



POLESTAR™ 200R IN RUBBER

PoleStar™ 200R imparts excellent electrical insulation properties to low and medium voltage power cables. Its low moisture absorption properties ensure that the insulation properties are maintained under wet operating conditions. Extrusion and calendaring of rubber benefit from the processing properties of PoleStar™ 200R. Products can be manufactured with a very smooth finish and excellent dimensional control, due to the low die swell imparted by PoleStar™ 200R.

PoleStar™ 200R gives very low levels of mill sticking when used in halogenated polymers such as polychloroprene, Hypalon or chlorinated polyethylene. It is also light coloured, chemically inert and gives low permanent set behaviour. This combination of properties ensures its use in pharmaceutical closure applications,

where only the highest quality materials can be tolerated. (Table 2).

Its performance in Hypalon (Table 3) is shown overleaf where a range of loading is looked at giving compounds with different hardnesses, because the plasticiser has remained constant.

TABLE 1

Cable Insulation	
Vistalon 4608	100
Zinc oxide	5
Stearic acid	0.5
Flectol H	1.5
PoleStar™ 200R	150
Vinyl silane	1.5
Sunpar 2280	30
Perkadox 1440	7
Rhenofit TAC/S	2
Properties	
Tensile strength (MPa)	7.8
Modulus at 300% (MPa)	5.1
Elongation at break (%)	240
Hardness (IRHD)	68
Compression set at	
100°C (%)	7.5
Volume resistivity (ohm.cm)	1.3 x 10 ¹⁴
Relative permittivity	2.91
Dissipation factor (Tanδ)	0.009

TABLE 2

Bromobutyl Closure	
Bromobutyl X2	100
Red iron oxide	0.5
AC617A	2
Paraffin wax	2
Zinc Oxide	4
TMTD	0.4
PoleStar™ 200R	100
Properties	
Tensile Strength (MPa)	7.8
Modulus at 100% (MPa)	2.1
Elongation at break (%)	780
Hardness (IRHD)	51

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TABLE 3

	phr
Hypalon 90	100
Maglite DE	10
Titanium dioxide	20
Polyethylene wax	3
Sulphur	1
MBTS	0.5
Robac P25	2
Diisooctyl sebacate	15
PoleStar™ 200R	50-250

MONSANTO RHEOMETER

	50	100	150	200	250
Minimum Torque(dNm)	1.68	3.10	5.37	6.3	11.5
Maximum Torque(dNm)	34.5	47.8	59.4	68.1	81.4
T ₂ (mins)	2.7	2.2	2.0	1.5	1.4
T ₉₀ (mins)	19.5	21.5	19.5	11.3	9.7
Properties (cured 20 mins at 160°C)					
Tensile Strength (MPa)	13.8	9.0	9.7	11.0	11.9
Modulus at 100% (MPa)	3.4	6.4	9.6	-	-
Elongation at break (%)	480	340	130	60	60
Hardness (IRHD)	61	73	83	91	93
Compression Set at 100°C (%)	88	86	58	74	79

IMERYS PERFORMANCE & FILTRATION MINERALS

Par Moor Centre, Par Moor Road, Par, Cornwall, UK PL24 2SQ
 t: +44 (0)1726 818000 f: +44 (0)1726 811200
 e: perfmins@imerys.com
 www.imerys-perfmins.com

154 rue de l'Université, 75007 Paris - France
 t: +33 1 49 55 66 37 f: +33 1 49 55 66 57
 e: info.europe@worldminerals.com
 www.worldminerals.com