

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](#))

Special rules of classification

Classification Rules:

Classes of [B01L 1/00-B01L 99/00](#) are given for invention information, i.e. the information is such that if you do a search on this subject-matter it is important to see the document. The definitions below give guidance to scope and limits of the respective classes. Additional information is classified with Indexing Codes in the range of [B01L 1/00-B01L 99/00](#). These codes are used in combination or without a class in [B01L](#). In addition to a class in [B01L](#), Indexing Codes in the range of [B01L 2200/00-B01L 2400/00](#) are applied where possible to all documents classified in [B01L](#). Indexing Codes [B01L 2200/00-B01L 2400/00](#) are not used for documents without a class in [B01L](#). Also if documents have only an Indexing Code in the range of [B01L 1/00-B01L 99/00](#), no Indexing Code is used.

Double classification:

Often double classification will be necessary, also within [B01L](#) itself. For example in cases documents relating to sample containers it might be that a document gets classified for the sample taking in [A61B 10/0045](#), for sample storage in [B01L 3/50](#) and in [G01N](#) for a specific analysis technique.

Circulation:

Due to the broad scope of [B01L](#), and its status as residual group, there is no exhaustive list of neighbouring fields. In particular, it is important that documents relating to sample containers are also circulated to the specific analysis techniques mentioned in the document to allow double classification where appropriate. Some of the areas where documents need to be circulated regularly are: [A61B](#), [A61J](#), [A61M](#), [B01D](#), [B01F](#), [B01J](#), [B29C](#), [B81](#), [B82](#), [C12N](#), [C12M](#), [C12Q](#), [F04B](#), [F16K](#), [G01F](#), and in particular [G01N](#).

B01L 1/00

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

Definition statement

This place covers:

Chambers, enclosures, rooms and cupboards for laboratory use which have no specific application.

Also comprises Air-pressure chambers.

References

Limiting references

This place does not cover:

Laboratory benches	B01L 9/02
Incubators	C12M 41/14
Industrial clean rooms	F24F 3/161

Informative references

Attention is drawn to the following places, which may be of interest for search:

Fume cupboards	B08B
Manipulation devices, glove boxes	B25J
Cooling chambers	F25D

B01L 1/02

Air-pressure chambers; Air-locks therefor

Definition statement

This place covers:

Incubator or conditioning cabinet not otherwise provided for. Doors and bayonet designs.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Glove boxes	B25J
Vacuum locks for discharge tubes	H01J 37/18

B01L 1/025

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

Definition statement

This place covers:

Closed chambers, not otherwise provided for, to provide a defined environment such as temperature, pressure, humidity and other gas concentrations, climate chambers.

References

Limiting references

This place does not cover:

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](#))}

References**Limiting references**

This place does not cover:

Clean rooms for industrial use	F24F 3/161
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Treatment rooms for medical purposes	A61G 10/00
Ventilation	F24F 7/00

B01L 1/50

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

References**Limiting references**

This place does not cover:

Sample containers	B01L 3/50 , B01L 3/14
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Refuse receptacles	B65F 1/00
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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](#))

Definition statement

This place covers:

Simple fluid transfer means, such as tubes, valves, fittings.

Various containers, in particular for sample or reagent storage also comprising microfluidic structures.

Droppers comprising various fluid dispensing means such as pipettes, burettes and droplet dispensers.

Spatulas.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Chemical Reactors	B01J 19/00
Packaging containers	B65D
Culturing devices	C12M 23/02
Metering volume	G01F
Analysis of a material	G01N

Special rules of classification

Due to the diversity of the subgroups in this group the head group is only rarely used to classify. It is preferred to use all relevant main groups instead.

B01L 3/02

Burettes; Pipettes

Definition statement

This place covers:

Burettes, pipettes, pipette tips, droplet counters, droplet dispensers (droppers), and other laboratory devices to withdraw and discharge a liquid.

Relationships with other classification places

This class relates to generally to manually operated devices, but is not restricted to hand held devices. Automation of pipetting stations is classified in [G01N 35/10](#).

