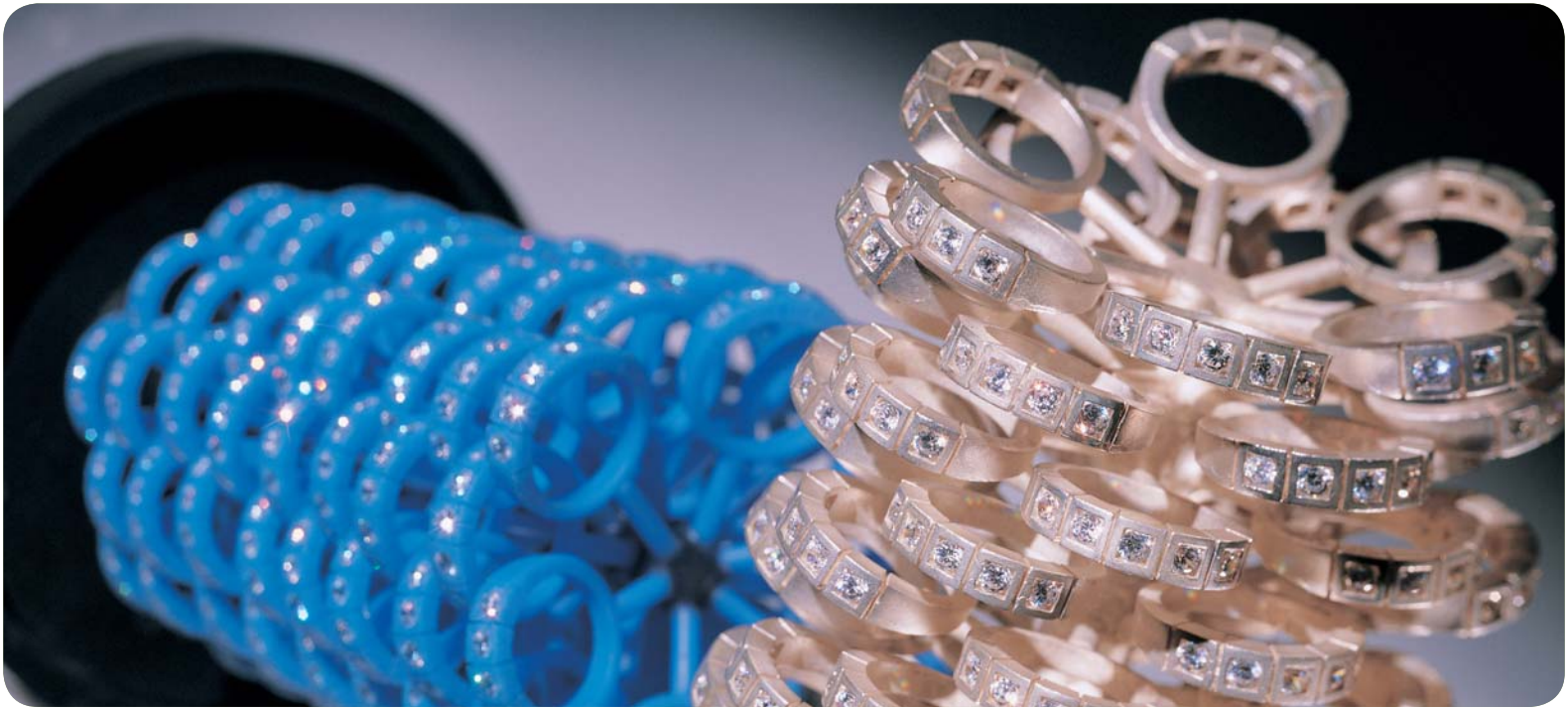
Kerr
SYBRON DENTAL SPECIALTIES



The art and science of lost wax casting.

Cast *with* Kerr.™

Casting Investment Powder

KerrCast 2000™

Satin Cast 20™

Satin Cast Diamante™

Satin Cast Xtreme™

Supervest 20™

Kerr Casting Investments

Don't waste valuable time polishing rough finishes or recasting. Kerr Casting Investments are manufactured to exacting standards. With a tradition of over 100 years, Kerr is committed to meeting the demands of today's casting needs.

Kerr's renowned product, Satin Cast, is recognized by the world's finest jewelers as the investment that creates the finest results. Eliminating bubbles, inclusions and fins, Satin Cast is a dependable investment that delivers superior quality castings every time.

Platinite™

G-400™

Research

Kerr's Investment products offer application specific formulations utilizing only the highest quality raw materials, to deliver a superior level of strength and accuracy. Decades of research and quality control has produced materials that deliver consistent results to meet the demands of today's changing industry.

Satin Cast 20 is available in easy-to-handle 15kg / 33lb cartons.

Casting Investment Application Chart

Product	Application
KerrCast 2000	Gold and silver.
Satin Cast 20	Highest quality gold and silver.
Satin Cast Diamante	Highest quality stone in place.
Satin Cast Xtreme	Highest quality white gold.
Supervest 20	Gold and silver, large items.
Platinite	Platinum and stainless steel.
G-400	Aluminum.

