

# TECAFORM® AH FG Blue (Food Grade Acetal Copolymer)

Compare TECAFORM AH FG Blue



TECAFORM® FG Blue is Ensinger's new blue colored acetal designed specifically for the food industry. TECAFORM® is resistant to hot water, and typical cleaning chemicals, and it possesses good bearing and wear properties. Its blue color makes it more visible than standard grades. TECAFORM® is commonly used as bushings, rollers, wear strips and other applications requiring a combination of strength, low moisture absorption, chemical resistance and dimensional stability.

- **No centerline porosity**
- **Low moisture absorption**
- **Excellent machinability**
- **Good combination of mechanical properties**
- **Resistance to food industry cleaning chemicals**  
TECAFORM® FG BLUE is resistant to aqueous solutions with pH values ranging from 4 to 14.
- **Good wear and abrasion properties**
- **Good dimensional stability**
- **Good property retention at elevated temperatures**

*TECAFORM® is used in a wide variety of food industry applications requiring good strength and toughness, dimensional stability, wear resistance and the ability to operate in a wet environment with little absorption. Material handling, filling and bottling equipment are some of the common machines utilizing TECAFORM®'s combination of properties. Typical applications are gears, wear strips, bushings, pump parts, fittings and rollers.*

|                   | Properties                    | Condition           | Units             | Value           |
|-------------------|-------------------------------|---------------------|-------------------|-----------------|
|                   | Chemical Designation          |                     |                   | POM             |
| <b>Physical</b>   | Filler                        |                     |                   | Food Grade Blue |
|                   | Density                       |                     | g/cm <sub>3</sub> | 1.41            |
|                   | Tensile Modulus               | @ 73 jF             | PSI               | 250,000         |
|                   | Tensile Strength @ Yld        | @ 73 jF             | PSI               | 8,800           |
|                   | Tensile Strength @ Brk        | @ 73 jF             | PSI               | 9,700           |
|                   | Shear Strength                | @ 73 jF             | PSI               |                 |
|                   | Elongation @ Yld              | @ 73 jF             | %                 | 9               |
|                   | Elongation @ Brk              | @ 73 jF             | %                 | 25              |
|                   | Flexural Modulus              | @ 73 jF             | PSI               | 400,000         |
|                   | Flexural Strength             | @ 73 jF             | PSI               | 12,000          |
| <b>Mechanical</b> | Compressive Modulus           | @ 73 jF             | PSI               | 334,000         |
|                   | Compressive Strength          | @ 73 jF, 10% strain | PSI               | 11,500          |
|                   | Izod (charpy) Impact Strength | @ 73 jF             | ft-lbs/in         | 1.1             |
|                   | Rockwell Hardness             | @ 73 jF             | M (R) Scale       | 86              |
|                   | Coefficient of Friction       | Static              |                   |                 |

## TECAFORM® AH FG blue - Stock Shapes

### Chemical Designation

POM-C (Polyacetal (Copolymer))

### Colour

blue

### Density

1.41 g/cm<sup>3</sup>

### Main features

- food grade blue
- low moisture absorption
- easily machinable to tight tolerance
- good mechanical properties
- good wear properties

### Target Industries

- food processing
- conveyor technology
- packaging and paper machinery
- pharmaceutical industry
- engineering for beverage filling systems

| Mechanical properties                 | condition                     | value   | test method | comment                              |
|---------------------------------------|-------------------------------|---|-------------|--------------------------------------|
| Modulus of elasticity (tensile test)  | @ 73 °F                       | 250,000 psi   | ASTM D 638  | (1) Data obtained from public source |
| Tensile strength at yield             | @ 73 °F                       | 8,800 psi   | ASTM D 638  | (2) Data obtained from public source |
| Tensile strength at break             | @ 73 °F                       | 9,700 psi   | ASTM D 638  | (3) Data obtained from public source |
| Elongation at yield                   | @ 73 °F                       | 9 %   | ASTM D 638  | (4) Injection molded data            |
| Elongation at break                   | @ 73 °F                       | 25 %  | ASTM D 638  | (5) Injection molded data            |
| Flexural strength                     | @ 73 °F                       | 12,000 psi  | ASTM D 790  |                                      |
| Modulus of elasticity (flexural test) | @ 73 °F                       | 400,000 psi   | ASTM D 790  |                                      |
| Compression strength                  | @ 73 °F, 1% strain            | 1,200 psi   | ASTM D 695  |                                      |
| Compression strength                  | @ 73 °F, 10% strain           | 11,500 psi  | ASTM D 695  | 3)                                   |
| Impact strength (Izod)                | @ 73 °F                       | 1.1 ft-lbs/in                                       | ASTM D 256  |                                      |
| Rockwell hardness                     | M Scale                       | 86  | ASTM D 785  |                                      |
| Coefficient of friction               | Dynamic, 40 psi, 50 fpm       | 0.21 %  | ASTM D 3702 | 4)                                   |
| Wear rate                             | Against Steel, 40 psi, 50 fpm | 65*10 <sup>-10</sup> in <sup>3</sup> -min/ft-lbs-hr | ASTM D 3702 | 5)                                   |

