

# ES Diffusion Tubes

## New range of Refillable Diffusion tubes.

ES Diffusion Tubes compliment our existing range of Kin-Tek Trace Source™ permeation tubes, for over 500 compounds.

The new ES Diffusion Tubes offer greater flexibility, for making a wider range of VOCs & SVOCs gas standards. They have been designed to be easily refillable from the screw-capped end of the tube.

## Description

ES Diffusion Tubes are used to emit pure component vapour, for making traceable gas mixtures, in the ppm to ppb range.

Each diffusion tube consists of a glass storage area for storing pure compound and a precision capillary, for controlling the vapour flow.

Tubes are used in a thermostatically heated oven and are calibrated by weighing them at intervals over a period of time, using traceable gravimetric calibration.

**The output concentration is determined by the following:**

- 1.The tube capillary size and length.**
- 2.The vapour pressure and gas-phase diffusion coefficient of the compound.**
- 3.The temperature of the Vapour Generator oven.**



## Benefits

- Economic advantage: tubes can be refilled over and over again.
- Research & development: ideal when fast analytical method development is required.
- Vapour standards can be produced from liquids & solids with a modest sublimation rate, including SVOC's
- Can be used for oxygen sensitive compounds, or for unstable compounds with a shorter shelf life.
- Verifiable Accuracy - Traceable Diffusion Tubes can be gravimetrically calibrated.
- ES Diffusion Tubes are available with a standard range of tube lengths, with nominal internal bore sizes. This full range gives an enormous 32000-fold range of emission rates, because of the range of tube lengths and diameters available.
- ES Diffusion Tubes can be used in both fixed and portable Vapour Standards Generators for traceable validation and calibration of both field and laboratory measurements.