



# PROTOCAST

**PROTOCAST IS A NEWLY DEVELOPED AND IMPROVED INVESTMENT CASTING POWDER FOR DIRECT CASTING OF RAPID PROTOTYPED/ 3D PRINTED PIECES OR PATTERNS.**

**PREMIUM  
INVESTMENT  
POWDER FOR  
CASTING 3D  
PRINTED WAX  
AND RESIN  
PATTERNS**

Suitable for casting both resin and wax printed pieces, Protocast was developed by GRS in the United Kingdom to offer continued improvement on the casting of rapid prototyped pieces or patterns.

3D printing is fast moving in terms of technology, Resin and the design or print demands. GRS are committed to continuously developing their investment casting powders to match the industry's needs and have extensively tested Protocast with both resin and wax pieces or patterns from various 3D printer manufacturers for optimal results.

It has been developed to suit all manufacturer's casting resins or waxes and will easily cast all alloys including high percentage Palladium White Gold. The mixing, investing and burnout process does not need amending from the standard investment powder procedures so as to avoid any changes in customers current processes.



[WWW.GRSCASTINGPOWDERS.COM](http://WWW.GRSCASTINGPOWDERS.COM)

**GOODWIN REFRACTORY SERVICES LTD.**

Spencroft Road, Newcastle-under-Lyme, England, ST5 9JE

info@grscastingpowders.com T: +44 (0)1782 663600 F: +44 (0)1782 663611

Do not burnout until a minimum of 90 minutes after investing. During this 90 minute period flasks should not be touched, this includes stripping bases and removing vacuum tape. Do not load flasks into a hot furnace. Always follow the recommended burnout cycle and never place flasks closer than 15mm to elements. Always ensure you do not over or under load your furnace, as this will affect the burnout cycle.

Do not remove flasks from furnace to cast until they have been held at casting temperature for a minimum of 1 hour.

If held for less than 1 hour, the core of the flasks will be at a much higher temperature than the digital temperature display states, and may result in metal mould reaction.



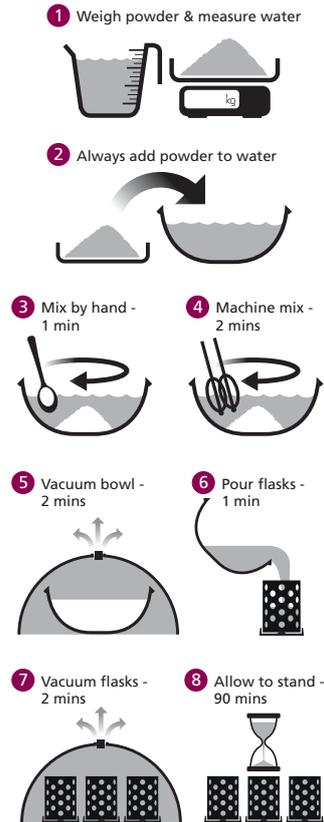
### CAUTION

Always use Resin/CAD manufacturers post build procedure to ensure optimum results using Protocast. Consult Resin/CAD manufacturer for post build procedure.

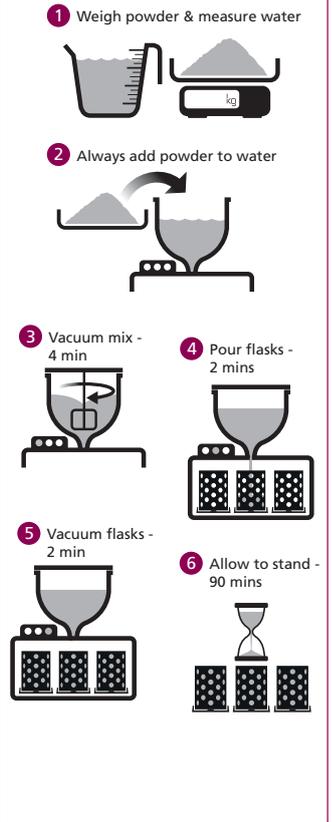
Water/Powder Ratio 40:100	
Conventional Mixing	Time (Mins)
Add Powder To Water	-
Hand Mix	1
Machine Mix	2
Vacuum Bowl	2
Pour Flasks	1
Vacuum Flasks	2
<b>Total Mixing Time</b>	<b>8</b>

Water/Powder Ratio 38-40:100	
Vacuum Mixing	Time (Mins)
Add Powder To Water	-
Mix Under Vacuum	4
Pour Flasks	2
Hold Under Vacuum	2
<b>Total Mixing Time</b>	<b>8</b>

### Conventional Mixing



### Vacuum Mixing



## BURNOUT PROCEDURE

