

# POTICON IT3

Polyether Imide  
Otsuka Chemical Co., Ltd.

Message:

The Poticon series features a potassium titanate micro-filler compounded in thermoplastic resins to provide outstanding micro-reinforcement and dimensional stability. The excellent surface smoothness of these compounds limits friction toward opposing materials, reducing wear and allowing for greaseless applications. Moreover, as Poticon diminishes damage toward the mold and metal die and offers excellent recyclability, it also decreases processing costs.

- Advantages
- Microscopic reinforcement
  - Superior friction sliding and wear reduction
  - Excellent dimensional accuracy and surface smoothness
  - Highly recyclable

- Applications
- Automotive Parts (gears, bearings)
  - LED Reflectors
  - Watch Parts (gears, ground plane)
  - Camera (image stabilization parts)
  - Sliding Parts (gears, wheel bearing)
  - Camera Module Parts
  - Motor Parts (cog-wheels, bearings)
  - IT3 Property: Dimension accuracy

| General Information            |                                 |                   |             |
|--------------------------------|---------------------------------|-------------------|-------------|
| Features                       | High Dimensional Stability      |                   |             |
|                                | Low friction coefficient        |                   |             |
|                                | Recyclable materials            |                   |             |
| Uses                           | LEDs                            |                   |             |
|                                | Gear                            |                   |             |
|                                | Application in Automobile Field |                   |             |
|                                | Camera application              |                   |             |
|                                | Bearing                         |                   |             |
| Processing Method              | Injection molding               |                   |             |
| Physical                       | Nominal Value                   | Unit              | Test Method |
| Specific Gravity               | 1.41                            | g/cm <sup>3</sup> | ASTM D792   |
| Molding Shrinkage              |                                 |                   |             |
| Flow                           | 0.40                            | %                 |             |
| Transverse flow                | 0.60                            | %                 |             |
| Water Absorption (Equilibrium) | 0.25                            | %                 | ASTM D570   |
| Hardness                       | Nominal Value                   | Unit              | Test Method |
| Rockwell Hardness (M-Scale)    | 109                             |                   | ASTM D785   |
| Mechanical                     | Nominal Value                   | Unit              | Test Method |
| Tensile Strength               | 108                             | MPa               | ASTM D638   |
| Tensile Elongation (Break)     | 3.5                             | %                 | ASTM D638   |

|   |                             |  |             |
|---|-----------------------------|--|-------------|
| Flexural Modulus                              | 5700                        | MPa                                    | ASTM D790   |
| Flexural Strength                             | 157                         | MPa                                    | ASTM D790   |
| Coefficient of Friction (vs. Steel - Dynamic) | 0.36                        |  |             |
| Abrasion Loss                                 |                             |  |             |
| -- <sup>1</sup>                               | 435                         | 10 <sup>-3</sup> mm <sup>3</sup> /N·km |             |
| of counterpart <sup>2</sup>                   | 0.00                        | 10 <sup>-3</sup> mm <sup>3</sup> /N·km |             |
| Heat Distortion                               | 206                         | °C                                     | ASTM D648   |
| Impact  | Nominal Value               | Unit                                   | Test Method |
| Notched Izod Impact                           | 20                          | J/m                                    | ASTM D256   |
| Thermal                                       | Nominal Value               | Unit                                   | Test Method |
| CLTE - Flow                                   | 2.9E-5                      | cm/cm/°C                               | ASTM D696   |
| Injection                                     | Nominal Value               | Unit                                   |             |
| Processing (Melt) Temp                        | 350 - 420                   | °C                                     |             |
| Mold Temperature                              | 80 - 120                    | °C                                     |             |
| Injection Pressure                            | 80.0 - 140                  | MPa                                    |             |
| NOTE  |                             |  |             |
| 1.  | Surface pressure: 1MPa      |  |             |
| 2.  | Slipping velocity: 0.3m/sec |  |             |

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