



SD-Basic Laboratory Scale Spray Dryer

A simple and effective laboratory scale spray dryer for product research and development.

The SD-Basic spray dryer is designed to enable initial product trials and evaluation to be carried out quickly and efficiently.

The unit is supplied with a complete glassware set comprising main drying chamber, cyclone, sample collection and waste collection bottles, clamps, seals and all necessary tubing.

TECHNIQUE

A self-priming peristaltic pump delivers the liquid sample from a container through a small diameter jet into the main chamber. At the same time compressed air* enters the outer tube of the jet which causes the liquid to emerge as a fine atomised spray into the drying chamber.

Heated air is blown through the main

chamber evaporating the liquid content of the atomised spray. The solid particles of the material, which are normally in a free flowing state, are then separated from the exhaust air flow by a cyclone and collected in the sample collection bottle. The exhaust airflow is directed through a flexible 50 mm diameter hose direct to atmosphere or to an existing extraction system.



SD-Basic Control Panel

APPLICATIONS

Spray drying can be used in a wide range of applications where the production of a free-flowing powder sample is required. This technique has successfully processed materials in the following areas:

Food and Drink - Flavours and Colourings - Milk and Egg Products
Pharmaceuticals - Polymers and Resins - Perfumes - Ceramics and Advanced Materials - Soaps and Detergents - Dyestuffs - Adhesives and many others.



SD-Basic Cyclone and Drying Chamber

CONSTRUCTION

The chemically resistant painted housing includes the blower, heater and the controls for inlet temperature and pump speed. The drying air volume is fixed at 70m³/hr.

The unit requires but is not supplied with an external compressor*

All clamps and fittings are designed to allow assembly and removal of the

glass components in only a matter of seconds and the rear of the cabinet includes an inlet filter ensuring that the drying air does not include contaminants.

TWO FLUID NOZZLE

The stainless steel spray assembly consists of an inner tube for the liquid sample leading to a small diameter jet. An outer tube directs the supply of compressed air to the nozzle and the close tolerance gap between the nozzle and the jet ensures a fine vaporised spray. The SD-Basic is supplied as standard with 0.5 mm jet and other

sizes are available as accessories.

The spray assembly incorporates a manual de-blocking device that prevents the jet nozzle from becoming blocked. De-blocking is sometimes necessary with materials which may solidify or when large particles in suspension cause blockages in the jet.



SD-Basic Components

CONTROLS AND FUNCTIONALITY

The unit is designed to ensure that all functions are simple to select and adjust, to quickly achieve the optimum conditions for Spray Drying. A simple

digital controller allows selection of the inlet temperature and a rotary knob controls the pump speed. A digital display of the outlet temperature is also included.

SD-BASIC SPECIFICATION

Dimensions	- 1100 mm x 500 mm x 500 mm (HWD) including jet assembly
Weight	- Approx. 60 kg
Heater	- 3000 watts
Operator Settings	- Air Inlet Temperature : Max. 200°C Feed Pump Volume : 0 to 1500 ml/hr Air Flow Fixed at approx. 70m ³ /hr
Power Requirements	- 220/240v 50/60 Hz 1ph

*minimum compressed air requirements:
50 l/min @ 8 bar