

# CMT Materials, Inc.

## Innovative Tooling Materials for Thermoforming



CMT Materials, Inc. is the acknowledged leader in plug assist thermoforming materials. Working directly with thermoformers, tool & mold makers and machine builders, we have developed a family of products that allow our customers to utilize the right material for their specific part and sheet application. HYTAC® products are available in rod, sheet and block, in a wide variety of sizes. Customer needs are also met with a one-part castable system, custom cast and custom cutting. A large inventory of product on-hand is available for shipment on the day of order.

### HYTAC-W (Thermoset Syntactic)

Entry level thermoset for use with PVC, PS or PE

### HYTAC-B1X (Thermoplastic Syntactic)

Industry leading syntactic for durability and fine detail

### HYTAC-WF (Thermoset Syntactic)

High strength, high temperature, smooth surface finish

### HYTAC-WFT (Thermoset Syntactic)

Teflon® impregnated, smooth surface

### HYTAC-FLX (Thermoset Syntactic)

Optimized for easy machining, good durability, smooth surface finish

### HYTAC-Rx-L1 (Thermoset Syntactic)

Specifically formulated and registered for pharmaceutical blister packaging. Low Stick surface version.

### HYTAC-FLXT (Thermoset Syntactic)

Teflon® impregnated, easy release for transparent plastics, multi-layer or barrier plastics. Ultra smooth surface

### HYTAC-Rx-H1 (Thermoset Syntactic)

Specifically formulated and registered for pharmaceutical blister packaging. High Stick surface version

**CUSTOM CAST** For unique shapes/sizes/requirements, CMT offers both custom casting/cutting capability and a premixed yet uncured castable product that may be cast/poured at a customer site. Contact CMT with your requirements.

Product	Color	Service Temperature		Thermal Conductivity		Flexural Toughness (ASTM D790)		Typical CNC Finish (µin) Ra*	Coefficient Thermal Expansion	
		°F	°C	BTU/hr-ft-°F	W/m²K	Psi	kPa		x10 <sup>-6</sup> /in/in°F	x10 <sup>-6</sup> m/m/°C
HYTAC-W	White	350	176	0.07	0.11	2.7	18.6	54	22	41
HYTAC-WF	White	450	232	0.11	0.19	4.7	32.4	28	18	32
HYTAC-WFT	Light Green	425	218	0.11	0.19	4.5	31.0	24	20	37
HYTAC-FLX	Pink	350	176	0.07	0.11	7.6	52.4	22	23	42
HYTAC-FLXT	Dark Green	350	176	0.10	0.17	7.2	49.6	21	20	36
HYTAC-B1X	Light Blue	350	176	0.11	0.19	11.6	80.0	39	38	68
HYTAC-Rx-L1	White	450	232	0.10	0.17	3.9	26.9	24	25	46
HYTAC-Rx-H1	Cream	450	232	0.08	0.14	4.3	29.7	22	25	46

\* Ra values from CNC milled surface using 2 upcut spiral plastic cutting end mill. Measurements taken with Mahr Federal Pocket Surf III.

\*\* Samples did not break. Toughness value at 5% strain reported.

## Application and Machining Considerations:

Attribute	W	WF	WFT	FLX	FLXT	B1X	Rx-L1	Rx-H1
Ease in Machining	1	2	3	5	5	5	3	2
Eliminates Dust in Machining	1	2	3	4	4	5	3	2
Resistance to Abuse	2	3	3	4	4	5	3	3
Durability with Fine Detail	2	3	3	4	4	5	3	3
Material Distribution	3	4	4	5	5	5	4	4
Polishing	2	4	5	5	5	3	4	4
Use with Transparent Plastic	3	3	4	4	5	4	4	4
Minimal Scratch of Sidewall	2	3	4	4	4	4	4	4
Low Stick Surface	2	3	5	2	5	3	5	2
High Friction Surface	3	2	0	4	0	3	0	5
Deep Draw Use	3	4	4	5	5	5	4	5
Multi-layer Use	2	3	4	4	5	3	5	4
Meets FDA Food Contact Guidelines	5	5	5	5	5	5	0	0
Has FDA Drug Master File on record	0	0	0	0	0	0	5	5
Heavy Gage, Large Part forming	2	2	3	3	3	3	0	0
<b>Sheet Material</b>								
APET	Y	R	Y	R	Y	R	Y	R
CPET	Y	R	R	R	R	R	R	Y
EVOH	N	Y	R	Y	R	Y	R	Y
HDPE	R	R	Y	Y	Y	R	Y	Y
HIPS	Y	Y	Y	R	Y	R	R	Y
LDPE	R	Y	R	Y	R	R	Y	Y
OPS	Y	R	Y	R	Y	R	Y	R
PC	N	R	R	Y	Y	Y	Y	Y
PETG	Y	R	Y	R	Y	R	Y	R
PLA	N	Y	Y	R	Y	R	Y	R
PMMA	Y	R	R	Y	Y	Y	Y	Y
PP	Y	R	Y	R	Y	R	Y	R
PS	R	Y	R	Y	Y	R	Y	R
Rigid PVC	R	R	Y	Y	Y	R	Y	Y
RPET	Y	R	R	R	R	R	Y	R

### Legend:

0 = Not recommended → 5 = Best performance  
 R = Recommended Y = Acceptable N = Not Suitable

Chart usage:

1. Select a product listed as suitable for use with your material to be formed.
2. Select attributes based on what is most critical to the part to be formed.
3. Sum up the attribute score to determine the optimal plug material for your application.

Note: There is no one size fits all when determining the best choice of plug assist material. Review your requirements with a CMT specialist to determine the actual suitability of any HYTAC material prior to use. This chart is for directional reference only.