



## Edgetek™ 5209 Black 30 A 1

### Acetal (POM) Copolymer

#### Key Characteristics

##### Product Description

The Edgetek® Engineering Thermoplastic Compounds portfolio covers a broad range of standard and custom-formulated high performance materials. This portfolio includes high-temperature materials for elevated service temperature environments, high-modulus / structural materials for load-bearing and high-strength applications and flame-retardant products. These compounds are based on select engineering thermoplastic resins that are compounded with reinforcing additives such as carbon fiber, glass fiber and glass beads.

##### General

|                       |   |   |   |
|-----------------------|---|---|---|
| Material Status       | • Commercial: Active  |   |   |
| Regional Availability | • Africa & Middle East<br>• Asia Pacific                        | • Europe<br>• Latin America                             | • North America                                     |
| Features              | • Copolymer<br>• General Purpose                                | • Low Friction<br>• Wear Resistant                      |   |
| Uses                  | • Automotive Applications<br>• Bearings<br>• Business Equipment | • Consumer Applications<br>• Gears<br>• General Purpose | • Industrial Applications<br>• Pulleys<br>• Rollers |
| Appearance            | • Black   |   |   |
| Forms                 | • Pellets   |   |   |
| Processing Method     | • Injection Molding   |   |   |

#### Technical Properties <sup>1</sup>

| Physical   | Typical Value (English) | Typical Value (SI) | Test Method |
|--|-------------------------|--------------------|-------------|
| Specific Gravity                                       | 1.41                    | 1.41               | ASTM D792   |
| Melt Mass-Flow Rate (MFR) <sup>2</sup> (190°C/2.16 kg) | 8.2 g/10 min            | 8.2 g/10 min       | ASTM D1238  |
| Molding Shrinkage - Flow                               | 0.025 to 0.027 in/in    | 2.5 to 2.7 %       | ASTM D955   |
| Water Absorption (24 hr, 0.125 in (3.18 mm))           | 0.20 %                  | 0.20 %             | ASTM D570   |
| Mechanical   | Typical Value (English) | Typical Value (SI) | Test Method |
| Tensile Modulus <sup>3</sup>                           | 365000 psi              | 2520 MPa           | ASTM D638   |
| Tensile Strength <sup>3</sup> (Yield)                  | 9500 psi                | 65.5 MPa           | ASTM D638   |
| Tensile Elongation <sup>3</sup> (Break)                | 40 %                    | 40 %               | ASTM D638   |
| Flexural Modulus                                       | 365000 psi              | 2520 MPa           | ASTM D790   |
| Flexural Strength                                      | 13000 psi               | 89.6 MPa           | ASTM D790   |
| Impact   | Typical Value (English) | Typical Value (SI) | Test Method |
| Notched Izod Impact                                    |                         |                    | ASTM D256A  |
| 73°F (23°C), 0.125 in (3.18 mm), Injection Molded      | 1.3 ft·lb/in            | 69 J/m             |             |
| Thermal  | Typical Value (English) | Typical Value (SI) | Test Method |
| Deflection Temperature Under Load                      |                         |                    | ASTM D648   |
| 264 psi (1.8 MPa), Unannealed, 0.125 in (3.18 mm)      | 230 °F                  | 110 °C             |             |
| CLTE - Flow  | 4.8E-5 in/in/°F         | 8.6E-5 cm/cm/°C    | ASTM D696   |

Copyright © 2016 PolyOne Corporation. PolyOne makes no representations, guarantees, or warranties of any kind with respect to the Information contained in this document about its accuracy, suitability for particular applications, or the results obtained or obtainable using the information. Some of the Information arises from laboratory work with small-scale equipment which may not provide a reliable indication of performance or properties obtained or obtainable on larger-scale equipment. Values reported as "typical" or stated without a range do not state minimum or maximum properties; consult your sales representative for property ranges and min/max specifications. Processing conditions can cause material properties to shift from the values stated in the Information. PolyOne makes no warranties or guarantees respecting suitability of either PolyOne's products or the Information for your process or end-use application. You have the responsibility to conduct full-scale end-product performance testing to determine suitability in your application, and you assume all risk and liability arising from your use of the Information and/or use or handling of any product. POLYONE MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, either with respect to the Information or products reflected by the Information. This data sheet shall NOT operate as permission, recommendation, or inducement to practice any patented invention without permission of the patent owner.

## Processing Information

| Injection              | Typical Value (English) | Typical Value (SI) |
|------------------------|-------------------------|--------------------|
| Drying Temperature     | 180 °F                  | 82.2 °C            |
| Drying Time            | 2.0 hr                  | 2.0 hr             |
| Processing (Melt) Temp | 370 to 410 °F           | 188 to 210 °C      |
| Mold Temperature       | 120 to 180 °F           | 48.9 to 82.2 °C    |

## Notes

<sup>1</sup> Typical values are not to be construed as specifications.

<sup>2</sup> Procedure A

<sup>3</sup> Type I, 0.20 in/min (5.1 mm/min)

## CONTACT INFORMATION

## Americas

United States - Avon Lake  
+1 440 930 1000

United States - McHenry  
+1 815 385 8500

## Asia

China - Guangzhou  
+86 20 8732 7260

China - Shenzhen  
+86 755 2969 2888

China - Suzhou  
+86 512 6823 24 38

China - Suzhou  
+86 512 6265 2600

Hong Kong -  
+852 2690 5332

Taiwan - Yonghe City,  
+886 9396 99740, +886 2929 1849

## Europe

Germany - Gaggenau  
+49 7225 6802 0

Spain - Barbastro (Huesca)  
+34 974 310 314



*Beyond Polymers.*

*Better Business Solutions. <sup>SM</sup>*

[www.polyone.com](http://www.polyone.com)

## PolyOne Americas

33587 Walker Road  
Avon Lake, Ohio 44012  
United States  
+1 440 930 1000  
+1 866 POLYONE

## PolyOne Asia

No. 88 Guoshoujing Road  
Z.J Hi-tech Park, Pudong  
Shanghai, 201203, China  
+86 21 5080 1188

## PolyOne Europe

6 Giällewee  
+352 269 050 35

Copyright ©, 2016 PolyOne Corporation. PolyOne makes no representations, guarantees, or warranties of any kind with respect to the Information contained in this document about its accuracy, suitability for particular applications, or the results obtained or obtainable using the information. Some of the Information arises from laboratory work with small-scale equipment which may not provide a reliable indication of performance or properties obtained or obtainable on larger-scale equipment. Values reported as "typical" or stated without a range do not state minimum or maximum properties; consult your sales representative for property ranges and min/max specifications. Processing conditions can cause material properties to shift from the values stated in the Information. PolyOne makes no warranties or guarantees respecting suitability of either PolyOne's products or the Information for your process or end-use application. You have the responsibility to conduct full-scale end-product performance testing to determine suitability in your application, and you assume all risk and liability arising from your use of the Information and/or use or handling of any product. POLYONE MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, either with respect to the Information or products reflected by the Information. This data sheet shall NOT operate as permission, recommendation, or inducement to practice any patented invention without permission of the patent owner.