Ordering

07960 Satin Cast 20, 45 kg
31009 Satin Cast 20, 15 kg
31723 Satin Cast 20, 2 kg (6pk)

31312 Satin Cast Diamante, 45 kg
25219 Satin Cast Xtreme, 45 kg

27746 KerrCast 2000, 45 kg
14169 Supervest 20, 45 kg

27778 Platinite, 36 kg
20743 G-400, 45 kg

Kerr | Injection Waxes

Aqua Green™

Ruby Red™

Turquoise Blue™

Accu®Carve Purple™

Accu®Flakes™, Accu®Beads™

Designed for platinum, gold, silver as well as industrial and dental alloys, AccuFlakes injection wax has set the standard in precision casting for years. With the lowest ash content available (0.003%), AccuFlakes and AccuBeads guarantee the cleanest burnout possible. Available in 8 application-specific colors in quick-melting Flake or Bead form.

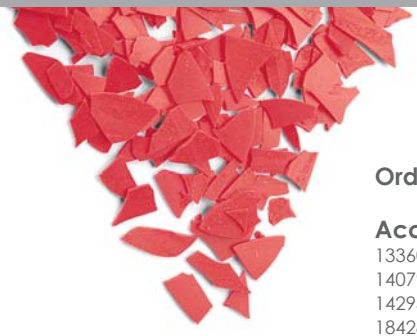
Injection Wax Application

Product	Injection Temp
Aqua Green	65°C/150°F
Ruby Red	65°C/150°F
Turquoise Blue	65°C/150°F
NYC Pink	68°C/155°F
Flex Plast Blue	68°C/155°F
Tuffy Green	73°C/165°F
Super Pink	65°C/150°F
AccuCarve Purple	79°C/174°F

Flex Plast Blue™

NYC Pink™

Tuffy Green™



Super Pink™

Chart

Application

All purpose. Most popular.
All purpose. Most popular.
All purpose. Most popular.
Highest detail. For filigree.
Most flexible. For stone in place.
Toughest. For large models.
Quick solidification. For bezels.
Highest carvability.

Ordering

AccuFlakes, 23 kg
13360 Aqua Green
14079 Rub Red
14293 Turquoise Blue
18428 NYC Pink
23020 Flex Plast Blue
16181 Tuffy Green
12138 Super Pink
32456 AccuCarve Purple

AccuBeads, 23 kg
33497 Aqua Green
33498 Ruby Red
33499 Turquoise Blue
33500 NYC Pink
333501 Flex Plast Blue
33502 Tuffy Green
33503 Super Pink
33504 AccuCarve Purple

Accu®Carve™ Carving Waxes

Designed for descriminating wax designer, AccuCarve precision carving waxes are specially formulated for hand carving as well as machining. They resist clogging of cutting tools and files.

Available in 3 degrees of hardness.
Green - Hardest
Purple - Medium hardness
Blue - Regular (most flexible)

Suggested Burnout

Preheat the furnace to 300°F. Place the flask in furnace on a wax burnout tray, and hold temperature to 450°F for one hour. Check to ensure the wax has drained into the tray. Remove the wax tray leaving the flask in the furnace to continue with normal burnout cycle.

Off Center	Solid Bar	Round Tube	Flat Side	
1-1/16”	**7/8”**	**7/8”**	**1 x 1”**	**1-1/8” x 1/8”**
34870 Green	34858 Green	34864 Green	34873 Green	34879 Green
34871 Purple	34859 Purple	34865 Purple	34874 Purple	34880 Purple
34872 Blue	34860 Blue	34866 Blue	34875 Blue	34881 Blue
	1-1/16”	**1-1/16”**	**1-1/8” x 1”**	**1-5/16” x 1-3/16”**
	34861 Green	34867 Green	34876 Green	34882 Green
	34862 Purple	34868 Purple	34877 Purple	34883 Purple
	34863 Blue	34869 Blue	34878 Blue	34884 Blue

3 Piece Bar Kit, 1/2 lb
Kit with 3 wax bars measuring
1-7/8" x 1-1/8" x 3-1/8"
34897 Green
34898 Purple
34899 Blue

Block, 1/2 lb
Wax block measuring
1-7/16" x 3-1/8" x 3-3/8"
34885 Green
34886 Purple
34887 Blue

Block, 1 lb
Wax block measuring
1-7/16" x 3-1/8" x 6-1/2"
34888 Green
34889 Purple
34890 Blue

Slices Asst., 1/2 lb
Assorted slices measuring
1-7/16" x 3-1/8" with
thicknesses from 1/8" to 1/2"
34894 Green
34895 Purple
34896 Blue

Slices Asst., 1 lb
Assorted slices measuring
1-7/16" x 3-1/8" with
thicknesses from 1/8" to 1"
34891 Green
34892 Purple
34893 Blue

Specialty Waxes

Kerr has been a manufacturer of precision waxes for over 50 years, providing consistent quality, application specific waxes for today's critical casting needs.

