

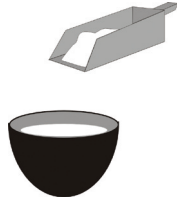
Investment Mixing Instructions



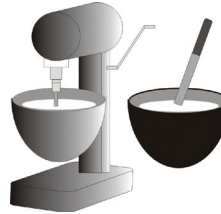
1. Weigh investment.



2. Measure water.



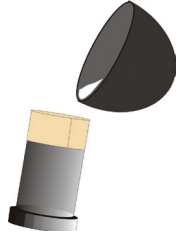
3. Add investment to water.



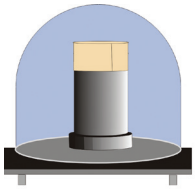
4. Mix 3 to 3-1/2 minutes.



5. Vacuum 20 seconds after boil.



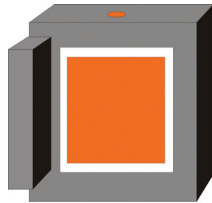
6. Pour into flask.



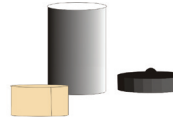
7. Vacuum up to 90 seconds.



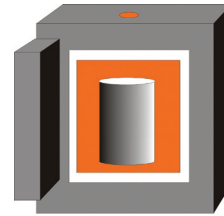
8. Let flasks sit still for 2 hours.



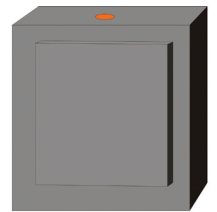
9. Preheat furnace 300°F / 149°C.
(for multiple flasks do not preheat)



10. Remove sprue base.



11. Load into furnace.



12. Follow appropriate burnout cycle.

Investment 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)

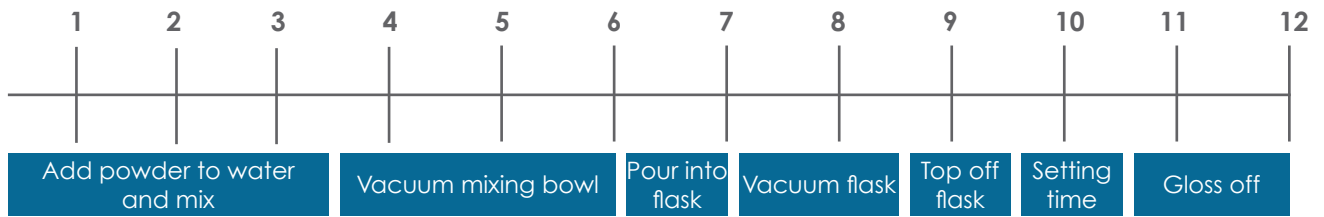
Regular Castings
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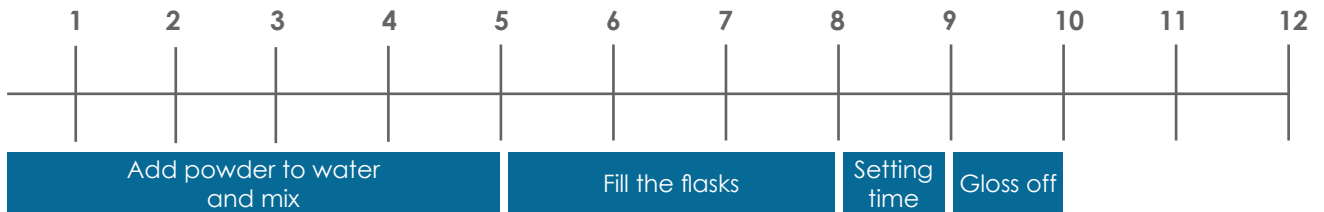
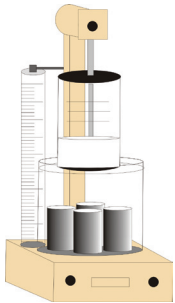
Flask Diameter	Height 2"	2.5"	3"	3.5"	4"	5"	6"		2"	2.5"	3"	3.5"	4"	5"	6"
2"	5 oz 57 ml	6 oz 68 ml	7.5 oz 85 ml	9 oz 102 ml	10 oz 114 ml				5 oz 53.9 ml	6 oz 64.6 ml	7.5 oz 80.8 ml	9 oz 97 ml	10 oz 107.8 ml		
2.5"	8 oz 91 ml	10 oz 114 ml	12 oz 136 ml	14 oz 160 ml	16 oz 183 ml	20 oz 228 ml			8 oz 86.2 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.

