

Atomizer Aerosol Generator ATM 210



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Product Description

The ATM 210 aerosol generator produces aerosols with known properties in accordance with the guideline VDI 3491. This special model facilitates generation of aerosols into pressurised vessels (up to 10bar). Its design ensures a highly stable particle size distribution and concentration with high reproducibility and a high aerosol output. The generator is suitable for various liquids, e.g. DOP, Emery 3004, DEHS and salt solutions. It can also be used to disperse PSL reference materials.

The ATM 210 is designed for use with an external pressurised air supply. Pressure reducer and manometer are so positioned that the instrument can be easily and safely operated. The liquid reservoir is arranged inside the chassis of the generator.

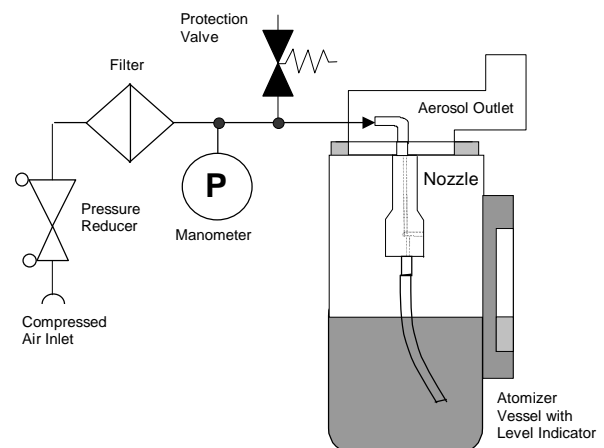
For safety requirements a protection valve has been added to the liquid reservoir. All fluid components are certified for pressures up to 20bar.

Advantages

- Aerosol generation into pressurised vessels up to 10bar
- Polydisperse aerosol mainly below 1µm
- Excellent stable particle size distribution
- Defined and high particle number concentration

Principle

The essential part of the ATM 210 is a new atomizer nozzle¹ made completely of stainless steel. It works as a two-stream nozzle based on the injection principle and is combined with a baffle placed close to the spray outlet. This integrated particle impact section removes coarse spray droplets and results in a number dependant particle size distribution mainly below 1µm. The necessary compressed air is cleaned by a HEPA-filter. A pressure reducer and a manometer facilitate regulation of the atomizer pressure. A level indicator outside the atomizer vessel allows the user to check the liquid level during operation.



Schematic of the ATM 210

One Generator – Two Models

The ATM 210 is available as a standard and a high flow model (ATM 210/H). The own difference between both instruments is the design of the atomizer nozzle, which can be easily changed by the user. The aerosol output of the ATM 210/H is nearly ten times higher than that of the standard model (see specification).

Specifications

Compressed air supply:	Max. 1200kPa (12bar)
Outlet:	Ø 19mm
Flow rate:	250l/h (ATM 210) 2500l/h (ATM 210/H)
Mass flow	Max. 2.5 g/h (ATM 210) Max. 25 g/h (ATM 210/H)
Nonstop operation	15h (ATM 210) 1.5h (ATM 210/H)
Dimension:	230 x 200 x 240mm
Weight:	4.9kg
Aerosol Materials:	DEHS, DOP, Emery 3004, paraffines, PSL latex-spheres (max 2µm), suspensions, salt solutions

Aerosol Materials

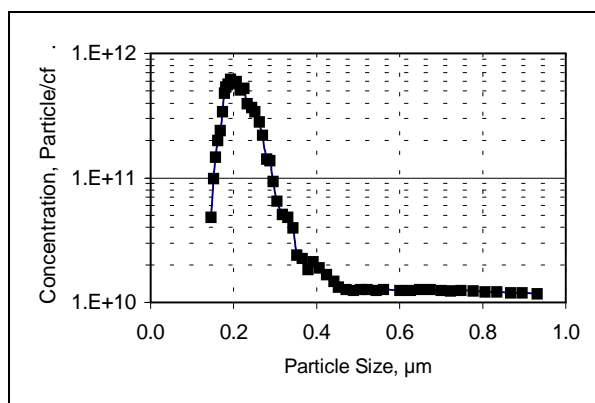
Using non volatile material (e.g. DEHS, DOP, Emery 3004) leads to a stable aerosol with a known live time. The material will however slowly evaporate leaving the filter uncontaminated after testing.

¹ Patent pend. GS 9408604.4

Specification of DEHS-Aerosol

Total	$> 10^8$ particles/cm ³
at 0.2µm	$2 \cdot 10^7$ particles/cm ³
at 0.5µm	$5 \cdot 10^5$ particles/cm ³
at 1.0µm	$1 \cdot 10^5$ particles/cm ³
0.3 - 0.5µm	$1.5 \cdot 10^7$ particles/cm ³
0.5 - 1.0µm	$8 \cdot 10^6$ particles/cm ³
Modal (number)	0.25µm
Particle production rate	$5 \cdot 10^{12} \dots 25 \cdot 10^{12}$ particles/h

The Aerosol was generated with ATM 220 and measured by a Scanning Mobility Particle Sizer (TSI, Inc.).



Number Concentration of an DEHS-ATM Aerosol vs. Particle Size

Look also at our World Wide Web site at <http://www.topas-gmbh.de>.