



# **Powders**

## **Aerospace Industrial Investment Powder**

Goodwin Refractory Services is one of the world's largest manufacturers of Industrial Investment Powder for the Aerospace, Automotive, Rapid Prototyping and other Industrial applications.

In conjunction with our customers, over many years, we have developed a versatile range of investments to suit all applications. These can be tailored to an individual foundry's specification, producing an investment powder which will cope with the most demanding of tolerances.

GRS has the ability to carry out manufacturing trials at our UK facility, to offer our technical consultancy service and help improve the quality of the castings and manufacturing efficiency. GRS Industrial Investment Powders are used to manufacture parts for use by such world renowned names as Boeing and Airbus from the Aerospace Industry; and Ferrari Formula 1, B.M.W. Mercedes and Volkswagen Audi from the Automotive Industry.

#### M028

This is our most popular Industrial Investment and was formulated in our laboratory for the production of high-accuracy, thin-walled Aluminium castings and other low-temperature, non-ferrous alloys for the aerospace industry.

### M456

This has been developed for thin-walled castings, in particular those containing vented channels where the inner wall integrity is vital, and the ease of removal of the investment after casting is essential; this may often be required when casting military parts, for example in the new Eurofighter aircraft.



**Eurofighter Typhoon** 







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## **Aerospace Industrial Investment Powder**

## **Mixing Instructions**

#### M028

Water:	Vacuum Mixing
Powder Ratio	27 : 100

Machine Vacuum Mixing	Min.
Weigh out water & powder	-
Add powder to water	-
Mix under vacuum	4
Pour flasks	2
Hold flasks under vacuum	2
Total time taken	8

<sup>•</sup> Leave for 90 minutes to stand before burnout.

### M456

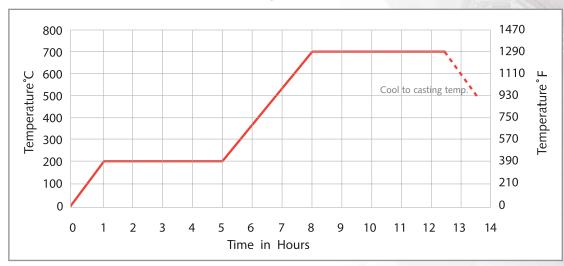
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### **De-Waxing**

To achieve best results flasks should be steam de-waxed in an autoclave at a pressure not to exceed 10 PSI (0.7 bar).

## **Recommended Burnout Cycles**



Dwell times at 200°C and 700°C will vary depending on the size of the flask. Larger flasks will take longer.



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