




Struktol® LA 455

Struktol® LA 455 IS A NEWLY DEVELOPED LABEL-FREE ALTERNATIVE TO Struktol® LA 435, WHICH IMPROVES THE AGING BEHAVIOUR OF NR, IR, SBR, XSB, CR OR ABS BASED LATEX GOODS. Struktol® LA 455 IS AN AQUEOUS DISPERSION OF ANTIOXIDANTS, STABILIZED WITH ANIONIC EMULSIFIERS. IT IS BASED ON A SYNERGISTIC BLEND OF HINDERED POLYPHENOLS AND DOES NOT CONTAIN ANY ORGANIC SOLVENTS. JUST AS FOR Struktol® LA 435, Struktol® LA 455 CONTAINS HIGH-MOLECULAR, NON-DISCOLOURING ANTIOXIDANTS WHICH HAVE A VERY LOW VOLATILITY AND VERY GOOD COLOUR STABILITY.

PROPERTIES

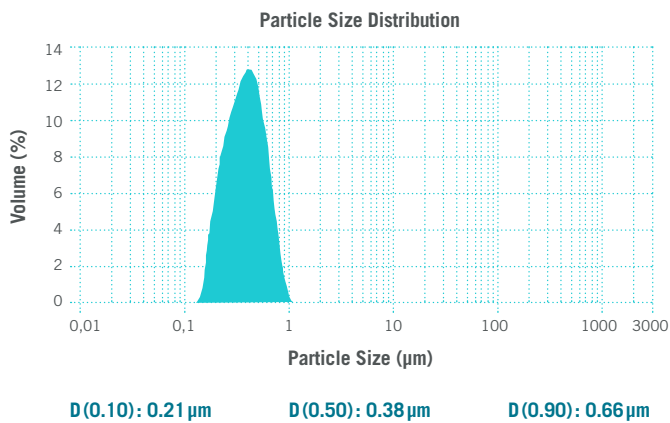
	Appearance	Solid content	Actives content	Emulsifier	pH-value	Dangerous substance	Hazardous good	Mean particle size
Struktol® LA 455	light colored liquid	45 %	40 %	anionic Potassium soaps of fatty acids	9	NO	NO	0.38 µm
Struktol® LA 435	light colored liquid	45 %	40 %	anionic Potassium soaps of fatty acids	9	YES (H361d) 	NO	0.22 µm

PARTICLE SIZE DISTRIBUTION

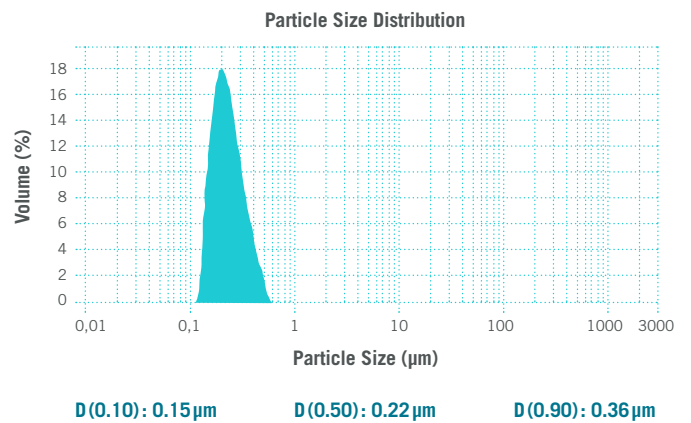
As a consequence of both our production process and process control, both dispersions offer a narrow and monomodal particle size distribution.

Hereby, a high activity and a homogeneous distribution of the antioxidant in the polymer matrix can be ensured.

