PRECISION SURFACES INTERNATIONAL, INC.
922 Ashland Street
Houston, Texas 77008-6734

PSI

PRODUCT DATA SHEET

ABRASIVE DISCS

PSI Abrasive Discs, manufactured by the 3M Company, are used in the rough to fine grinding steps of sample preparation. The information provided in this article is intended to offer the Materials Scientist information valuable in abrasive disc selection.

The three different abrasive minerals usually found in the laboratory are the man-made products Silicon Carbide, Aluminum Oxide and Zirconia Alumina. Silicon Carbide is the hardest and sharpest of the common abrasive minerals. Its superior ability to penetrate and cut under light pressure makes Silicon Carbide the most popular abrasive in the materials lab. Aluminum Oxide is an extremely tough, wedge shaped mineral which penetrates tough materials without excessive fracturing. Where life and economy in abrasive discs is important, Aluminum Oxide can be used on high tensile materials such as carbon and alloy steel. Zirconia Alumina abrasive is a self-sharpening, long life product giving excellent results for rugged stock removal. This product is frequently used in elemental analysis to avoid silicon contamination.

Abrasive grits are available from 40 to 2000 grit. The coarser grits are graded through screens made with silk threads of exact size and number per square inch. The grit/mesh number represents the approximate number of openings per linear inch in the screen. Grits 240 and finer are generally graded by hydraulic separators, air classifiers and levigating tanks.

The paper used in PSI Abrasive Discs for the metallurgical lab is a specialized technical product made to very exact standards to achieve essential physical properties. These properties include finish, strength, adhesion, flexibility and weight. Lab abrasive discs are generally C and A weights. These weights are obtained from the papermakers ream of 480 sheets cut 24" x 36". C weight papers (70 lbs/ream) are found in products graded from 60 to 600 grit. A weight papers (40 lbs/ream) are used with the ultrafine grits of 1000 through 2000.

Metallographers can choose abrasive discs with either a Plain Back or with a Pressure Sensitive Adhesive Backing. Plain Back Discs are generally held in place with paper holding bands which fit over and around the circumference of the wheel. The Ultrafine Abrasive A weight products can be adhered to the wheel with water only. Pressure Sensitive Adhesive (PSA) backings consist of adhesive applied to the disc back and a release liner left in place until immediately prior to application to the grinding wheel. PSA discs enable full use of the abrasive face and offer convenience in application and removal.

PSI maintains a large inventory of the popular abrasive discs used in the materials lab. By sourcing 3M Products, quality and consistency of PSI Abrasive Discs is assured.

PSI maintains a large inventory of the popular abrasive consumable sizes and grits in the form of belts, discs, rolls, sheets, and strips. Custom sizes are available upon request.

For budget-minded applications, we offer an economy brand of abrasives in disc, roll, sheet and strip form.

AVAILABLE MINERALS & GRADES				
SiC (Wet or Dry)		**AlOx** (Dry)		**ZrAl** (Wet or Dry)
60	600	40	180	50
120	1000	50	240	60
180	1200	60	320	80
240	1500	80	400	120
320	2000	120		180
400	2500			220