

STRUKTOL® EF 44A

STRUKTOL® EF 44A is our additive for applications in natural and synthetic rubber. **STRUKTOL® EF 44A** provides process improvement in a wide range of elastomers; including NR, BR, SBR, and EPDM.

Especially suited for applications in extruded compounds, it also offers advantages in transfer and injection molding, improves filler dispersion (especially mineral fillers), increases storage stability, and improves batch-to-batch uniformity.

STRUKTOL® EF 44A is in accordance with regulations FDA 177.2600.

For samples or application work on your particular compound, please call Struktol at 1-800-327-8649.



Struktol Company of America

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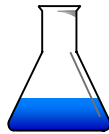
Phone: (800) 327-8649

Fax: (330) 928-8726

STP0170

STRUKTOL EF 44A

A New Generation Product



Common Problems with Silica Loaded Compounds

- Silica has highly active polar surfaces
- Need high shear mixing to disperse
- Secondary agglomeration after mixing occurs
- High and variable compound viscosities
- Poor extrusion performance
- Scorch problems

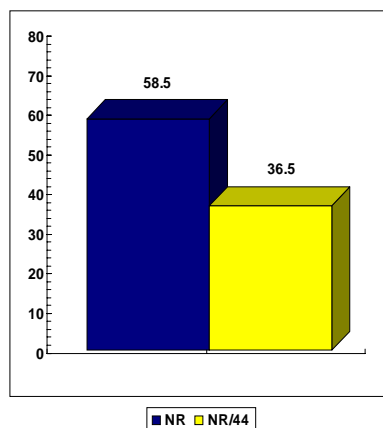
EF 44A in NR and Silica

FORMULAE	NR	NR/44
SMR 20 (PREMAST.)	100.00	
Hil Sil 233	50.00	
N339	5.00	
ZnO	5.00	
ST.AC.	1.50	
TMQ	1.00	
EF 44A	0	3.00
PEG	2.50	
Aromatic Oil	15.00	
SECOND STAGE		
Sulfur	2.50	
TBBS	1.40	
TMTD	.25	
TOTALS	184.15	187.15

EF 44A IN NR AND SILICA

(REPORT NO. 97023)

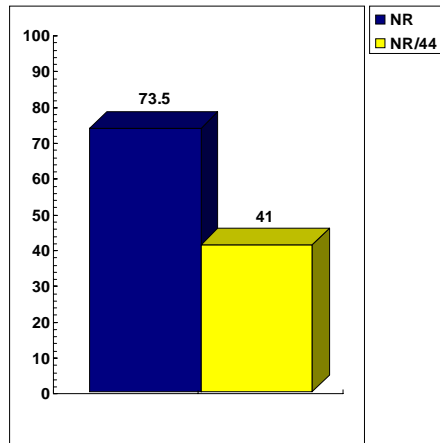
- MOONEY VISCOSITY @ 100°C
- 24 HRS AFTER MIXING
- ML 1+4



EF 44A IN NR AND SILICA

(REPORT NO. 97023)

- MOONEY VISCOSITY @ 100°C
- 4 WEEKS AFTER MIXING
- ML 1+4

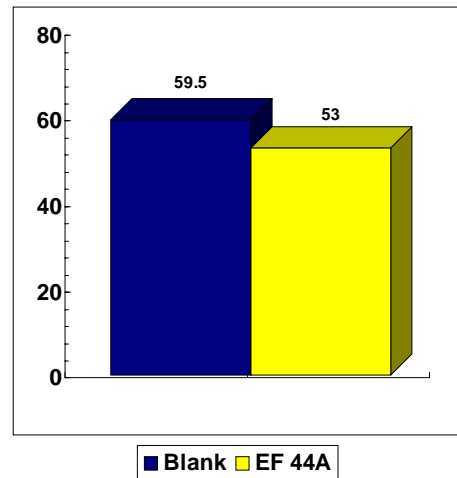


EF 44A IN SBR

FORMULAE	BLANK	EF 44A
SBR1815	225.00	
Hard clay	50.00	
Whiting	50.00	
Napthenic oil	15.00	
ZnO	4.00	
Stearic Acid	1.50	
PEG	1.00	
Blended Wax	2.00	
Paraffin Wax	1.00	
TMQ	1.50	
EF 44A	0	4.00
Sulfur	2.25	
TBBS	1.75	
TMTD	.75	

