



SPECIALTY WAX

Manufactured in our state of the art facility in Avon, OH, all of our wax products are batch-tested in our own full-service laboratory. The quality of our wax products is world-renowned and unsurpassed by any of our peers.

68



Sheet Wax

69-70



Machinable Wax & File-A-Wax®

71



Fillet Wax & Accessories

72



Other Waxes

SHEET WAX

Freeman Sheet Wax is used primarily to simulate metal or part thickness when making metal forming dies or punches, resin transfer molds (RTM), or any two-part molds requiring a uniform part thickness. Formulated and manufactured by Freeman, these waxes are available in most thicknesses from .007" to .394" with a tolerance of $\pm .001$ ".

266 Hi-Temp Thermo-Stable Sheet Wax

Our most popular sheet wax, this medium brown wax was developed primarily for use with tooling plastics to prevent wax deformation under exothermic heat conditions. 12" x 24" and 8" x 12" are available Plain or Adhesive-backed. 6" x 6" is available Adhesive-backed only.

- ▶ More flexible than 165 Regular Sheet Wax – forms quickly and accurately to any contoured surface
- ▶ Natural draping characteristics at room temperature and absence of memory (spring-back) eliminate the need to warm or temper wax
- ▶ Melting point of 282°F
- ▶ Adhesive can be applied manually with Sheet Wax Adhesive Spray (page 84)

165 Regular Sheet Wax

This yellow-colored wax is formulated for durability and translucency. 12" x 24" and 8" x 12" are available Plain or Adhesive-backed.

- ▶ Firm surface for durability and depression resistance
- ▶ Translucency of sheets up to $\frac{1}{8}$ " thick, excellent for visualizing layout lines and transcribing engineering information
- ▶ Melting point of 177°F
- ▶ Adhesive can be applied manually with Sheet Wax Adhesive Spray (page 84)

Master HT-260 Regular Sheet Wax

Formulated to withstand high temperatures, this wax was developed for casting and laminating resins that either require or give off heat during curing. 12" x 24" is available Plain or Adhesive-backed.

- ▶ Extremely pliable
- ▶ Melting point of 260°F
- ▶ Adhesive can be applied manually with Sheet Wax Adhesive Spray (page 84)

Please see our website, www.FreemanSupply.com, for complete details and part numbers. When ordering, specify the type, backing, and thickness you require. Custom thicknesses are available with a 10 box minimum.

Sheet Wax Application Procedure



Remove the backing from the self-adhesive wax sheets or apply Sheet Wax Spray Adhesive per directions on plain sheet wax.



Position wax sheets onto model or tool. Use butt joints or the 'overlay and cut' jointing technique.



Roll to extrude air bubbles for a flat, even surface.



Accurately fit subsequent pieces.



Consolidate corners using filleting tools.



Repair imperfections in joints by using Master Gap Wax (page 72) or Protolina Modeling Clay (page 120).

FREEMAN MACHINABLE WAX

An Industry Staple

Formulated and manufactured by Freeman, this extremely hard, synthetic material machines faster than polyurethane and epoxy tooling boards or metals without sacrificing quality of finish, surface detail, or dimensional accuracy.

The Next Generation

Standard and custom sizes are available in **three formulations:** the original, industry-standard **Blue**, the economical, user-friendly **Purple**, and the refined and enhanced **Turquoise**.

What is Machinable Wax?

Qualities

Non-abrasive

Unlike metal and tooling boards that can cause significant wear on cutting tools.

User-friendly

Machining produces chips instead of dust for a cleaner work environment.

Self-releasing/self-sealing

Pour liquid tooling plastics (including epoxy, urethane and silicone rubber) into Machinable Wax without requiring the use of sealers or release agents.

Able to be glued

Produces large or irregularly-shaped pieces for machining with the use of 3M #90 Spray Adhesive (page 84).

Self-lubricating

Enables all machining operations to be performed without the need for coolants or cutting fluids.

Wide variety of sizes

Eliminates the waste associated with using large tooling boards for smaller projects.

Applications

- **Molds and prototypes:** creates accurate reproductions
- **Education:** as a training aid and project material
- **CNC:** demonstrations or proofing machining programs
- **Medical/Dental:** molds for proton therapy or dental work

Machining guidelines

	Spindle Speed	Feed Rate
Roughing	3,000 rpm	100 in./min.
Finishing	8,000-10,000 rpm	40-100 in./min.

Data obtained using a 1/2" ball end mill

Calculating weight

$\frac{L \times W \times \text{Thickness (inches)}}{28.8} = \text{Weight (lb.)}$	
--	--



Which one is right for me?

