

# ACCESSORIES

- additives
- color dispersions
- release systems
- accelerators
- primers
- modifiers

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# ACCESSORIES

- Quick Selector Chart -

<b>FILLERS</b>				
	<b>TYPE</b>	<b>MIX RATIO*: Starting Point</b>	<b>MACHINABILITY</b>	<b>DESCRIPTION</b>
FILL-ITS	Free flowing granule filler, Wood like	300 parts by volume to A/B mixture (see mix ratio chart)	Excellent	Treated mixture of vegetable matter. Machines like wood.
ALUMINUM CONDUCTITES	Aluminum aggregate	50 parts by weight to the A/B mixture	Excellent	Aluminum fill to increase thermal conductivity and reduce shrinkage.
CHOPPED GLASS	Short strand fiberglass	25 parts by weight to the A/B mixture	Very Good	Chopped glass to reinforce.
MILLED GLASS	Short fiberglass powder	25 parts by weight to the A/B mixture	Poor	Fine powder type reinforcing fiber

<b>RELEASE SYSTEMS</b>				
	<b>TYPE</b>	<b>APPLICATION METHOD</b>	<b># OF COATS</b>	<b>DESCRIPTION</b>
GREASE-IT II	Modified PVA barrier - coat	Spray / Brush on	4 coats	Water soluble, film forming, release agent and parting film for porous and non-porous surfaces.
GREASE-IT IV	Non-silicone	Spray can	1-2 coats	Non-silicone release for non-porous surfaces.
GREASE-IT V	Polymeric silicone Paintable	Spray can	1-2 coats	Polymeric silicone release for non-porous surfaces. Good for difficult to release materials. Paintable.
GREASE-IT FDG	Polymeric silicone	Spray can	1-2 coats	For Food and Drug Grade applications. Polymeric silicone release for non-porous surfaces.
GREASE-IT WAX LT	Liquid Wax	Brush on / wipe apply	2-4 coats	Liquid wax release for non-porous surfaces. Can be used with GREASE-IT II.
GREASE-IT WAX P	Paste Wax	Brush on / wipe apply	2-4 coats	Paste wax release for non-porous surfaces. Can be used with GREASE-IT II.

<b>PRIMERS</b>				
	<b>TYPE</b>	<b>APPLICATION METHOD</b>	<b>NUMBER OF COMPONENTS</b>	<b>DESCRIPTION</b>
PRIMER 200	Polymer	Brush / Spray	One	Adhesion promoter to metal and other surfaces.
PRIMER 810	Thin liquid	Brush / Spray	One	Adhesion promoter to plastic surfaces.

<b>ADDITIVES</b>				
	<b>TYPE</b>	<b>ADDITION AMOUNT</b>	<b>NUMBER OF COMPONENTS</b>	<b>DESCRIPTION</b>
ANTI-AIR	Liquid	Add 0.0004 parts to 100 parts Polymer by weight	One	Relieves surface tension and allows for air to escape.
UV SCREEN 101	Liquid	3-5% by weight to mixed Polymer	One	Protects against changes in color and physical changes due to ultraviolet absorption.

<b>MISCELLANEOUS</b>				
	<b>TYPE</b>	<b>APPLICATION METHOD</b>	<b>NUMBER OF COMPONENTS</b>	<b>DESCRIPTION</b>
A-TAK	Liquid	Cured polymer - immerse Uncured polymer - wipe	One	Non-flammable clean-up system and stripper for uncured & cured Polymers. Can be used to soften and/or dissolve some cured Epoxies and Urethanes.

\* See Technical Brochures and MSDS sheets for more information.

