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VANDERBILT

Technical Data

No. 1245
Rubber Department

VANOX[®] L PDR Antioxidant

Reaction product of p-cresol and dicyclopentadiene

VANOX L PDR is a highly effective, polymeric, non-discoloring, nonstaining phenolic antioxidant for natural and synthetic rubbers. It exhibits excellent performance in latex applications and can easily be converted into a dispersion. **VANOX L PDR** has low volatility and exhibits low extraction by washing and boiling, making it suitable for use in rubber threads and latex for carpet backing and foams.

Properties

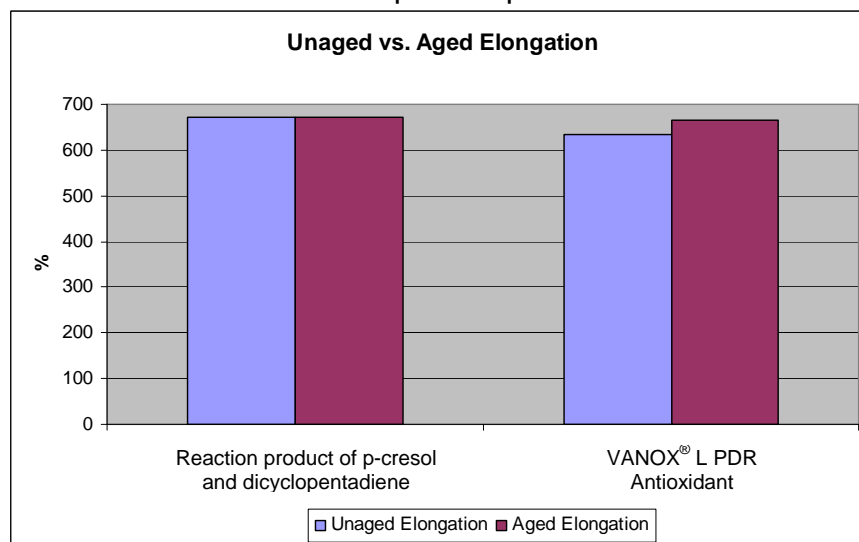
Physical form
Color
Ash content, 2hrs @ 800°C, %, max.*
Loss on drying, 2hrs @ 100°C, %, max.*
Melting point, initial, °C, min.*
Solubility

VANOX[®] L PDR Antioxidant

powder
white to cream
0.3
1.0
105
Soluble in acetone and toluene.
Insoluble in water.

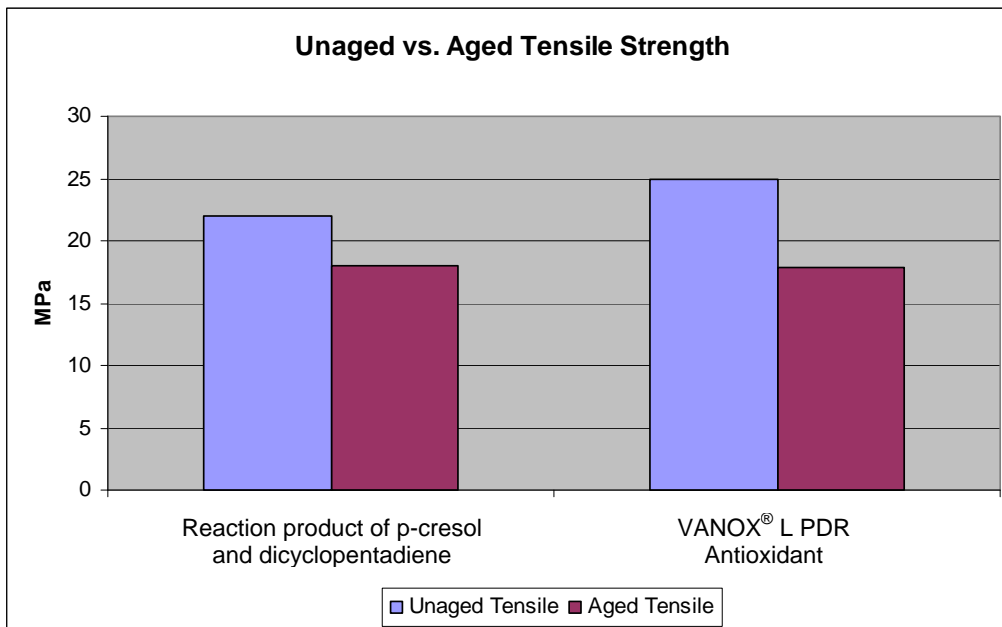
* Certified Property

VANOX L PDR shows equivalent performance to a competitive product



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VANOX® L PDR Antioxidant is FDA listed in 21 CFR 177.2600, Rubber articles intended for repeated use; 21 CFR 178.2010, Antioxidants and/or stabilizers for polymers; 21 CFR 175.105, Adhesives for food packaging; and 21 CFR 175.125, Pressure-sensitive adhesives.

Testing/Results

Ingredient	Compound 1		Compound 2	
	Dry phr	Wet phr	Dry phr	Wet phr
Low-Ammonia NRL	100.0	164.0	100.0	164.0
DARVAN™ WAQ Surfactant	1.0	3.0	1.0	3.0
Potassium Hydroxide	0.5	5.0	0.5	5.0
Sulfur Dispersion	1.0	2.0	1.0	2.0
Zinc Oxide Dispersion	0.5	0.8	0.5	0.8
SETSIT® 104 Accelerator	---	1.5	---	1.5
DARVAN™ SMO Surfactant	0.5	1.5	0.5	1.5
Reaction product of p-cresol and dicyclopentadiene (Control)	1.0	2.0	---	---
VANOX® L PDR Antioxidant	---	---	1.0	2.0

The films were coated on glass plates and allowed to dry for 24 hours. These films were then placed in the oven for vulcanization and cured for 30 minutes at 100°C. Samples were aged for 168 hours at 70°C. All samples were tested on an Instron® 3366 Universal Testing Machine.

Sample	Modulus @ 300% (MPa)	Elongation (%)	Tensile (MPa)
Control			
Unaged	1.3	671	22.0
Aged (7 days @ 70°C)	---	671	18.0
% Retained	---	100	81.7
VANOX® L PDR Antioxidant			
Unaged	1.9	635	24.9
Aged (7 days @ 70°C)	---	665	17.9
% Retained	---	105	71.7

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