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## MAGNESIA PRODUCTS

### ZEROGEN - VERTEX -TREATED MAGNESIUM HYDROXIDE-

#### DESCRIPTION:

Zerogen/Vertex are silane or stearic acid-treated magnesium hydroxides. These products are utilized as an inert filler, non-halogen flame retardant, smoke suppressant for latex foam, elastomeric goods, epoxies, reinforced polyesters, phenolics and urethane foam. The silane treatment enhances cross-link density and improves physical and dynamic properties.

Magnesium hydroxide, specific gravity of 2.36, releases its 31% water of crystallization when heated to above 325°C as water vapor. The high temperature of water release allows for processing of engineered plastics without moisture entering into the molding operation. The resulting endothermic reaction cools the product below flash point, reducing the risk of fire. The vapor released also helps reduce smoke, an additional advantage of this type flame retardant. Char formation is also improved over alumina trihydrate.

Magnesium hydroxide also functions as an excellent acid acceptor in a chlorinated polyethylene (CPE) non-peroxide, thiadiazole cure system providing better scorch time as well as faster cure than magnesium oxide. Mg(OH)<sub>2</sub> has also been shown to prevent premature scorch vs. MgO in Hypalon formulas.

The Vertex products are economical treated-magnesium hydroxide grades. Zerogen 50 SP is a cleaner grade, i.e., higher magnesium hydroxide content, lower moisture and residual metals, etc., typically used in more demanding applications.

TYPICAL PROPERTIES:	VERTEX	VERTEX ST	ZEROGEN 50SP
Treatment	Silane	Stearic Acid	Silane
Mg(OH) <sub>2</sub> , %	97.5	97.5	99.6
Free Moisture (105C, 2 hrs) <sup>1</sup> , %	0.30	0.29	0.10
Surface Area (BET) <sup>1</sup> , m <sup>2</sup> /gm	7.0	7.0	6.5
Average Particle Size <sup>1</sup> , microns	1.8	1.8	0.7
Calcium as Ca, %	0.3	0.3	0.06
Chlorine as Cl, %	1.2	1.2	0.04
Iron as Fe, %	0.03	0.03	0.004
Oil Absorption, ml/100 gm	30	30	43

1- test performed on unmodified material

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