# PD COLOR DISPERSION SERIES

## OPAQUE COLOR DISPERSIONS



**PD-6 M  
RED**

0.03 (3%) by weight  
in Ultralloy 206/207



**PD-15 M  
ORANGE**

0.03 (3%) by weight  
in Ultralloy 206/207



**PD-3 M  
YELLOW**

0.03 (3%) by weight  
in Ultralloy 206/207



**PD-25 M  
YELLOW**

0.03 (3%) by weight  
in Ultralloy 206/207



**PD-4 M  
GREEN**

0.03 (3%) by weight  
in Ultralloy 206/207



**PD-9 M  
BROWN**

0.03 (3%) by weight  
in Ultralloy 206/207



**PD-1 M  
DARK BLUE**

0.03 (3%) by weight  
in Ultralloy 206/207



**PD-26 M  
BLUE**

0.03 (3%) by weight  
in Ultralloy 206/207



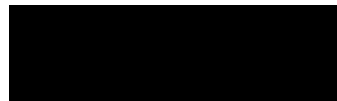
**PD-8 M  
LIGHT GREY**

0.03 (3%) by weight  
in Ultralloy 206/207



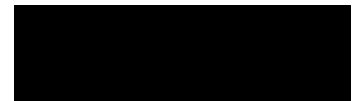
**PD-11 M  
DARK GREY**

0.03 (3%) by weight  
in Ultralloy 206/207



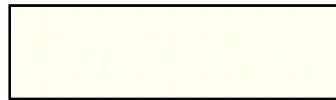
**PD-2 M  
CARBON BLACK**

0.02 (2%) by weight  
in Ultralloy 206/207



**PD-512 M  
BLACK OXIDE**

0.02 (2%) by weight  
in Ultralloy 206/207



**PD-7 M  
WHITE**

0.05 (5%) by weight  
in Ultralloy 206/207

**PD - Mix Ratio:** Add 1 - 5% (0.01-0.05) by weight to Part B, mix well. In above results, ratios were added by weight to Ultralloy 206/207 Part B, then mixed and cured.

Color Dispersions are compatible with most Hapco Resin Systems except those listed under the MP Color Series. Read product list for MP Color Series. All of Hapco Color Dispersions are appropriate for standard and/or Food and Drug applications.

Weigh the color additions accurately for batch to batch uniformity. The above colors may be blended to form additional colors.

### NOTES:

All above Ratios are % added by weight to **Ultralloy 206/207 Part B**, then mixed and cured.

**Packaging Available:** 1/2 pint cans, 1 quart cans, 1 gallon pails, and 5 gallon pails.

# TD COLOR DISPERSION SERIES

## \* TRANSLUCENT COLOR DISPERSIONS



**TD-22 M  
RED**  
0.005 (1/2%) by weight  
in Ultralloy 206/207



**TD-24 M  
YELLOW**  
0.005 (1/2%) by weight  
in Ultralloy 206/207



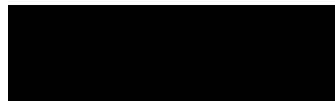
**TD 20 M  
VIOLET**  
0.005(1/2%) by weight  
in Ultralloy 206/207



**TD-21 M  
ORANGE**  
0.005 (1/2%) by weight  
in Ultralloy 206/207



**TD-23 M  
BLUE**  
0.005 (1/2%) by weight  
in Ultralloy 206/207



**TD-28 M  
BLACK**  
0.005 (1/2%) by weight  
in Ultralloy 206/207

**TD - Mix Ratio:** Add 1/10 - 2% (0.001-0.02) by weight to Part B, mix well. In above results, ratios were added by weight to Ultralloy 206/207 Part B, then mixed and cured. Less than 1/10% (0.001) by weight may be added to the Part B for very translucent colors, 1/2% (0.005) to 2% (0.02) may be added to Part B to form opaque colors.

Color Dispersions are compatible with most Hapco Resin Systems except those listed under MP Color Series. Read product list for MP Color Series. All of Hapco Color Dispersions are appropriate for standard and/or Food and Drug applications.

Weigh the color additions accurately for batch to batch uniformity. The above colors may be blended to form additional colors.

### **NOTES:**

All above Ratios are % added by weight to **Ultralloy 206/207 Part B**, then mixed and cured.

**Packaging Available:** 1/2 pint cans, 1 quart cans, 1 gallon pails, and 5 gallon pails.

\*Translucent color dispersions are not translucent in some Liquid Molding Systems. Consult your Hapco Representative for more details.

