



A Product of DuPont Dow Elastomers

Nordel® IP 4770P

Description

Nordel® IP 4770P is a high molecular weight semi-crystalline grade and offers fast cure rates and high states of cure with standard sulfur cure systems. It offers high green strength and high extensibility. It is designed for extruded applications such as profiles and hose. It is also suitable for molded goods. This grade is available in rod form for improved mixing speed and throughput.

Storage and Handling

The quality of EPDM products may be affected by exposure to artificial or natural light. This product should be stored indoors in its original packaging and out of direct sunlight.

Typical Polymer Properties*

Property	Value	Test Method
Mooney Viscosity ML 1 + 4 at 125°C	70	ASTM D-1646
Composition		
Ethylene, mass%	70	ASTM D-3900
Propylene, mass%	25	ASTM D-3900
ENB, mass%	5	ASTM D-6047
Molecular Weight Distribution	Medium	DuPont Dow PQ-E-034 and 036
Product Density, g/cc	0.87	ASTM D-297
Residual Transition Metal, ppm	10 max.	DuPont Dow
Ash Content, mass%	0.1 max.	ASTM D-5667
Total Volatiles, mass%	0.4 max.	DuPont Dow PQ-E-007
Product Form	free-flowing pellets	

*These data are provided for description only and are not intended to serve as sales specifications.

**Nordel® IP 4770P
Typical Application Recipes**

	Highly Extended Low-Cost Hose 0639A04-06	Dense Extruded Profile 0639A05-06	Heat-Resistant Peroxide Compound 0072A38-11	General- Purpose Compound 0639A03-06
Nordel® IP 4770P	100	100	100	100
Zinc Oxide	5	5	—	5
Stearic Acid	2	1	—	1
N-550 Black	50	—	50	80
N-650 Black	200	100	—	—
N762 Black	—	100	—	—
Ground Calcium Carbonate	200	—	—	—
Calcium Oxide	—	8	—	—
Parrafin Wax	2	—	—	—
Paraffinic Oil	75	115	10	50
Naphthenic Oil	125	—	—	—
Sulfur	1	1.5	—	1.5
MBTS	1.5	1	—	1
TeDEC	—	0.5	—	—
ZnDBC	2	2	—	2
ZnDMC	1	—	—	—
TMTD	1	0.8	—	0.5
DTDM	1	—	—	—
DCP-40% Active	—	—	7	—
Total	716.5	434.8	167	241
Product Density, g/cc	1.339	1.185	1.064	1.083
Compound Properties				
Mooney Viscosity, ML 1+4, 100°C	21	47	—	62
Mooney Scorch at 125°C				
Minimum viscosity	7.6	18	47	22
5 pt rise, min	19.4	7.4	10.4	11.9
10 pt rise, min	22.1	8.4	12.0	13.8
0.5° Arc, 30 min chart, MDR at				
	160°C	160°C	180°C	160°C
M _L , dN·m	0.6	1.4	3.0	1.6
M _H , dN·m	7.3	11.6	33.16	19
t'1, min	2.8	0.9	0.3	1.2
t'2, min	3.4	1.0	0.3	1.4
t'50, min	4.0	1.5	1.0	3.0
t'90, min	7.1	6.2	2.9	11.5
t'95, min	8.4	9.3	3.9	16.7
Tan delta at M _L	—	1.01	1.01	0.96
Tan delta at M _H	—	0.24	0.04	0.21
Vulcanizate Properties				
Original Physical Properties at RT				
Press cured, t'95 +3 min at	160°C	160°C	180°C	160°C
Modulus at 100% Elongation, MPa	2	3.8	5.6	3.9
Modulus at 200% Elongation, MPa	3.9	7.5	17.0	7.8
Modulus at 300%, MPa	5.2	9	—	11.0
Tensile Strength, MPa	7.0	10.4	26.1	18.8
Elongation, %	492	446	266	480
Hardness, Shore A	61	70	74	69
Tear Strength, die C, kN/m	31	—	30.6	39.3

(continued)

Nordel® IP 4770P (continued)
Typical Application Recipes

	Highly Extended Low-Cost Hose 0639A04-06	Dense Extruded Profile 0639A05-06	Heat-Resistant Peroxide Compound 0072A38-11	General- Purpose Compound 0639A03-06
Compression Set, Method B, pellets cured MDR t'95 + 15 min				
22 hr at -25°C	96	98	95	95
22 hr at 100°C	43	72	32	32
70 hr at 125°C	75	88	61	61
70 hr at 150°C	—	—	—	—
Temperature Retraction				
TR-10, °C	-15	—	-28	-23
Change in Properties After Aging				
Aged in Air, 70 hr at 125°C				
Modulus at 100% Elongation, MPa	4.4	8.1	5.8	5.9
Modulus Change, %	120	113	3	51
Tensile Strength, MPa	8.2	14.1	26	16.4
Tensile Change, %	17	36	—	-13
Elongation, %	243	186	265	265
Elongation Change, %	-51	-58	—	-45
Hardness, Shore A	75	80	80	77
Hardness Change, pt	14	10	6	8

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