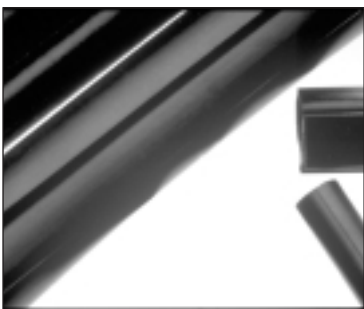


SPHERON® 1416



Description

SPHERON® 1416 furnace carbon black is a pelleted reinforcing grade with a surface area between the classes previously known as "Fast Extrusion Furnace" black (FEF) and "High Abrasion Furnace" black (HAF). Its particles are highly aggregated with DBPA and C-DBPA structure values higher than for STERLING SO/ASTM N550. The medium surface area offers good rubber reinforcement and the high structure allows good processing, good dimensional stability and smooth extruded surfaces. It makes SPHERON 1416 carbon black more reinforcing and higher UHF active without sacrificing much on dispersibility compared to ASTM N550. It allows higher compound extension with plasticizer and white fillers resulting in reduced overall compound costs.

Applications

The morphology of SPHERON 1416 carbon black makes this black capable of replacing blends of semi reinforcing and reinforcing black in rubber compounds without losing physical properties like Tensile and Tear Strength at usually improved dispersion and product durability.

The good reinforcement and low heat build up in comparison with traditional N300 reinforcing carbon black grades makes SPHERON 1416 carbon black an interesting choice for demanding dynamic applications.

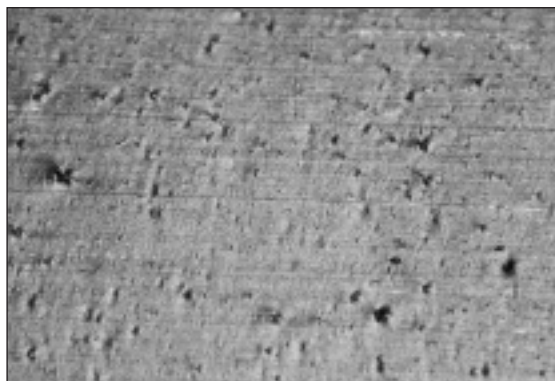
SPHERON 1416 carbon black has found its way into a variety of Industrial Product applications, ranging from brake and TDI hoses to building profile and automotive door seal application.



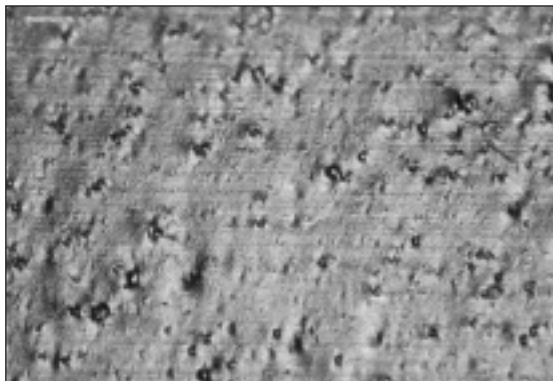
SPHERON 1416 carbon black has a higher structure and surface area as ASTM N550 carbon black. The rubber reinforcing properties approach N300 type grades, but at considerable better dispersion and smoother extrusion. These SPHERON 1416 carbon black performance features are shown in below comparison against ASTM N358 and N550 at equal hardness in a EPDM test formulation (100 phr EPDM, see table for phr carbon black, 75 phr oil):

Carbon Black Grade	SPHERON 1416	ASTM N358	ASTM N550
Carbon Black Loading (phr)	110	90	120
Viscosity @ 100° C ML (1+4), (MU)	65	64	70
Hardness Shore A, (max.)	70	70	71
Zwick Rebound Rebound @ 23°C, (%)	45	44	46
Volume Resistivity Cabot Method R, (ohms, cm)	120	110	220
Tensile Properties			
Tensile Strength, (MPa)	15.2	15.6	14.4
Elongation @ Break, (%)	400	402	352
100% Modulus (MPa)	3.9	3.3	4.7
300% Modulus (MPa)	11.9	11.6	13.1

Photos taken at 25x magnification of 1 mm thin, extruded tape surfaces of the compounds above show better dispersion for SPHERON 1416 carbon black vs. ASTM N300 carbon black:



SPHERON 1416, (110 phr)



ASTM N358, (90 phr)

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