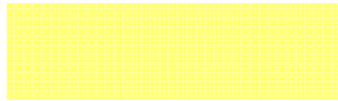
# MP COLOR DISPERSION SERIES

## TRANSLUCENT\* and OPAQUE COLOR DISPERSIONS for

- Hapflex 1021, 1036, 1036-5, 1056, 1056-5
- Steralloy 2021, 2021-5, 2036, 2036-5, 2056, 2056-5
- Di-Pak 4021, 4036, 4036-5, 4056, 4056-5



**TD-22 MP  
RED**  
0.005 (1/2%) by weight  
in Ultralloy 206/207



**TD-24 MP  
YELLOW**  
0.005 (1/2%) by weight  
in Ultralloy 206/207



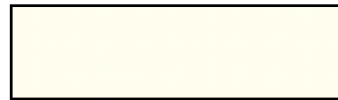
**TD-23 MP  
BLUE**  
0.005 (1/2%) by weight  
in Ultralloy 206/207



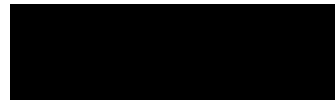
**TD-21 MP  
ORANGE**  
0.005 (1/2%) by weight  
in Ultralloy 206/207



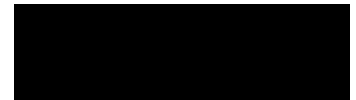
**PD-3 MP (Opaque)  
YELLOW**  
0.03 (3%) by weight  
In Ultralloy 206/207



**PD-7 MP (Opaque)  
WHITE**  
0.05 (5%) by weight  
in Ultralloy 206/207



**PD-2 MP (Opaque)  
BLACK**  
0.02 (2%) by weight  
in Ultralloy 206/207



**TD-28 MP  
BLACK**  
0.005 (1/2%) by weight  
in Ultralloy 206/207

**TD - Mix Ratio:** Add 0.005 - 0.05% by weight to Part B, mix well.

Less than 1/10% or less than 0.001 by weight can be added to the Part B for very translucent colors, 1/2% (0.005) - 2% (0.02) may be added to the Part B, by weight, for opaque coloring.

**PD - Mix Ratio:** Add 1—5% (0.01-0.05) by weight to Part B, mix well.

Weigh the color additions accurately for batch to batch uniformity. The above colors may be blended to form additional colors.

### NOTES:

All above Ratios are % added by weight to **Ultralloy 206/207 Part B**, then mixed and cured.

**Packaging Available:** 1/2 pint cans, 1 quart cans, 1 gallon pails, and 5 gallon pails.

\*Translucent color dispersions are not translucent in some Liquid Molding Systems. Consult your Hapco Representative for more details.

# FILLERS

## **CHOPPED GLASS**

A type of glass fiber reinforcement consisting of short, individual strands of glass fiber. Use chopped glass to strengthen castings and in parts that are difficult to laminate. Chopped glass thickens the mixture rapidly.

Impact, tensile, compressive and flexural strengths can all be increased with the addition of chopped glass.



## **MILLED GLASS**

A fine powdered, single strand, glass fiber that is used as a reinforcement to increase mechanical strengths (impact, modulus, compressive and flexural) of resins. Use where increased strength is required for bonding, filleting, and fastening with resin. Use to thicken resin.

Milled glass improves dimensional stability, increases heat distortion temperature (HDT), and reduces shrinkage.

**MILLED GLASS EFFECTS:** (adding 20-25% by weight, added to the B side)

HDT increases 30°F

Elongation decreases 5% - 10%

Tensile Strength decreases 3% - 5%

Modulus of Elasticity increases 20%

*If you increase the length of the fiber, all of the values will increase.*

*If you increase the number of fibers, such as woven cloth, the values will multiply 2 or 3 times.*

### **NOTE:**

Milled & Chopped Glass should be dried before use at 200-250°F in an oven for at least 8 hrs before use. Unused material should be stored in a sealed plastic bag for future use.