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Manual dosing	B05B
Closures with discharging devices	B65D 47/00
Dispensing not otherwise provided for	B67D
Repeated volume dosing of fluids in general	G01F 11/00
Dispensing of fluids in automatic analysers	G01N 35/10

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Pipette	Means with one port
Burette	Means with two ports
Dropper	Means to dispense the liquid dropwise

B01L 3/0203

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

Definition statement

This place covers:

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

References**Limiting references**

This place does not cover:

If the volume dispensed is droplet sized	B01L 3/0241
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Medical burettes	A61M 5/1412
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B01L 3/021

{Pipettes, i.e. with only one conduit for withdrawing and redistributing liquids}

Definition statement

This place covers:

Pipettes, i.e. with only one conduit for withdrawing and redistributing liquids.

References**Limiting references**

This place does not cover:

If the volume dispensed is droplet sized	B01L 3/0241
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Pipette type sampler or inoculator for cell handling	C12M 33/04
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Special rules of classification

If used to fill standard multiwell plates use [B01L 2300/0829](#).

B01L 3/0213**{Accessories for glass pipettes; Gun-type pipettes, e.g. safety devices, pumps}****Definition statement***This place covers:*

This group covers accessories for (traditional) glass pipettes, such as safety devices to protect the user from inhaling hazardous fluids or pumps. This group also encompasses gun-type pipettors.

References**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Gun type pipettors in general	G01F 11/026
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B01L 3/0217**{of the plunger pump type (medical syringes [A61M](#))}****Definition statement***This place covers:*

Piston or plunger-type pipettes.

References**Limiting references***This place does not cover:*

Medical syringes	A61M 5/178
Fluid dosing with measuring chambers in general	G01F 11/02

B01L 3/022**{Capillary pipettes, i.e. having very small bore ([B01L 3/0224](#) - [B01L 3/0237](#) take precedence)}****Definition statement***This place covers:*

Pipettes where a piston or plunger is moved within a capillary.

Relationships with other classification places

Pipettes having a capillary needle but no plunger within the capillary are not classified here, use Indexing Code [B01L 2300/0838](#) in combination with appropriate group in [B01L 3/02](#) instead.

References**Limiting references***This place does not cover:*

Capillary pipette without piston	B01L 3/021 , B01L 3/0241
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Pipettes having mechanical means to set stroke length	B01L 3/0224
Details of electronic control, e.g. relating to user interface	B01L 3/0237

Informative references

Attention is drawn to the following places, which may be of interest for search:

Microinjections	C12N 15/89
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B01L 3/0231

{having several coaxial pistons}

Definition statement

This place covers:

Plunger pipettes with coaxial pistons. This group does NOT cover multiple parallel plungers.

B01L 3/0234

{Repeating pipettes, i.e. for dispensing multiple doses from a single charge}

References

Limiting references

This place does not cover:

Drop counters; Drop formers	B01L 3/0241
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B01L 3/0241

{Drop counters; Drop formers (making arrays for combinatorial libraries [B01J 19/0046](#); automation of dispensing for analysis [G01N 35/10](#))}

Definition statement

This place covers:

Droplet dispensers and droplet counters. This group covers the constructional details of the dispensing part itself not the automation aspects.

Relationships with other classification places

The integration into automated systems is classified for instance in [G01N 35/10](#) and [B01J 19/0046](#)

References

Limiting references

This place does not cover:

Making arrays for combinatorial libraries	B01J 19/0046
Spraying or atomising in general	B05B
Printing	B41J
Automation of dispensing for analysis	G01N 35/10

Informative references

Attention is drawn to the following places, which may be of interest for search:

Means for dispensing and evacuation of reagents to make chemical libraries	B01J 2219/00351
Microinjections	C12N 15/89
Investigating characteristics of particles	G01N 15/00

Special rules of classification

If used to fill standard multiwell plates use [B01L 2300/0829](#).

B01L 3/0244

{using pins}

Definition statement

This place covers:

Droplet dispensers using pins.

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Nibs, quills, pens for writing and drawing	B43K 1/00
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Special rules of classification

Use [B01L 2400/02](#) for details of printing action.

B01L 3/0258

{using stamps}

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Stamps in general	B41K
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B01L 3/0262

{using touch-off at substrate or container}

Definition statement

This place covers:

In touch-off dispensers the liquid contacts the target surface while it still hangs at the dispenser thus leading to a bridge between the two bodies. Capillary forces draw the liquid subsequently, at least in part, to the target surface.

