

# POKETONE (Polyketone) What is it?

Unique engineering plastic, the polymer of which backbone consists of only Carbons.

Highly crystalline with compact crystal structure.

Excellent impact resistance, abrasion resistance, chemical resistance, fuel resistance, and gas barrier properties.

- **Manufactured in Seoul, South Korea by Hyosung** – Currently 110 Million lbs. per year of capacity with capacity authorization to double the output per year by 2020.
- **Competing Resins: All Nylons, PBT, POM (Acetal)**
- **Performance:**
  - High Impact Strength – Impact/Fatigue (2X of POM)
  - Excellent Chemical Resistance – Automotive Fluids, Hydrocarbon Solvents, Salts
  - Excellent Wear Resistance – Wear and Friction better than POM
  - Exceptional Barrier Properties – Gasoline, Diesel (2X of PA12)
  - Good Flame Retardancy – Only half of flame retardant is necessary to meet UL V-0 Rating
  - Stable Dimensions – After 24 hours and in Moisture Environments

|   | PP    | POM   | POK   | PA6   | PA66  | PBT   |
|---|-------|-------|-------|-------|-------|-------|
| Glass Transition Temp, T <sub>g</sub> , °C      | -35   | -30   | 15    | 47    | 50    | 66    |
| Crystalline Melting Pt, T <sub>m</sub> , °C     | 168   | 177   | 210   | 223   | 275   | 223   |
| HDT, 66 psi (0.45 MPa), °C                      | 104   | 156   | 205   | 160   | 200   | 154   |
| HDT, 264 psi (1.8 MPa), °C                      | 82    | 101   | 105   | 54    | 70    | 54    |
| Specific Gravity                                | 0.9   | 1.41  | 1.24  | 1.14  | 1.14  | 1.31  |
| Moisture Absorption, 24hr/23 °C                 | 0.05  | 0.2   | 0.3   | 1.2   | 1.2   | 0.25  |
| Dimensional Change, 24hr/23 °C H <sub>2</sub> O | 0.0   | 0.0   | 0.2   | 3.0   | 2.7   | 0.0   |
| Mold Shrinkage, in/in                           | 0.012 | 0.020 | 0.020 | 0.016 | 0.018 | 0.018 |

- **Markets:**
  - **Automotive** – Radiator End Tanks, Junction Box, Clip Holders, Cable Box, Fuel Tank Fuel Doors, Fuel Line, Connector, Wheel Cover
  - **Electrical/Electronics** – Electrical Switch, Gears, Connectors, CDU Stacker, Refrigerator Door Closer
  - **Appliance** – Water Meter, Water Filtration System, Pump Housings, and Water Filters
  - **Industrial** – Rail Fastening System, Conveyor Belts, Cosmetic Containers, Industrial Wheels, Helmet components, Cable Ties, Oil Seal, Pipe and Tubing
  - **Medical** – Equipment Housings
- **Injection Molders Benefits: Easy Mold Ability**
  - **Short Cycle Times** – Low Clamp-force Requirements
  - **Easy Drying** – (Not Sensitive to Humidity) – Superior Flow Ability