# FILLERS

	<b>FILL-ITS</b> (see mixing chart)	<b>CHOPPED GLASS</b>	<b>MILLED GLASS</b>
<b>MIX RATIO:</b> Starting Point (to 100 parts A/B mixture)	300 parts by volume to A/B mixture <i>(see mix ratio chart)</i>	25 parts by weight to the A/B mixture	25 parts by weight to the A/B mixture
<b>MIX RATIO:</b> Range	200-600 parts by volume to A/B mixture <i>(see mix ratio chart)</i>	5-30 parts by weight to A/B mixture	20-28 parts by weight to A/B mixture
<b>Type:</b>	Filler / Machinable Wood like, free flowing granules	Short strand fiberglass. 1/32 Fiberglass	Short fiberglass powder. 1/32 Fiberglass
<b>Color:</b>	Tan / brown	Gray / White	Gray / White
<b>Specific Gravity:</b>	.63 dry	NA	NA
<b>Thermal Conductivity:</b> Alum BTU hr-1/ft-1/0F Steel BRU hr-1/ft-1/0F	Poor	NA	NA
<b>Machinability:</b>	Excellent	Very good	Poor
<b>Description:</b>	Treated mixture of vegetable matter. Machines like wood.	Chopped glass to thicken and reinforce.	Fine powder type reinforcing fiber.

# FILL-ITS/HAPREZ MIXING

## FILL-ITS

**FILL-ITS** are a low cost, light, Machinable backfill material that has been specifically designed to be compatible with all **HAPREZ** Laminating Systems. When used with **HAPREZ** laminating systems, a strong, durable, backfill is achieved, with excellent physical properties.

Both the **HAPREZ** laminating/binder systems and **FILL-ITS** have been chemically treated. When combined, the **FILL-ITS / HAPREZ** matrix bond together and act as a uniform structure.

A **FILL-ITS / HAPREZ** matrix machines just like wood, without the grain. When it is milled, a curled chip is produced, compared to dust produced when machining conventional polymer plastics. **FILL-ITS** matrices are strong and will hold threads well. It can be drilled, tapped, sanded, planed, and all Hapco's Polymer systems bond tenaciously to **FILL-ITS**

### MIXING OPTIONS:

1. *Hand mix* - Only recommended for small volumes.
2. *5 gallon rotary pail mixer with stationary arm* - Recommended for medium volumes.
3. *Dough Mixer* - Recommended for medium-large volumes.
4. *Cement mixer* - For large + volumes.

### MIXING DIRECTIONS: (see following page for mix ratio information)

- Always mix the **Haprez** (part A) & **Hapcure** (part B) components first.
- Pour the **Hapcure** (part B) into the **Haprez** (part A).
- Mix well, scraping the sides and bottom of the container.
- Pour the mixed Haprez A&B into a gallon or 5 gallon pail.
- This will make the mixing of Fill-Its easier.
- Add the Fill-Its by volume or weight to the mixed Haprez in stages.
- Add a small amount of Fill-It, mix until wet, then add more Fill-It.
- Mix until completely wetted out, insuring there are no dry Fill-its.
- Pack into the unit being cast, tamp lightly.



Pour B side into the A side



Mix well



Pour mixed Haprez A&B into a mixing container



Add Fill-Its to the mixed Haprez in stages, until wet



Pack & tamp lightly

# Mix Ratio for HAPREZ 3742/62 with FILL-ITS

## For 1 quart of HAPREZ 3742/62:

Resulting in 3 - 7 quarts of Total Mix  
Total Mix = HAPREZ 3742/62 with FILL-ITS