B01L 3/0268

{using pulse dispensing or spraying, eg. inkjet type, piezo actuated ejection of droplets from capillaries}

References**Limiting references**

This place does not cover:

Ink jet printing of ink	B41J 2/01
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Nozzles and apparatus for spraying or atomising in general	B05B 1/00
nebulizers for MS after chromatography	G01N 30/724
Introducing samples into mass spectrometers	H01J 49/04

B01L 3/0272

{Dropper bottles}

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Eye dropper	A61F 9/0026
Packaging container closures with dropper	B65D 47/18

B01L 3/0275

{Interchangeable or disposable dispensing tips}

Definition statement

This place covers:

Pipette tips, note that the subgroup also covers ejection means for pipette tips.

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Pipette tip racks	B01L 9/543
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Synonyms and Keywords

In patent documents, the following words/expressions are often used as synonyms:

- "chip (in English translations of Japanese documents)" and " (pipette) tips"

B01L 3/0279**{co-operating with positive ejection means}****Definition statement***This place covers:*

Pipette tip ejectors.

Relationships with other classification places

Note that this is not restricted to the features of the tip itself but can also relate to the ejection mechanism of the pipette.

B01L 3/0282**{mounted within a receptacle (wash bottles [B01L 3/10](#))}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Eye dropper	A61F 9/0026
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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](#))}

Definition statement*This place covers:*

Fluid handling apparatus not provided for in [B01L 3/02](#), this group is restricted to gas, beads or pulverized materials.

Relationships with other classification places

The subgroup is used as residual group for liquid handling.

B01L 3/0293**{for liquids}****Definition statement***This place covers:*

Liquid handling apparatus not provided for in [B01L 3/02](#).

B01L 3/06**Crystallising dishes****Relationships with other classification places**

Often used in combination with classes in [B01L 3/50](#).

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Crystallization for separation	B01D 9/00
Sugars	C07H
Single crystal crystallization	C30B 7/00
Crystals of macromolecules	C30B 29/58

Special rules of classification

If used as a sample container double classify with relevant class in [B01L 3/50](#)

B01L 3/08

Flasks (specially adapted for distillation [B01D](#) {[B01D 3/10](#)})

Definition statement

This place covers:

Flasks used in the lab and not otherwise provided for. Flasks usually comprise an inlet which is smaller than the main body.

B01L 3/12

Gas jars or cylinders

References

Limiting references

This place does not cover:

Gas storage containers in general	F17C
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B01L 3/14

Test tubes {(devices for taking samples of blood [A61B 5/14](#))} (not used, see [B01L 3/50](#) and subgroups)]

Definition statement

This place covers:

Sample containers having the form of tubes, also covers centrifugal type test tubes and test tube caps.

Relationships with other classification places

Sample containers having a different form, e.g. plates, bags, are classified in [B01L 3/50](#), this class is only used for (cylindrical) tube formed containers.

References

Limiting references

This place does not cover:

Sample containers with other geometrical forms	B01L 3/50
Test tubes with sample transport other than by centrifugation	B01L 3/502
Racks and holders for test tubes	B01L 9/06
Devices for taking samples of blood	A61B 5/14

Informative references

Attention is drawn to the following places, which may be of interest for search:

Centrifuges	B04B 5/04
Tubular or bottle type culture devices	C12M 1/24
Automatic sample analysis	G01N 35/00

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Test tubes	Elongated tubes
Round tubular	Sample containers

B01L 3/16

Retorts

Definition statement

This place covers:

Retorts are simple distillation apparatuses. They often comprise round bases and turned down necks.

References

Limiting references

This place does not cover:

Distillation, microdistillation	B01D
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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](#))}

Definition statement

This place covers:

Sample containers not being simple test tubes. Covered are simple containers which only store the sample but also more complex containers with integrated passive or active parts which inter alia transport samples within it.

Relationships with other classification places

Containers for chemical synthesis, even if of small size, are classified in [B01J](#).

Containers specific to a single analytical technique are usually classified in the respective field, e.g. in [G01N](#), [C12M](#). Documents are double classified in both places when, due to their constructional aspects, they are also relevant for other applications.

