

PHENOXY RESIN MECHANICAL DATA

Flame Retardant Phenoxy Resin

Alloys with RDP have been shown to meet a UL Rating of V-0:

	Alloy #1	Alloy #2	Alloy #3
% PKFE	78.9%	75.4%	73.8%
% RDP	21.1%	24.6%	21.3%
% TPP			4.9%
Average Time (sec)	5	4.1	4.8
UL Rating	V-0	V-0	V-0

RDP: An aromatic oligomeric phosphate compound.

TPP: Triphenyl phosphate

Phenoxy Resin PKFE was Alloyed with REOFOS RDP

Tensile, Flexural and Notched Izod Impact testing was performed on the alloys:

	Phenoxy Resin PKFE	Phenoxy Alloy PKFE & RDP (% RDP)		
		20.3%	21.9%	22.9%
Yield Strength (psi)	9,515	10,600	9,120	8,100
Tensile Strength @ Break (psi)	6,833	3,470	7,880	8,100
Elastic Modulus (X 000 psi)	380	461	453.6	424.0
% Elongation @ Break (%)	96.2	9.6	3.3	2.4
Flexural Modulus (X 000 psi)	380.8	434.0	444.6	446.6
Impact Resistance (ft*lbf/in)	0.35	0.19	0.26	0.23

Phenoxy Resin: Physical Test Data

All the “engineering information” we have is summarized in the table below. The Tg was determined by DSC.

	PKHB	PKHC	PKHH	PKHJ	PKFE
Molecular Weight:					
Mw (av.)	32,000	43,000	52,000	57,000	60,000
Mn (av.)	10,000	11,000	13,000	16,000	16,000
Solution Viscosity ⁴	180 - 280	410 - 524	525 - 715	600 - 775	600 - 895
Tg ¹	~84	89	92	95	98
Melt Point					
Melt Flow ²	~60 g/10 min.	<15 g/10 min.	4 g/10 min.	<4 g/10 min.	<4 g/10 min.
Tensil @ Yield ³	8,662 psi	9,529 psi	9,726 psi	9,794 psi	9,515 psi
Tensil @ Break ³	5,635 psi	6,972 psi	6,911 psi	6,990 psi	6,833 psi
Elastic Modulus ³	312,000 psi	373,600 psi	375,400 psi	380,800 psi	383,000 psi
Flex. Modulus ³	331,900 psi	383,800 psi	388,200 psi	385,400 psi	380,800 psi
% Elong. @ Yield ³		4.8 %	4.5 %	4.7 %	4.6 %
% Elong. @ Break ³	91 %	134.4 %	107.3 %	55.2 %	96.2 %
Impact Resistance, Notched Izod ³	0.89 ft-lb./in.	0.29 ft-lb./in.	0.32 ft-lb./in.	0.57 ft-lb./in.	0.35 ft-lb./in.

Notes:

1. Determined by DSC.
2. At 200° C and 2.16 kgs. load.
3. These results are for testing done on PKHB+ resin. All values at 73° F.
4. Brookfield @ 25° C, 20% in cyclohexanone.