Sticky

A hard, fast setting wax. Repairs wax patterns and welds waxes together. Melts at 73°C/163°F.

00623 15 Sticks
00625 120 Sticks

Round Wire Spool

Easy to form wax wire used for producing various bars , sprues an prong settings.

11013 6 ga	**11017 14 ga**
11014 8 ga	**11018 16 ga**
11015 10 ga	**11019 18 ga**
11016 12 ga	**11020 20 ga**

Boxing Strips

A tacky wax that results in perfect adhesion without the application of heat. Melts at 80°C/176°F.

00609 Strips, box/35

Boxing Sticks

A tacky wax that results in perfect adhesion without the application of heat. Melts at 80°C/176°F.

00608 Sticks, box/42

Perfect Purple

A unique inlay casting wax formulated especially for wax pattern build-ups requiring hard smooth surfaces in an easy-to use wax. Melts at 73ºC/163ºF.
11493 1 oz bar

Blue Inlay

A superior build-up wax for making patterns. Melts at 73ºC/163ºF.
00474 Regular, 15 Sticks
00475 Regular, 120 Stick
00476 Hard, 15 Sticks
00478 Hard, 120 Sticks

Green Inlay

A superior build-up wax for making patterns. Melts at 73ºC/163ºF.
00480 Hard, 120 Sticks

Ivory Inlay

A superior build-up wax for making patterns. Melts at 73ºC/163ºF.
00481 Regular, 15 Sticks

Disclosing

A creamy wax used to repair wax pattern defects. Applies easy to finger or tool.
35118 Ivory, 57 g

Utility Rod White

Tacky at room temperature, once applied it will adhere without heat.
09731 White, Round, 1 lb
09732 White, Square, 1 lb

Utility Rod Red

Tacky at room temperature, once applied it will adhere without heat.
09733 Red, Round, 1 lb

Utility Sheet Red

Tacky at room temperature, once applied it will adhere without heat.
00627 Red, Sheet, 1/2 lb

Kerr | Solutions & Carvers

Laboratory Solutions

A comprehensive line of application specific Separators, Surfactants, Die Lubricants and Solvents designed for your most crucial applications. Proven quality formulas that have been industry standards for over 30 years. Available in easy to use 8 oz spray bottles, and larger 32 oz refills.

Debubblizer

A surface tension reducing agent that allows investment to flow uniformly to all portions of the wax pattern. For use when hand mixing.

22320 8 oz Spray
22321 32 oz Refill

Vacufilm

A surface tension reducing agent developed specifically for investing under vacuum. Eliminating bubbles on the casting.

22327 8 oz Spray
22328 32 oz Refill

Super-Sep

An alocohol-based die separating fluid that dries on contact. Plaster, stone or investment can be poured against it immediately.

22325 8 oz Spray
22326 32 oz Refill

Microfilm

A non-oily, water-soluble die lubricant that allows a wax pattern to be removed without distortion. Allows for quick and clean separation.

22322 8 oz Spray
22323 32 oz Refill

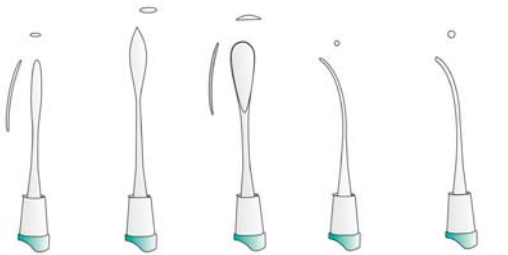
Laboratory Solitine

A solvent designed for cleaning and finishing wax patterns to a smooth surface. Also removes wax from wax injectors, wax pots and other tools.

00516 4 oz
22324 8 oz Spray

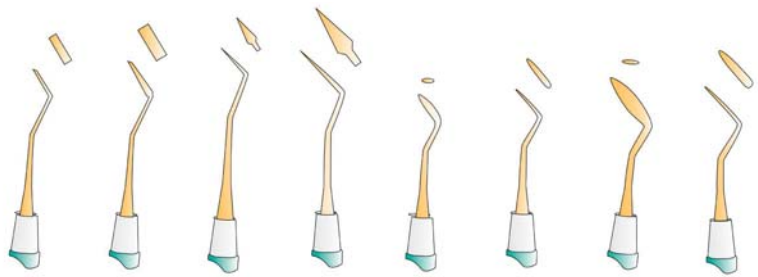
Two Part Wax Carvers

Innovative wax sculpturing instruments that are customize able by connecting two halves to create the ideal instrument for your particular need. Each half includes a connector screw. Instruments feature soft hexagonal silicone grips, and offer the option of Stainless Steel or Titanium Nitride coated blades for added strength to withstand higher temperatures.

