

## TECAPAI® CM XP440 black-green - Stock Shapes (rods, plates, tubes)

### Chemical Designation

PAI (Polyamide-imide)

### Colour

black green

### Density

1.46 g/cm<sup>3</sup>

### Fillers

graphite, PTFE

production process: compression moulding

### Main features

- excellent wear properties
- very good thermal stability
- excellent dimensional stability
- good machinability

### Target Industries

- oil and gas industry
- chemical and refinery industry
- chemical plant engineering
- process engineering
- aircraft and aerospace technology

| <i>Mechanical properties</i>          | <i>condition</i> | <i>value</i> |                            | <i>test method</i> | <i>comment</i>  |
|---------------------------------------|------------------|--------------|----------------------------|--------------------|---|
| Modulus of elasticity (tensile test)  |                  | 580,000      | psi                        | ASTM D 638         |   |
| Tensile strength at break             |                  | 9,300        | psi                        | ASTM D 638         |   |
| Elongation at break                   |                  | 3.1          | %                          | ASTM D 638         |   |
| Flexural strength                     |                  | 15,000       | psi                        | ASTM D 790         |   |
| Modulus of elasticity (flexural test) |                  | 580,000      | psi                        | ASTM D 790         |   |
| Compression strength                  | 1% strain        | 4,500        | psi                        | ASTM D 695         |   |
| Compression strength                  | 10% strain       | 22,000       | psi                        | ASTM D 695         |   |
| Compression modulus                   |                  | 350,000      | psi                        | ASTM D 695         |   |
| Impact strength (Izod)                | notched          | 0.6          | ft-lbs/in                  | ASTM D 256         |   |
| Shore hardness                        | D scale          | 88           |                            | ASTM D 2240        |   |
| Coefficient of friction               | static           | 0.14         |                            | ASTM D 1894        |   |
| Coefficient of friction               | dynamic          | 0.18         |                            | ASTM D 1894        |   |
| <i>Thermal properties</i>             | <i>condition</i> | <i>value</i> |                            | <i>test method</i> | <i>comment</i>  |
| Glass transition temperature          |                  | 529          | °F                         | ASTM D3418         |   |
| Deflection temperature                | @ 264 psi        | 500          | °F                         | ASTM D 648         |   |
| Thermal expansion (CLTE)              | -40 °F to 302 °F | 1.94         | *10 <sup>-5</sup> in/in/°F | ASTM E 831         |   |
| <i>Other properties</i>               | <i>condition</i> | <i>value</i> |                            | <i>test method</i> | <i>comment</i>  |
| Limiting PV                           |                  | 9,300        | psi-fpm                    | ASTM D 3702        | 1) (1) Calculated using a factor of safety of 4 with a testing speed 100 fpm. |
| Moisture absorption                   | 24 hr immersion  | 0.2          | %                          | ASTM D 570         |   |
| Moisture absorption                   | saturation       | 1.6          | %                          | ASTM D 570         |   |
| Flammability (UL94)                   | 3.3 mm           | V-0          |                            | -                  |   |

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