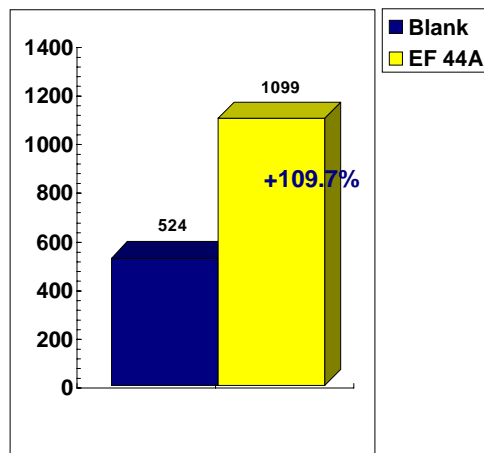
EF 44A IN SBR

- Mooney Viscosity ML
1+4 @ 100°C



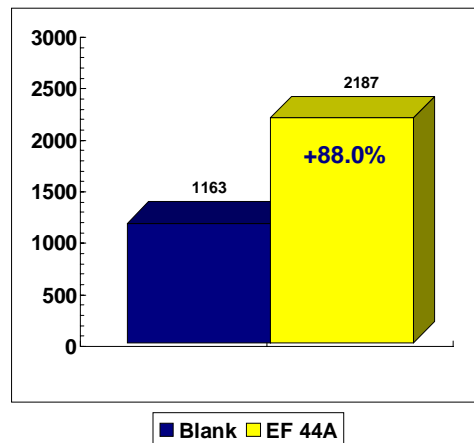
EF 44A IN SBR

- Capillary Rheometer
105°C, 180 sec preheat
Flow, ML/secX10



EF 44A IN SBR

- Capillary Rheometer
125°C, 120 sec preheat
Flow, ML/secX10



EF 44A Added to Silica Compounds

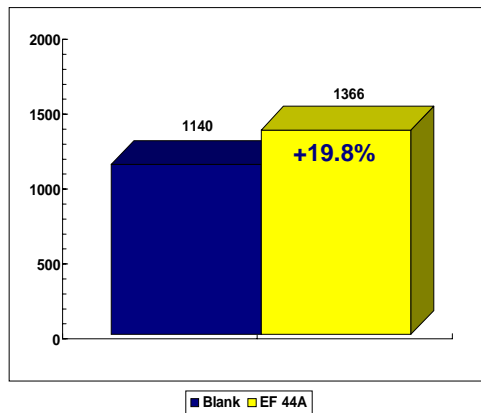
- Reduces viscosity, but molecular weight remains high
- Acts as a wetting agent during mixing
- Helps reduce secondary agglomeration of silica after mixing
- Helps stabilize viscosity
- Improves flow and scorch control
- Improves molding and extrusion

EF 44A IN EPDM

FORMULAE	CONTROL	EF 44A
Keltan 70A	100.00	
N762	150.00	
Stanplas 2000	75.00	
ZnO	5.00	
Stearic Acid	1.00	
EF 44A		3.50
SECOND STG.		
Sulfur	1.00	
TBBS	2.00	
ZDBC	2.00	
TMTD	1.00	
TOTAL	337.00	340.50