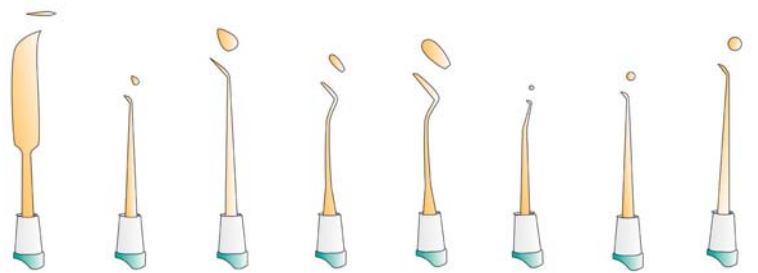


014-902 014-901 014-900 014-904 014-903

Set of 3 Waxing Instruments
Commonly used set, contains: Large Scoop, 1/2 hollenback Reg., Small Scoop, Small Cleoid, Large Discoid, Small Discoid.
014-965 Titanium Nitride
014-935 Stainless Steel



Stainless Steel	014-925	014-924	014-915	014-914	014-913	014-912	014-911	014-910
Titanium Nitride	014-955	014-954	014-945	014-944	014-943	014-942	014-941	014-940

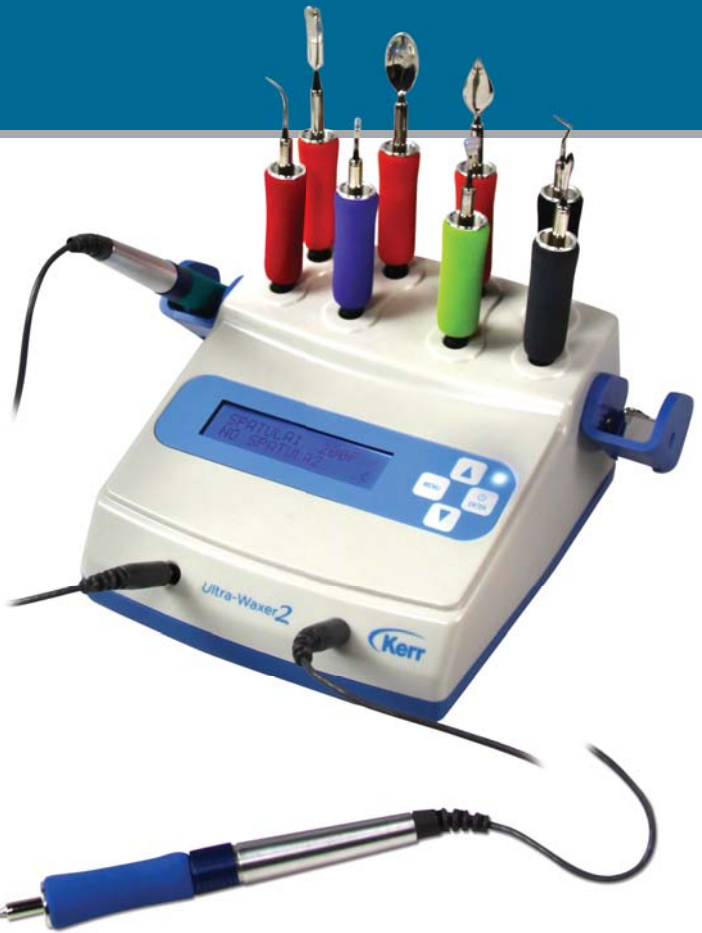


Stainless Steel	014-916	014-923	014-922	014-921	014-920	014-919	014-918	014-917
Titanium Nitride	014-946	014-953	014-952	014-951	014-950	014-949	014-948	014-947

Kerr | Waxing Equipment

Ultra-Waxer 2

The ultimate electronic waxer just got better, with dual spatulas for increased productivity, convenient tip holder for convenience and organization, and easy to use menu functions, such as programmable presets and quick heat function. Includes 2 Ultra-Spatulas and 2 Tips (Small PKT # 35167 and Large PKT #35168). Dual Voltage 100/240 Vac.
Item 34844



Ultra-Spatula and Tips

The Ultra-Waxer 2 still features an all aluminum, light weight Spatula, with interchangeable heating tips. The Ultra-Tips are color coded for quick identification, foam gripped for ultimate comfort, and the ability to change the tip while still hot.

35167 Small PKT, Blue
35168 Large PKT, Teal
35169 Beavertail, Purple
35170 Small #7, Grey
35171 Large #7, Green
35172 Needle, Red
35173 1/2 Hollenback, Black
35174 Small Denture, Pink
35175 Large Denture, Orange
35176 Denture Spoon, Yellow
35177 Ultra-Spatula, Cord/Handle

MasterTouch

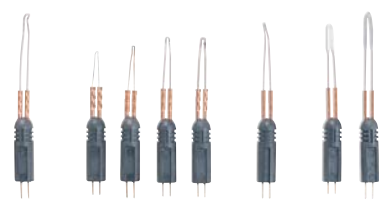
A versatile wax pen offering excellent wax control in pattern build-up and spruing. Exclusive feature offers instant tip heating and cooling when used with the optional foot control. Includes handpiece, foot control, and 2 tips (21878 and 21887). Dual voltage unit.

