

Sample Preparation / Shakers





1108 Oxygen Bomb



Acid Digestion Bombs



Microwave Digestion Bombs



Cell Disruption Bombs



Shaker Type Hydrogenation Apparatus

Oxygen Combustion Bombs

Parr offers oxygen bomb combustion apparatus for burning organic samples in preparation for analytical analysis of a wide variety of anions and cations. These are available with general purpose, large capacity and lined vessels.

Parr also offers a variety of special purpose oxygen combustion bombs. The 1104 High Strength Bomb has been designed to handle explosives and other high energy or unknown compounds. The 1105 Bomb includes a complete platinum liner for applications requiring unique corrosion requirements. The 1108CL is intended for samples with high chlorine content. The 1121 Bomb can burn samples up to 10 grams and the 1109 Bomb can burn samples as small as 25 mg.

Acid Digestion Vessels

Parr Acid Digestion Bombs combine the unique chemical inertness of PTFE with the advantages of a sealed pressure vessel. These convenient bombs offer a rapid procedure for sample dissolution or digestion that has several important advantages over more traditional methods of sample preparation. They provide a convenient means

for holding strong mineral acids or alkalis at temperatures well above normal boiling points. These sturdy digestion bombs will accelerate digestions, permit the use of strong acids, dissolve analytical samples without losing trace elements and without adding unwanted contaminants, and obtain complete digestion or dissolution of samples that react slowly or incompletely when treated by other methods.

Microwave Digestion Vessels

Polymer Microwavable Acid Digestion Bombs are also available. The aggressive digestion action produced at the higher temperatures and pressures generated in these bombs result in remarkably short digestion times. Many materials require exposures of less than one minute to obtain complete dissolution. Because of their unique, high strength design, they provide a much more vigorous action than can be obtained with open-cup microwave digestion systems that are restricted to lower temperatures and pressures. In addition, there is no loss of volatile matter from these sealed vessels and the sensitive parts of a microwave oven are not subjected to corrosive acid fumes.

Cell Disruption Bombs

Cell disruption by rapid decompression from a pressure vessel has been used for many years by investigators who wanted to overcome the limitations imposed by other cell disruption procedures. The nitrogen decompression method is particularly well suited for treating mammalian and other membrane bound cells. It has also been used successfully for treating plant cells, for releasing virus from fertilized eggs and for treating fragile bacteria.

Shaker Type Hydrogenation Apparatus

Parr Shaker Type Hydrogenators provide compact and easily operated systems for treating chemicals with hydrogen in the presence of a catalyst at pressures up to 5 atmospheres (60 psig) and temperatures to 80 °C. They are used primarily for synthesizing or modifying organic compounds by catalytic hydrogenation, reduction or condensation, but they are equally suitable for any other laboratory procedure in which a liquid and gas must be mixed vigorously in a glass reactor at pressures up to 5 atm.

Guide to Parr Sample Preparation Vessels

| Model No. | Vessel Type | Sample Size | Maximum Pressure psi | Operating Temperature °C | Catalog |
|-----------|---------------------------|--|----------------------|--------------------------|---------|
| 1104-1122 | Oxygen Combustion Bombs | 25 mg - 10 g | 1500 | NA | 4700 |
| 4744-4748 | Acid Digestion Bombs | 1.0 g - 5.0 g Inorganic 0.1 g - 0.5 g Organic | 1900 | 150 - 250 | 4700 |
| 4781-4782 | Microwave Digestion Bombs | 1.0 g - 2.0 g Inorganic 0.1 g - 0.2 g Organic | 1200 | 250 Maximum | 4700 |
| 4635-4639 | Cell Disruption Bombs | 30 mL - 3.75 L | 2200 | Room Temperature | 4635 |

Guide to Parr Shaker Type Hydrogenation Apparatus

| Model No. | Bottle Size | Bottle Heater & Auto. Temp. Controller | Maximum Pressure psi | Bottle Type | Catalog |
|-----------|---------------------|--|----------------------|-------------|---------|
| 3911 | 250 & 500 mL | No | 60 | * | 3900 |
| 3916 | 250 & 500 mL | Yes | 60 | * | 3900 |
| 3921 | 1L, 2L, 2.25L, 1.7L | No | 40, 30, 60, 65 | * | 3900 |
| 3926 | 1L, 2L, 2.25L, 1.7L | Yes | 40, 30, 60, 65 | * | 3900 |

*Bottles are available in Borosilicate Glass, Borosilicate Glass Fiberglass covered, Hand Blown, Heavy Wall Borosilicate Glass and Stainless Steel.