

The FDA has established a standard (21CFR 178.3297) for carbon blacks produced by the furnace process that are to be used in indirect food contact applications. This standard requires that carbon black aggregates when incorporated as a colorant in polymers do not migrate out of the substrate into the food product. Furthermore, trace amounts of polycyclic aromatic hydrocarbons (PAHs) which can be generated during the production of carbon black are strongly bound to the surface of the black. However, in order to lessen any concerns regarding PAHs, the FDA code requires that the usage of furnace blacks meet the following criteria:

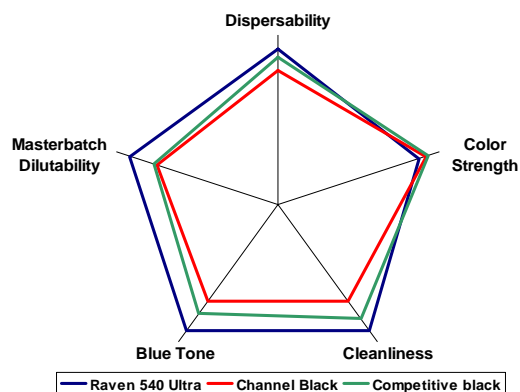
- Total amounts of 22 PAHs specified by FDA must not exceed a total amount of 0.5 ppm
- The amount of Benzo(a)pyrene must not exceed 5 ppb

Compliance with 21CFR 178.3297 requires that the loading of furnace blacks, conforming with the above two requirements, must not in excess of 2.5% by weight of the polymer in the end use product.

Raven 540 Ultra[®] is **Columbian's** newest product that complies with the FDA requirements found in 21CFR 178.3297. **Raven 540 Ultra[®]** offers a balance of exceptional purity, performance and economics.

Typical Properties of Raven 540 Ultra[®]

Analytical Property	Value
Particle size, nm	40
Nitrogen Surface Area, m ² / g	66
STSA, m ² / g	57
Tint Strength, % ITRB#3	66
OAN, mL/100g	150
Total PAH, ppm	<0.5
Benzo(a)pyrene, ppm	<0.005



Summary of Performance Advantages Raven 540 Ultra[®]

- Complies with **21 CFR 178.3297**
- Ease of dispersion
- Significantly lower PAH and BAP content than any channel black available today



Columbian's Technical Inquiry Team is ready to respond to your applications questions.

1-800-235-4003 ext. 9335 e-mail: iteam@columbianchemicals.com

For samples please call Columbian's Customer Service.
1-800-U-CARBON (1-800-822-7266).

WWW.COLUMBIANCHEMICALS.COM

1800 West Oak Commons Court
Marietta, Georgia 30062

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