References

Limiting references

This place does not cover:

Test tubes	B01L 3/14
Synthesis reactors	B01J
Petri dishes	C12M 23/10

Informative references

Attention is drawn to the following places, which may be of interest for search:

Reagent containers	B01L 3/52
Labcontainer with identification means	B01L 3/545
Transport containers for preserved human or animal parts	A01N 1/02
Body liquid sampling	A61B 10/0045
Medical containers	A61J
Containers for storage of materials	B65D
Constructional details of bioreactors for culturing	C12M 23/00
Cuvettes constructions	G01N 21/03
Microscopic slides	G02B 21/34

Special rules of classification

It is important to note that this group is restricted to sample containers and not to lab containers in general.

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](#))}

Definition statement

This place covers:

Sample container where fluid is transported during use between different parts of the container.

Relationships with other classification places

In addition to storage of the sample these containers usually enable other function as well, such as sample preparation or analysis. Double classification is preferred.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Measuring characteristics of blood in vivo and taking blood samples	A61B 5/14
Taking bodily sample other than blood	A61B 10/0045
Devices for introducing media into the body	A61M
Specific analysis techniques	G01N
Sample preparation	G01N 1/00
Centrifugal-type cuvettes	G01N 21/07
Analysis by separation into components	G01N 30/00
Analysing biological materials	G01N 33/48
Automatic analysers	G01N 35/00

B01L 3/5021

{Test tubes specially adapted for centrifugation purposes (centrifuges [B04B 5/04](#))}

Relationships with other classification places

Non-tubular centrifugal sample containers are classified in [B01L 3/502](#).

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Centrifuges	B04B
Centrifugal type cuvettes	G01N 21/07
Physical separation of blood components	G01N 33/491

B01L 3/5023

{with a sample being transported to, and subsequently stored in an absorbent for analysis}

Definition statement

This place covers:

Constructional details and flow shaping in sample containers where liquid is transported through an absorbent, e.g. lateral flow devices.

Relationships with other classification places

Analysis technique, sensor details and chemistry of lateral flow devices are classified in [G01N](#), e.g. [G01N 33/543](#).

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Layered products	B32B
Optical sensors	G01N 21/75
Electric, electro-chemical and magnetic analysis	G01N 27/00
Physical analysis of biological material	G01N 33/487
Immunoassays	G01N 33/543

Special rules of classification

Double classify with [B01L 3/5027](#) or [B01L 3/5027](#) for porous microchannels in a substrate.

B01L 3/5025

{for parallel transport of multiple samples}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Bioreactors	C12M
Centrifugal cuvettes	G01N 21/07

B01L 3/50255

{Multi-well filtration}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Filtration per se	B01D
Bioreactors	C12M
Purifying or cleaning a sample	G01N 1/34

B01L 3/5027

{by integrated microfluidic 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](#); microcapillary devices in general [B81B 1/00](#))}

Definition statement

This place covers:

Sample containers with integrated microfluidic components. Microfluidic components are not restricted to capillary transport but are defined by their small size.

Relationships with other classification places

Microfluidic devices can be found in a number of different fields. This group covers only those devices that are used to analyse a sample. The focus is on the sample handling per se in such devices, i.e. handling of fluids, beads, single molecules. The specifics of the analysis itself is for example classified in [G01N](#) and [C12Q](#).

Capillary fluid transport in porous materials as flow layers of sample containers, e.g. lateral flow devices, are classified in [B01L 3/5023](#).

References

Limiting references

This place does not cover:

Micromixers	B01F 13/0059
Microreactor for synthesis	B01J 19/0093
Microcapillary devices in general	B81B 1/00

Informative references

Attention is drawn to the following places, which may be of interest for search:

Microdevices for drug release	A61K 9/0097
Sample preparation	G01N 1/00
Introducing samples into mass spectrometers	H01J 49/04

Special rules of classification

For microfluidic devices characterized by the specific integrated thermal control, e.g. for PCR, use double classification with [B01L 7/00](#).

Use index codes [B01L 2200/00](#)-[B01L 2400/00](#) as complete as possible.

Synonyms and Keywords

In patent documents, the following words/expressions are often used as synonyms:

- "sample containers with integrated microfluidic components", "lab-on-a-chip" and "microfluidic device for analysis"

B01L 3/502707

{characterised by the manufacture of the container or its components (manufacture of microstructural devices in general [B81C](#); by shaping or joining plastic parts [B29C 59/00](#) [B29C 65/00](#), by laminating [B32B 37/00](#))}

Definition statement

This place covers:

Sample containers with integrated microfluidic components with specific manufacturing details.

