

Struktol Rubber Processing Additives

Product Overview

Activators	
<u>Activator 73 A</u> <u>Activator 73 LM</u>	Multifunctional cure activators for the sulfur vulcanization of diene rubber, especially natural rubber. They can partly or totally replace conventional activators based on fatty acids (stearic acid, zinc stearate, and zinc 2-ethylhexanoate) and impart excellent reversion resistance. They can also be used as an effective physical peptizer for the mastication of natural rubber to improve processability in mixing, extrusion and molding. "LM" is designed for low shear and low temperature mixes.
<u>ZEH</u> <u>ZEH-DL</u>	As a rubber soluble zinc soap, it is used instead of stearic acid and reduces stress relaxation and primary creep of NR-vulcanizates, especially in combination with soluble EV-systems. ZEH-DL is a free flowing powder; it offers processing advantages compared to the high viscous liquid of ZEH.
<u>Zimag 29/43A</u>	A cross-linking agent consisting of a 2:3 ratio of zinc oxide to magnesium oxide for chloroprene compounds to reduce scorch.
<u>Zinc Laurate</u>	Used as an activator for thiazoles, thiurams and dithiocarbamates by supplying fatty acid and soluble zinc.
Amides	
<u>TR 121</u> <u>TR 131</u> <u>TR 141*</u>	These unsaturated fatty primary amides function by migrating to the surface in a microscopic coating which reduces the coefficient of friction. TR 121 (oleamide) migrates more rapidly than TR 131 (erucamide) but has reduced heat stability. They function as both a lubricant and mold release agent and their low odor make it extremely suitable for food contact applications. *For peroxide cure systems, use TR 141.
Coated Metal Oxides	
<u>WB 700A</u>	Coated zinc oxide with 91% ZnO for natural and synthetic rubber compounds, especially for CR. A non-dusting powder.
<u>WB 900A</u>	Coated magnesium oxide with 75% MgO for natural and synthetic rubber compounds, especially for CR and CSM. Provides protection against humidity and carbon dioxide.
Coated Sulfurs	
<u>SU 95AF</u> <u>SU 109A</u> <u>SU 120A</u> <u>SU 135A</u>	These coated sulfurs contain dispersing and wetting agents that can be added to any natural rubber and synthetic rubber compound which is sulfur cured. They are active dispersions of oil treated sulfur at the following activity: SU 95A – 95% (soluble), SU 109A – 75% (insoluble), SU 120A – 83% (soluble), and SU 135A – 36% (insoluble).
Coupling Agents	
<u>Silane Coupling Agents</u>	They provide coupling of most non-black pigments to the polymer backbone allowing for: improved abrasion resistance, higher compound modulus, lower hysteresis, improved compression set, and improved rolling resistance in tire tread compounds and shoe sole compounds.
Homogenizing Agents	
<u>40 MS</u>	This homogenizing agent is particularly effective with those elastomer blends that tend to crumble at the beginning of the mixing cycle. It is used to improve the homogeneity of elastomers of different polarity and viscosity. It also reduces bagging tendencies; extrusion rates are increased without increasing the die swell, and calendaring properties are improved. STRUKTOL® 40 MS increases the green tack of many compounds although strictly it is not a tackifier.