Each batch is manufactured to the highest standards in world-class facilities with high-quality ingredients while still keeping your budget in mind. With competitive prices and better results, you'll find no better match for your project.

Original Classic Blue

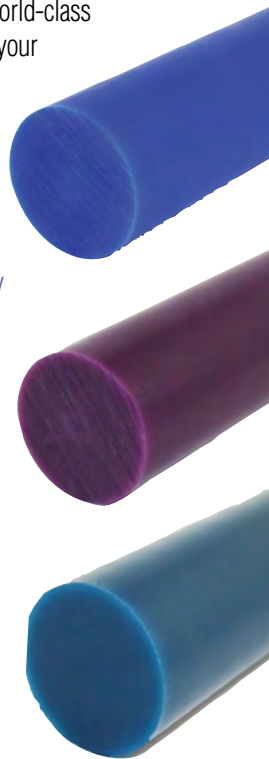
This tried-and-true wax has been the industry-standard for over 30 years. It performs exceptionally well on the CNC or when carving by hand.

Economical Purple

Ideal for educational training programs or testing, this wax undergoes the same quality standards as the other formulations while being budget-friendly.

Enhanced Turquoise NEW!

This premium wax is ideal for applications where a high level of detail and accuracy is needed whether working by hand or machine.



	Blue	Purple	Turquoise
Hardness (Shore D)	50-55	52	56
Surface Finish	Excellent	Good	Excellent
Fine Detail	Good	Fair	Excellent
Proofing	Excellent	Excellent	Excellent
Flexibility	Excellent	Excellent	Good
Thin-Walled Sections	Good	Good	Excellent

FERRIS® FILE-A-WAX®

A Trusted Brand

Also formulated and manufactured by Freeman, the creators of **Machinable Wax**, these carving waxes are legends in the jewelry industry. Known for their variety of hardnesses, carvability, and shape options, you are sure to find a wax for every possible jewelry pattern making application.



Always Expanding

In addition to the classic blue, purple, green, gold, and orange, we have extended the File-A-Wax line to six unique formulations by adding Turquoise. This new, truly unique wax is both easily hand-carved and possesses exceptional machining properties.

SPECIALTY WAX

First choose your color...

	Blue	Purple	NEW! Turquoise	Green	Gold	Orange
Flexibility	Excellent	Good	Fair	Fair	Good	Poor
Hard Carvability	Good	Excellent	Excellent	Fair	Good	Good
Hardness (Shore D)	52	55	56	57	59	60
High-Speed CNC	Poor	Fair	Excellent	Good	Excellent	Excellent

...then choose your shape:

Standard

½ lb. and 1 lb. pound blocks, common slice packages and slice assortments

Tubes & Rods

Square slabs, square blocks, round bars and oval bracelet bars

Designer

Individually packaged solid bars, round tubes and flat-sided tubes

Fixture

A wide variety of sizes to fit various CNC milling machine fixtures



Photo courtesy of Brian Smith of Smithology Custom Jewelry

Custom blocks and cylinders are also available! Visit www.FreemanWax.com to find a distributor near you.

MASTER PROTOWAX

This unique machinable investment casting wax is perfect for prototype work or even short-run part requirements. Please see our website, www.FreemanSupply.com or contact Customer Service for complete details.

- ▶ Easily turned, milled, drilled, tapped, and carved faster than metal without any tool wear
- ▶ Excellent stability and low expansion rate virtually eliminate investment shell cracking problems
- ▶ Available in blocks up to 5" thick, and cylinders from 2" to 8.5" in diameter up to 12" long; custom sizes available



Specifications

Color	Specific Gravity	Ash Content	Hardness (Shore D)	Softening Point	Volumetric Shrinkage @ Room Temp.	Viscosity @ 160°F (CPS)
Red	0.94	0.010%	43	157°F	7%	30

FILLET WAX & ACCESSORIES

Specifications

	Ring & Ball Softening Point (±6)	Flash Point (F°)	Hardness (Shore D)
Freeman Fillets	179	465	30
Master Fillets	173	465	26
Di-Dup Fillets	156	465	14
Master Bond Fillets	168	465	15
Master Marble Fillets	169	465	15
String Wax Di-Dup	156	465	14
String Wax Fillet	179	465	30
Half-Round Wax	179	465	30

Freeman Wax Fillets

Freeman Wax Fillets are made of a performance-proven, high melting point wax formulation for meeting a wide variety of pattern shop applications.