Struktol® LA 455



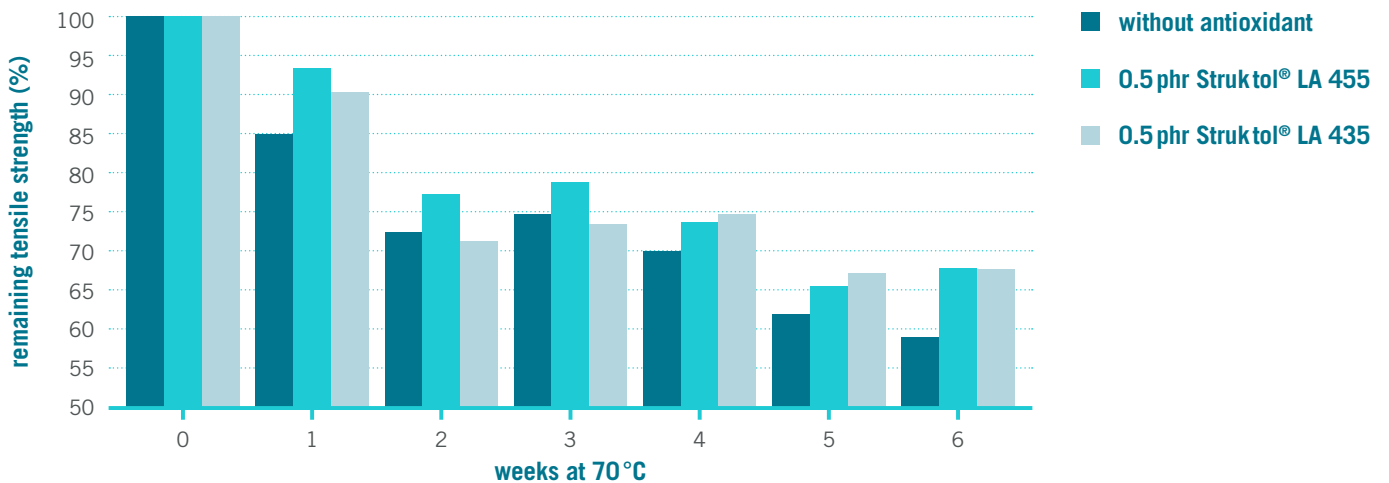
Struktol® LA 435



APPLICATION TESTS

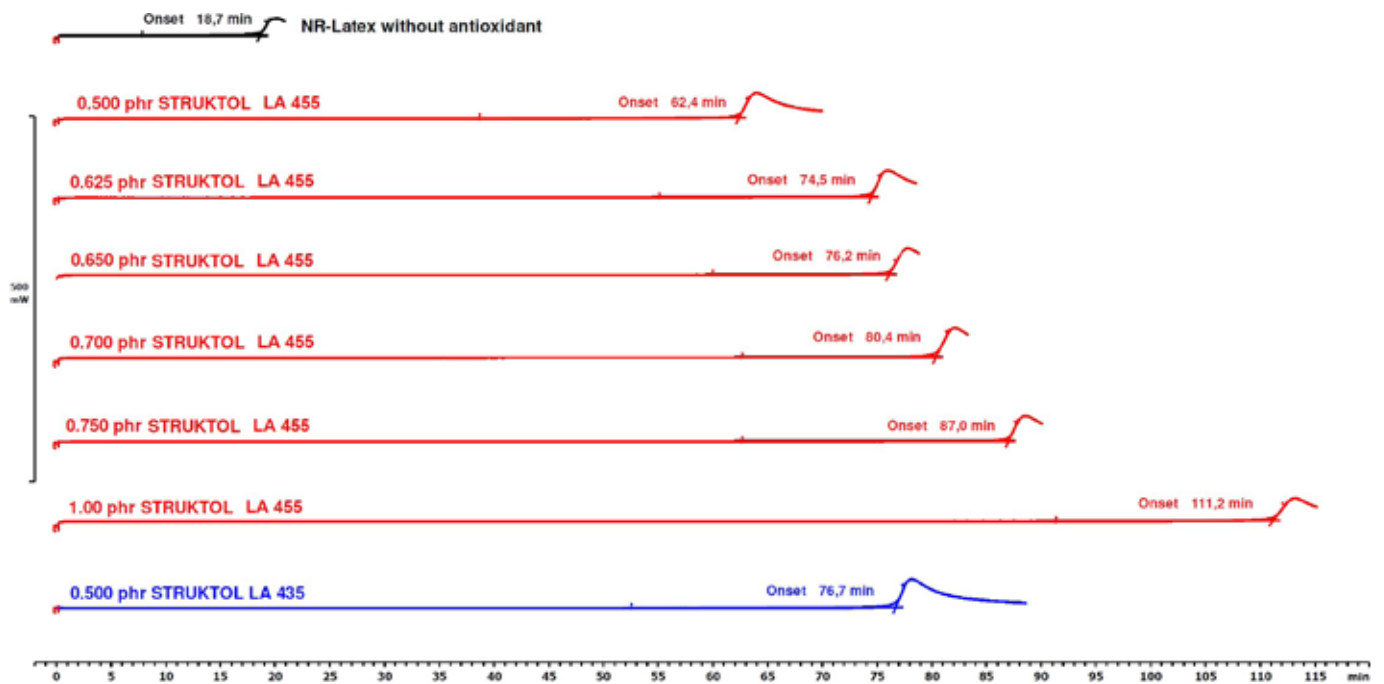
When ageing NR-latex vulcanisates containing 0.5 phr of the antioxidant dispersion at a temperature of 70°C over a period of 6 weeks, it can be seen that the variation in tensile strength both for Struktol® LA 455 and Struktol® LA 435 is on the same level. This indicates a comparable protection performance of Struktol® LA 455 in relation to Struktol® LA 435.

Ageing test of natural rubber latex vulcanizates



APPLICATION TESTS

By determining the thermo-oxidative resistance (Oxygen-Induction-Time/OIT) by differential scanning calorimetry (DSC) of NR-latex specimens, the effective dosage of Struktol® LA 455 compared to Struktol® LA 435 can be reduced.



Test Conditions: 135°C isotherm/Oxygen at 50 bar

For comparable protection performance, we recommend adding Struktol® LA 455 at a slightly higher dosage level.

Dosage of Struktol® LA 455 → approx. 130% of the dosage of Struktol® LA 435



THE AGEING BEHAVIOUR OF A XSBR-LATEX COMPOUND

XSBR-Latex + 400phr Ca(CO ₃) ₂	unaged	2h / 150 °C	4h / 150 °C	6h / 150 °C	8h / 150 °C	10h / 150 °C	12h / 150 °C	14h / 150 °C	16h / 150 °C	18h / 150 °C	20h / 150 °C	22h / 150 °C	24h / 150 °C
without antioxidant													
0.1 phr Struktol® LA 455													
0.1 phr Struktol® LA 435													

THE AGEING BEHAVIOUR OF A CR-LATEX COMPOUND

CR-Latex	unaged	24h 100 °C	48h 100 °C	72h 100 °C	96h 100 °C	120h 100 °C	144h 100 °C	168h 100 °C	192h 100 °C	216h 100 °C	240h 100 °C	336h 100 °C	504h 100 °C
CONTROL (without Antioxidant)													
0.5 phr Struktol® LA 455													
0.5 phr Struktol® LA 435													

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