22129 Master Touch Kit
21871 Cord/Handle

MasterTouch Tips

Tips feature Nichrome wire tips with immediate heating and cooling. Tips have snap-n design that allows for easy and safe removal.

21874 20 ga, Long Bent
21876 20 ga, Bent
21877 22 ga, Bent
28788 24 ga, Bent
21879 28 ga, Bent
21887 20 ga, Rolled Flat Spatula
21888 22 ga, Rolled Flat Spatula
25780 22 ga, Pointed



Smoothy

The Smoothy produces a flameless jet stream of heated air and is ideal for the final stages of wax pattern sculpturing. Only 15 cm long, the Smoothy is held like a pencil and the hot air jet is passed over the surfaces of wax patterns to produce smooth, scratch free contours. The Smoothy can also be used as a mini-torch producing pencil point flame with temperatures up to 2300°F (1260°C), suitable for soldering precious metals, adding contacts and minor casting repairs. Operates on standard butane fuel and is UL registered. Supplied with one Crown and Bridge Finishing tip.

Item 013-950

Kerr | Casting Equipment

Centrifico

The Kerr Centrifico is a well made, precision casting machine that has been the industry standard for decades. It comes complete with accessories to cast all rings up to 3-1/2" diameter by 2-5/8" high, and features a Cast-R-Knob for easy and safe winding of the arm, heavy duty spring, and heavy duty construction.

00009 Centrifco Casting Machine
33703 Cast-R-Knob Spin Knob
15550 Casting Well

Clay Crucibles

Quality made, industry standard clay crucibles for all of your casting needs.

00027 (1 oz) 2 pk
00028 (2.5 oz)
12194 (2.5 oz) Quartz
09508 (7 oz)
15027 (12 oz)
11605 (20 oz)

Zircon Alumina Crucibles

Non contaminating, slotted crucibles for use with all alloys. Flat trough easily holds 30 dwt. of alloy. Color coded for use with specific metals to prevent cross contamination.

010-101 Yellow
010-103 Pink
010-105 Blue
010-001 White

Furnace Markers

Self sharpening, high temperature ferrous markers for casting molds. Will not burn away during burnout.

007-935 Yellow, marks flask
007-936 Brown, marks investment

Stainless Steel Flasks
00016 1C, 1-1/4" Dia.
00018 2C, 1-3/4" Dia.
32970 3C, 2-1/2" Dia.
00020 4C, 3-3/8" Dia.

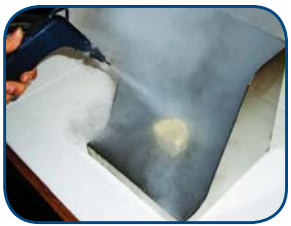
Rubber Sprue Bases
32401 T1, 1-1/4" Dia.
13989 T2, 1-3/4" Dia.
32969 T3, 2-1/2" Dia.
13247 T4, 3-3/8" Dia.

Touchsteam

Portable yet a workhorse, the Touchsteam Portable Steamer is perfect for any size lab for the elimination of film residue from soaps and ultrasonic cleaners. Also ideal for cleaning and neutralizing metal frameworks prior to porcelain application, removing pencil marks and polishing compound from models and dies, as well as cleaning porcelain before glazing. Heavy-duty stainless steel construction with a one gallon tank, and a cool-grip handpiece with interchangeable nozzles. It features a unique self-regulating pressure cap, and requires no plumbing. Footprint dimensions are 9" x 12", and weights less than 30 lbs when full.

An innovative Catch Tray system is available separately, allowing the user to control the spray and collect excess water in a connected reservoir. This allows even more portability - as it does not need to be placed near a sink.

33405 Touchsteam 110V
33406 Touchsteam 230V
33473 Catch Tray



Electro-Melt™

Electro-Melts are a line of compact electric furnaces for melting metals. They are designed to be hand-held for easy pouring of the metal directly from the furnace. This makes them ideal for use in casting, reclaiming, alloying and refining metals.

Electro-Melts are automatic and feature electronic controllers for extremely precise melting of metal, including high-karat gold. The electronic feature regulates the temperature by providing full power input to the furnace until a selected temperature is attained, and will hold the temperature to a +/- 5°F/3°C. Maximum temperature 1120°C/2050°F.

Standard Electro-Melt (1 kg)

Melting Capacity:
Gold - 930 g / 30 Troy oz
Silver - 775 g / 25 Troy oz
21 minutes to 982°C/1800°F

31809 120V
31808 230V

Electro-Melts are supplied with a graphite stirring rod and a graphite crucible which provides a reducing atmosphere during melting.

