



- **SCOPE**

- This is a mixed acids digest which dissolves reasonably well most acid soluble minerals like carbonates, sulphides and oxides apart from silicates and certain refractory minerals (e.g. cassiterite, tantalite, rutile, etc).

- **PRINCIPLE**

- This digest involves the breaking down of oxides, sulphides, carbonates and other acid soluble minerals and the formation of salts which dissolve readily in hot Hydrochloric acid.

- **PROCEDURE**

- Catch weigh  $0.300 \pm 0.030$ g pulped sample into teflon beaker
- Add 10 ml  $\text{HNO}_3/\text{HClO}_4$  Mix
- Replace beaker on hot plate and heat at  $105^\circ\text{C}$  for 1 hour, at  $150^\circ\text{C}$  for 1 hour, at  $200^\circ\text{C}$  for 1 hour and finally at  $250^\circ\text{C}$  till dry (or nearly dry).
- [If Sulfur is required allow to stand at room temperature for 2 hours before heating at  $105^\circ\text{C}$ ].
- Remove beaker from hot plate and cool to room temperature. Add 12 ml  $\text{HCl}/\text{HNO}_3$  Mix and place polypropylene watch glass on beaker and heat at  $140^\circ\text{C}$  for 20 minutes or till all salts are dissolved.
- Remove beaker from hot plate and cool to room temperature. Wash contents of beaker into 30ml polystyrene vial and make volume up to 30 ml with doubly deionised water. Screw lid on and mix solution thoroughly. Deliver solutions to ICP section.
- Ag, As, Cu, Fe, Mn, Pb & Zn are determined analysed using a Perkin Elmer 5300V ICP-OES.