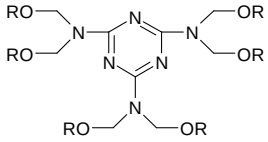
Resimene® 3520

Technical Data Sheet

CHARACTERISTICS

Hexamethoxymethyl melamine (HMMM) resin

TYPICAL STRUCTURE



FORM OF DELIVERY

Liquid, 98% Minimum Non-Volatiles

FIELDS OF APPLICATION

Crosslinker for resorcinol and phenolic novolac resin types for adhesion promoting or reinforcing compounds in rubber applications

SPECIFICATION

Property Determined per batch		
Viscosity Gardner-Holdt 25°C (435-1200-3)	Letter	Y-Z3
Non-Volatile Matter / Solids		
Foil,45 minutes at 45°C (435-1200-19)	[%]	98 min.
Color, APHA (435-1019)		30 max.
Haze, APHA (435-1019)		5 max.
Density (Liquids) (435-1200-30) at 25°C (DIN 12791 part 1+3) at 20°C	lb./gal. g/cm^3	9.9 - 10.1 1.18 -1.22
Formaldehyde Content (DIN EN ISO 11402)	[%]	0.15 max
Useful Information Not continually determined		
Flash Point (Pensky Martens, closed cup) (analog. DIN EN 22719)	[°F] [°C]	>230 >110

TECHNICAL INFORMATION

Resimene 3520 is a hexamethoxymethyl melamine (HMMM) type resin used as a crosslinking agent for resorcinol or novolak resins and as an adhesion promoter for rubber compounds to steel cord, textiles and other reinforcing materials.

The resin is used in combination with resorcinol or a novolak resin to increase compound hardness or for promotion of adhesion between rubber and reinforcing cord or fabrics. Resimene 3520 is suggested as a replacement for hexamethylenetetramine because of its lower toxicity, absence of amine or ammoniacal by-products and minimal effect on scorch time.

Resimene 3520 S-72 is recommended to bond treated cellulose fibers to the rubber matrix. Resimene 3520 is non-staining and non-discoloring when used on its own. When used in combination with resorcinol or resorcinol based resins, pink discoloration occurs, which becomes brown on exposure to UV light. However, the compound remains non-staining.

APPLICATION & PROCESSING

Resimene 3520 is normally used at 1.5 to 4.5 phr in conjunction with 0.5 to 3.0 phr resorcinol in most elastomers to promote adhesion. It is effective with brass plated steel cord, polyester, rayon, nylon and glass fibers in tire, belting and industrial product applications. Adhesion properties can be enhanced with 5.0 to 10.0 phr silica. For hardness increase levels of resorcinol or Novolak resin can be much higher than those used for adhesion. When Resimene 3520 is used to bond treated cellulose fibers into the rubber matrix, it is usually added at about 1.5 phr for each 20 to 30 phr of treated cellulose fiber. Resimene 3520 is normally added with the curatives in the final mixing stage. In the presence of resorcinol or novolak resin, the mix temperature should not exceed 100°C. Vulcanization should be taken to maximum modulus to achieve maximum adhesion or hardness.

STORAGE STABILITY

At temperature up to 25°C the storage stability of Resimene 3520 packed in original containers amounts to at least 24 months. Some turbidity may occur in isolated cases but this has no effect on product quality.

RESIMENE
Amino Crosslinker Resins for Surface Coatings

This information is based on our present state of knowledge and is intended to provide general guideline for our products and their uses. It should not therefore be construed as guaranteeing specific properties of the products described or their suitability for a specific application. No legal liability shall be derived from it. Any existing industrial property rights must be observed. The quality of our products is guaranteed under our General Conditions of Sale.

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