Dissolve Inorganic Samples

Ores, rock samples, glass and other inorganic materials can be dissolved rapidly in Parr Acid Digestion Vessels using strong mineral acids: HF, HCl, H₂SO₄, HNO₃, Aqua Regia and others. Other chemicals and manufactured products can be leached or dissolved as well, all without introducing unwanted ions and with complete sample recovery. Using reaction temperatures well above normal boiling points, samples can be dissolved or digested rapidly for all types of chemical analyses, particularly for AA and ICP spectroscopy, and for other instrumental methods in which trace elements must be identified.

Digest Organic Materials

Organic samples can be treated with nitric acid and other oxidizing acids in these vessels with no difficulty, provided certain safety precautions are observed. Alkaline or acid hydrolysis reactions can also be handled equally well.

Other Uses

In addition to their normal uses for sample digestion and dissolution, these vessels serve as excellent general purpose reactors for procedures requiring a small PTFE lined vessel for use within prescribed temperature and pressure limits. Agitation can be produced by a magnetic stir bar or by shaking or rolling the vessel. These vessels have proven to be an excellent means to perform hydrothermal synthesis. Hydrothermal synthesis is a technique that involves the growth of materials from aqueous solutions at elevated temperature and pressure. The term hydrothermal usually refers to any heterogeneous reaction in the presence of aqueous solvents and complexing agents under high pressure and temperature conditions to dissolve and recrystallize materials that are relatively insoluble under ordinary conditions. The hydrothermal technique is widely used for the synthesis of a variety of inorganic compounds, nanomaterials and zeolites. It is a highly interdisciplinary subject and the technique is popularly used by geologists, biologists, physicists, chemists, ceramists, hydrometallurgists, material scientists, engineers, and many others.