

SPHERON® 6000



SPHERON® 6000 carbon black is a cost-effective carbon black that combines superior dispersion, high loading, excellent extrusion characteristics, high green strength, and very low conductivity for a variety of hose, extrusion, and molded applications.

SPHERON 6000 carbon black has been developed to provide improved performance for a wide range of hose, extrusion, and molded applications. Customers experiencing dispersion problems using ASTM N600 or N700 series carbon blacks will find special value by selecting SPHERON 6000 carbon black. This carbon black disperses quicker and easier than most conventional grades, thereby shortening mix cycle times and reducing mixing passes.

Its high electrical resistivity and excellent extrusion characteristics make SPHERON 6000 carbon black particularly well suited for improving the resistance of radiator hose compounds to electrochemical degradation. This is done without compromising other physical or processing parameters.

SPHERON 6000 carbon black gives very smooth surfaces and good elasticity in extruded profiles making it an excellent choice for low-viscosity sponge and low-hardness applications. SPHERON 6000 carbon black also demonstrates low tan delta making it appropriate for applications requiring reduced hysteresis, such as engine mounts and drive belts.

Performance Features

- Excellent dispersion
- High electrical resistivity
- Superior surface smoothness and appearance
- High green strength
- Excellent dimensional stability
- Low hysteresis
- High loadability

Typical Applications

- Automotive coolant hoses
- Hydraulic hoses
- Other automotive and industrial hoses
- Sponge and low-hardness extrusion profiles
- Low-viscosity extrusion and hose applications
- Belts
- A wide variety of molded parts

SPHERON 6000 carbon black and other custom carbon black products have been specially developed by Cabot's Industrial Products business as part of the company's ongoing commitment to exceed existing market needs and promote solutions for future product design and processing challenges.





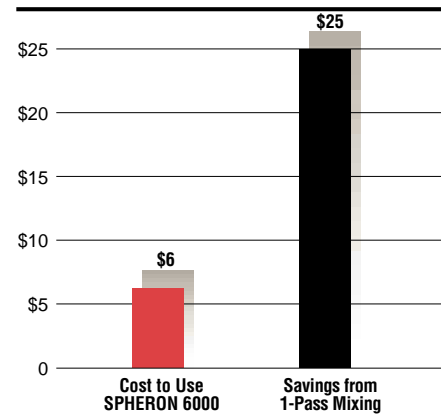
Extrusion Performance & Select Physical Properties of NBR Compounds with Various Types of Carbon Black

SPHERON 6000 carbon black delivers the best combination of properties for hose and extrusion applications. Its combination of good loading and viscosity control plus its low shrinkage, excellent smoothness, high green strength and superior dispersion make SPHERON 6000 the new choice for the majority of hose and extrusion applications.

Carbon Blacks	N650	N660	N774	N762	N990	SPHERON 6000
Hose Extrusion Performance						
Loading	80	80	95	95	140	95
Loading Rating	5	5	2	2	1	2
Mooney Viscosity – ML 1+4 @ 100C	92	74	73	70	60	90
Viscosity Rating	1	3	4	5	6	2
Extrusion Shrinkage, %	21	30	34	35	50	27
Shrinkage Rating	1	3	4	5	6	2
Extrusion –Smoothness	16/16	9/16	11/16	11/16	7/16	16/16
Garvy Rating						
Smoothness Rating	1	5	3	3	6	1
Green Strength, Mpa	0.83	0.74	0.79	0.81	0.62	1.02
Green Strength Rating	2	5	4	3	6	1
Dispersion – Philip’s Rating	8.3	7.8	8.0	7.8	9.1	9.1
Dispersion Rating	3	5	4	5	1	1
Total Extrusion Rating	13	26	21	23	20	9
Best Carbon Black NBR Hose Extrusion	2nd	6th	4th	5th	3rd	1st
Physical Properties						
Hardness Shore A	76	74	74	73	74	75
Tensile, MPa	18.39	18.25	16.60	16.39	13.5	16.73
Elongation	340	348	363	393	503	360
100% Modulus	5.78	4.60	4.32	4.16	2.93	5.18
Die C Tear – kN/m	48.34	49.91	48.16	50.79	48.98	50.01
Compression Set	72.5	71.3	70.5	71.8	68.3	70.7

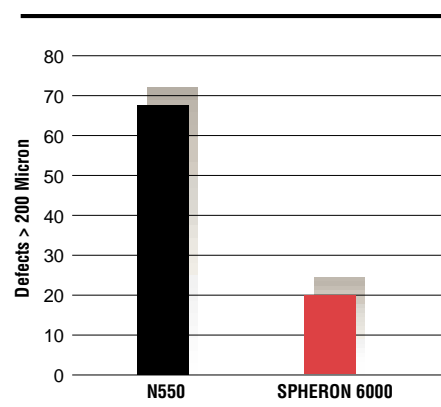
Per Batch Costs and Savings From Using Cabot’s SPHERON 6000 Carbon Black

SPHERON 6000 carbon black can deliver considerable cost savings by reducing mixing passes even if the price per pound is more than the present carbon black being replaced.



Dispersion measured by Kontron

The number of surface defects as measured by Kontron Image Analysis indicates that SPHERON 6000 carbon black delivers a much smoother surface in molded parts than conventional N550 grades.



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