

CPC**COOPERATIVE PATENT CLASSIFICATION****B01L****CHEMICAL OR PHYSICAL LABORATORY APPARATUS FOR GENERAL USE**

(apparatus for medical or pharmaceutical purposes [A61](#); apparatus for industrial purposes or laboratory apparatus whose construction and performance are comparable to that of similar industrial apparatus, see the relevant classes for industrial apparatus, particularly subclasses of [B01](#) and [C12](#); separating or distilling apparatus [B01D](#); mixing or stirring devices [B01F](#); atomisers [B05B](#); { vibrating devices, e.g. shaking tables,} sieves [B07B](#); corks, bungs [B65D](#); handling liquids in general [B67](#); vacuum pumps [F04](#); siphons [F04F 10/00](#); taps, stop-cocks [F16K](#); tubes, tube joints [F16L](#); apparatus specially adapted for investigating or analysing materials [G01](#), particularly [G01N](#); electrical or optical apparatus, see the relevant classes in Sections G and H)

NOTE

This subclass covers only laboratory apparatus which is either applicable solely to laboratory purposes or which, by reason of its simple construction and adaptability, is such as would not be suitable for industrial use.

WARNING

The following IPC groups are not used in the CPC scheme. Subject matter covered by these groups is classified in the following CPC groups:

- [B01L 3/14](#) covered by [B01L 3/50](#)

Groups [B01L 1/50](#), [B01L 3/50-B01L 3/569](#), [B01L 7/50-B01L 7/54](#), [B01L 9/50-B01L 9/547](#) do not correspond to former or future IPC groups.

Concordance CPC : IPC for these groups is as follows:

- [B01L 1/50](#) : [B01L 1/00](#) - [B01L 3/50](#) - [B01L 3/502](#) :

[B01L 3/00](#) - [B01L 3/5021](#) - [B01L 3/50215](#) : [B01L 3/14](#) - [B01L 3/5023](#) - [B01L 3/508](#) :

[B01L 3/00](#) - [B01L 3/5082](#) - [B01L 3/50825](#) : [B01L 3/14](#) - [B01L 3/5085](#) - [B01L 3/569](#) :

[B01L 3/00](#) - [B01L 7/50](#) - [B01L 7/54](#) : [B01L 7/00](#) - [B01L 9/50](#) - [B01L 9/547](#) :

[B01L 9/00](#)

B01L 1/00

Enclosures; Chambers (fume cupboards [B08B](#); provided with manipulation devices, glove boxes [B25J](#); cooling chambers [F25D](#))

B01L 1/02

. Air-pressure chambers; Air-locks therefor

B01L 1/025

.. { **Environmental chambers** (incubators for culturing cells [C12M 41/14](#), Test chambers to test weather resistance [G01N 17/002](#)) }

B01L 1/04

. Dust-free rooms or enclosures {(clean rooms suitable for industrial purposes [F24F 3/161](#)) }

B01L 1/50

. { for storing hazardous materials in the laboratory, e.g. cupboards, waste containers }

B01L 3/00

Containers or dishes for laboratory use, e.g. laboratory glassware (bottles [B65D](#); apparatus for enzymology or microbiology { specially adapted for culturing } [C12M 1/00](#)); **Droppers** (receptacles for volumetric purposes [G01F](#))

B01L 3/02

. Burettes; Pipettes

B01L 3/0203

.. {Burettes, i.e. for withdrawing and redistributing liquids through different conduits }

