

designed for scientists

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## FLOW CHEMISTRY | IKA FLOW SYSTEM

# IKA FLOW System

/// Flow chemistry your way

Continuous flow synthesis is rapidly becoming an essential part of any workflow within the chemical and pharmaceutical industries due to the many advantages over batch chemistry that it provides. Chemists trust in the increased reproducibility of reactions, higher process reliability, rapid modification and testing of chemical processes and conditions, and last but not least, increased product quality and yield.

In close collaboration with renowned Dr. Stephen Hilton from UCL School of Pharmacy, IKA has rethought flow chemistry and developed a flow reactor that is second to none. What's the secret? Compared to other expensive, commercially available flow chemistry equipment, the IKA FLOW system has been designed with the flexibility needed for any laboratory looking to transition to continuous flow synthesis. All you need to purchase is the necessary parts of the flow chemistry apparatus and combine it with your existing IKA magnetic stirrer RCT digital to implement it into your laboratory.



## Scope of delivery

- IKA FLOW System
- Glass bottle
- Capillary set
- Heating block
- CDR.PP standard (2x)
- Tubing set

IKA FLOW System  
Ident. No. 0020100742

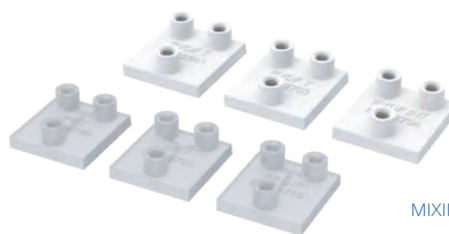


The magnetic stirrer RCT digital perfectly complements your IKA FLOW System



#### DISC REACTOR SETS

- CDR.PP standard
- CDR.PP narrow
- CDR.PVDF standard
- CDR.PVDF narrow



#### MIXING CHIP SETS

- MX.PVDF
- MX.PP

## Highly flexible

IKA FLOW System is highly flexible due to its variety of accessories and consumables. Currently there are mixing chips and reactors made of polypropylene and polyvinylidene difluoride available that cover a broad range of chemistries. However, further materials and reactor designs can be provided on demand thanks to our modern approach to manufacturing using 3D printing.

IKA FLOW System is especially designed to be used with the IKA magnetic stirrers RCT digital or RCT basic – though, it can be combined with any heated magnetic stirrer in the lab. The heating block, which is placed on the magnetic stirrer, can accommodate up to four reactors at the same time. This allows for easy modification of any flow path to ensure that your path length matches any requirements. For those processes requiring longer heating times, additional heating blocks can be purchased and used with an additional stirrer hotplate allowing for a range of temperatures through differing flow processes.

## Easily integrated

Further proof of IKA FLOW System's flexibility is its compatibility with any fume hood gas to put pressure on the reaction process. No extra external pumps are required. You just connect the system to any fume hood gas source such as compressed air, nitrogen or argon that is usually available in every lab. It also allows for connection to other gases such as carbon dioxide or oxygen depending on the chemistry that is being carried out.

IKA FLOW is the perfect and effortless entry-level system to incorporate flow chemistry into your laboratory.





## Light-weight and compact design

Space is always a challenge and financial premium in any laboratory. That is why our engineers focused on developing a light-weight and compact design during development. The result: IKA FLOW System has one of the smallest footprints compared to other flow reactors on the market and is easy to move in a laboratory to where it is needed. In addition, once set up, it allows the user to continue to use the stirrer hot-plate as normal, providing ultimate flexibility to any user.



## Consistent, predictable and safe

One of the key advantages of flow chemistry is the high process reliability and reproducibility of reactions. With the IKA FLOW System, there are no separate pumps required and a continuous source of pressure is used to move fluid through the system, meaning that there is hardly any risk of pressure drop or fluctuation in the system during reaction. In case of an emergency, the user just degases the closed pressurized system by opening the door of the main housing. These facts combined with well coordinated tubing and capillary system, disc reactors and mixing chips ensure consistent and predictable results.



## Constantly developing

IKA FLOW System is just the start of your journey into the incorporation of continuous flow synthesis in your laboratory. Due to the incorporation of 3D printing into its manufacture, it is constantly evolving and will continue to introduce and offer new chemistry options to its users including consumables made of new materials or by combining it with reaction drivers other than heat. Our R&D team is currently working on new modular solutions using electro- or photochemistry. So, stay tuned and check out our website for any updates.

## Technical data

### GENERAL DATA

Max. solvent volume	500 ml
Connection type	Push-to-connect // Screw fittings
Max. input pressure	1 mPa
Input pressure	Pressure of the gas from fume hood
Max. working pressure	137 kPa
Working pressure	Pressure of the gas in solvent bottle
Max. working temperature	100 °C

### MAIN HOUSING

Material	304 stainless steel // Nylon (PA)
Dimensions (W x H x D)	250 x 375 x 140 mm
Weight	2,7 kg

### HEATING BLOCK

Material	Aluminum
Dimensions (diameter x H)	175 x 25,5 mm
Weight	0,65 kg
Disc reactor material	Polypropylene (PP)
Disc reactor volume	4.092 mm <sup>3</sup>

### TUBING

Tubing A outer diameter	3,2 mm
Tubing A inner diameter	1,6 mm
Tubing 0 – 11 outer diameter	1,6 mm
Tubing 0 – 9 & 11 inner diameter	0,8 mm

### CAPILLARY

Capillary 1 inner diameter	0,125 mm
Capillary 1 length	50 mm
Capillary 2 inner diameter	0,125 mm
Capillary 2 length	100 mm
Capillary 3 inner diameter	0,18 mm
Capillary 3 length	50 mm
Capillary 4 inner diameter	0,25 mm
Capillary 4 length	100 mm

3 years  
warranty\*

CE

\*2+1 years after registering at  
[www.ika.com/register](http://www.ika.com/register),  
wearing parts excluded

## Additional products

If required, the following IKA devices are available for your lab to enhance flow chemistry with IKA FLOW System:



**IKA Plate (RCT digital)**  
Magnetic stirrer with heating  
Ident. No. 0025004601



**RCT basic**  
Magnetic stirrer with heating  
Ident. No. 0003810000

## Accessories IKA FLOW System



**MX.PP**  
Mixing chip set, polypropylene  
Ident. No. 0020103092



**MX.PVDF**  
Mixing chip set, polyvinylidene difluoride  
Ident. No. 0020103093



**Heating Block**  
Heating block for up to four disc reactors  
Ident. No. 0020103369



**Capillary Set**  
Ident. No. 0020103091



**DR.PP narrow**  
Disc reactor set, polypropylene, narrow,  
2 pcs.  
Ident. No. 0020102705



**DR.PP standard**  
Disc reactor set, polypropylene, standard,  
2 pcs.  
Ident. No. 0020102637



**DR.PVDF narrow**  
Disc reactor set, polyvinylidene difluoride,  
narrow, 2 pcs.  
Ident. No. 0020102706



**DR.PVDF standard**  
Disc reactor set, polyvinylidene difluoride,  
standard, 2 pcs.  
Ident. No. 0020102638

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