<u>HP 55</u>	This is a high performance process additive developed for the rubber industry. Benefits have been shown in the tire industry, particularly where solution SBR and NR are being used. Processing benefits are seen without adverse effects on dynamic properties. This leads to potential application in other tire and non-tire applications (conveyor belts, motor mounts, hose, etc.).
Mandrel Release	
<u>MR 161A</u>	Shows excellent release properties with Ethylene Propylene Diene Copolymers (EPDM Hose) in both Peroxide and Sulfur cured systems. Has also shown excellent release properties of Ethylene Acrylate rubbers (VAMAC Hose).
Peptizers	
<u>A 80</u> <u>A 82</u> <u>A 86</u> <u>A 95</u>	These are used as a combination peptizing and processing additive which is effective in natural and synthetic rubber. A 80 and A 82 are easily dispersed in rubber due to their high content of dispersing agent. A 86 and A 95 contain more active substance and can therefore be used at lower levels.
<u>A 91F</u>	A mixture of zinc soaps of high molecular weight fatty acids used to reduce viscosity in NR and SBR.
<u>A 96</u>	A peptizer in NR and has a limited effect on synthetic rubber (oil extended SBR and butyl rubber). It can be used on a mill or on an internal mixer. It causes splitting of the molecular chains which will reduce the molecular weight and make the rubber increasingly plastic.
<u>HT 105A</u>	A non-discoloring multifunctional additive based on a novel processing additive which is used as a mild mastication additive. It gives excellent dispersion in rubber and at the same time the dispersion of powdery compounding materials is improved.
Plasticizers	
<u>AW 1</u>	An antistatic plasticizer for mineral filled NBR, SBR and NR compounds. A surface resistance as low as 1×10^6 Ohms can be achieved for NBR based vulcanizates.
<u>KW 400</u>	An easily soluble plasticizer in aliphatic and aromatic hydrocarbons to improve the low temperature flexibility with all commonly used rubbers. NBR vulcanizates can be compounded with flexibility at temperatures as low as -55°C.
<u>KW 460</u>	This polyglycol ester plasticizer improves low temperature flexibility; particularly in polar polymers. It is stable across a wide temperature range.
<u>KW 550</u>	This synthetic ester plasticizer is easily soluble in aliphatic and aromatic hydrocarbons. It also provides a good balance between low temperature flexibility and superior heat resistance.
<u>WB 300</u>	Used in NBR, ECO, and ACM to improve oil and fuel resistance. Due to its incompatibility with aliphatic hydrocarbons, mineral oils and greases, it will not leach from vulcanizates, which minimizes hardening and shrinkage.
Polyethylene Waxes	
<u>HM 97</u>	A blend of low molecular weight polyethylene waxes that offers improved performance and/or processing of hot melt adhesives. It can improve bond strength, anti-blocking, softening point, viscosity modification and solvent and oil gelation.
<u>PE(H)-100</u> <u>PE(H)-101</u>	A versatile polyethylene wax (homopolymer) used in natural and synthetic elastomers. It is used to improve flow and processability.
Processing and Dispersing Agents	
<u>A 50</u>	A rubber soluble zinc soap of high molecular weight that leads to a faster physical peptizing of natural rubber. It starts to be effective in the lower temperature range of compounding and can be used for mastication in a separate stage as well as for single stage mixing.

<u>A 60</u>	A rubber soluble zinc soap leading to a faster physical peptization of natural rubber. It starts to be effective in the lower temperature range of compounding and can be used for mastication in a separate stage as well as for single stage mixing. <u>A 60DH</u> has a lower melting profile than A 60.
<u>CY 48</u>	A recent addition to our line of processing and performance enhancing additives. It can be used in both natural & synthetic rubbers due to its selected composition comprising fatty acid derivatives with different polarities.
<u>EF 44 A</u>	A blend of fatty acid derivatives (predominantly zinc soaps) that is useful as a processing additive for applications in natural and synthetic rubber and provides excellent improvement of processing behavior for a wide range of elastomers such as NR, SBR, and EPDM (except for halogenated elastomers).
<u>EP 52</u>	A processing additive designed for use in EPDM, butyl, and halobutyl rubber compounds. It is a blend of rubber compatible non-hardening synthetic resins and fatty acid soaps, and is effective at improving extrusion uniformity and preventing surging while smoothing out the extrudate.
<u>HPS 11</u>	A product designed and selected to give maximum polymer to additive interactions. It is effective in increasing flow, promoting release, and effectively acts to improve overall processing. It contains no metal ions.
<u>HT 290</u>	A processing additive for fluorinated rubbers. It is a blend of fatty acid derivatives and waxes and is a silicone free processing additive especially designed for fluoroelastomers and provides improved flow and easier demolding. Its good lubricating properties provide an increased extrusion rate and lead to an improved appearance rating.
<u>JV 46F</u>	Designed for high performance silica loaded compounds. It is excellent for use in performance tires containing a wide range of elastomers NR, BR, SBR and S-SBR. It dramatically improves processing and extrusion (especially silica filled compounds) and stabilizes viscosity during extended storage times while giving your compound enhanced dynamic properties.
<u>RP 28</u>	A nonstaining compatibilizing agent used primarily to blend dissimilar elastomers, including cured recycle. Improves mixing homogeneity and reduces filler incorporation time.
<u>TR 251</u>	A complex oleochemical mixture containing mono and di amides and metal soap. It is a unique blend of anionic and ionic surfactants with lubricants, and is an effective dispersant, wetting agent and process agent in a variety of polymer systems.
<u>W 34</u>	For the production of compounds on open mills or in internal mixers, the addition of this product causes a better plasticity of elastomers which leads to a rapid incorporation of the fillers and other powdery ingredients. In highly filled compounds, it counteracts the formation of filler agglomerates. The dispersing effect supports the fine dispersion of all mixing ingredients so that lots with uniform properties will result.
<u>WA 48</u>	A highly effective processing aid that is mainly used for special polymers. It contains a combination of zinc soaps and fatty acid ester tailor-made for use in epichlorohydrin rubber (ECO) to improve flow properties and release.
<u>WB 16</u>	This mixture of fatty acid soaps, predominantly calcium, is used in rubber compounds to improve the flow properties attributable to a considerable reduction of the viscosity (internal friction) of the green compound. It improves mold release, especially when complicated mold designs are involved. It has a slight activating effect on the cure rate of sulfur-containing compounds.
<u>WB 42</u>	A synergistic blend of fatty acid derivatives with selected polarities that provides internal as well as external lubrication in a wide range of elastomers, resulting in improved flow, cavity fill, and mold release. It does not affect peroxide cure.
<u>WB 212</u> <u>WB 222</u>	A blend of high-molecular weight, aliphatic, fatty acid esters and condensation products, bound to chemically inert fillers. A processing additive for polymers and is normally used to improve the general compound processing without significant

