

# BUEHLER®

## Final Polishing Suspensions

- Application Specific Suspensions for Superior Performance
- Consistent Polishing Results
- High Surface Removal Results
- Low Deformation
- Full Range of Products for Virtually Any Material



# Mechanochemical Polishing Suspensions



## MasterMet® Colloidal Silica Suspension

- Most general usage mechanochemical colloidal silica (SiO<sub>2</sub>) final polishing suspension
- Fine 0.06 micron SiO<sub>2</sub> particles in an aqueous base with a pH ~10
- Fast, effective cutting by SiO<sub>2</sub> particles, without deformation
- Especially suited for ferrous and nonferrous materials, titanium, semiconductors, and hard materials such as ceramics (alumina)

## MasterMet® 2 Colloidal Silica Suspension

- Fine, non crystallizing 0.02 micron SiO<sub>2</sub> particles in an aqueous base with a pH ~10.5
- Gentle mechanochemical material removal, without deformation
- Nonstaining
- For use on soft ferrous and nonferrous materials (copper and aluminum),

ceramics (alumina and zirconia), and optical fibers (glass and plastic) where a more gentle action is desired during final polish

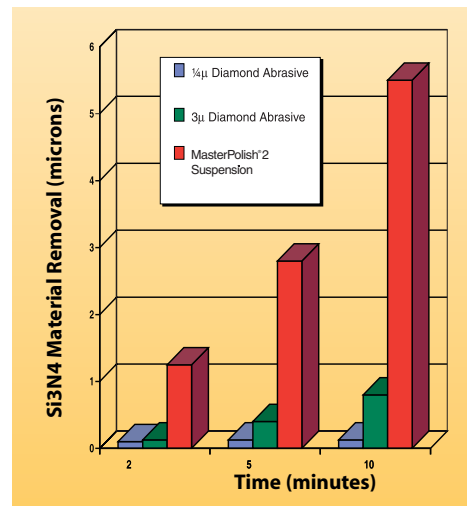
## MasterPolish® Final Polishing Suspension

- A proprietary blend of high purity 0.05 micron alumina and colloidal silica
- Provides high material removal due to a combination of the high pH ~9 and the abrasive blend
- Superior surface finishes
- Suspension contains little water and is suitable for polishing water sensitive materials as well as ferrous, nickel and cobalt based materials, and composites

## MasterPolish® 2 Final Polishing Suspension

- Proprietary medium utilizing a mechanochemical polishing action
- Superior surface finishes

- Exceptional removal rates for ceramic materials due to chemical reaction with ceramic surface
- Ideal for alumina, glass, sapphire, silicon nitride, and metal/ceramic composites



MasterPolish® 2 is the Final Polishing Media of choice for ceramics like Silicon Nitride due to its high material removal and resultant surface finish.

# Alumina Polishing Suspensions



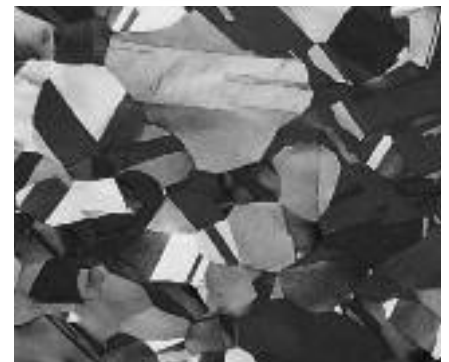
## MasterPrep® Alumina Suspension

- Best alumina based final polishing suspension produces superior surface finishes due to uniform size distribution and shape of abrasive particles
- Finely dispersed, nonagglomerated particles (0.05 micron)
- Can be applied using Buehler or other automatic dispensing systems
- Nonstaining
- No dilution with water needed
- Best for soft materials (aluminum, brass, and copper), ferrous (steels and irons),

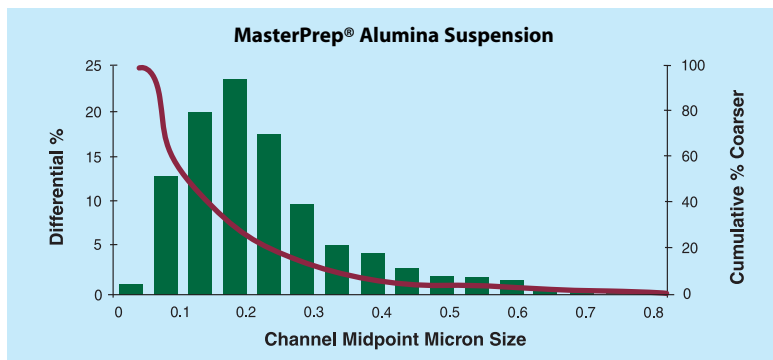
and nonferrous materials, precious metals, and electronics