References**Limiting references**

This place does not cover:

Manufacture of microstructural devices in general	B81C
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Shaping or joining of plastics	B29C 59/00 , B29C 65/00
Laminating	B32B 37/00
Microdevices for electrophoresis	G01N 27/44791
Photolithography	G03F 7/00

B01L 3/502715

{characterised by interfacing components, e.g. fluidic, electrical, optical or mechanical interfaces}

Definition statement

This place covers:

Integrated microfluidic interfaces, i.e. the section of the interface which forms part of the container.

Fluidic interfaces comprise inlets and outlets.

Optical interfaces may comprise lenses, prisms, mirrors.

Mechanical interfaces may comprise aligning marks, guides.

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Holders for lab-on-a-chips	B01L 9/52
Handling and feeding of cartridges in automated analysers	G01N 35/00

B01L 3/502723**{characterised by venting arrangements}****Definition statement***This place covers:*

Means to remove air or gases from a microfluidic sample container.

Also comprises documents where bubble formation is avoided.

References**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Venting, avoiding backpressure, avoid gas bubbles	B01L 2200/0684
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B01L 3/50273**{characterised by the means or forces applied to move the fluids (micropumps [F04B 19/006](#), of the membrane type [F04B 43/043](#))}****Definition statement***This place covers:*

Means or forces to move fluid in microfluidic sample containers, e.g. integrated pumps.

References**Limiting references***This place does not cover:*

Influencing the flow rate for a given force	B01L 3/502746
Infusion devices with flow control	A61M 5/168
Micropumps in general	F04B 19/006
Micropumps of the membrane type in general	F04B 43/043

Informative references*Attention is drawn to the following places, which may be of interest for search:*

Micromixers	B01F 13/0059
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Special rules of classificationUse Indexing Codes [B01L 2400/04](#) to specify the kind of force or means to move the fluid.

B01L 3/502738

{characterised by integrated valves (microvalves [F16K 99/0001](#))}

Definition statement

This place covers:

This group covers the constructional details of valves specific to microfluidic sample containers. It also covers valving schemes when they depend on integrated structures, like cascades of capillary valves.

Relationships with other classification places

External valve actuators are classified in [F16K](#) or [G01N 35/00](#).

References

Limiting references

This place does not cover:

Throttle valves in microfluidic sample containers	B01L 3/502746
Microvalves and actuators in general	F16K 99/0001

Informative references

Attention is drawn to the following places, which may be of interest for search:

Valves in automated analysers	G01N 35/1097
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Special rules of classification

For valve details use [B01L 2400/06](#).

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Valve	Means to stop or divert the whole flow of a fluid
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B01L 3/502746

{characterised by the means for controlling flow resistance, e.g. flow controllers, baffles ([B01L 3/502738](#) takes precedence)}

Definition statement

This place covers:

Controlling the flow resistance in a microfluidic sample container which is neither valving, where the flow is stopped, nor pumping, which is the source of the force for the flow.

For example, providing baffles in order to slow but not stop a flow in a specific section of a channel. Adapting the channel dimensions to obtain a specific flow pattern.

References

Limiting references

This place does not cover:

Valves for microfluidic sample containers	B01L 3/502738
Infusion devices with flow control	A61M 5/168
Flow control in general	G05D 7/00

Special rules of classification

For flow control details use [B01L 2400/08](#).

B01L 3/502753

{characterised by bulk separation arrangements on lab-on-a-chip devices, e.g. for filtration or centrifugation (separation in general [B01D](#); microapparatus for analysis using electrophoresis [G01N 27/44791](#); sample preparation [G01N 1/28](#))}

Definition statement

This place covers:

Sample containers with integrated microfluidic components with bulk separation such as filtration or centrifugation. In general, the flow direction of the bulk fluid is the same as the component which is separated. In a bulk separation a certain class of particles/fluid is usually separated from another class as a group. For example, centrifugation leads to a classification of particle groups based on their density.

Relationships with other classification places

When the separation is the only purpose and the device is not combined with sample storage, i.e. not integrated, it should not be classified in this group.