APPLICATIONS	TOTAL MIX		HAPREZ 3742/62 (1 quart total)		FILL-ITS (add to 1 quart of Haprez 3742/62)	
	by volume	by weight	Haprez 3742	Hapcure 62	by volume	by weight
Heavy Production (3 parts Fill-its to 1 Part Haprez by volume)	4 quarts (approx.)	2,681 grams or 5.90 lbs.	700 grams	196 grams	3 parts of Fill-its or 3 quarts of Fill-its	1,785 grams or 3.93 lbs.
Medium Production (4 parts Fill-its to 1 Part Haprez by volume)	5 quarts (approx.)	3,276 grams or 7.21 lbs.	700 grams	196 grams	4 parts of Fill-its or 4 quarts of Fill-its	2,380 grams or 5.25 lbs.
Light Production Molds, etc. (5 parts Fill-its to 1 Part Haprez by volume)	6 quarts (approx.)	3,871 grams or 8.53 lbs.	700 grams	196 grams	5 parts of Fill-its or 5 quarts of Fill-its	2,975 grams or 6.55 lbs.
Small Castings (2 parts Fill-its to 1 Part Haprez by volume)	3 quarts (approx.)	2,086 grams or 4.59 lbs.	700 grams	196 grams	2 parts of Fill-its or 2 quarts of Fill-its	1,190 grams or 2.62 lbs.
Porous Castings Vacuum Form, etc. (6 parts Fill-its to 1 Part Haprez by volume)	7 quarts (approx.)	4,466 grams or 9.84 lbs.	700 grams	196 grams	6 parts of Fill-its or 6 quarts of Fill-its	3,570 grams or 7.86 lbs.

## For 1 gallon of HAPREZ 3742/62:

Resulting in 3 - 7 gallons of Total Mix  
Total Mix = HAPREZ 3742/62 with FILL-ITS

APPLICATIONS	TOTAL MIX		HAPREZ 3742/62 (1 gallon total)		FILL-ITS (add to 1 gallon of Haprez 3742/62)	
	by volume	by weight	Haprez 3742	Hapcure 62	by volume	by weight
Heavy Production (3 parts Fill-its to 1 Part Haprez by volume)	4 gallons (approx.)	13,104 grams or 28.86 lbs.	2,800 grams	784 grams	3 parts of Fill-its or 3 quarts of Fill-its	9,520 grams or 20.97 lbs.
Medium Production (4 parts Fill-its to 1 Part Haprez by volume)	5 gallons (approx.)	10,724 grams or 23.62 lbs.	2,800 grams	784 grams	4 parts of Fill-its or 4 quarts of Fill-its	7,140 grams or 15.73 lbs.
Light Production Molds, etc. (5 parts Fill-its to 1 Part Haprez by volume)	6 gallons (approx.)	15,484 grams or 34.11 lbs.	2,800 grams	784 grams	5 parts of Fill-its or 5 quarts of Fill-its	11,900 grams or 26.21 lbs.
Small Castings (2 parts Fill-its to 1 Part Haprez by volume)	3 gallons (approx.)	8,344 grams or 18.38 lbs.	2,800 grams	784 grams	2 parts of Fill-its or 2 quarts of Fill-its	4,760 grams or 10.48 lbs.
Porous Castings Vacuum Form, etc. (6 parts Fill-its to 1 Part Haprez by volume)	7 gallons (approx.)	17,864 grams or 39.35 lbs.	2,800 grams	784 grams	6 parts of Fill-its or 6 quarts of Fill-its	14,280 grams or 31.45 lbs.

**NOTES:** The more FILL-ITS, the lower the shrinkage, and the lower the strength.  
(from 2:1 to 5:1 by volume, at 6:1 the casting becomes porous).