Boxes

SKU	Fillet #	Dia./Rad.	Length
085104	1R	1/16" R	1640'
085208	2	1/8" R	1152'
085212	3	3/16" R	460'
085216	4	1/4" R	292'
085220	5	5/16" R	240'
085224	6	3/8" R	190'
085228	7	7/16" R	144'
085232	8	1/2" R	106'
085240	10	5/8" R	72'
085248	12	3/4" R	44'
085264	16	1" R	24'

Rolls

SKU	Fillet #	Dia./Rad.	Length
085302	00R	1/32" D	1500'
085303	0R	3/64" D	1500'
085304	1R	1/16" D	750'
085408	2	1/8" R	500'
085412	3	3/16" R	400'
085416	4	1/4" R	175'
085420	5	5/16" R	125'
085424	6	3/8" R	85'
085428	7	7/16" R	40'
085432	8	1/2" R	40'

Master Wax Fillets (Summer Formula)

Primarily used for master patterns, this wax offers patternmakers a quality product that is easy to apply, produces accurate results and is economical.

Boxes

SKU	Fillet #	Dia./Rad.	Length
085800	1R	1/16" D	1640'
085805	2	1/8" R	1152'
085810	3	3/16" R	460'
085815	4	1/4" R	292'
085820	5	5/16" R	240'
085825	6	3/8" R	190'
085830	7	7/16" R	144'
085835	8	1/2" R	106'
085840	10	5/8" R	72'
085845	12	3/4" R	44'
085850	16	1" R	24'
085855	1/8" Round		2'

Rolls

SKU	Fillet #	Dia./Rad.	Length
085900	00R	1/32" D	1500'
085905	0R	3/64" D	1500'
085910	1R	1/16" D	750'
085915	2	1/8" R	500'
085920	3	3/16" R	400'
085925	4	1/4" R	175'
085930	6	3/8" R	125'
085935	8	1/2" R	85'
085940	10	5/8" R	40'
085945	12	3/4" R	40'

Master Marble Wax Fillets (Winter Formula)

This specialized blend of waxes is formulated specifically for the cultured marble industry. It produces a smooth radius on synthetic marble products. Under most normal working conditions, this wax adheres to the cultured marble mold without the use of heated fillet tools. 24 strips per box.

SKU	Fillet #	Diameter	Length
085660	2	1/8"	1152'
085665	3	3/16"	460'
085670	4	1/4"	292'
085675	6	3/8"	190'
085680	8	1/2"	106'

Master Bond Wax Fillets

This is a soft, self-adhering wax compound for the full-mold process and is used to apply a smooth radius to a foam pattern. The wax burns at a rate equal to 1.1 lb./ft.³ density foam, eliminating inclusions. 24 strips per box.

SKU	Fillet #	Radius	Length
085620	2	1/8"	1152'
085625	3	3/16"	460'
085630	4	1/4"	292'
085635	5	5/16"	240'
085640	6	3/8"	190'
085645	7	7/16"	144'
085650	8	1/2"	106'
085655	12	3/4"	44'

Freeman Di-Dup Wax Fillets

Freeman Di-Dup Wax Fillets are softer than our standard wax fillets and also have a lower melting point. These two features make them ideal for creating inside radii on expanded polystyrene foam patterns. This material is cut into 24" lengths and packaged in 2 lb. boxes.

SKU	Fillet #	Radius	Length
085504	4	1/4"	350'
085506	6	3/8"	175'
085508	8	1/2"	80'
085510	10	5/8"	75'
085512	12	3/4"	35'
085516	16	1"	20'

Freeman String Wax

String Wax is a round wax product that, when melted, is used as an adhesive to secure investment casting wax patterns to the gating system or for general wax pattern repair.

SKU	Description	Diameter	Approx. Length
085606	Di-Dup – Roll	1/8"	440'
085433	Fillet – Roll	1/8"	880'
085209	Fillet – Box	1/4"	292'

Freeman Half Round Wax

This specialty wax is extruded to a uniform half round shape making this material ideal for mold registration when applied to the parting line of a mold surface. Manufactured using our Fillet Wax formulation, this material will not inhibit the curing of silicones, urethanes, or plasters.

SKU	Radius	Width	Length
085114	1/8"	1/4"	24"
085113	3/16"	3/8"	24"
085112	5/16"	5/8"	24"
085111	3/8"	3/4"	24"

Fillet Tools

Freeman's high-quality, chrome-plated steel ball-end Fillet Tools are manufactured to accurate diameters to correctly and easily install wax or leather fillet.