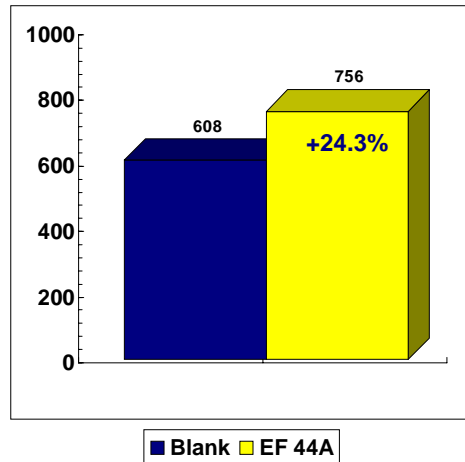
EF 44A IN EPDM

- Capillary Rheometer
125°C, 120 sec preheat
Flow, ML/secX10



EF 44A IN EPDM

- Capillary Rheometer
105°C, 180 sec preheat
Flow, ML/secX10



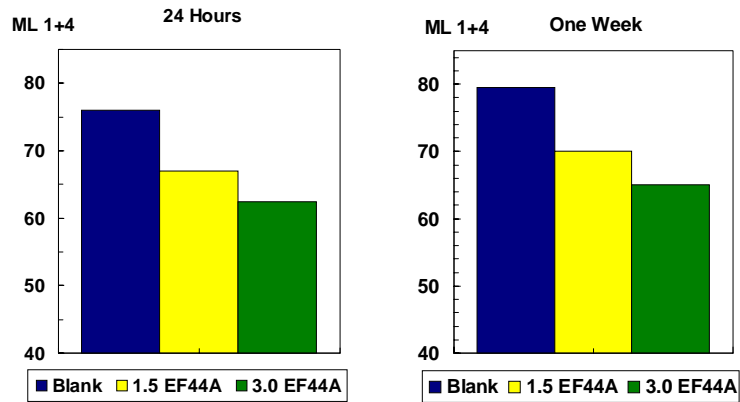
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EF 44A in an OTR Tread

FORMULAE	NR	NR/44 1.5 and 3.0 phr
SIR 20	100.00	
N220	40.00	
HI SII 210	10.00	
ZnO	3.00	
ST.AC.	2.00	
Sundex 790	5.00	
Second Stage		
N220	10.00	
6PPD	2.00	
TMQ	1.00	
Struktol EF 44A	0	1.50(3.00)
Final Stage		
Sulfur	1.75	
TBBS	1.25	
TMTD	0.20	
Total	176.20	177.7(179.2)

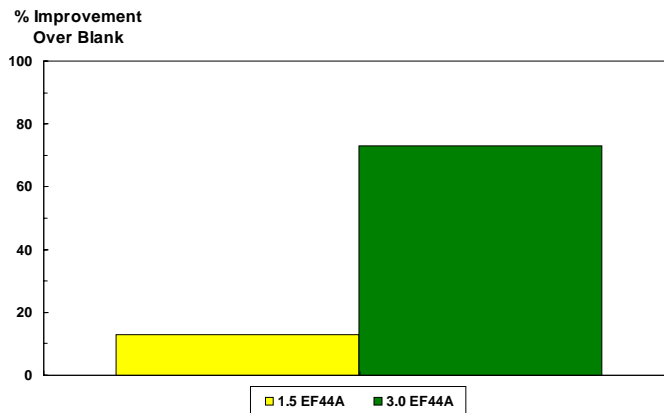
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EF 44A in an OTR Tread Mooney Viscosity



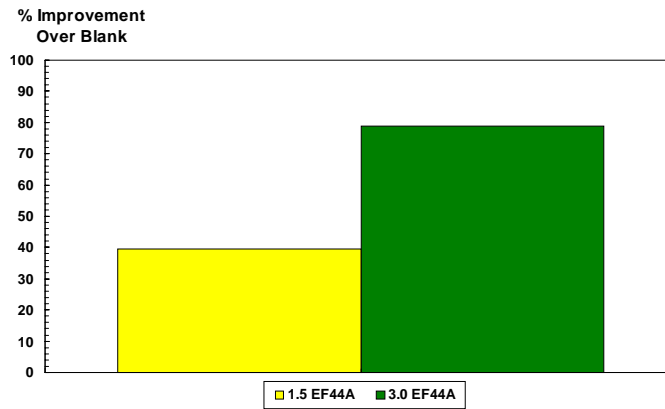
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EF 44A in an OTR Tread Reversion



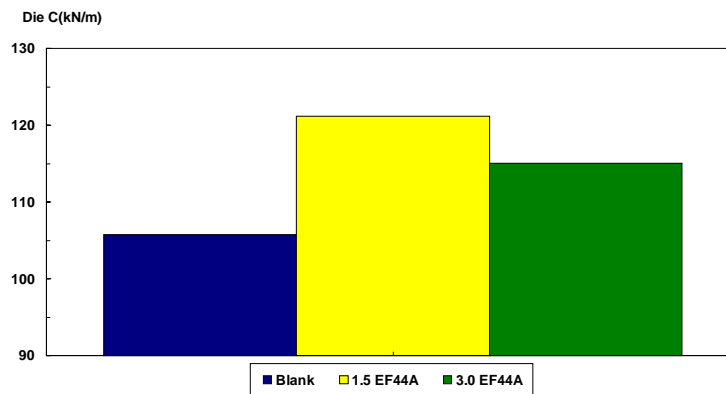
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EF 44A in an OTR Tread Capillary Flow



