MIXING INSTRUCTIONS
FOR
SUSPENSION TREATED MATERIAL

Before beginning the actual mixing procedure, it is necessary to establish how much abrasive you will actually need in your slurry. There are two common ways to measure how much abrasive you need, by volume or by weight. For our OPTICAL POWDERS AND MICRO ALUMINA, we recommend you start by using 1 to 2 pounds abrasive per gallon of water. By volume, that would be approximately a 5:1 ratio. Your starting slurry density should be 20 degrees Baume when you make your hydrometer check. You can experiment with your own mixing ratios, but we suggest that you not mix less than one pound per gallon or more than 2½ pounds per gallon. When mixed either too thin or too thick, you will not get the best performance from the abrasive.

To correctly mix your slurry, always add the abrasive to the water. This helps to get the material readily dispersed into the water. Ideally, use hot tap water, 110-115°, when mixing, and, if possible, mix your material the night before you plan to use it. Hot water helps to disperse the suspension additives quicker and mixing the night before helps to assure that everything is completely mixed. Ideally, it is best to use a high speed mixer to get the best blending action. The most important thing is to make sure that everything is thoroughly mixed – NO CLUMPS OR LUMPS of material should be present. Make sure to check the bottom of your mixing container for any unmixed material. An improperly mixed slurry will definitely result in lower stock removal rate and an increased cycle time.

These instructions have been written with one objective in mind and that is to help you get the best possible results in your own lapping application.

IDEAL MIXING PROCEDURE:

Fill a high walled mixing tank with the necessary amount of hot water. Turn on the mixer to create a vortex in the water. Slowly pour the abrasive into the side of the vortex. This allows the suspension to fully disperse, preventing agglomeration or balling up. Turn the mixer to high speed and shear (violent agitation at least 3000 rpm using a high-shear impeller) for five minutes. After the initial high shear mixing, it is not necessary to continue to violently agitate the slurry. A gentle stirring action at a much lower rpm will keep the slurry uniformly mixed.