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| OverviewThis short paper will give you a description of how samples are prepared for elemental analysis by X-ray fluorescence (XRF).MethodPressed powder pellet: Is used for low concentration elements of high atomic number. In geology called trace elements (10 to 100s ppm). To get the maximum intensity the samples will not be diluted by flux.It is very important that the whole sample has the same grain size. Because different minerals in geological material have a different hardness, the ease of crushing them will vary. Therefore the sample should be sieved through a 125 µm mesh and make sure that the whole sample goes through. Sample preparation:Put 10 g of rock sample (finely grounded <125 µm) in an agate mortar and add 2 ml Elvacite or Paraloid -solution (purely organic compound of Methyl-butyl methacrylate). Mix well with a pestle until the powder is completely dry, and there is a very thin film of Elvacite around each grain. Place your sample in the form and press it with a load of 20 ton. Release the sample from the form and place the sample in an oven at 80 ◦C for ca 1 hour to harden it.The form must be cleaned and washed with ethanol after use to prevent oxidation. Wrap the different parts of it in paper for storage.Glass bead: Used for elements with atomic number lower than ca 20 = Na, Mg, Al, Si, P, K and Ca in addition to Ti, Mn and Fe (Main elements in geological material).1 part of sample is being mixed with 9 parts of Spectroflux 100 (Li-tetraborate). Flux is used to give all samples a similar matrix and to make the melting process easier.The mixture of sample/flux will be melted at 1150 ◦C in a crucible made of Pt with 5% Au to let the melt drop from the crucible more easily. We have a special machine for melting, a Perl’x 3, which is programmed to the right melting temperature, time, agitation etc. The melting process in the machine ends by casting the melt in a Pt/Au form and air cooled. Beads then can be released from the form and numbered.Sample material must be ignited, and loss of ignition determined before mixing with flux. Loss of ignition is used for correction of results of the analysis to represent the original (not ignited) material. Blindern, Nov.01 2007 TW/MN/BLB   | ‹ | This paper is written byTurid Winje, Berit L. Berg og Mufak Naoroz November 2007 |