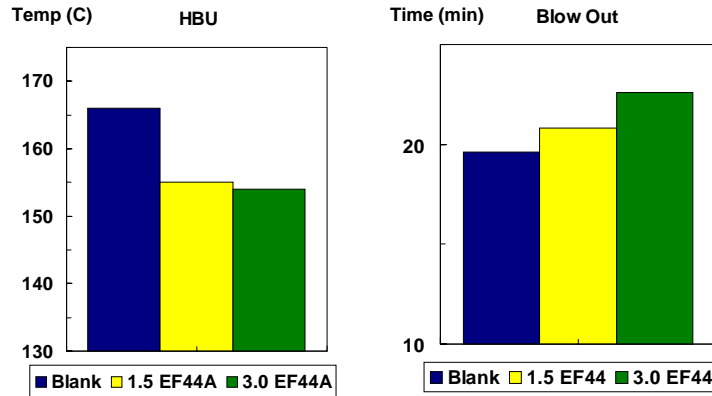
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EF 44A in an OTR Tread Tear Strength @ 23C



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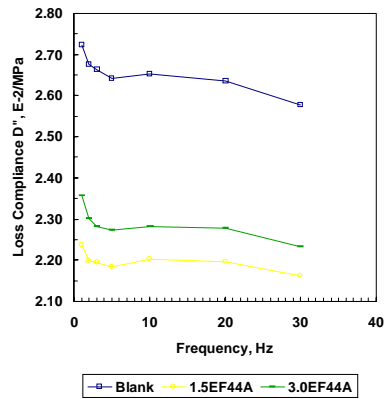
EF 44A in an OTR Tread Firestone Flexometer



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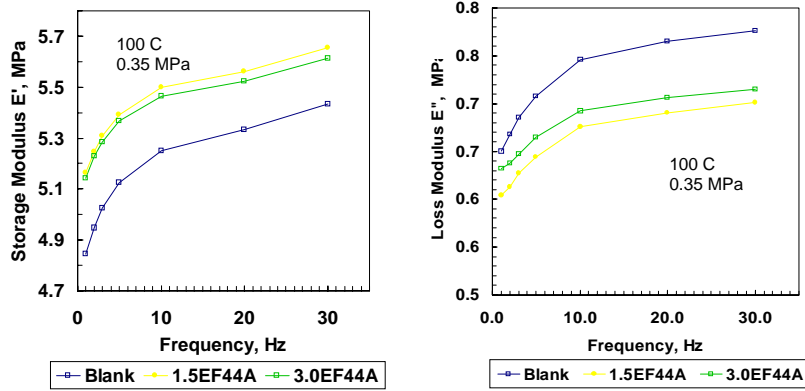
EF44A in an OTR Tread Loss Compliance

- At 100 C
- Constant dynamic stress, 0.35 MPa



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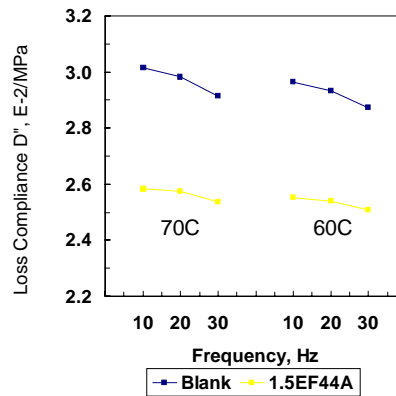
EF44A in an OTR Tread Storage and Viscous Modulus



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EF44A in an OTR Tread Loss Compliance

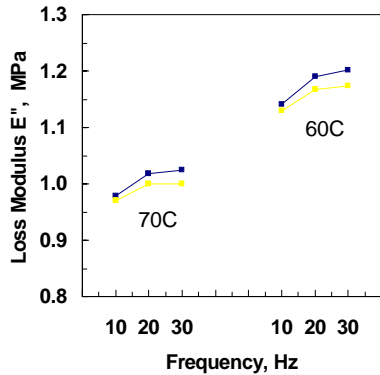
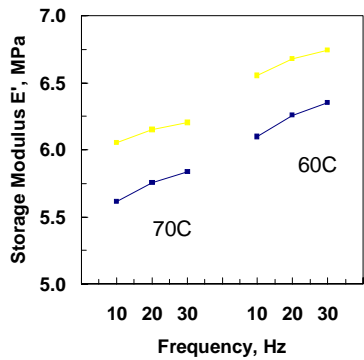
- Constant dynamic stress 0.23 MPa



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EF44A in an OTR Tread

Storage and Loss Modulus



At constant dynamic stress 0.23 MPa

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