SKU	Size	Radii
046380	# 1	1/16" & 1/8"
046385	# 2	3/16" & 1/4"
046390	# 3	5/16" & 3/8"
046395	# 4	1/2" & 5/8"

Alcohol Lamp

This chrome-plated brass lamp comes complete with snuffer cap attached by chain and an adjustable cotton wick. The 7" long cotton wick raises and lowers by hand screw.



SKU	Description
046730	Metal Alcohol Lamp (5 oz.)
046735	Replacement Wicks

OTHER WAXES

Specifications

	Flash Point (°F)	Hardness (Shore D)	Melting Point (°F)	Ash Content (%)
Optical Soluble	565	50±10	142-152	—
Sol-U-Carv	565	45	137-147	—
Beeswax	475	25	147	—
Paraffin (140°)	445	26	141	0.002
Paraffin (150°)	485	26	151	0.002
MicroCrystalline	580	22	178	0.002
Sculpture (Yellow)	572	30	167	0.002
Sculpture (Brown)	572	20	167	0.002
Victory Brown	500	20	174	0.002
Master Gap	465	Paste	145±6	—
Tapping	465	26	177±6	—

Blind Gauging Wax

- ▶ Produced to precise thicknesses, available from .015" to .105"
- ▶ Manufactured in 1/2" x 1 1/4" adhesive-backed strips, 100/box
- ▶ Specifically formulated for checking clearances between the fan and casing during repair and maintenance of jet engines

Please see our website, www.FreemanSupply.com, or contact Customer Service for complete details and part numbers.



Optical Soluble Wax

Freeman Optical Soluble Wax is a high-quality investment casting wax specifically formulated for the optical and jewelry industry. This product is completely soluble in warm water and is ideal for making any design where a hollow area in the finished pattern is desired. It is also used in the optical industry for the manufacturing of intraocular lenses. Available in 50 lb. boxes (SKU #118423).

Sol-U-Carv

A carvable wax that is water soluble, making it ideal for use in lost wax casting, especially in the making of cores, hollow beads, or other pieces that feature hollow areas. Available in 1 lb. boxes (SKU #115090).

Beeswax

Our pure filtered Beeswax is a firm, light-colored wax commonly used for modeling, engraving, and finishing leather, textiles, and wood. Available in 1 lb. boxes (SKU #027220).



Refined Paraffin Wax

This petroleum-based hard white wax is available in a 140°F (SKU # 117734) and 150°F (SKU # 117735) melting temperature formulation. Both have a crystalline or semi-crystalline structure and are available in 10 lb. 2" x 10" x 14" slabs.

MicroCrystalline Wax

This light-yellow, petroleum-based wax is low in odor and has a soft, sticky feel. Available in 10 lb. 2" x 10" x 14" slabs (SKU # 117713).

Sculpture Wax

These petroleum-based waxes that remains flexible at low temperatures, is very easy to carve, offers good surface finishes and have superior adhesive qualities. They are most commonly used as adhesives and sculpting waxes, but can also be blended for candle-making. Available in yellow (SKU # 110354) or Brown (SKU # 117718) in 4.5 lb. 4" dia. x 20" billets.



Victory Brown Wax

This brown wax is less crystalline than paraffin wax and remains flexible at low temperatures. It may be used as an adhesive, in investment castings, and blended in for candle-making. Easily molded by hand, it may also be used as a sculpture wax. Available in 11 lb. 1 1/4" x 12" x 19" slabs (SKU # 117715).

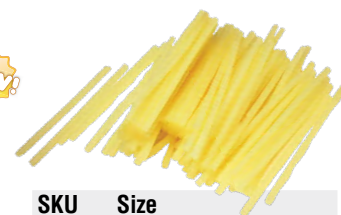


Master Gap Wax NEW!

By popular demand, Freeman has formulated Master Gap Wax, a soft, green wax that quickly and easily fills gaps in sheet wax at room temperature. This wax applies much smoother and faster than clay and cleans up quickly. Apply with a spatula and remove excess with a plastic scraper in one pass! Available in Quart (SKU #119669) or Gallon (SKU #119668).

Tapping Wax NEW!

Save yourself time and effort with Tapping Wax. Designed to make cleanup after tapping threads faster and easier, simply place a Tapping Wax stick in the drilled hole after reaming, and tap. The wax will collect the debris, eliminating the hassle of cleaning out compacted metal shavings.



SKU	Size
110359	4.5 lb. Billet
119636	1/4" x 6" Sticks (1 lb. Box)
119637	3/16" x 6" Sticks (1 lb. Box)
119638	3/8" x 6" Sticks (1 lb. Box)
119639	1/2" x 6" Sticks (1 lb. Box)

SEE ALSO

Product	Page #
Freeman Core Vent Wax	93