

Slurry Additives

DCH-10 ANTIFOAM

A water-based silicone emulsion, this material is used in colloidal silica based slurries to reduce air entrapment.

Typical Properties

pH (Neat)	3.5
Specific Gravity	0.998
Solubility	Dilutable
Active %	10

Typical Usage Levels

- New colloidal silica slurries: 5 ml/gallon of slurry
- Existing primary water-based slurries: Test for defoaming character by shaking separated binder for 5 seconds, if the foam lingers beyond 20 seconds, add 2 ml/gallon of slurry.
- Specialty backup slurry binders: Contact the R&R Technical Department before using.

WET-IT WETTING AGENT

A nonionic surfactant used in colloidal silica based slurries so the slurry will coat the wax or previously applied shell coat.

Typical Properties

pH (5% in D.W.)	5 - 8
Specific Gravity	0.96
Solubility	Soluble in water

Typical Usage Level

- New colloidal silica slurries: 10 ml/gallon of slurry
- Specialty binders: Usage will vary depending on slurry test results. Contact the R&R Technical Department before using. (DO NOT USE with Keycote™ slurry)

KEYCOTE WETTING AGENT

A nonionic surfactant used exclusively in Keycote system based slurries so the slurry will coat the wax or previously applied shell coat.

Typical Properties

pH (5% in D.W.)	3 - 6
Specific Gravity	1.05
Solubility	Soluble in water

Typical Usage Level

- Keycote system slurry: 5 ml/gallon of slurry
Keycote wetting agent should only be added to a Keycote slurry. It should only be used to adjust/enhance the wetting capability when needed and does not need to be added to a new slurry. Contact the R&R Technical Department before using.



R&R
DENSPLY

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GROTAN

Bacteria growth in a slurry can be detrimental to both the performance and life of a water based slurry. Bacteria can be introduced through a variety of sources such as airborne bacteria. Due to the potential for bacteria contamination in a slurry a program should be set up to test for and eradicate any bacteria growth.

Culture slides can be used to test for the presence of bacteria in a slurry. The procedure for using the culture slides is provided by the manufacturer of these kits. At Ransom & Randolph, we use MCE Combi Dip Slides. They are available from Metal Working Equipment & Chemical Company Inc. at (518)523-2355.

Only make additions if bacteria growth is present, Grotan was not designed to be added on a regular basis. To test for the presence of bacteria, use the culture slides on a sample of binder separated from the slurry. If bacteria are detected, use the following additions of Grotan:

	<u>Bacteria Count</u>	10 ³	10 ⁴	10 ⁵	10 ⁶	10 ⁷
Additions of <u>Grotan*</u> (ml/gal slurry)		1.1	1.7	2.2	2.8	3.4
(ml/l slurry)		0.3	0.5	0.6	0.7	0.9

*These additions should be made as part of a deionized water addition.

Retest slurry 48 hours after Grotan additions. If bacteria are still present, repeat additions and retest. Slurries should be tested at least monthly for bacteria.

REDIP™ INDICATOR

ReDip Indicator takes the guesswork out of shell drying. For use with water-based binders, the color indicator prevents loss due to sloughing of undried coats, reduces time spent overdrying shells "just to be sure", and allows the caster to produce stronger shells by insuring that each coat is fully dried before applying an additional coat.

ReDip indicator's unique composition tells you exactly when the moisture is out of the shell with a simple, visible color change. With ReDip indicator, wet shells are greenish-yellow in color, dry shells are orange. During firing, the indicator is burned off and the shell returns to its normal color.

ReDip indicator is inert and will not affect the slurry or shell in any way. ReDip indicator is non-toxic and non-hazardous.

Mixing Instructions

Use 1 to 1.5 parts ReDip indicator to 200 parts binder, by volume, in your slurry for drying control with color.



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