B01L 3/0206

... {of the plunger pump type }

B01L 3/021	..	{Pipettes, i.e. with only one conduit for withdrawing and redistributing liquids}
B01L 3/0213	...	{ Accessories for glass pipettes; Gun-type pipettes, e.g. safety devices, pumps}
B01L 3/0217	...	{of the plunger pump type (medical syringes A61M)}
B01L 3/022	....	{Capillary pipettes, i.e. having very small bore (B01L 3/0224 to B01L 3/0237 take precedence)}
B01L 3/0224	....	{having mechanical means to set stroke length, e.g. movable stops (B01L 3/0231 , B01L 3/0234 take precedence)}
B01L 3/0227	....	{Details of motor drive means (B01L 3/0231 , B01L 3/0234 take precedence)}
B01L 3/0231	....	{having several coaxial pistons}
B01L 3/0234	....	{Repeating pipettes, i.e. for dispensing multiple doses from a single charge}
B01L 3/0237	....	{ Details of electronic control, e.g. relating to user interface}
B01L 3/0241	..	{Drop counters; Drop formers (making arrays for combinatorial libraries B01J 19/0046 ; automation of dispensing for analysis G01N 35/10)}
B01L 3/0244	...	{using pins}
B01L 3/0248	....	{ Prongs, quill pen type dispenser}
B01L 3/0251	....	{ Pin and ring type or pin in tube type dispenser}
B01L 3/0255	....	{ characterized by the form or material of the pin tip}
B01L 3/0258	...	{ using stamps}
B01L 3/0262	...	{ using touch-off at substrate or container}
B01L 3/0265	...	{ using valves to interrupt or meter fluid flow, e.g. using solenoids or metering valves}
B01L 3/0268	...	{ using pulse dispensing or spraying, eg. inkjet type, piezo actuated ejection of droplets from capillaries}
B01L 3/0272	...	{ Dropper bottles}
B01L 3/0275	..	{Interchangeable or disposable dispensing tips}
B01L 3/0279	...	{co-operating with positive ejection means}
B01L 3/0282	..	{mounted within a receptacle (wash bottles B01L 3/10)}
B01L 3/0286	..	{ Ergonomic aspects, e.g. form or arrangement of controls}
B01L 3/0289	..	{ Apparatus for withdrawing or distributing predetermined quantities of fluid (B01L 3/02 takes precedence; sample taking G01N 1/00 ; sample taking within automatic analysers G01N 35/00 ; volume measuring in general G01F)}
B01L 3/0293	...	{ for liquids}
B01L 3/0296	....	{ from piercable tubing, e.g. in extracorporeal blood sampling}
B01L 3/04	.	Crucibles
B01L 3/06	.	Crystallising dishes
B01L 3/08	.	Flasks (specially adapted for distillation B01D {B01D 3/10})
B01L 3/10	.	Wash bottles
B01L 3/12	.	Gas jars or cylinders
B01L 3/14	.	Test tubes {(devices for taking samples of blood A61B 5/14)}(not used, see B01L 3/50 and subgroups)]

WARNING

This is no longer used for the classification of new documents as from 1 April 2012. The back-file is being transferred to [B01L 3/50](#) and subgroups

B01L 3/16	. Retorts
B01L 3/18	. Spatulas
B01L 3/50	. { Containers for the purpose of retaining a material to be analysed, e.g. test tubes (devices for taking samples of blood A61B 5/14)}
B01L 3/502	.. { with fluid transport, e.g. in multi-compartment structures (centrifugal-type cuvettes G01N 21/07 ; analysis by separation into components G01N 30/00 ; automatic analysers G01N 35/00)}
B01L 3/5021	... { Test tubes specially adapted for centrifugation purposes (centrifuges B04B 5/04)}
B01L 3/50215	.... { using a float to separate phases}
B01L 3/5023	... { with a sample being transported to, and subsequently stored in an absorbent for analysis}
B01L 3/5025	... { for parallel transport of multiple samples}
B01L 3/50255	.... { Multi-well filtration}
B01L 3/5027	... { by integrated micro-fluidic structures, i.e. dimensions of channels and chambers are such that surface tension forces are important, e.g. lab-on-a-chip (B01L 3/5023 takes precedence; micromixers B01F 13/0059 ; microreactors for synthesis B01J 19/0093 ; micro-capillary devices in general B81B 1/00)}
B01L 3/502707	.... { characterised by the manufacture of the container or its components (manufacture of micro-structural devices in general B81C ; by shaping or joining plastic parts B29C 59/00 B29C 65/00 , by laminating B32B 37/00)}
B01L 3/502715	.... { characterised by interfacing components, e.g. fluidic, electrical, optical or mechanical interfaces}
B01L 3/502723	.... { characterised by venting arrangements}
B01L 3/50273	.... { characterised by the means or forces applied to move the fluids (micro pumps F04B 19/006 , of the membrane type F04B 43/043)}
B01L 3/502738	.... { characterised by integrated valves (microvalves F16K 99/0001)}
B01L 3/502746	.... { characterised by the means for controlling flow resistance, e.g. flow controllers, baffles (B01L 3/502738 takes precedence)}
B01L 3/502753	.... { characterised by bulk separation arrangements on lab-on-a-chip devices, e.g. for filtration or centrifugation (separation in general B01D ; micro-apparatus for analysis using electrophoresis G01N 27/44791 ; sample preparation G01N 1/28)}
B01L 3/502761	.... { specially adapted for handling suspended solids or molecules independently from the bulk fluid flow, e.g. for trapping or sorting beads, for physically stretching molecules (investigating characteristics of particles G01N 15/00)}
B01L 3/502769	.... { characterised by multiphase flow arrangements}
B01L 3/502776	..... { specially adapted for focusing or laminating flows}
B01L 3/502784	..... { specially adapted for droplet or plug flow, e.g. digital micro-fluidics (automatic analysis using a stream of discrete samples in a tube system G01N 35/08)}
B01L 3/502792	..... { for moving individual droplets on a plate, e.g. by locally altering surface tension}