| Thermal properties       | condition    | value                         | test method | comment |
|--------------------------|--------------|-------------------------------|-------------|---------|
| Melting temperature      |              | 329 °F                        | -           | 1)      |
| Deflection temperature   | @264 psi     | 230 °F                        | ASTM D 648  | 2)      |
| Deflection temperature   | @ 66 psi     | 316 °F                        | ASTM D 648  | 3)      |
| Service temperature      | Intermittent | 285 °F                        | -           | 4)      |
| Service temperature      | Long Term    | 195 °F                        | -           | 5)      |
| Thermal expansion (CLTE) |              | 4.7*10 <sup>-5</sup> in/in/°F | ASTM D 696  | 6)      |

| Electrical properties  | condition            | value                          | test method | comment |
|------------------------|----------------------|--------------------------------|-------------|---------|
| Volume resistivity     |                      | 1.0*10 <sup>-14</sup> Ω/square | ASTM D 257  | 1)      |
| Dielectric strength    |                      | 500 V/mil                      | ASTM D 149  | 2)      |
| Dissipation factor     | @ 60HZ, 73°F         | 0.001                          | -           | 3)      |
| Dielectric loss factor | @60 Hz, 70°          | 0.001                          | ASTM D 150  | 4)      |
| Dielectric constant    | @ 60HZ, 73°F, 50% RH | 3.7                            | ASTM D 150  | 5)      |

| Other properties    | condition           | value  | test method | comment |
|---------------------|---------------------|--------|-------------|---------|
| Moisture absorption | @ saturation, 73 °F | 0.8 %  | ASTM D 570  |         |
| Moisture absorption | @ 24 hrs, 73 °F     | 0.22 % | ASTM D 570  |         |

→ Resin specification:  
ASTM D6778-06 POM0211 superseding ASTM D4181-00 POM211  
Shapes specification:  
ASTM D6100-11 S-POM211

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|                   |                             |                        |                  |           |
|-------------------|-----------------------------|------------------------|------------------|-----------|
|                   | Vicat Softening Point       |                        | iF               |           |
|                   | Melting Temperature         |                        | iF               | 329       |
|                   | Heat Deflection Temperature | @ 66                   | iF               | 316       |
|                   | Heat Deflection Temperature | @ 264                  | iF               | 230       |
| <b>Thermal</b>    | Service Temperature         | Intermittent           | iF               | 285       |
|                   | Service Temperature         | Long Term              | iF               | 195       |
|                   | Thermal Expansion (CLTE)    |                        | in/in/iF         | 4.7*10-5  |
|                   | Specific Heat               |                        | BTU/lb-iF        |           |
|                   | Thermal Conductivity        |                        | BTU-in/hr-ft_-iF |           |
|                   | Surface Resistivity         |                        | ohms/square      |           |
|                   | Volume Resistivity          |                        | ohm-cm           | 1.0*10-14 |
| <b>Electrical</b> | Dielectric Strength         |                        | V/mil            | 500       |
|                   | Dielectric Constant         | @ 60 HZ, 73 iF, 50% RH |                  | 3.7       |
|                   | Dissipation Factor          | @ 60 Hz, 73 iF         |                  | 0.001     |
|                   | Moisture Absorption         | @ 24 hrs, 73 iF        | %                | 0.22      |
|                   | Moisture absorption         | @ Saturation, 73 iF    | %                | 0.8       |
| <b>Other</b>      | Flammability                | UL 94                  |                  | HB        |
|                   | Food Grade                  |                        |                  | Y         |
|                   | Relative Cost               |                        |                  | \$        |