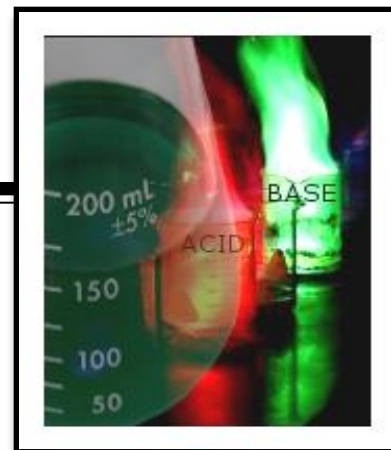


Aflas, Peroxide Cured FKM & Trilene®

Trilene® 65 & Trilene® 77 in Aflas®, Peroxide Cured FKM

- Trilene as a processing aid.
- Trilene as a base resistant additive.



Trilene® can be used as a processing aid for mixing peroxide curable FKM or Aflas. Both FKM and Aflas® TPE are specialized high performance elastomers. Aflas® TPE is a fluoroelastomer known for its base resistance over conventional FKM types. Aflas® TPE elastomer provides long-term service at 204 °C (400 °F); resistance to a broad range of chemicals including oils and lubricants and their additive packages, rust inhibited engine coolants, high temperature steam, acids and caustics, amine corrosion inhibitors, sour (H₂S) oil and gas; and excellent electrical resistance properties.

The use of Trilene® 65 & Trilene® 77 as a process aid in Aflas® TPE elastomer works as an extremely effective process aid with minimal effect on properties when used at low levels. Trilene® 65 was evaluated at the 3 phr and Trilene® 77 at 2 phr levels with the following results:

- Trilene® 65 or Trilene® 77 is an excellent dispersant in Aflas® TPE elastomer.
- Trilene® 65 or Trilene® 77 helps mold and mill release characteristics of Aflas® TPE elastomer. (Aflas is notorious for mold fouling)
- Trilene® 65 or Trilene® 77 helps smooth out milled sheets of Aflas® TPE elastomer.
- Trilene® 65 or Trilene® 77 at low levels causes minimal effect on properties :
 - Cure rate is comparable.
 - There was no measurable difference in short-term air aging at 260 °C (500 °F).
 - There was little effect on compression set after 70 hours at 200 °C (392 °F).

Use of Trilene in Aflas & Peroxide Cured FKM Compounds*

Material	Compound 1	Compound 2	Compound 3	Compound 4
Aflas 100-S	100	70	100	70
Aflas 150-P		30		30
Austin Black	15	15	15	15
ExBar W2	10	10	10	10
Trilene 77	2	2	2	2
Akrowax PE-LM	1	1	1	1
Sodium Stearate	1	1	1	1
TAIC-DLC, 72% active	5.5	5.5	8.33	8.33
Vulcup 40 KE	4	4	6	6
Total (phr)	138.5	138.5	143.3	143.3

Physical Properties

Durometer A hardness	69	69	71	73
Specific gravity	1.580	1.577	1.574	1.578
Tensile strength, MPa	14.5	13.6	13.7	15.2
Elongation at break, %	308	333	270	257
100% modulus, MPa	4.43	3.83	4.94	6.22
200% modulus, MPa	10.7	9.3	11.1	12.7

Data Source
'DoE use in FKM custom compounding.'

D'Abate, Gary D.

Rubber World

Dec 1, 2006

