



# Pyrolyser Mini

Raddec Pyrolyser Mini Furnace System

**A compact furnace for the efficient and rapid extraction of tritium and  $^{14}\text{C}$  from any material**

*The Pyrolyser Mini system is a compact two stage combustion furnace designed to complement the existing Pyrolyser-Trio family of combustion furnaces. The Pyrolyser Mini has been designed to be compact enabling the system to be installed and operated in confined spaces.*



## Key features

- Compact design capable of being installed in fume cupboards, glove boxes or mobile laboratories.
- Operates from a standard UK 240V/13A socket.
- Sample zone rated to 950°C.
- Uses only two heating zones, removing the need for a thermal isolation zone and reducing the overall dimensions of the system.
- Controls housed within a separate control box connected to the furnace via an umbilical. Control box can therefore be located outside the fume cupboard/glove box for ease of operation.
- Two samples can be processed simultaneously during each run.
- Gas connections are directly onto the work tube. End caps can therefore be easily fitted and removed without the need to disconnect the gas lines.
- Work tubes are orientated vertically to enable straightforward loading / unloading from the top of the furnace. No side access to the furnace is required during routine operation.
- The furnace system is mounted on a swivel joint allowing the entire furnace to be rotated forwards to permit easy access to the work tubes during work tube replacement.
- Operates without oxygen.
- Bubbler system incorporates anti-suck back bubblers.

## Specifications & system requirements

| General   | Pyrolyser-2 Mini  |
|---|---|
| Number of independent furnace zones                 | 2   |
| Number of independent sample work-tubes             | 2   |
| Minimum sample throughput                           | 2 samples/day   |
| Maximum sample size per tube                        | Up to 20 g (dry) but depends on combustibility                  |
| Typical catalyst lifetime per work-tube             | 10 g loading lasts about 20 determinations                      |
| Typical lifetime of silica liners and worktubes     | 2 years is typical if care is taken; repairs are quite feasible |
| Overall mass  | Approx. 40 kg (furnace unit)                                    |
| Overall instrument dimensions (w d h)               | 400 x 450 x 750 mm (furnace unit)                               |
| Power demand (North American option also available) | 2.5 kW<br>13A 1-phase electrical supply                         |
| System cooling to aid new cycle of sample loading   | Natural cooling   |

| Controllers  |   |
|--|---|
| Sample zone temperature control                                    | Eurotherm 3504 (in separate control box connected via umbilical)                        |
| Catalyst zone temperature control                                  |   |
| Over-temperature protection  | Yes (2 policemen)   |
| Number of user-defined programs                                    | 4   |
| PC-based programming possible                                      | No  |
| Data logging (with USB output)                                     | No  |
| Gas supplies   | Laboratory compressed air at 1 bar<br>Controlled via flowmeters in separate control box |
| Automatic gas switching  | N/A   |
| Trapping media for HTO and CO <sub>2</sub>                         | 1% Nitric acid in water and Carbosorb™  |
| Bubbler trapping efficiencies                                      | >95% for <sup>3</sup> H and 95% <sup>14</sup> C   |
| Typical detection limits (2s) - <sup>3</sup> H and <sup>14</sup> C | Nominally 0.010 Bq/g sample (for a 5 g sample and a 2 hour count)                       |

### Raddec International Ltd

Suite 63, 151 High Street, Southampton SO14 2BT  
 Phone: 07739 898344 or 023 80231667 (Tel & FAX)  
 Email: [sales@raddec.com](mailto:sales@raddec.com)