems simple, the quality and care we take in manufacturing each nozzle is a key to your MicroBlasting success. The superior quality of our nozzles guarantees the highest level of repeatability with every blast.
Standard Nozzles

**Straight Round Nozzles**
- MB1500-28 Grey .010" 0.25mm
- MB1500-10 Silver .015" 0.38mm
- MB1500-24 Violet .018" 0.46mm
- MB1500-27 (thin wall) Black .018" 0.46mm
- MB1500-37 Orange .025" 0.64mm
- MB1500-11 Green .030" 0.76mm
- MB1500-29 Yellow .046" 1.20mm

**Extended Nozzles (1.5" Long) Round**
- MB1503-1 Violet .018" 0.46mm
- MB1503-2 Green .030" 0.76mm
- MB1503-3 Yellow .046" 1.20mm

**Rectangular Nozzles**
- MB1500-26 Orange .008" x 0.02" 0.20mm x 0.50mm
- MB1500-12 Blue .008" x .040" 0.20mm x 1.00mm
- MB1500-19 Red .008" x .060" 0.20mm x 1.50mm
- MB1500-20 Silver .008" x .080" 0.20mm x 2.00mm
- MB1500-22 Olive .008" x .125" 0.20mm x 3.20mm
- MB1500-23 Black .008" x .150" 0.20mm x 3.80mm
- MB1500-32 Blue .012" x .150" 0.30mm x 3.80mm

**Angled Nozzles 45°**
- MB1502-3 Violet .018" 0.46mm
- MB1502-5 Green .030" 0.76mm
- MB1502-6 Yellow .046" 1.20mm

**Angled Nozzles 90°**
- MB1501-25 Violet .018" 0.46mm
- MB1501-14 Green .030" 0.76mm
- MB1501-28 Yellow .046" 1.20mm

1. **Handpiece tube**
2. **Abrasive hose, blue, ¼" 25 foot package**
3. **Abrasive hose, blue, ¼" 100 foot package**
4. **Handpiece nose**
5. **MicroBlaster nozzles**