# Mix Ratio for HAPREZ 3745LV/62 with FILL-ITS

## For 1 quart of HAPREZ 3745LV/62:

Resulting in 3 - 7 quarts of Total Mix

Total Mix = HAPREZ 3745LV/62 with FILL-ITS

APPLICATIONS	TOTAL MIX		HAPREZ 3745LV/62 (1 quart total)		FILL-ITS (add to 1 quart of Haprez 3745LV/62)	
	by volume	by weight	Haprez 3745LV	Hapcure 62	by volume	by weight
Heavy Production (3 parts Fill-its to 1 Part Haprez by volume)	4 quarts (approx.)	2,681 grams or 5.90 lbs.	664 grams	232 grams	3 parts of Fill-its or 3 quarts of Fill-its	1,785 grams or 3.93 lbs.
Medium Production (4 parts Fill-its to 1 Part Haprez by volume)	5 quarts (approx.)	3,276 grams or 7.21 lbs.	664 grams	232 grams	4 parts of Fill-its or 4 quarts of Fill-its	2,380 grams or 5.25 lbs.
Light Production Molds, etc. (5 parts Fill-its to 1 Part Haprez by volume)	6 quarts (approx.)	3,871 grams or 8.53 lbs.	664 grams	232 grams	5 parts of Fill-its or 5 quarts of Fill-its	2,975 grams or 6.55 lbs.
Small Castings (2 parts Fill-its to 1 Part Haprez by volume)	3 quarts (approx.)	2,086 grams or 4.59 lbs.	664 grams	232 grams	2 parts of Fill-its or 2 quarts of Fill-its	1,190 grams or 2.62 lbs.
Porous Castings Vacuum Form, etc. (6 parts Fill-its to 1 Part Haprez by volume)	7 quarts (approx.)	4,466 grams or 9.84 lbs.	664 grams	232 grams	6 parts of Fill-its or 6 quarts of Fill-its	3,570 grams or 7.86 lbs.

## For 1 gallon of HAPREZ 3745LV/62:

Resulting in 3 - 7 gallons of Total Mix

Total Mix = HAPREZ 3745LV/62 with FILL-ITS

APPLICATIONS	TOTAL MIX		HAPREZ 3745LV/62 (1 gallon total)		FILL-ITS (add to 1 gallon of Haprez 3745LV/62)	
	by volume	by weight	Haprez 3745LV	Hapcure 62	by volume	by weight
Heavy Production (3 parts Fill-its to 1 Part Haprez by volume)	4 gallons (approx.)	13,104 grams or 28.86 lbs.	2,655 grams	929 grams	3 parts of Fill-its or 3 quarts of Fill-its	9,520 grams or 20.97 lbs.
Medium Production (4 parts Fill-its to 1 Part Haprez by volume)	5 gallons (approx.)	10,724 grams or 23.62 lbs.	2,655 grams	929 grams	4 parts of Fill-its or 4 quarts of Fill-its	7,140 grams or 15.73 lbs.
Light Production Molds, etc. (5 parts Fill-its to 1 Part Haprez by volume)	6 gallons (approx.)	15,484 grams or 34.11 lbs.	2,655 grams	929 grams	5 parts of Fill-its or 5 quarts of Fill-its	11,900 grams or 26.21 lbs.
Small Castings (2 parts Fill-its to 1 Part Haprez by volume)	3 gallons (approx.)	8,344 grams or 18.38 lbs.	2,655 grams	929 grams	2 parts of Fill-its or 2 quarts of Fill-its	4,760 grams or 10.48 lbs.
Porous Castings Vacuum Form, etc. (6 parts Fill-its to 1 Part Haprez by volume)	7 gallons (approx.)	17,864 grams or 39.35 lbs.	2,655 grams	929 grams	6 parts of Fill-its or 6 quarts of Fill-its	14,280 grams or 31.45 lbs.

**NOTES:** The more FILL-ITS, the lower the shrinkage, and the lower the strength.  
(from 2:1 to 5:1 by volume, at 6:1 the casting becomes porous).

# RELEASE SYSTEMS

## [GREASE-IT II](#)

**GREASE-IT II** is a water soluble, film forming, release agent and parting film. **GREASE-IT II** air dries to form a barrier coat over the pattern or mold, without any adverse affects on surface texture, detail or dimensions. **GREASE-IT II** is designed for use on mold making applications and difficult release applications. It is also recommended whenever brush-on gel coats or surface coats are used. **GREASE-IT II** forms a film which allows brushing and working of the gel coats, without wiping the release coat off or into the surface coat being applied. **GREASE-IT II** is a transfer type releasing film which adheres to and demolds with the cast part. It is then easily washed off with water. For best results, use **GREASE-IT II** as a second system with GREASE-IT WAX.

## [GREASE-IT IV](#)

**GREASE-IT IV** is a sprayable, silicone based release agent. In some cases, multiple releases can be obtained. It can be used on nonporous surfaces and is an excellent release for all epoxies, urethanes, and other polymer alloys. **GREASE-IT IV** can be used in production applications.

