



PR-2003 Black

Ultraviolet & Track Resistant Test Data

Description

PR-2003 BLACK is a linear low density polyolefin concentrate which when blended at 5% with HDPE base resin and various moisture cure resins, offers an excellent balance of ultraviolet protection and track resistance.

Applications and Uses

PR-2003 BLACK blended with HDPE base resin can be used as an insulating material for 5 to 15 kV Spacer Cable – Tree Wire. Used for primary and secondary wire insulation for overhead distribution. The blend of PR- 2003 and HDPE is effective in preventing direct shorts and flashovers should tree limbs or other objects come into contact with the conductor.

Tree wire & Spacer Cable

Typical Test Data

PROPERTY	UNIT	SPECIFICATIONS	TEST METHOD	TEST RESULTS
ASH CONTENT	%	TEST & RECORD	ASTM D-1603	25.7
MELT FLOW INDEX	g/10 min	TEST & RECORD	ASTM D-1238	158.7 @ 190C 10KG
PELLET COUNT	pellets/g	50.0 + / - 10.0	MDSI	45
PELLET SIZE		#4= <1.0%		#4 = 0.00
DISTRIBUTION	%	#6+#8= 98.0% + #12 = <1.0%	ASTM-1921	#6 & #8 = 99.90 #12 = 0.10
MOISTURE	%	TEST & RECORD	MDSI	0.05
BULK DENSITY	lb/cft	TEST & RECORD	ASTM D-1895	43.95

Environmental Stress Cracking

Test to pass ASTM D1248. The standard calls for 80% retention after 48 hours. Both Dow 1310 and Exxon 9586 with 5% PR 2003 passed with 100% after 48 hours.

Sunlight Resistance

Samples passed 720 hours of conditioning with 80% retention.

1310 with 5% Black			9856 with 5% Black		
unaged	Psi	Elong. (%)	unaged	Psi	Elong.(%)
average	3450	718	average	3314	864
aged	Psi	Elong.(%)	aged	Psi	Elong.(%)
average	2765	799	average	3955	743

Tracking Resistance

Testing done in accordance with ASTM D2303 Passed.

Heat Deformation

Heat Deformation Testing was done in accordance with ICEA T-27-581

	Deformation	Maximum	Pass/fail
1310 with 5% Black	1.81%	30%	Pass
9586 with 5% Black	2%	30%	Pass

Processing Recommendations

PR-2003 BLACK must be fed into the extruder at a 5% addition rate and 95% of HDPE base resin. This blend can be extruded using a conventional extruder and screw. Suggested extrusion conditions are listed below. These conditions are intended as a general guideline only and are not optimum values because manufacturing conditions, such as extruder type and size, affect the processing of thermoplastic compounds.

<u>Extruder Zone</u>	<u>Temperature Range</u>
Z1 (Feed Throat)	350°F
Z2	400°F
Z3	450°F
Z4	475°F
Die	475°F
Melt Temperature	475°F
Wire Preheat	230°F

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