Maxi Electro-Melt (3 kg)

Melting Capacity:
Gold - 3.1 kg / 100 Troy oz
Silver - 2.6 kg / 83 Troy oz
31 minutes to 982°C/1800°F

31811 120V
31810 230V

Super Flux

A special jewelers compound for fluxing precious metals when torch melting or furnace melting.
8 oz / 226 g jar.
12067

Graphite Crucibles

Designed for Kerr Electro-Melts, these graphite crucibles provide maximum resistance to oxidation while metal is being melted.
29478 30 oz / 1 kg (Standard)
29479 100 oz / 3 kg (Maxi)

Investment Mixing Instructions for Satin Cast Series, KerrCast 2000 and Supervest 20

1. Weigh investment.

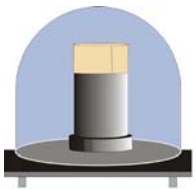
2. Measure water.

3. Add investment to water.

4. Mix 3 to 3-1/2 minutes.

5. Vacuum 20 seconds after boil.

6. Pour into flask.



7. Vacuum up to 90 seconds.

8. Let flasks sit still for 2 hours.

9. Preheat furnace 300°F / 149°C. (for multiple flasks do not preheat)

10. Remove sprue base.

11. Load into furnace.

12. Follow appropriate burnout cycle.

Investment Troubleshooting

Condition	Causes / Corrections
"Fins" or flash on casting (added thin metal extensions)	Incorrect water/powder ratio causing weak investment mold, investment improperly stored, investment extended past work time, flasks disturbed too soon, flasks heated too rapidly
"Non-fills" (incomplete castings)	Pattern improperly sprued (too thin or too few), incomplete wax burnout, mold too cool when cast, metal too cool when cast, insufficient metal by weight
Porous castings (fine cavities in metal)	Pattern improperly sprued, incomplete wax burnout, metal overheated, mold too hot, too much "old" metal (never use more than 50%), metal insufficiently fluxed, too much flux added to metal
Foreign particle inclusions	Sharp corners and bends in sprue system, flask placed in furnace too soon, flask heated too fast
Spauling (portion of investment in mold)	Sharp corners and bends in sprue system, flask placed in furnace too soon, flask heated too fast, investment handled past work time
Bubbles / Nodules	Wax patterns not painted with wetting agent, slurry not sufficiently mixed, vacuum in need of pump oil
Rough Surface	Roughness on wax pattern, pattern improperly sprued, incorrect water/powder ratio
Watermarks (grainy surface)	Investing too rapidly, incorrect water/powder ratio, investment handled past work time

Investment Recommended Water / Powder Ratios

To determine the number of pounds of investment needed to fill any particular flask, divide the cubic inch content of the flask by 20.
(1 lb = 454 grams).

To determine flask content in cubic inches:

Round Flask:
0.7854 x dia.^{2} x height

Square Flask:
width x length x height

			Heavy Castings Heavy Ladies Rings, Men's Rings & School Rings **38 ml water to 100 g powder**					**Regular Castings** Ladies Rings, Pendants, Filigree & Intricate Wax Patterns **40 ml water to 100 g powder**			
Weight / lbs.	**grams**		**Water av. oz**	**ml**	**Yields cubic inch**	**Yields cubic cent.**		**Water av. oz.**	**ml**	**Yields cubic inch**	**Yields cubic cent.**
1/2	227		3.0	86	10.5	174		3.2	91	11	179
1	454		6.1	172	21	349		6.4	182	22	359
5	2268		31	862	107	1745		32	908	110	1794
10	4535		61	1724	213	3490		64	1816	219	3589
15	6803		92	2586	320	5235		96	2724	329	5383
20	9070		122	3448	426	6980		128	3632	438	7178
25	11338		153	4310	533	8725		160	4540	548	8972

Investment Powder & Water Requirements for Flask Sizes

Top Figure - Investment Powder (oz), Bottom Figure - Water (ml)

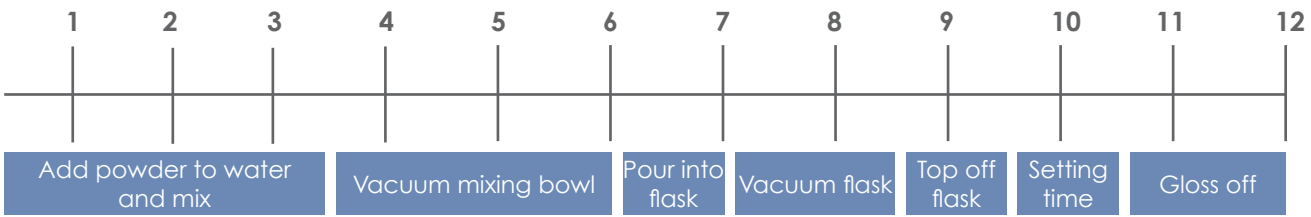
Regular Castings
Ladies Rings, Pendants,
Filigree & Intricate Wax Patterns
40 ml water to 100 g powder

Heavy Castings
Heavy Ladies Rings,
Men's Rings & School Rings
38 ml water to 100 g powder

