

DEA range: Batch and Inline Deaerator

Deaerates and Degasses

your products with great accuracy and reproducibility on small scale



Introduction deaeration of products

In many production processes, the presence of air is inevitable. To attain a better quality product when pasteurising, homogenising or filling the product into containers, the presence of air must be avoided or minimised. During product preparations air encapsulation is common, especially on laboratory and pilot scale. A deaerator system optimises conditions by the removal of air and gas by method of controlled vacuum and temperature. No chemical stripping gases are used.

Benefits of deaerated products

- Increased product stability
- Prevents oxidation
- Improved product shelf life
- Reduced volume of packaging.
- Colour retention
- Taste retention
- Better homogenisation characteristics
- Better heat transfer characteristics

Further improvement to the product quality is achieved through an aroma recovery process. Aroma is recovered within a condenser and reintroduced into the product.

Introduction of the OMVE DEA laboratory / pilot Deaerator

The OMVE laboratory & pilot deaerators remove gasses from a broad range of products. The deaerators are specifically designed for laboratory and pilot applications. To simulate industrial deaeration processes and gain similar results on R&D or Pilot scale OMVE has developed three main types of deaeration systems. These systems can be used stand-alone or inline.

Features

- Automatically controlled
- Aroma recovery condenser
- Inline with a HTST / UHT or homogeniser
- Compact and mobile
- Minimum number of rotating parts
- Sight glass cylinder

Benefits

- Easy to operate
- Retention of product composition
- Simulates an industrial line
- Occupies minimal space
- Low maintenance
- Allows visual inspection during processing

Description of operation

Depending on the configuration, products can be pre-heated and pumped into the vacuum chamber. The vacuum can be set to a required set point. The product passes through a nozzle or flows over a (rotary) disc when entering the chamber (depending on viscosity and presence of particles). The vacuum in the chamber and the fine product mist (if using a spray nozzle) or a thin product film (in the case of a disc) causes oxygen and other gasses to be extracted from the product. The vacuum may also extract ingredients and flavours from the product. To recover these ingredients and flavours, an aroma condenser can be installed to reintroduce them into the product.

Optional Accessories

- Feed pump
- Level control with outlet pump
- Aroma condenser to recover extracted "aromas"
- Pre-heat exchanger for faster evaporation of entrapped air
- Jacketed vacuum chamber for faster evaporation of entrapped air
- Data logging

Specifications

| | | |
|---------------------------------------|--|---------------|
| Type of Deaerator | Batch | Continuous |
| Flow rate 10 - 50 l/hr [2.2 – 11 gph] | DEA210 | DEA220 |
| Flow rate 50 - 150 l/hr [11 – 33 gph] | DEA310 | DEA320 |
| Deaeration methods | Spray Nozzle (SN) | |
| | Static Disc (SD) | |
| | Rotary Disc (RD) | |
| Process parameters | | |
| Max chamber pressure | 3 bar(a) [~43.5 psi(a)] | |
| Max vacuum in chamber | 200 mbar(a) [~2.9 psi(a)] | |
| Max temperature | 80 °C [176 °F] | |
| Mechanical parameters | | |
| Material product line | SS 316 | |
| Material housing | SS 304 | |
| Viewing cylinder | Protective glass | |
| Overall dimensions | | |
| Unit size (H x W x D) | 1530 x 900 x 1050mm [60.2" x 35.4" x 41.3"] | |
| Electrical supply | DEA-A: 230V / 1ph / 50Hz / 16A | |
| | Other electrical requirements available on request | |