

# XRF Scientific Ltd

## Mineral Sands - Zircon and Titaniferous

Fusion Example

### Chromite sand and high chromium content specimen

Flux Types:

XRFSATS100 when the dosage of alkali is not important

XRFS5050 (if dosage of K and Na is not requested)

XRFS65 G, XRFS35G, and

XRFSATLMP/Dev mix of ATL100, AML with lithium metaphosphate

Very difficult samples: cassiterite, zirconium high content etc.

XRFSG grades 100-250, F20 G

It is easy to detect if the specimens are not well dissolved by the examination of the glass disc. Bad dissolution gives crystallisation, cracking of the glass disk, opaque glass beads.

Additive: Lithium bromide, iodide

### Quartzite sand (pure SiO<sub>2</sub>)

Flux types: XRFS7030. XRFS65. XRFSLiF10.

The heating temperature should be high typically 1200 °C.

Fast swirling is important as the SiO<sub>2</sub> tends to concentrate in the bottom of the crucible and thus are difficult to dissolve. (Recommended Phoenix speed 60 %)

Note. In older opposition automatic fusion machines with classical gas/air **only** burners, even equipped with special crucibles, increases in the rocking will not dissolve all of the silica using a standard mixture of prefused anhydrous flux. (particle size between 100 and 500 µm)

XRFS has developed new fluxes with varying particle size constraints. The use of this grade improves the total specific surface of the specimen/sample system and permits the easier dissolution of pure SiO<sub>2</sub>. The particle size distribution is an important factor when used with gas/oxygen burners (Phoenix machines) in obtaining optimal results.

Flux types: XRFS7030G. XRFS65G

Please contact your local distributor for more information on our applications. XRFS offers a sample preparation service free of charge to intended customers.

## Recommended References

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<b>Fusion XRF Procedure - Zircon</b>	<p><a href="#">AS 4392.2-1997 : Heavy mineral sands - Analysis by wavelength dispersive X-ray fluorescence spectrometry - Zircon materials</a></p> <p>Abstract This Standard sets out a wavelength dispersive X-ray fluorescence procedure for the determination of zirconium, hafnium, silicon, aluminium, titanium, iron, phosphorus, calcium, lanthanum, cerium, thorium, uranium, arsenic and lead in zircons. Sulphur is included in the analytical program for information only; sulphur is not reported.</p>
<b>Fusion XRF Procedure - Titaniferous Mineral Sands</b>	<p><a href="#">AS 4392.1-1996 : Heavy mineral sands - Analysis by wavelength dispersive X-ray fluorescence spectrometry - Titaniferous mineral sands</a></p> <p>Abstract This Standard sets out a wavelength dispersive X-ray fluorescence procedure for the determination of titanium, iron, aluminium, silicon, zirconium, manganese, vanadium, niobium, calcium, chromium, magnesium, sulphur, cerium, phosphorus, lanthanum, thorium, uranium, tin, arsenic and lead in titaniferous mineral sands. The method is applicable to all titaniferous heavy mineral sands (including synthetic rutile)</p>