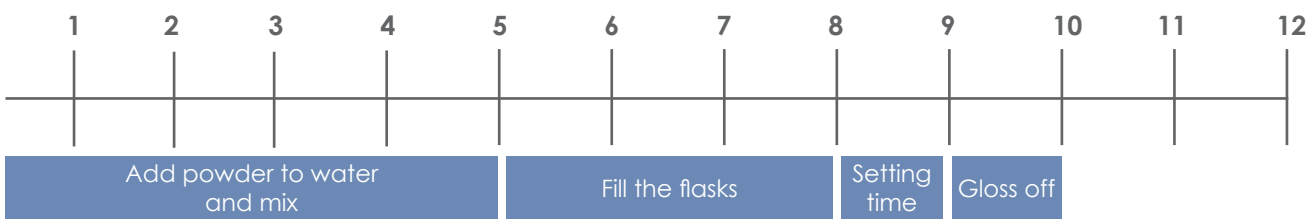
Flask Diameter	Height 2"	2.5"	3"	3.5"	4"	5"	6"		2"	2.5"	3"	3.5"	4"	5"	6"
2"	5 oz 57 ml	6 oz 68 ml	7.5 oz 85 ml	9 oz 102 ml	10 oz 114 ml				5 oz 53.9 ml	6 oz 64.6 ml	7.5 oz 80.8 ml	9 oz 97 ml	10 oz 107.8 ml		
2.5"	8 oz 91 ml	10 oz 114 ml	12 oz 136 ml	14 oz 160 ml	16 oz 183 ml	20 oz 228 ml			8 oz 86.2 ml	10 oz 107.8 ml	12 oz 129 ml	14 oz 150.9 ml	16 oz 172.5 ml	20 oz 215.6 ml	
3"	12 oz 136 ml	15 oz 170 ml	18 oz 205 ml	21 oz 240 ml	1.5 lb 274 ml	30 oz 340 ml	32 oz 410 ml		12 oz 129.3 ml	15 oz 161.7 ml	18 oz 194 ml	21 oz 226.4ml	1.5 lb 258 ml	30 oz 323 ml	32 oz 345 ml
3.5"	1 lb 182 ml	1.25 lb 228 ml	1.5 lb 274 ml	1.75 lb 320 ml	2 lb 364 ml	2.5 lb 456 ml	3 lb 548 ml		1 lb 172 ml	1.25 lb 215 ml	1.5 lb 258 ml	1.75 lb 301 ml	2 lb 344 ml	2.5 lb 430 ml	3 lb 516 ml
4"	18 oz 205 ml	23 oz 262 ml	27 oz 308 ml	2 lb 364 ml	2.25 lb 410 ml	3 lb 546 ml	3.5 lb 637 ml		18 oz 194 ml	23 oz 247.9 ml	27 oz 291 ml	2 lb 344 ml	2.25 lb 387 ml	3 lb 516 ml	3.5 lb 602 ml
5"					3.75 lb 682 ml	4.75 lb 864 ml	5.5 lb 1000 ml						3.75 lb 645 ml	4.75 lb 817 ml	5.5 lb 946 ml

Recommended Work Time - In Minutes

Conventional Mixing



Vacuum Mixing



Work Time: Work time is the time that has elapsed between adding the powder to the water, and when the investment thickens.

Water Temperature: Water should be 70°F / 21°C to 75°F / 24°C. Colder water extends work time, warmer water shortens work time.

Recommended Burnout Cycles

Casting Temperatures

Ladies Rings,
lacy or intricate designs
900º - 1000ºF (482º - 538ºC)

Gents Rings,
heavier designs
700º - 900ºF (371º - 482ºC)

During the last 1 to 2 hours of burnout, the temperature must be adjusted so that the flasks are at correct temperature for casting.

5 Hour Cycle
2 - 1/2" x 2-1/2"
(63 x 63 mm)

8 Hour Cycle
3-1/2" x 4"
(89 x 100 mm)

12 Hour Cycle
4" x 8"
(100 x 200 mm)

73ºF/23ºC
Ambient

300ºF/149ºC
5 Hour - 1 hr
8 Hour - 1 hr
12 Hour - 2 hr
Initial Wax and Water Elimination

700ºF/371ºC
5 Hour - 1 hr
8 Hour - 2 hr
12 Hour - 2 hr
Trapped Wax Elimination

900ºF/482ºC
8 Hour - 1hr
12 Hour - 2 hr
Thermal Expansion of Mold

1350ºF/732ºC
5 Hour - 2 hr
8 Hour - 3 hr
12 Hour - 4 hr
Complete Elimination

Casting Temp.
5 Hour - 1 hr
8 Hour - 1 hr
12 Hour - 2 hr
Temperature Reduction

Cast

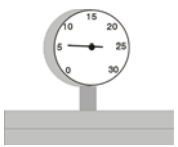
Note: *Graph is meant as a guide only, adjustments should be made as necessary. 5, 8 and 12 Hour Cycles represent hold times only, and do not include ramp time. Recommended ramp time of approximately 9ºF / 5ºC per minute.*

Instruction / Injection Wax

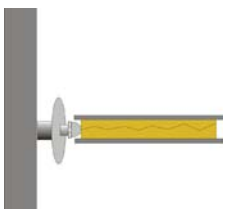
Injection Wax Instructions for AccuBeads and AccuFlakes

1. Fill wax pot and heat to specific injection temperature. It is important not to overheat the wax.

2. Spray both sides of the rubber mold with Kerr Microfilm or Silicone Mold Release spray. Open mold fully by bending it backwards in order to reach all ares with the spray. It is not necessary to spray each time before injecting the mold.