- B01L 3/5029 ... { using swabs}
- B01L 3/505 .. { flexible containers not provided for above}
- B01L 3/5055 ... { Hinged, e.g. opposable surfaces}
- B01L 3/508 .. { rigid containers not provided for above}
- B01L 3/5082 ... { Test tubes per se}
- B01L 3/50825 { Closing or opening means, corks, bungs (closures for containers [B65D](#); means for removing stoppers [B67B 7/02](#))}
- B01L 3/5085 ... { for multiple samples, e.g. micro-titration plates}
- B01L 3/50851 { specially adapted for heating or cooling samples (laboratory heating apparatus [B01L 7/00](#); incubators [C12M](#))}
- B01L 3/50853 { with covers or lids}
- B01L 3/50855 { using modular assemblies of strips or of individual wells}
- B01L 3/50857 { using arrays or bundles of open capillaries for holding samples}
- B01L 3/5088 ... { confining liquids at a location by surface tension, e.g. virtual wells on plates, wires ([B01L 3/50857](#) takes precedence)}
- B01L 3/52 . { Containers specially adapted for storing or dispensing a reagent ([B01L 3/02](#) takes precedence; containers for medical or pharmaceutical purposes [A61J 1/00](#); containers in general [B65D](#); storing or dispensing test elements [G01N 33/4875](#); automated reagent dispensing [G01N 35/1002](#))}
- B01L 3/523 .. { with means for closing or opening}
- B01L 3/527 .. { for a plurality of reagents}
- B01L 3/54 . { Labware with identification means (identification of carriers, materials or components in automatic analysers [G01N 35/00732](#))}
- B01L 3/545 .. { for laboratory containers}
- B01L 3/5453 ... { for test tubes}
- B01L 3/5457 ... { for container closures}
- B01L 3/56 . { Labware specially adapted for transferring fluids}
- B01L 3/561 .. { Tubes; Conduits (in general [F16L](#))}
- B01L 3/563 .. { Joints or fittings (in general [F16L](#)); Separable fluid transfer means to transfer fluids between at least two containers, e.g. connectors}
- B01L 3/5635 ... { connecting two containers face to face, e.g. comprising a filter}
- B01L 3/565 .. { Seals (in general [F16L](#))}
- B01L 3/567 .. { Valves, taps or stop-cocks (in combination with burettes [B01L 3/0203](#); in general [F16K](#))}
- B01L 3/569 .. { Glassware}
- B01L 5/00** **Gas handling apparatus** (gas jars or cylinders [B01L 3/12](#); cold traps, cold baffles [B01D 8/00](#); separation of gases or vapours [B01D 53/00](#); gas generators [B01J 7/00](#); steam traps [F16T](#))
- B01L 5/02 . Gas collection apparatus, e.g. by bubbling under water (for sampling [G01N](#))
- B01L 5/04 . Gas washing apparatus, e.g. by bubbling

