



# Nordel® IP hydrocarbon rubber

A Product of DuPont Dow Elastomers

## Nordel® IP 4570

### Description

Nordel® IP 4570 is an amorphous EPDM grade designed for extruded applications. It is ideally suited for dense extruded profiles, coolant hose and general purpose moldings. The combination of high viscosity and low crystallinity allows for good balance of processibility, extensibility, low-temperature properties and performance.

### 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%	50	ASTM D-3900
Propylene, mass%	45	ASTM D-3900
ENB, mass%	5.0	ASTM D-6047
Molecular Weight Distribution	Medium	DuPont Dow PQ-E-034 and 036
Product Density, g/cc	0.86	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	bale	

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

**Nordel® IP 4570**  
**Typical Application Recipes**

	Heat-Resistant Peroxide Compound 0625A16-01	Dense Extruded Profile 0625A19-01	Radiator/Heater Hose 0625A22-02	General-Purpose Compound 0625A15-2
Nordel® IP 4570	100	100	100	100
Zinc Oxide	—	5	5	5
Stearic Acid	—	1	1	1
N-550 Black	50	—	—	80
N-650 Black	—	—	160	—
Ground Calcium Carbonate	—	—	30	—
Sterling ST6630 Black	—	175	—	—
Calcium Oxide	—	8	—	—
Paraffinic Oil	10	100	100	50
Sulfur	—	1	1	1.5
ZnDBC	—	1	1	2
MBTS	—	1.5	1.5	1
DPTT	—	0.75	0.75	—
TMTD	—	0.75	0.75	0.5
DCP-40% Active	7	—	—	—
<b>Total</b>	<b>167</b>	<b>394</b>	<b>401</b>	<b>241</b>
Product Density, g/cc	1.055	1.18	1.22	1.09
<b>Compound Properties</b>				
<b>Mooney Viscosity, ML 1+4, 100°C</b>	122	80	64	64
<b>Mooney Scorch at 125°C</b>				
Minimum viscosity	59	30	24	23
5 pt rise, min	11.4	20.4	16.8	10.5
10 pt rise, min	13.9	23.7	20.0	12.0
<b>0.5° Arc, 30 min chart, MDR at</b>	<b>180°C</b>	<b>160°C</b>	<b>160°C</b>	<b>160°C</b>
M <sub>L</sub> , dN·m	2.9	2.9	1.9	1.5
M <sub>H</sub> , dN·m	28.8	15.9	13.8	18.9
t'1, min	0.3	2.0	2.0	1.2
t'2, min	0.4	2.6	2.6	1.4
t'50, min	0.9	3.9	3.9	3.3
t'90, min	2.8	7.6	6.8	15.9
t'95, min	3.6	10.0	8.2	21.5
Tan delta at M <sub>L</sub>	0.89	0.847	0.867	1.013
Tan delta at M <sub>H</sub>	0.031	0.216	0.27	0.198
<b>Vulcanizate Properties</b>				
<b>Original Physical Properties at RT</b>				
<b>Press cured, t'95 +3 min at</b>	<b>180°C</b>	<b>160°C</b>	<b>160°C</b>	<b>160°C</b>
Modulus at 50% Elongation, MPa	1.9	—	—	—
Modulus at 100% Elongation, MPa	4	4.4	3.3	3.4
Modulus at 200% Elongation, MPa	12.6	—	—	—
Modulus at 300%, MPa	—	10.1	7.9	10.1
Tensile Strength, MPa	18.9	11	9.3	11.1
Elongation, %	255	355	425	330
Hardness, Shore A	64	71	65	64
<b>Tear Strength, die C, kN/m</b>	<b>22.1</b>	<b>29.9</b>	<b>37.1</b>	<b>24.5</b>
<b>Compression Set, Method B,</b>				
<b>Pellets cured MDR t'95 + 15 min</b>				
22 hr at -25°C	34	55	73	43
22 hr at 100°C	3	66	75	31
22 hr at 125°C	—	88	89	57
70 hr at 150°C	—	—	—	—

(continued)

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**Typical Application Recipes** (continued)

	Heat-Resistant Peroxide Compound 0625A16-01	Dense Extruded Profile 0625A19-01	Radiator/Heater Hose 0625A22-02	General-Purpose Compound 0625A15-2
<b>Temperature Retraction</b>				
TR-10, °C	-47	-39	-43	-45
<b>Change in Properties After Aging</b>				
<b>Aged in Air, 70 hr at 125°C</b>				
Modulus at 100% Elongation, MPa	3.7	9.9	8.34	5.3
Modulus Change, %	-8	125	153	58
Tensile Strength, MPa	17.9	13.4	12.3	11.3
Tensile Change, %	-5	22	32	2
Elongation, %	260	155	180	205
Elongation Change, %	2	-56	-58	-38
Hardness, Shore A	66	78	76	70
Hardness Change, pt	2	7	11	6
<b>Aged in Air, 70 hr at 150°C</b>				
Modulus at 100% Elongation, MPa	3.5	—	—	—
Modulus Change, %	-13	—	—	—
Tensile Strength, MPa	12	—	—	—
Tensile Change, %	-37	—	—	—
Elongation, %	215	—	—	—
Elongation Change, %	-16	—	—	—
Hardness, Shore A	67	—	—	—
Hardness Change, pt	3	—	—	—

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