# Ceramic Alumina

## EXTEC® $\Delta$ SIMPLICITY

## 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

- 1. Extec Labout 1010 Low Speed Diamond Saw (www.extec.com/labout1010)
- Extec Labpol 12-3DI Auto Polisher/Grinder (www.extec.com/labpol12-3DI)

or

3. Extec Labpol 12 Auto Polisher/Grinder (www.extec.com/labpol12)

## Sectioning

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

# **Mounting**

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

# Grinding/Polishing Method -- Ceramic Alumina

Code	Abrasive/ Type Size	Lubricant	Code	Pressure (psi)	Time	Wheel Speed	Head Speed/ Direction
V	40um	EXTEC Universal Diamond Extender & Water	I	5 psi	120 seconds	120 rpm	60rpm/Comp
V	20um	EXTEC Universal Diamond Extender & Water	I	5 psi	120 seconds	120 rpm	60rpm/Contra
V	PC Diamond 9um	EXTEC Universal Diamond Extender & Water	I	5 psi	120 seconds	120 rpm	60rpm/Contra
VII	6um PC Diamond Few Drops Extec Colloidal Silica Susp. 0.06um	Water Soluble Diamond Extender & Water	I	8 psi	4 minutes	240 rpm	60rpm/Contra
	V	V 20um  V 20um  V PC Diamond 9um  VII 6um PC Diamond Few Drops Extec Colloidal Silica Susp.	V 40um EXTEC Universal Diamond Extender & Water  V 20um EXTEC Universal Diamond Extender & Water  V PC Diamond 9um Diamond Extender & Water  VII 6um PC Diamond Vater  Viii Few Drops Extec Colloidal Silica Susp.	V 40um EXTEC I Universal Diamond Extender & Water  V 20um EXTEC I Universal Diamond Extender & Water  V PC EXTEC I Universal Diamond Extender & Water  V PC Diamond Universal Diamond Extender & Water  VII 6um PC Diamond Soluble Few Drops Extec Extender & Colloidal Silica Susp.	Type Size  V 40um  EXTEC Universal Diamond Extender & Water  V 20um  EXTEC Universal Diamond Extender & Water  V PC Diamond 9um  Viii 6um PC Diamond Extender & Water  Viii 6um PC Diamond Extender & Water Soluble Diamond Extender & Colloidal Silica Susp.	Type Size  V 40um  EXTEC Universal Diamond Extender & Water  V 20um  EXTEC Universal Diamond Extender & Water  V PC Diamond Universal Diamond Extender & Water  V PC Diamond Soluble Vater  VIII  Gum PC Diamond Viiii Few Drops Extec Colloidal Silica Susp.  (psi)  120 seconds  120 seconds  120 seconds  120 seconds  120 seconds  4 minutes	Type Size  V 40um  EXTEC   I   5 psi   120   120 rpm   Seconds  Universal   Diamond   Extender & Water    V 20um  EXTEC   Universal   Diamond   Extender & Water    V PC   EXTEC   Universal   Diamond   Extender & Water    Universal   Diamond   Diamond   Extender & Water    VII   6um PC   Diamond   Soluble   Diamond   Extender & Water    VIII   Few Drops   Extec   Colloidal   Silica   Susp.    EXTEC   I   5 psi   120   120 rpm    S psi   Speed   Speconds    S psi   Spe

Duraplan Plano	VII	3um PC Diamond 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 Diamond 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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