B01L 7/00	Heating or cooling apparatus (evaporators B01D 1/00 ; drying gases or vapours, e.g. desiccators, B01D 53/26 ; autoclaves B01J 3/04 ; drying ovens F26B ; furnaces, ovens F27); Heat insulating devices
B01L 7/02	. Water baths; Sand baths; Air baths
B01L 7/04	. Heat insulating devices, e.g. jackets for flasks
B01L 7/50	. { Cryostats }
B01L 7/52	. { with provision for submitting samples to a predetermined sequence of different temperatures, e.g. for treating nucleic acid samples (amplification or hybridisation processes per se C12Q 1/68 ; controlling sequential reactions for synthesis B01J 19/0046) }
B01L 7/525	. . { with physical movement of samples between temperature zones }
B01L 7/5255	. . . { by moving sample containers }
B01L 7/54	. { using spatial temperature gradients }
B01L 9/00	Supporting devices; Holding devices (tweezers, tongs B25B)
B01L 9/02	. Laboratory benches or tables; Fittings therefor
B01L 9/04	. Retort stands; Retort clamps
B01L 9/06	. Test-tube stands; Test-tube holders
B01L 9/065	. . { specially adapted for capillary tubes }
B01L 9/50	. { Clamping means, tongs (in general F16B 2/06) }
B01L 9/52	. { Supports for flat sample carrier, e.g. used for plates, slides, chips }
B01L 9/523	. . { for multisample carriers, e.g. used for microtitration plates }
B01L 9/527	. . { for microfluidic devices, e.g. used for lab-on-a-chip }
B01L 9/54	. { Supports related to pipettes and burettes }
B01L 9/543	. . { for disposable pipette tips, e.g. racks or cassettes }
B01L 9/547	. . { for dispensing pins }
B01L 99/00	Subject matter not provided for in other groups of this subclass {(chemical indicators in general G01N)}
B01L 2200/00	Solutions for specific problems relating to chemical or physical laboratory apparatus
B01L 2200/02	. Adapting objects or devices to another
B01L 2200/021	. . Adjust spacings in an array of wells, pipettes or holders, format transfer between arrays of different size or geometry
B01L 2200/022	. . . Variable spacings
B01L 2200/023	. . adapted for different sizes of tubes, tips or container
B01L 2200/025	. . Align devices or objects to ensure defined positions relative to each other
B01L 2200/026	. . Fluid interfacing between devices or objects, e.g. connectors, inlet details
B01L 2200/027	. . . for microfluidic devices
B01L 2200/028	. . Modular arrangements
B01L 2200/04	. Exchange or ejection of cartridges, containers or reservoirs
B01L 2200/06	. Fluid handling related problems

B01L 2200/0605	..	Metering of fluids
B01L 2200/061	..	Counting droplets
B01L 2200/0615	..	Loss of fluid by dripping
B01L 2200/0621	..	Control of the sequence of chambers filled or emptied
B01L 2200/0626	..	using levitated droplets
B01L 2200/0631	..	Purification arrangements, e.g. solid phase extraction (SPE)
B01L 2200/0636	..	Focussing flows, e.g. to laminate flows
B01L 2200/0642	..	Filling fluids into wells by specific techniques
B01L 2200/0647	..	Handling flowable solids, e.g. microscopic beads, cells, particles
B01L 2200/0652	...	Sorting or classification of particles or molecules
B01L 2200/0657	...	Pipetting powder
B01L 2200/0663	...	Stretching or orienting elongated molecules or particles
B01L 2200/0668	...	Trapping microscopic beads
B01L 2200/0673	..	Handling of plugs of fluid surrounded by immiscible fluid
B01L 2200/0678	..	Facilitating or initiating evaporation
B01L 2200/0684	..	Venting, avoiding backpressure, avoid gas bubbles
B01L 2200/0689	..	Sealing
B01L 2200/0694	..	Creating chemical gradients in a fluid
B01L 2200/08	.	Ergonomic or safety aspects of handling devices
B01L 2200/082	..	Handling hazardous material
B01L 2200/085	..	Protection against injuring the user
B01L 2200/087	..	Ergonomic aspects
B01L 2200/10	.	Integrating sample preparation and analysis in single entity, e.g. lab-on-a-chip concept
B01L 2200/12	.	Specific details about manufacturing devices
B01L 2200/14	.	Process control and prevention of errors
B01L 2200/141	..	Preventing contamination, tampering
B01L 2200/142	..	Preventing evaporation
B01L 2200/143	..	Quality control, feedback systems
B01L 2200/145	...	Detecting door closure
B01L 2200/146	...	Employing pressure sensors
B01L 2200/147	...	Employing temperature sensors
B01L 2200/148	..	Specific details about calibrations
B01L 2200/16	.	Reagents, handling or storing thereof
B01L 2200/18	.	Transport of container or devices
B01L 2200/185	..	Long distance transport, e.g. mailing
B01L 2300/00		Additional constructional details
B01L 2300/02	.	Identification, exchange or storage of information
B01L 2300/021	..	Identification, e.g. bar codes
B01L 2300/022	...	Transponder chips

