

## Autodrop Pipettes



### ADVANTAGES

- Fast liquid change
- Contactless dispensing
- Single droplet volumes from 20 pl to 180 pl \*
- Variation of dispensed volume approx. 1 % \*
- Very small storage volume, depending on pipette type: 25µl, 37µl or 1ml
- Very small dead volume of about 14 µl
- Droplet rate 1 ... 2000 Hz \* (provided by a standard driver electronics)
- Droplet velocity approx. 2 m/s \*
- It is possible to dispense fluids with a viscosity up to about 20 mPas \*

### Technology

Autodrop Pipettes are based on piezo-driven inkjet printing technology. The fluid is aspirated through the nozzle tip into the glass capillary.

The integrated piezo actuator induces a shock-wave into the fluid contained in the pipette, which causes a droplet to be emitted from the nozzle.

### Criteria to find the best Autodrop Pipette

- What kind of fluid is to be dispensed (Viscosity, concentration of additives etc.)?
- What kind of solvent is used?
- Are there particles in the liquid: Size and concentration of particles?
- Desired diameter of the droplets
- Desired droplet emission frequency
- Dispensing volume:
  - a) single droplet
  - b) throughput of droplets per second
- How many pipettes are necessary for the application?
- Is there an interest to upgrade the system to more than one dispenser head later?
- Is an xyz-positioning system required?

Need help? Please send us a short description of the application and a datasheet of the fluid.

### Features

- The inner nozzle diameter of the Autodrop Pipettes strongly influences the droplet size.
- The relation between inner nozzle diameter, droplet size and droplet volume is:

inner nozzle diameter	droplet size in flight *	droplet volume *
30 µm	35 µm	20 pl
50 µm	55 µm	90 pl
70 µm	70 µm	180 pl

\* depending on the fluid used

- The spot size on the substrate depends on the wetting behaviour between the fluid and the surface material.
- microdrop Technologies GmbH are specialized in customized solutions. Please ask for application-optimized dispenser heads!

### Autodrop Pipette AD-K-901

Compared with the other pipettes the AD-K-901 has a longer designed glass capillary which enables a dipping in microtiter plates up to 9,5mm. The nozzle tip outer diameter of 1mm enables a dipping in a 384-well plates. With the using of a transparent body it is easy to read the filling level at any time.

## Autodrop Pipettes

AD-K-901



### Autodrop Pipette, storage volume 37 µl

Viscosity range:	0.4 ... 20 mPas *
Standard inner nozzle diameter:	30 µm, 50 µm, 70 µm
Droplet volume:	20 ... 180 pl *
Variation of dispensed volume:	< 1 % *
Droplet velocity:	2 m/s *
Standard drop rate:	1 ... 2000 Hz *
Life time:	> 100 billion cycles
Storage volume:	approx. 37 µl
Dead volume:	approx. 14 µl
Materials in contact with fluid:	glass (PEEK, FEP, ETFE, PTFE)**

#### Dimensions:

- Pipette AD-K-901: ø 8,5 mm / l: 140 mm
- Holder with electrical contacts AD-H-901: w: 20 mm / h: 138 mm / d: 31 mm
- Pipette with holder: w: 20 mm / h: 148 mm / d: 31 mm

AD-K-501



### Autodrop Pipette, storage volume 25 µl

Viscosity range:	0.4 ... 20 mPas *
Standard inner nozzle diameter:	30 µm, 50 µm, 70 µm
Droplet volume:	20 ... 180 pl *
Variation of dispensed volume:	< 1 % *
Droplet velocity:	2 m/s *
Standard drop rate:	1 ... 2000 Hz *
Life time:	> 100 billion cycles
Storage volume:	approx. 25 µl
Dead volume:	approx. 12 µl
Materials in contact with fluid:	glass

#### Dimensions:

- Pipette AD-K-501: ø 7 mm / l: 73 mm
- Holder with electrical contacts AD-H-501: w: 8.5 mm / h: 45 mm / d: 29 mm
- Pipette with holder: w: 8.5 mm / h: 97 mm / d: 29 mm

AD-K-401



### Autodrop Pipette, storage volume 1 ml

Viscosity range:	0.4 ... 20 mPas *
Standard inner nozzle diameter:	30 µm, 50 µm, 70 µm
Droplet volume:	20 ... 180 pl *
Variation of dispensed volume:	< 1 % *
Droplet velocity:	2 m/s *
Standard drop rate:	1 ... 2000 Hz *
Life time:	> 100 billion cycles
Storage volume:	approx. 1 ml
Dead volume:	approx. 12 µl
Materials in contact with fluid:	glass and silicone

#### Dimensions:

- Pipette AD-K-401: ø 10 mm / h: 103 mm
- Holder with electrical contacts AD-H-401: w: 16.5 mm / h: 85 mm / d: 30 mm
- Pipette with holder: w: 16.5 mm / h: 97 mm / d: 30 mm

\* depending on the fluid used

\*\* only by using the tube as reservoir or for filling