## MicroPolish® II Deagglomerated Alumina Suspensions And MicroPolish Alumina Suspensions

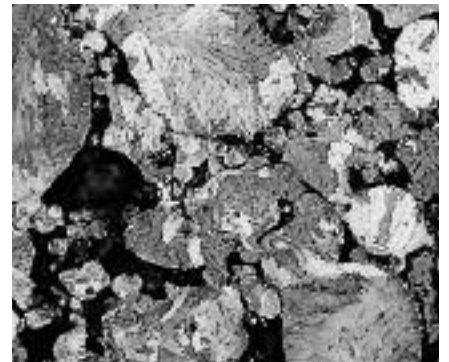
- General usage alumina primarily used for ferrous and nonferrous materials
- Superior formulation and particle sizing produces a finer surface finish than standard aluminas
- More cutting edges exposed, producing fine surfaces quickly
- Proprietary formulation inhibits freezing during shipping



Annealed and cold drawn arsenical, phosphorus-deoxidized copper prepared using a four step process with MasterPrep® as the final polishing step and etched.



MasterPrep® Suspension has aggregate particles that are one tenth the size of conventional aluminas, resulting in superior surface finishes.



Martensitic powder-metallurgy alloy steel gear, prepared using a four step process with MasterMet® as the final polishing step and etched.

## Quick Reference Guide to Final Polishing Solutions

### Final Polishing Suspensions

### Material

MasterMet® 0.06 micron colloidal silica in a basic solution (pH~10). Reacts chemically with surface allowing abrasives to cut more effectively without deformation	Tool Steels, Stainless Steels, Nickel and Cobalt based alloys, aluminum, Titanium, TSC/TBC, ceramics, refractory metals, carbides, glass
MasterMet® 2 0.02 micron noncrystallizing colloidal silica (pH~10.5)	Soft ferrous and nonferrous materials, alumina, glass-sapphire, silicon nitride, metal/ceramic composites
MasterPolish® Proprietary 0.05 micron formulation (pH~9) with mechanochemical polishing action	Tool steels, nickel and cobalt based alloys, metal composites, water sensitive materials
MasterPolish® 2 Proprietary 0.06 micron formulation (pH~10) with mechanochemical polishing action	Alumina, glass-sapphire, silicon nitride, metal/ceramic composites
MasterPrep® Nonagglomerated alumina of 0.05 micron yielding best surface finish of alumina final polishing suspensions listed	Tool steels, nickel and cobalt based alloys, aluminum, copper, lead, zinc, tin, petrographic materials, electronics, PCB's
MicroPolish® II Suspensions 1, 0.3, 0.05 micron sizes available Deagglomerated, freeze resistant suspension base	Tool steels, nickel and cobalt based alloys, aluminum, copper, lead, zinc, tin, petrographic materials, electronics, PCB's
MicroPolish® Suspension 1, 0.3, 0.05 micron sizes available Freeze resistant suspension base	Tool steels, nickel and cobalt based alloys, aluminum, copper, lead, zinc, tin, petrographic materials, electronics, PCB's

### Ordering Information

Type	Particle Size (microns)	Quantity	Catalog Number
MasterMet® Colloidal Silica	0.06	6 oz. (0.18l)	40-6370-006
		64 oz. (1.9l)	40-6370-064
MasterMet® 2 Colloidal Silica	0.02	6 oz. (0.18l)	40-6380-006
		64 oz. (1.9l)	40-6380-064
MasterPolish® Suspension	0.05	32 oz. (0.95l)	40-10084
MasterPrep® Polishing Suspension	0.05	6 oz. (0.18l)	40-6377-006
		32 oz. (0.95l)	40-6377-032
		64 oz. (1.9l)	40-6377-064
MicroPolish® II Alumina	1.0	6 oz. (0.18l)	40-6361-006
MicroPolish® II Alumina	0.3	6 oz. (0.18l)	40-6363-006
		128 oz. (3.8l)	40-6363-128
MicroPolish® Alumina	1.0	6 oz. (0.18l)	40-10081
MicroPolish® Alumina	0.3	6 oz. (0.18l)	40-10082
MicroPolish® Alumina	0.05	6 oz. (0.18l)	40-10083

For a complete listing of BUEHLER consumable supplies for use with Grinder/Polishers, please refer to our Consumables Buyer's Guide. Buehler continuously makes product improvements; therefore, technical specifications are subject to change without notice.

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