## [GREASE-IT V](#)

**GREASE-IT V** is a sprayable or paintable polymeric release that rapidly cures to form an excellent release. In some cases, multiple releases can be obtained. It can be used on nonporous surfaces and is an excellent release for difficult to release epoxies, urethanes, and other polymer alloys. **GREASE-IT V** can be used in production applications.

## [GREASE-IT FDG](#)

**GREASE-IT FDG** is a sprayable, food & drug grade release that rapidly cures to form an excellent release. It is made for applications that require a Food & Drug grade release. **GREASE-IT FDG** is paintable.

## [GREASE-IT WAX LT](#)

**GREASE-IT WAX LT** is a liquid wax, release agent that has been specifically formulated to release epoxies, urethanes, and other polymer alloys. **GREASE-IT WAX LT** can be applied with a brush, wipe, or cloth in multiple coats, allowing to dry between coats. Buffing between coats will achieve the most accurate transfer of detail. **GREASE-IT WAX LT** has also been designed to be used with GREASE-IT II, a film forming release, when a two-step release system is required.

## [GREASE-IT WAX P](#)

**GREASE-IT WAX P** is a hard, paste wax, release agent which has been specifically formulated to release epoxies, urethanes, and other polymer alloys. **GREASE-IT WAX P** can be applied with a brush, wipe, or cloth in multiple coats, allowing to dry between coats. Buffing between coats will achieve the most accurate transfer of detail. **GREASE-IT WAX P** has also been designed to be used with GREASE-IT II.

# RELEASE SYSTEMS

	<b>GREASE-IT II</b>	<b>GREASE-IT IV</b>	<b>GREASE-IT V</b>	<b>GREASE-IT FDG</b>	<b>GREASE-IT WAX LT</b>	<b>GREASE-IT WAX P</b>
<b>Type</b>	PVA barrier coat	Silicone Release	Paintable Silicone Release	Food & Drug Grade Release	Liquid wax	Paste wax
<b>Viscosity</b>	60 cps @ 25°C	Spray Can	Spray Can	Spray Can	Liquid	Paste
<b>Specific Gravity</b>	.96	NA	NA	NA	.8	.8
<b>Color</b>	Green	Clear	Clear	Clear	Clear	Tan
<b>Dry Time between coats</b>	3-6 minutes @ room temp. 1-2 minutes w/ hot air heat	10-20 seconds	10-20 seconds	10-20 seconds	5 minutes	5 minutes
<b>Required number of coats</b>	4 coats <i>(applied in different directions)</i>	1 - 2 coats	1 - 2 coats	1 - 2 coats	2 - 4 coats	2 - 4 coats
<b>Application Method</b>	Spray Brush-on	Spray can only	Spray can only	Spray can only	Brush-on Wipe apply	Brush-on Wipe apply
<b>Description</b>	Film forming barrier coat release for porous and non-porous surfaces.	Silicone release for non-porous surfaces.	Paintable Polymeric release for non-porous surfaces.	Release for applications that require a Food and Drug grade release. Paintable	Liquid wax release for non-porous surfaces.	Paste wax release for non-porous surfaces.
<b>Advantages</b>	Water soluble Does not transfer to the casting. Sprayable and brushable.	Easy to use spray can Good for all epoxies, urethanes, & polymer alloys.	Easy to use spray can Good for difficult to release epoxies, urethanes, & polymer alloys. Paintable	Easy to use spray can Good for all epoxies, urethanes, & polymer alloys. Paintable	Easy to use Reliable, can be buffed	Easy to use Reliable, can be buffed.

# OTHER PRODUCTS

## URETHANE AND EPOXY PRIMERS

**PRIMER 200** was specifically developed to enhance the bond of Hapco's epoxy and urethane based products. **PRIMER 200** is simple to use and yields a significant increase in strength over a wide range of environmental conditions. **PRIMER 200** is a one-part system and can be brushed or sprayed, making it ideally suited for low and high production.

**PRIMER 810** was specifically developed to enhance the bond of Hapco's epoxy and urethane based products to plastic. **PRIMER 810** is simple to use and yields a significant increase in strength. **PRIMER 810** is a one-part system and can be brushed or sprayed, making it ideally suited for low and high production.

