

**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](#)

**Guidance heading:****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 ( <a href="#">medical syringes A61M</a> ) }
B01L 3/022	.... {Capillary pipettes, i.e. having very small bore ( <a href="#">B01L 3/0224</a> to <a href="#">B01L 3/0237</a> take precedence) }
B01L 3/0224	.... {having mechanical means to set stroke length, e.g. movable stops ( <a href="#">B01L 3/0231</a> , <a href="#">B01L 3/0234</a> take precedence) }
B01L 3/0227	.... {Details of motor drive means ( <a href="#">B01L 3/0231</a> , <a href="#">B01L 3/0234</a> 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 ( <a href="#">making arrays for combinatorial libraries B01J 19/0046</a> ; automation of dispensing for analysis <a href="#">G01N 35/10</a> ) }
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 ( <a href="#">wash bottles B01L 3/10</a> ) }
B01L 3/0286	.. { Ergonomic aspects, e.g. form or arrangement of controls }
B01L 3/0289	.. { Apparatus for withdrawing or distributing predetermined quantities of fluid ( <a href="#">B01L 3/02</a> takes precedence; sample taking <a href="#">G01N 1/00</a> ; sample taking within automatic analysers <a href="#">G01N 35/00</a> ; volume measuring in general <a href="#">G01F</a> ) }
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 ( <a href="#">specially adapted for distillation B01D</a> { <a href="#">B01D 3/10</a> } )
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 <a href="#">G01N 35/08</a> ) }
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 <a href="#">B65D</a> ; means for removing stoppers <a href="#">B67B 7/02</a> ) }
B01L 3/5085	...	{ for multiple samples, e.g. micro-titration plates }
B01L 3/50851	....	{ specially adapted for heating or cooling samples (laboratory heating apparatus <a href="#">B01L 7/00</a> ; incubators <a href="#">C12M</a> ) }
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 ( <a href="#">B01L 3/50857</a> takes precedence) }
B01L 3/52	.	{ Containers specially adapted for storing or dispensing a reagent ( <a href="#">B01L 3/02</a> takes precedence; containers for medical or pharmaceutical purposes <a href="#">A61J 1/00</a> ; containers in general <a href="#">B65D</a> ; storing or dispensing test elements <a href="#">G01N 33/4875</a> ; automated reagent dispensing <a href="#">G01N 35/1002</a> ) }
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 <a href="#">G01N 35/00732</a> ) }
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 <a href="#">F16L</a> ) }
B01L 3/563	..	{ Joints or fittings (in general <a href="#">F16L</a> ) ; 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 <a href="#">F16L</a> ) }
B01L 3/567	..	{ Valves, taps or stop-cocks (in combination with burettes <a href="#">B01L 3/0203</a> ; in general <a href="#">F16K</a> ) }
B01L 3/569	..	{ Glassware }
<b>B01L 5/00</b>		<b>Gas handling apparatus</b> (gas jars or cylinders <a href="#">B01L 3/12</a> ; cold traps, cold baffles <a href="#">B01D 8/00</a> ; separation of gases or vapours <a href="#">B01D 53/00</a> ; gas generators <a href="#">B01J 7/00</a> ; steam traps <a href="#">F16T</a> )

- 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 19/00B8](#) ) }
- 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](#) ) }

**Guidance heading:**

**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

#### Guidance heading:

#### **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