Ultimate control of bead fusion with the Vulcan series of automatic fusion machines

Good sample preparation is an essential part of obtaining accurate analytical results, no less so in the preparation of fused beads: the choice of the correct quality flux, the method and the equipment for producing the bead. Accurate temperature adjustment and control, including the correct cooling regime, are crucial to making quality, reproducible fused beads.

The Vulcan addresses all the control issues and proves second to none in Automatic Bead Fusion, providing:

Accurate flame control for optimum fusion conditions, using gas, air and oxygen mixes
❑ Repeatable and stable fusion temperatures with no variation due to ambient conditions
❑ Low burner temperatures for sample oxidation and no upper temperature constraints, reducing the need for complex flux mixes
❑ Programmable gas control for multiple temperature settings including temperature ramping during fusion gives system flexibility when a wide range of samples types need to be fused (Optional)

Separate burners and cooling control for casting dishes
❑ Correct temperature of casting dish allows good bead formation
❑ Control of cooling conditions improves bead release and reduces the need for release additives
❑ Correct flame timing maintains good condition of platinum ware

Flexibility and programmability
❑ All functions have an override capability to allow manual control of the fusion process, for safety and during method development
❑ Fusion programs and advice available for special applications such as ferro alloys. Fusion settings can be stored in memory as application programs, allowing accurate, repeatable control of the fusion process

The Vulcan can also be used to directly prepare solutions for ICP/AAS or a combination of beads and solutions.

Vulcan models and specifications

The Vulcan is available in two model ranges.

1) The M series is fully microprocessor controlled allowing detailed setting and control of all the timing, agitating, casting and cooling functions. Up to ten fusion programs can be stored permanently in memory. Two gas setting stages are available, one low temperature setting, for example, if pre oxidation of the sample is required and one for main fusion. Temperatures would normally be optimised at installation and fixed for routine operation.

2) The MA series has all the features of the M with the addition of automatic gas control through precision valves and microprocessor supervision. This provides precise flame control, repeatability and even reliable transfer of programs from one Vulcan machine to another. If required multiple temperatures can now be programmed into a fusion process.

Model	Vulcan 2MA	Vulcan 4MA	Vulcan 6MA
Number of burners	2	4	6
Voltage	110-230 50Hz	110-230 50Hz	110-230 50Hz
Power	170W	210W	210W
Air pressure (max)	6 bar	6 bar	6 bar
Propane pressure	50 mbar	200 - 250 mbar	200 -250 mbar
Oxygen pressure	1.2 bar	1.2 bar	1.2 bar
Length	530 mm	530 mm	530 mm
Width	530 mm	700 mm	700 mm
Height	250 mm	250 mm	250 mm
Samples per hour	8 to 10	16 to 20	24 to 30

Analysco offers a complete range of accessories, consumables and sample preparation equipment for XRF. Expert training courses can also be arranged if required. Please contact us for more information.

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