Typical Properties	Viscosity @ 25°C	Specific Gravity	Color	*Flash Point	Cure Time	# of Components	Application Method
<b>PRIMER 200</b>	< 20 cps	0.9	clear	-6.6°C 20°F (TAG closed cup)	Air dry 1-2 minutes. For best results, heat at 180°F for 1 hour before using the Polymer.	One	Brush or Spray
<b>PRIMER 810</b>	< 30 cps	1.03	clear/ light yellow	91°C (TAG closed cup)	Apply and allow to set 1- 2 minutes	One	Brush or Spray

\*Flammable—Keep away from open flames. Keep in a cool dry place.



## ANTI-AIR - BUBBLE RELEASE AID

**ANTI-AIR** is an additive for HAPCO'S polymer alloy products, which aids in the release of bubbles caused by entrapped air. **ANTI-AIR** is added during the mixing process or can be pre-dispersed in the 'B' side, before proportioning the components.

**ANTI-AIR** reduces surface tension, which will aid in faster vacuum degassing.

**IMPORTANT:** Follow directions carefully as to the amounts to be added. Improper amounts of **ANTI-AIR** can have a detrimental effect on the polymer. Follow directions carefully.

Typical Properties	Viscosity	Color	# of Components	Mix Ratio Methods
<b>ANTI-AIR</b>	1000 ± 200	Off White	One	*Starting point is .0004 parts per 100 parts of 'B'. Add up to .0016 to the 'B' side by weight, mix well.

\* The 'B' side should be mixed each time it is used. In some cases, ANTI-AIR will separate on standing.

# OTHER PRODUCTS

## A-TAK

### ATTACKS AND CLEANS UP CURED/UNCURED URETHANES & EPOXIES

**A-TAK** is a clean-up system and stripper for Urethanes and Epoxies. **A-TAK** is a one component, thin liquid that is low hazard and is non-flammable. Most uncured Urethanes and Epoxies can be cleaned up with **A-TAK**. Cured systems can be immersed in **A-TAK** and will soften or dissolve. Prolonged immersion and/or heat may be required for some cured polymers.

#### USE:

*Cured Polymer* - Immerse in **A-TAK** until soft or dissolved. Accelerate with heat, up to 150°F, if necessary.

*Uncured Polymer* - Wipe with a clean rag soaked with **A-TAK**.

Test **A-TAK** on non-critical areas FIRST, before use. **A-TAK** may effect other areas; paint, etc.

Typical Properties	Viscosity	Color	# of Components	Flammability
<b>A-TAK</b>	20 cps @ 25°C	Clear	One	Non-Flammable



## UV INHIBITOR

**UV SCREEN 101** is an effective ultraviolet inhibitor designed to be used with HAPCO'S Urethanes and Epoxy Polymer Alloy systems. **UV SCREEN 101** is an effective UV inhibitor when used with Hapco Systems.

Typical Properties	Viscosity	Color	# of Components	Mix Ratio	Flammability
<b>UV SCREEN 101</b>	1000	Clear/ Pale yellow	One	3-5% by weight	Non-Flammable

## Some Important Notes:

### STORAGE:

Polymer systems have a minimum shelf life of six months when unopened. Both components should be stored in a room temperature dry place. When not in use, containers should be kept tightly closed.

### RESEALING:

Many polymers are moisture sensitive, reseal, using one of the following two (2) methods: blanket with nitrogen or use a hair dryer for 30 seconds to cover with dry air.

### PRECAUTIONS:

Skin or eye contact with polymers should be avoided. The use of gloves and eye protection are strongly recommended. All polymers, as a general practice, should be used in well-ventilated areas. Spot ventilation is most effective. Contaminated clothing should be removed immediately and the skin washed with soap and water or waterless skin cleaner. Should accidental eye contact occur, wash thoroughly with water and consult a physician.

The information presented here is based on carefully conducted laboratory tests and is believed to be accurate. However, results cannot be guaranteed and it is suggested that customers confirm results under their conditions and in their applications before production use.

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