

HYTAC[®] - FLX

Durable/High Finish
Syntactic Material

Technical Bulletin



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Innovative Tooling Materials for Thermoforming

Overview

HYTAC-FLX is high performance syntactic materials. This thermoset copolymer syntactic is quite unique : providing the **toughness** and **flexibility** of a thermoplastic, with the thermal stability of a thermoset.

FLX has the **low thermal conductivity** and specific heat needed by thermoformers for their process; yielding better **material distribution** and **clarity, reduced mark-off**, lower start-up and cycle times, and lower plug operating temperatures. It also offers the added machining benefit of **little or no dust** and minimal wear on tools. Further, this tough syntactic may be **easily polished** to a smooth surface for better part finish.

FLX may be used in plug applications with a wide range of polymer sheet material, but is especially suited to areas requiring **high durability**.

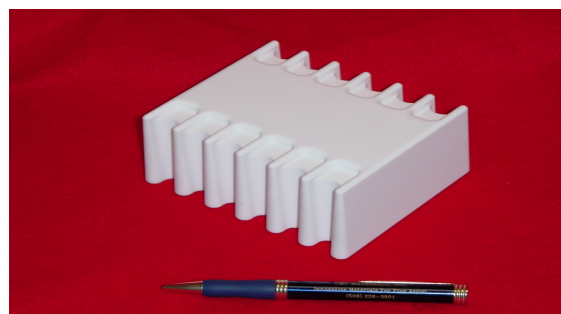
As compared to standard epoxy syntactics, **FLX** has been designed with : - 1.5 times the flex strength

- 5 times the toughness.
- 4 times the elongation to break,

FLX will withstand the most rigorous plug environment without the brittle failure often encountered in epoxy syntactics. **PP, PET & OPS, ... applications with need of hight toughness & elongation**

HYTAC-FLX has these outstanding attributes:

- **Good Dimensional Stability**
- **Excellent Toughness and Durability**
- **Superb Machinability**
- **Temperature Resistance**
- **Low Thermal Conductivity**



Property	HYTAC-FLX
Color	Almond
Density (lb/ft ³)	58-62 lb/ft ³ [0.92 - 0.99 g/cc]
Hardness Shore D	86
Flexural Strength	10,000 psi [68.9 Mpa]
Flexural Modulus	503 ksi [3.49 Gpa]
Thermal Conductivity	0.10 BTU /hr-ft-°F [0.17 W/m°K]
Specific Heat	0.28 BTU/(lb•°F) [1.19 kJ/(kg•°C)]
Coefficient of Thermal Expansion (in/in/°F)	40.0 x 10 ⁻⁶ (in/in/°F) 72 x 10 ⁻⁶ (mm/mm/°C)
Service Temperature	350 °F [180 °C]