B01L 2300/023	..	Sending and receiving of information, e.g. using bluetooth
B01L 2300/024	..	Storing results with means integrated into the container
B01L 2300/025	..	Displaying results or values with integrated means
B01L 2300/026	...	Drum counters
B01L 2300/027	...	Digital display, e.g. LCD, LED
B01L 2300/028	...	Graduation
B01L 2300/04	.	Closures and closing means
B01L 2300/041	..	Connecting closures to device or container
B01L 2300/042	...	Caps; Plugs
B01L 2300/043	...	Hinged closures
B01L 2300/044	...	pierceable, e.g. films, membranes
B01L 2300/045	...	whereby the whole cover is slidable
B01L 2300/046	..	Function or devices integrated in the closure
B01L 2300/047	...	Additional chamber, reservoir
B01L 2300/048	...	enabling gas exchange, e.g. vents
B01L 2300/049	...	Valves integrated in closure
B01L 2300/06	.	Auxiliary integrated devices, integrated components
B01L 2300/0609	..	Holders integrated in container to position an object
B01L 2300/0618	...	for removable separation walls
B01L 2300/0627	..	Sensor or part of a sensor is integrated
B01L 2300/0636	...	Integrated biosensor, microarrays
B01L 2300/0645	...	Electrodes
B01L 2300/0654	...	Lenses; Optical fibres
B01L 2300/0663	...	Whole sensors
B01L 2300/0672	..	Integrated piercing tool
B01L 2300/0681	..	Filter
B01L 2300/069	..	Absorbents; Gels to retain a fluid
B01L 2300/08	.	Geometry, shape and general structure
B01L 2300/0803	..	Disc shape
B01L 2300/0806	...	Standardised forms, e.g. compact disc (CD) format
B01L 2300/0809	..	rectangular shaped
B01L 2300/0812	...	Bands; Tapes
B01L 2300/0816	...	Cards, e.g. flat sample carriers usually with flow in two horizontal directions
B01L 2300/0819	...	Microarrays; Biochips
B01L 2300/0822	...	Slides
B01L 2300/0825	...	Test strips
B01L 2300/0829	...	Multi-well plates; Microtitration plates
B01L 2300/0832	..	cylindrical, tube shaped
B01L 2300/0835	...	Ampoules
B01L 2300/0838	...	Capillaries

B01L 2300/0841	...	Drums
B01L 2300/0845	...	Filaments, strings, fibres, i.e. not hollow
B01L 2300/0848	..	Specific forms of parts of containers
B01L 2300/0851	...	Bottom walls
B01L 2300/0854	...	Double walls
B01L 2300/0858	...	Side walls
B01L 2300/0861	..	Configuration of multiple channels and/or chambers in a single devices
B01L 2300/0864	...	comprising only one inlet and multiple receiving wells, e.g. for separation, splitting
B01L 2300/0867	...	Multiple inlets and one sample wells, e.g. mixing, dilution
B01L 2300/087	...	Multiple sequential chambers
B01L 2300/0874	...	Three dimensional network
B01L 2300/0877	...	Flow chambers
B01L 2300/088	...	Channel loops
B01L 2300/0883	...	Serpentine channels
B01L 2300/0887	..	Laminated structure
B01L 2300/089	..	Virtual walls for guiding liquids
B01L 2300/0893	..	having a very large number of wells, microfabricated wells
B01L 2300/0896	..	Nano scaled
B01L 2300/10	.	Means to control humidity and/or other gases
B01L 2300/105	..	using desiccants
B01L 2300/12	.	Specific details about materials
B01L 2300/123	..	Flexible; Elastomeric
B01L 2300/126	..	Paper
B01L 2300/14	.	Means for pressure control
B01L 2300/16	.	Surface properties and coatings
B01L 2300/161	..	Control and use of surface tension forces, e.g. hydrophobic, hydrophilic
B01L 2300/163	...	Biocompatibility
B01L 2300/165	...	Specific details about hydrophobic, oleophobic surfaces
B01L 2300/166	....	Suprahydrophobic; Ultraphobic; Lotus-effect
B01L 2300/168	..	Specific optical properties, e.g. reflective coatings
B01L 2300/18	.	Means for temperature control
B01L 2300/1805	..	Conductive heating, heat from thermostatted solids is conducted to receptacles, e.g. heating plates, blocks
B01L 2300/1811	...	using electromagnetic induction heating
B01L 2300/1816	...	using induction heating
B01L 2300/1822	...	using Peltier elements
B01L 2300/1827	...	using resistive heater
B01L 2300/1833	..	using electrical currents in the sample itself
B01L 2300/1838	..	using fluid heat transfer medium

