

# Ceramic Alumina

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## *Color Guide to Materials Preparation*

Preparation of ceramic materials that are extremely hard, brittle and porous are easily prepared after you realize that the mechanism of removal in brittle fracture. The second fact is to minimize grain pull out sometimes referred to as plucking. One must start out with a surface that has been sectioned with the appropriate diamond-wafering blade in order to reduce the amount of structural damage from the start. Planar grinding is best achieved a free abrasive on a metal mesh disc or with a fine grit fixed metal abrasive disc (depending upon the size of the mount). Remember that it is best to take a longer time grinding, saving you time during polishing. The rough and fine polishing can be achieved by using a combination of PC diamond and colloidal silica with a hard polishing cloth and/or pad. Final polishing will be accomplished with a chemical mechanical type of polishing.

### **Hardware** I

1. Extec Labcut 1010 Low Speed Diamond Saw ([www.extec.com/labcut1010](http://www.extec.com/labcut1010))
2. Extec Labpol 12-3DI Auto Polisher/Grinder ([www.extec.com/labpol12-3DI](http://www.extec.com/labpol12-3DI))  
or
3. Extec Labpol 12 Auto Polisher/Grinder ([www.extec.com/labpol12](http://www.extec.com/labpol12))

### **Sectioning** II

A Diamond Wafering Blade - medium to fine grit with a low concentration

### **Mounting** III

Castable mount is preferred due to the chance of fractures introduced during compression mounting.



Duraplan Plano	VII VIII	3um PC <u>Diamond</u> Few Drops Extec Colloidal Silica Susp. 0.06um	Water Soluble Diamond Extender & Water	I	8 psi	4 minutes	240 rpm	120rpm/Comp
Optigam	VII	1um PC <u>Diamond</u> Few Drops Extec Colloidal Silica Susp. 0.06um	Water Soluble Diamond Extender & Water	I	8 psi	3 minutes	120 rpm	60rpm/Comp
Chemic-Cloth	VIII	Final Polish B 0.06um Colloidal Silica	The last 10 seconds wash with Distilled Water		5 psi	120 seconds	120 rpm	60rpm/Contra

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