



PERFORMANCE ADDITIVES

TECHNICAL DATA SHEET

STAN-MAG® BARS
CR-GRADE MAGNESIA

Technical Data Sheet

Stan-Mag® Bars are a bonded magnesium oxide powder in the physical form of high density, easy to handle, three pound solid bars. They are easily cut into smaller sections for rapid weighing and easy addition to mixing equipment. Their uniform density and composition should enable addition to compounds on a volumetric basis if desired.

Stan-Mag Bars contain 70% of a high activity, medium light calcined grade of magnesium oxide using a mineral oil base hydrocarbon as a binder. The binder is compatible with natural and most synthetic elastomers and should have no adverse effect on the physical or chemical properties of a vulcanizate. Elimination of dust during weighing and mixing is an added and very important benefit for this product.

Since all of the particles of magnesia in Stan-Mag Bars are coated with a film of the binder, this product does not deteriorate in activity on exposure to the atmosphere like powdered forms of magnesia. The powder is in effect pre-dispersed and thus, the rate and degree of dispersion in a rubber compound are improved considerably. Therefore, even though the binder is a diluent for the magnesia, it has been observed that Stan-Mag Bars provide virtually equivalent scorch protection to powder. Thus, in all but the most critical formulations, Stan-Mag Bars may be substituted for the powder forms of magnesium oxide at equal concentrations.

Stan-Mag Bars have a very high bulk density which provides for considerable savings in storage space over that required for the powdered forms of magnesia.

TYPICAL PROPERTIES

Table with 2 columns: Property and Value. Properties include Type Magnesium Oxide, Physical Form, Color, Bulk Density, and Specific Gravity. Values include Medium Light Calcined, 3 lb. Solid Bars, Light Tan, 112 (lbs./cu. ft.), and 1.8.

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TECHNICAL DATA SHEET

Performance data on Stan-Mag Bars in a Neoprene formulation are shown in Table I. Comparative data with a powdered magnesia, Stan-Mag Beads and a competitive stick form of magnesia are included. Similar comparative data was obtained in mercaptan modified Neoprene. This data indicates that Stan-Mag Bars provide scorch and cure characteristics very similar to currently used magnesias and can be utilized in most neoprene formulations as a direct substitute.

TABLE I

COMPARISON OF MAGNESIAS IN NEOPRENE

Neoprene (Sulfur Modified)	100.0	100.0	100.0	100.0
SRF Black	29.0	29.0	29.0	29.0
Antioxidant	2.0	2.0	2.0	2.0
Stearic Acid (F-1500)	0.5	0.5	0.5	0.5
Zinc Oxide (Pasco 524-T)	5.0	5.0	5.0	5.0
Accelerator - ETU	0.4	0.4	0.4	0.4
Medium Light Calcined MgO Powder	4.0	0.0	0.0	0.0
Stan-Mag Bar	0.0	4.0	0.0	0.0
Competitive Bar Form	0.0	0.0	4.0	0.0
Stan-Mag Beads	0.0	0.0	0.0	4.0
Mooney Scorch ML 250°F (T5)				
Initial (Minutes)	11.0	10.5	10.0	10.0
After 1 Month (Minutes)	10.5	10.2	9.6	9.7
Rheometer Data 320° TM-100				
T2	2.70	2.75	3.00	2.90
T90	16.80	16.95	16.40	16.50
T90 - T2	14.10	14.20	13.40	13.60
Minimum Torque	7.80	6.80	6.00	7.30
Maximum Torque	53.00	53.00	51.00	58.20
Physical Properties after 20 Minutes at 320°F				
300% Modulus (psi)	2325	2550	2570	2790
Ultimate Tensile (psi)	2885	2900	2845	2960
Ultimate Elongation (%)	400	400	395	360
Shore A Hardness (units)	72	72	72	72
Compression Set (ASTM D-395 Method B cured 25' at 350°F)	60	60	61	60

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