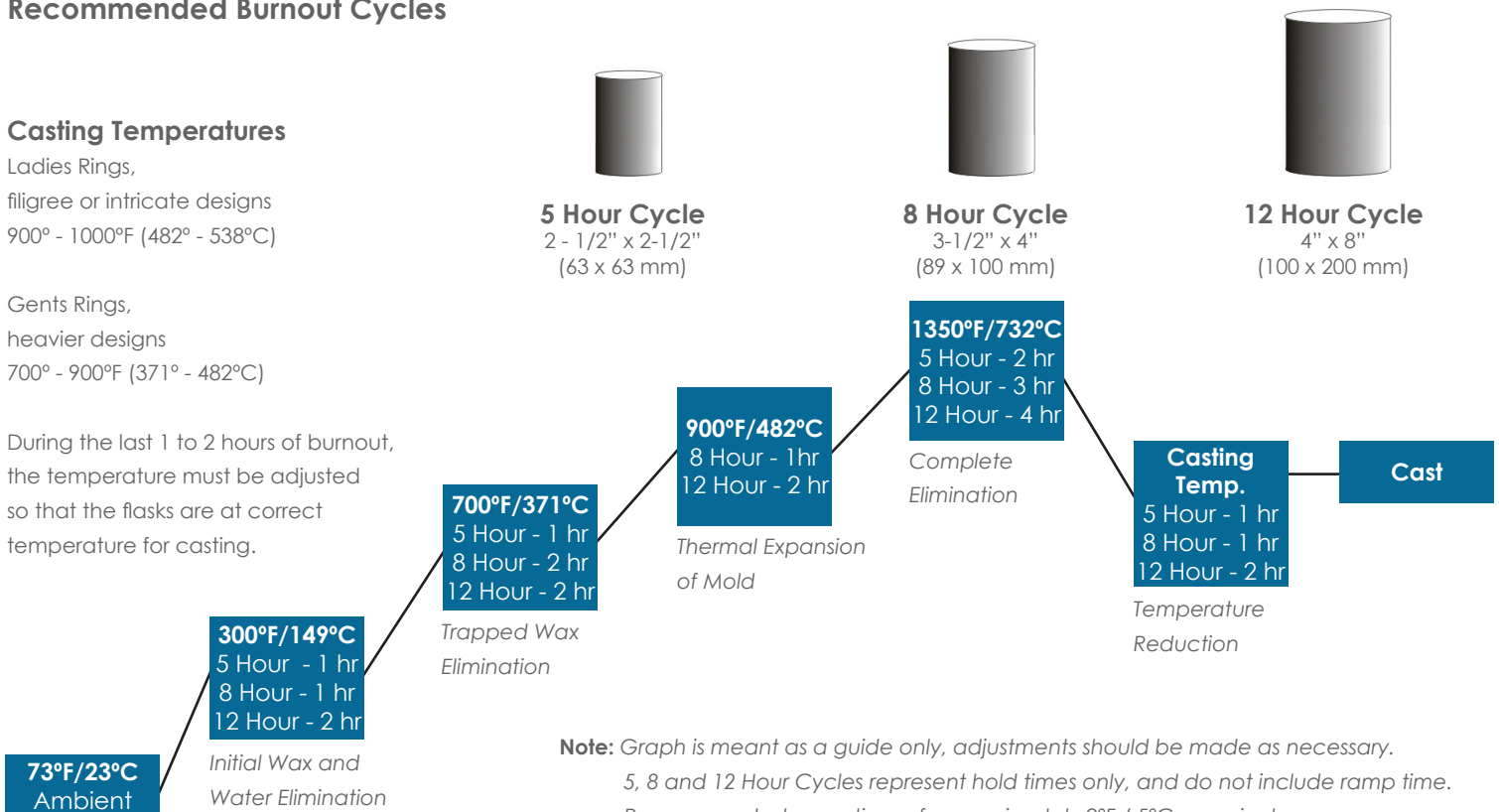
Recommended Burnout Cycles

Casting Temperatures

Ladies Rings,
filigree or intricate designs
900° - 1000°F (482° - 538°C)

Gents Rings,
heavier designs
700° - 900°F (371° - 482°C)

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



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 9°F / 5°C per minute.

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



Satin Cast 20™



Satin Cast Xtreme™

Casting Investment Application Chart

Product	Application
Satin Cast 20	Highest quality gold and silver.
Satin Cast Xtreme	Highest quality white gold.