AGF 2.0

The AGF 2.0 is an aerosol generator for atomizing liquids and latex suspensions with a constant particle rate and defined particle spectrum.

The AGF 2.0 system comprises an adjustable binary nozzle to adjust the desired mass flow and a cyclone with a cut-off of 2 μm. As a result, virtually no particles > 2 μm are generated.

Model Variations

AGF 2.0 D
Pressure-resistant version up to 10 barg overpressure

AGF 2.0 iP
AGF series aerosol generator with built-in pump

OPERATION PRINCIPLE

LIQUID NEBULIZER WITH BINARY NOZZLE AND CYCLONE

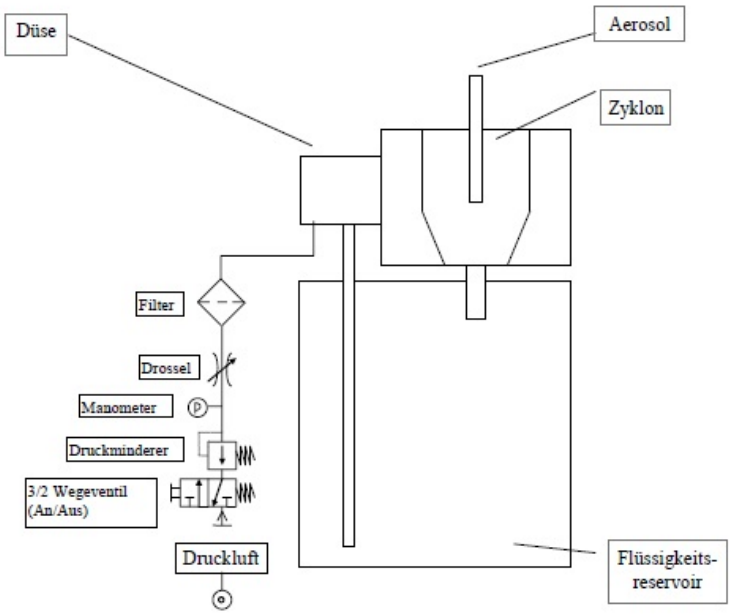

Fig. 1: Functional principle of the AGF series, including cyclone

The liquid to be dispersed is filled in the reservoir, and the AGF 2.0 is connected to the compressed air connection. A manometer enables the mass flow of the liquid to be continuously adjusted using the primary pressure on the nozzle. The mist of droplets generated by the nozzle flows tangentially into a cyclone. Large particles are separated by centrifugal force and drip back into the reservoir. The remaining droplets leave the cyclone via the so-called "immersion tube." The size spectrum of these droplets is determined on the one hand by the primary droplet spectrum generated by the nozzle, but especially by the separation characteristics of the cyclone on the other hand.

The separation size can be calculated: $d_{aerodyn.max} = 2\ \mu m$, i.e., regardless of the liquid to be atomized, the maximum particle size is $d_{aerodyn}$ 2 μm.

	Dimensions wxHxD mm	Weight Kg	Volume l/m	m_{max}*g/h	dp_{mean}*** μm	d_{max} μm	115/230 V 50/60 Hz	Pressure tight up to 10 bar	Compressed air supply
AGF 2.0	300x325x175	Approx. 9	6 - 17	4	0.25	2			x
AGF 2.0 iP	300x325x175	Approx. 15	12 - 14	2	0.25	2	x		
AGF 10.0	Ø240x385	Approx. 4	14 - 35	20	0.5	10			x
AGF 2.0 D	Ø200x260	Approx. 8	12 - 45	4	0.25	2		x	x
AGF 10.0 D	Ø200x300	Approx. 8	14 - 35	20	0.5	10		x	x
UGF 2000	270x200x175	Approx. 4	Approx. 1 - 13	1.5	0.2	1.5			x

Tabelle 2: Overview AGF System

*applied for DEHS **test rig version ***average number diameter

Table 1: Overview of the AGF and UGF systems

Benefits

- Exact adjustment of the operating parameters
- Number concentration (C_N) can be varied by the factor of 10
- Particle size distribution remains virtually constant if C_N is modified
- Number distribution maximum is within the MPPS range
- Virtually no power losses
- Optimal concentration, no coagulation losses
- Resistant to numerous acids, bases, and solvents
- Robust design, stainless steel housing
- Easy to operate
- As opposed to the collision method, AGF 2.0 does not generate particles > 2 μm thanks to its cyclone.
- Because the AGF generates virtually no droplets > 2 μm, the consumption of materials is very low, thus ensuring a long dosing time.
- With the use of DEHS, the mean particle size is within the MPPS range for HEPA/ULPA filters

DATASHEET

Volume flow	6 – 17 l/min
Mass flow (particles)	< 4 g/h (DEHS)
Filling quantity	300 ml
Particle material	DEHS, DOP, Emery 3004, paraffin oil, other non-resinous oils
Dosing time	> 24 h
Compressed air connection	Quick coupling
Aerosol outlet connection	$Ø_{inside}$ = 6 mm, $Ø_{outside}$ = 8 mm
Mean particle diameter (number)	0.25 μm
Particle diameter (maximum)	2 μm
Dimensions	325 • 300 • 175 mm (H • W • D)
Weight	Approx. 9 kg

Applications

- Clean room technology
  - Acceptance tests and leak tests as per ISO 14644 and VDI 2083
  - Leak tests, fit testing
  - Recovery tests
- Filter testing, quality control
  - Filter cartridges
  - Car interior filters
  - Filter media, particulate air filters
  - Aerosol generation for MPPS determination of HEPA/ULPA filters
- **Tracer particles**
  - Inhalation experiments
  - Optical flow measurement procedures with positive pressure values of up to 10 bar (model version AGF 2.0 D)
  - LDV
- Calibration of counting particle measurement methods
  - Nebulization of latex suspensions < 1 μm
- Smoke detector test

Mehr Informationen:
https://www.palas.de/product/agf20