B01L 2300/1844	...	using fans
B01L 2300/185	...	using a liquid as fluid
B01L 2300/1855	..	using phase changes in a medium
B01L 2300/1861	..	using radiation
B01L 2300/1866	...	Microwaves
B01L 2300/1872	...	Infrared light
B01L 2300/1877	..	using chemical reactions
B01L 2300/1883	..	using thermal insulation
B01L 2300/1888	..	Pipettes or dispensers with temperature control
B01L 2300/1894	..	Cooling means; Cryo cooling

B01L 2400/00**Moving or stopping fluids**

B01L 2400/02	.	Drop detachment mechanisms of single droplets from nozzles or pins
B01L 2400/021	..	non contact spotting by inertia, i.e. abrupt deceleration of the nozzle or pin
B01L 2400/022	..	droplet contacts the surface of the receptacle
B01L 2400/024	...	touch-off at the side wall of the receptacle
B01L 2400/025	...	tapping tip on substrate
B01L 2400/027	..	electrostatic forces between substrate and tip
B01L 2400/028	..	Pin is moved through a ring which is filled with a fluid
B01L 2400/04	.	Moving fluids with specific forces or mechanical means
B01L 2400/0403	..	specific forces
B01L 2400/0406	...	capillary forces
B01L 2400/0409	...	centrifugal forces
B01L 2400/0412	....	using additionally coriolis forces
B01L 2400/0415	...	electrical forces, e.g. electrokinetic
B01L 2400/0418	....	electro-osmotic flow (EOF)
B01L 2400/0421	....	electrophoretic flow
B01L 2400/0424	....	Dielectrophoretic forces
B01L 2400/0427	....	Electrowetting
B01L 2400/043	...	magnetic forces
B01L 2400/0433	...	vibrational forces
B01L 2400/0436	....	acoustic forces, e.g. surface acoustic waves (SAW)
B01L 2400/0439	....	ultrasonic vibrations, vibrating piezo elements
B01L 2400/0442	...	thermal energy, e.g. vaporisation, bubble jet
B01L 2400/0445	....	Natural or forced convection
B01L 2400/0448	....	Marangoni flow; Thermocapillary effect
B01L 2400/0451	....	Thermophoresis; Thermodiffusion; Soret-effect
B01L 2400/0454	...	radiation pressure, optical tweezers
B01L 2400/0457	...	passive flow or gravitation
B01L 2400/046	...	Chemical or electrochemical formation of bubbles

B01L 2400/0463	...	Hydrodynamic forces, venturi nozzles
B01L 2400/0466	...	Evaporation to induce underpressure
B01L 2400/0469	...	Buoyancy
B01L 2400/0472	...	Diffusion
B01L 2400/0475	..	specific mechanical means and fluid pressure
B01L 2400/0478	...	pistons
B01L 2400/0481	...	squeezing of channels or chambers
B01L 2400/0484	...	Cantilevers
B01L 2400/0487	...	fluid pressure, pneumatics
B01L 2400/049	....	vacuum
B01L 2400/0493	..	Specific techniques used
B01L 2400/0496	...	Travelling waves, e.g. in combination with electrical or acoustic forces
B01L 2400/06	.	Valves, specific forms thereof
B01L 2400/0605	..	check valves
B01L 2400/0611	...	duck bill valves
B01L 2400/0616	...	Ball valves
B01L 2400/0622	..	distribution valves, valves having multiple inlets and/or outlets, e.g. metering valves, multi-way valves
B01L 2400/0627	..	Molecular gates forcing or inhibiting diffusion
B01L 2400/0633	..	with moving parts
B01L 2400/0638	...	membrane valves, flap valves
B01L 2400/0644	...	rotary valves
B01L 2400/065	...	sliding valves
B01L 2400/0655	...	pinch valves
B01L 2400/0661	...	shape memory polymer valves
B01L 2400/0666	...	Solenoid valves
B01L 2400/0672	...	Swellable plugs
B01L 2400/0677	..	phase change valves; Meltable, freezing, dissolvable plugs; Destructable barriers
B01L 2400/0683	...	mechanically breaking a wall or membrane within a channel or chamber
B01L 2400/0688	..	surface tension valves, capillary stop, capillary break
B01L 2400/0694	..	vents used to stop and induce flow, backpressure valves
B01L 2400/08	.	Regulating or influencing the flow resistance
B01L 2400/082	..	Active control of flow resistance, e.g. flow controllers
B01L 2400/084	..	Passive control of flow resistance
B01L 2400/086	...	using baffles or other fixed flow obstructions
B01L 2400/088	...	by specific surface properties