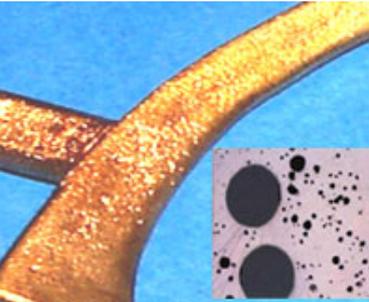
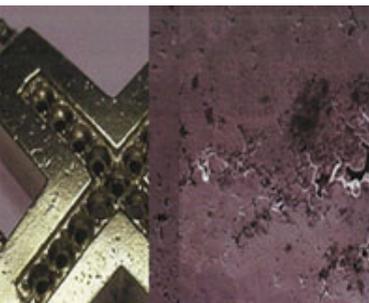


**Jewellery Trouble Shooting** Casting problems

## Casting problems

Problem	Cause	Remedy
Flashing or Finning 	Incorrect powder/water ratio (too much water)	Use correct amount of water (especially important with vacuum investing machines)
	Work time of investment too long. Slurry start to set while still under vacuum.	Ensure the work time is fully used. Normally 8 minutes.
	Casting the material with too much force.	For centrifugal casting, use the correct spin For vacuum casting, reduce pressure.
	Moving flask too soon	Leave the flasks for at least 1 hour.
	Moulds allowed to dry out before burn out.	If not burning out the same day, keep moulds wet by covering with wet sacking.
	Flasks overheated during burn out.	Ensure maximum burn out temperature does not exceed 750 °C
Bubbles	Investment too thick. Too little water.	Use correct powder/water ratio.
	Vacuum pump/tank faulty.	Ensure equipment is regularly serviced and adequate for the task.
Water marking	Incorrect powder/water ratio (too much water)	Use correct amount of water (especially important with vacuum investing machines)
	Work time of investment not used up.	Ensure the work time is used up and slurry temperature is 20 - 30 °C.
	Investment powder expired(too old)	Do not keep investment too long time.
Blister	Dewax soak time not long enough.	Extend time for dry dewax at least 3 hours (temperatures between 150 to 250°C)
	Flasks dewaxed at too high temperature.	Do not exceed 250°C during dry de-wax. Wax will boil and erode investment surface.
	Flasks put in furnace too soon after investing.	Leave flasks undisturbed for a minimum of one hour before de-wax.

Problem	Cause	Remedy
Rough surfaces 	Rough waxes. Flasks dewaxed at too high temperature. Steam de-wax for too long. Flasks overheated during burn out. Metal temperature too hot.	Use too much powder on the rubbers. Do not exceed 250°C during dry de-wax. Wax will boil and erode investment surface. Steam, de-wax for a maximum of 1 hour. Steam will erode surface of the casting. Ensure maximum burn out temperature does not exceed 750 °C Reduce metal casting temperature.
Gas porosity 	Usage of low quality metal. Reaction with investment temperature. (Flask temperature too hot) Overheating the metal. Temperature inside furnaces over.	Do not use more than 50% recycled alloy and ensure it is clean. Reduce flask temperature down, Specially on big design. Reduce metal casting temperature. Ensure the quality of Thermocouple can control temperature.
Shrinkage porosity 	Incorrect spruing	Sprues should be attached to the heaviest piece of the casting. There should be sufficient sprues to ensure the casting is adequately fed.
Incomplete casting	Metal or flask temperature too cold.	Increase casting temperatures. If the metal or flask is too cold, the metal will



freeze before completely filling the mould.

Improperly sprued.

the sprue system should be designed to allow the metal to enter easily and without restriction.