. S. Department of Commerce
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nal Bureau of Standards
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Certificate

STANDARD REFERENCE MATERIAL 1476
Branched Polyethylene
(Whole Polymer)

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This standard reference material is intended for the calibration of instruments used in polymer science and technology.

Quantity	Average Values	Estimate of Precision	No. of Points or Measurements
Limiting Viscosity Number (dl/g)			
In 1-chloronaphthalene at 130 °C	0.8132	0.0033*	14
In 1,2,4-trichlorobenzene at 130 °C	.9024	.0034*	30
In decalin[a] at 130 °C	1.042	.0022*	5
Melt Index (g/10 min)[b]	1.19	.010†	35
Density (g/cm^3) at 23 °C[c]	0.9312	.0006†	10

*Standard deviation of the intercept of the least squares line.
†Standard deviation of a single determination.

[a]"Technical" grade, a mixture of cis- and trans-decahydronaphthalene.
[b]By Procedure A, ASTM Method D1238-65T, Test Condition E, 190 °C, load 2160 g.
[c]By ASTM Method D1505-67T; Sample prepared by Procedure A, ASTM Method D1928-68.

The sample of branched polyethylene was obtained from the Union Carbide Corporation of South Charleston, West Virginia.

No pellet to pellet variation in limiting viscosity number could be found. The manufacturer has added to the polymer 50 ppm of the antioxidant Santonox (Monsanto), which is 4,4′-thio-*bis*(6-*t*-butyl-3-cresol).

The maximum rate of shear in the Ubbelohde viscometer was about 1500 sec^{-1}. All the measurements were carried out at specific viscosities (0.1 or less) which are sufficiently low for negligible shear rate dependence.

A report describing the investigations required for this certificate will be published in the Journal of Research of the National Bureau of Standards, Section A.

Measurements leading to the certification of this material were performed in the Molecular Properties and Characterization Section of the Polymer Division.

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J. Paul Cali, Acting Chief
Office of Standard Reference Materials