3. Adjust air pressure on wax injector to between 3 and 10 pounds. Higher pressure can be used if necessary. However, for best results keep pressure under 15 pounds.



4. Put rubber mold into clamp or hold between two plates applying moderate pressure by hand. Insert nozzle into sprue opening in mold. Press mold into nozzle for 5 to 7 seconds. Make sure rubber mold is at 90 degree angle for best results.

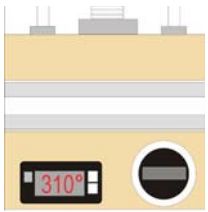
5. Wait for 1 to 1-1/2 minutes to allow wax to solidify. Open mold carefully and remove pattern making sure that you do not force the pattern out of the mold.

6. Change wax in injector pot every 2 to 3 months. Use Kerr Laboratory Solitine or other wax solvent for cleaning of the wax pot and injection nozzle.

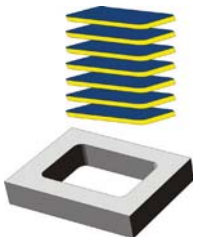
Injection Wax Troubleshooting

Condition	Cause	Correction
Mold overfills	Air pressure too high Wax too hot Mold plates held uneven Mold held too long at nozzle	Reduce air pressure Adjust temperature Hold plates firmly, distributing pressure evenly Hold for less time
Mold not filling	Air pressure too low Wax not hot enough Nozzle plugged	Adjust air pressure Adjust temperature Remove and clean
Air bubbles in pattern	Air pressure too high Wax pot low on wax Wax too hot or too cold	Adjust air temperature Add wax, ensure wax pot is more than 1/2 full Adjust temperature and stir wax to release trapped air
Wax brittle	Wax too hot Wax has been reused Molds cooling too long	Adjust temperature Use new wax Inject fewer molds during cycle production
Wax discolored	Wax too hot	Clean wax pot, add new wax

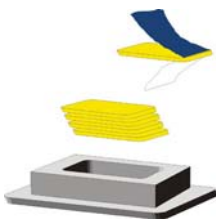
Mold Rubber Instructions



1. Preheat vulcanizer to 310°F / 155°C. Temperature should not exceed 325°F / 163°C.



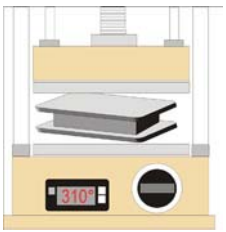
2. Cut the rubber to fit into the mold frame.



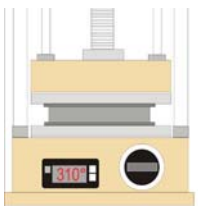
Remove backing from both sides of rubber and place first layers into mold pressing firmly.

3. Cut and form rubber around model, filling all voids.

Press the model into center of rubber. Pack remaining layers.

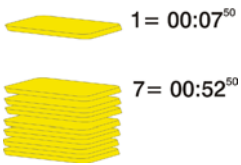


4. Place second mold plate on top and place between platens.



Close platens firmly, continue to tighten at two minute intervals, after 8 minutes give final tightening.

Vulcanizing Time



5. Deterimine the correct vulcanizing time by allowing 7.5 minutes per layer of rubber. For example a 3/4" (20mm) thick mold frame will take 7 layers of rubber, and will take 53 minutes of vulcanizing time. For best results do not exceed these time limits.

6. After vulcanizing, remove and allow to cool at room temperature for approximately 25 minutes before cutting.

Mold Rubber Troubleshooting

Condition	Cause	Correction
Cut mold does not seal evenly (warping)	Caused by tilt of platens	Ensure that platens are parallel in closing
Voids in mold	Model not filled in with rubber	Pack rubber pieces into and around model Preheat vulcanizer to 310°F/155°C Tighten vulcanizer 1/2 turn past first resistance Allow 15 minutes at 310°F/155°C for every 1/4" / 6mm. For intricate molds allow 20 minutes at 290°F/143°C for every 6mm.
Mold delaminates after curing	Surface of strips not clean Rubber has begun to vulcanize	Use new strips. Do not contaminate surfaces with hands, and protect from dirt or dust.
Mold soft and sticky in center	Underheated. Cure too short. Heating element burned out.	Check temperature of platens Cure 15 minutes for each 1/4" / 6mm.
Mold has pebbly surface **Mold is sticky and scorched** **Excessive shrinkage** **Lack of flexibility**	Overheated	Check calibration of vulcanizer

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