<u>WB 212</u> <u>WB 222</u> (continued)	influence on the physical properties. It acts as a dispersing agent for powdered materials and can shorten the mixing time by faster filler incorporation. The effect of the vulcanization behavior is neutral. It can reduce the risk of scorching particularly in highly loaded compounds. Due to the good plasticizing properties, molds can be filled faster with lower pressures during injection and transfer molding. The water content in WB 212 may cause a slight activation in compounds based on chlorosulfonated polyethylenes or equivalent polymers.
<u>WS 180</u>	A condensation product of fatty acid derivatives and silicones. This product leads to best results in the processing of both special (e.g. ACM, ECO) and standard elastomers showing most advantageous effects, lowering viscosity, improving mill release and helping to solve mold release problems. It has an extremely low peroxide demand and has practically no effect on physical properties.
<u>WS 280</u>	A processing additive based on organosilicones. These new organosilicones are highly compatible with rubber compounds. It has an extremely low volatility at high temperatures and is particularly suitable for FKM compounds and silicone compounds. It offers better extrusion properties and is excellent for injection molding.
<u>ZB 47</u>	A proprietary zinc compound which helps in the processing of filled rubber systems. It offers heat stability (reversion resistance) and improves dynamic properties in natural rubber compounds containing mineral fillers and silane coupling agents. It can improve tack of high natural rubber compounds.
<u>ZB 49</u>	STRUKTOL® ZB 49 is a recent addition to our line of processing and performance additives. It can be used as a physical peptizer and processing aid for natural rubber formulations. In synthetic and natural rubber blends that contain silica, with or without silane coupling agents, it improves downstream processing while enhancing physical properties. When used with silane coupling agents it has a synergistic affect and improves the coupled properties. <i>(Name changed from KK 49.)</i>
Rubber Antitack	
<u>Antiadherente</u>	A mixture of insoluble and soluble soaps with dispersing agents. It is a batch-off slab lubricant designed for use in the rubber industry. The formulation is made without inorganic fillers.
Specialty Polymers	
<u>Vestenamer 8012</u> <u>(Evonik)</u>	As a polymeric processing aid, it acts as a non-extractable plasticizer for rubber compounds. It is used as a processing aid in tires, profiles, tubes, a variety of molded rubber articles, roller coatings and calendered articles. This unique product becomes a liquid at high temperatures but returns to a solid at room temperature.
Tackifying Resins	
<u>Koresin (BASF)</u>	This product can be used as a high performance tackifier for natural and synthetic elastomers for improving long term building tack in compounds and cements.
<u>TH 110</u>	This product is a processing additive improving tack and homogeneity of raw compounds. Due to the balanced combination of the product an optimum dispersion of the ingredients in the compound is achieved.
<u>TS 30</u> <u>TS 30DL</u> <u>TS 35</u> <u>TS 35DL</u> <u>TS 50</u>	These products are resinous plasticizers which significantly increase the low green tack of synthetic rubber compounds. The "DL" forms are free-flowing powders that offer improved handling over high viscosity products. The TS 50 is especially suitable for EPDM compounds to improve the tack of "dry" highly loaded compounds.
<u>Strukrez 110</u>	A hydrocarbon resin that improves the homogeneity of elastomers of different polarity and viscosity. They are rapidly absorbed by the polymers during the mixing cycle. A relatively low viscosity mass is quickly achieved into which other compounding ingredients can easily be incorporated.