References

Limiting references

This place does not cover:

Separation or sorting of particles or molecules on an individual level	B01L 3/502761
Separation in general	B01D
Microapparatus for analysis using electrophoresis	G01N 27/44791

Informative references

Attention is drawn to the following places, which may be of interest for search:

Centrifugal test tubes	B01L 3/5021
Separation of solids from solids or fluids by e.g. electric or magnetic means, dielectrophoresis	B03C
Sample preparation	G01N 1/28
Centrifugal-type cuvettes	G01N 21/07
Analysing blood by separating its components	G01N 33/491
Automatic analysers using bio-disks	G01N 35/00069

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](#))}

Definition statement

This place covers:

Handling of suspended solids or molecules independent from the bulk fluid flow. In general, the fluid flow direction of the bulk fluid is different from the flow direction of the component to be separated. Handling may comprise trapping, sorting, stretching, orientating of particles or molecules.

Usually particles or molecules are handled individually, thus they can be selectively handled irrespective of whether more particles or molecules of the same type/class exist in the sample. For example, a single DNA molecule may be stretched in a nanochannel although the sample comprises many more DNA molecules.

References**Limiting references**

This place does not cover:

Investigating characteristics of particles	G01N 15/00
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Separation of solids from solids or fluids by e.g. electric or magnetic means, dielectrophoresis	B03C
Separating or Sorting solids from solids	B07B

Special rules of classification

When particles/molecules are separated as part of a whole class (as bulk) they are classified in [B01L 3/502753](#).

Details of particle/molecule handling can be coded in [B01L 2200/0647](#).

B01L 3/502769

{characterised by multiphase flow arrangements}

Definition statement

This place covers:

Sample containers with integrated microfluidic components having multiphase flow arrangements. Multiphase flow is meant to encompass flows where gas/liquid or liquid/liquid interfaces exist and kept during flow of the fluids. The fluids may be immiscible but under certain conditions this may not be necessary.

Special rules of classification

This group is only used in the rare event that none of the groups below are suitable.

B01L 3/502776**{specially adapted for focusing or laminating flows}****Definition statement***This place covers:*

Sample containers with integrated microfluidic components having laminated flow arrangements, such as a sheath flow.

References**Limiting references***This place does not cover:*

Micromixers	B01F 13/0059
Investigating characteristics of particles	G01N 15/00

B01L 3/502784**{specially adapted for droplet or plug flow, e.g. digital microfluidics (automatic analysis using a stream of discrete samples in a tube system [G01N 35/08](#))}****Definition statement***This place covers:*

Droplets or plug flow in sample containers with integrated microfluidic components, such as digital microfluidics.

References**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Automatic analysis using a stream of discrete samples in a tube system (bench top sized)	G01N 35/08
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B01L 3/502792**{for moving individual droplets on a plate, e.g. by locally altering surface tension}****Definition statement***This place covers:*

Moving droplets individually on a plate, for example by electrowetting.

The droplet may also be bordered by a cover plate in addition to a bottom plate. No side walls are present to guide the droplet.

Special rules of classification

If present, use Indexing Code for virtual walls [B01L 2300/089](#)

B01L 3/5029**{using swabs}****Definition statement***This place covers:*

Sample containers comprising both fluid transport and swabs. The invention is usually directed to the handling of the swab within the container and not the swab itself.

Relationships with other classification places

Swabs as sample taking devices are found in [G01N 1/02](#) and [A61B 10/0045](#).

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Devices for sampling bodily liquids	A61B 10/0045
Ear cleaners	A61F 11/006
Absorbent pads, swabs	A61F 13/15
Surgical swabs	A61F 13/36
Cell sampling container with a swab	C12M 1/30
Sampling with a swab	G01N 1/02 , G01N 2001/028

B01L 3/505**{flexible containers not provided for above}****Definition statement***This place covers:*

Flexible sample containers such as bags or foldable sample cards.

B01L 3/5055**{Hinged, e.g. opposable surfaces}****Definition statement***This place covers:*

Folded sample cards.

B01L 3/508**{rigid containers not provided for above}****Definition statement***This place covers:*

Sample containers having rigid walls and which do not comprise any internal sample transport.

References

Limiting references

This place does not cover:

Rigid sample containers with fluid transport	B01L 3/502
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Urine sample containers	A61B 10/007
Cuvettes	G01N 21/03
Microscopic slides	G02B 21/34
Vacuum locks for discharge tubes (and sample vessels to be used in vacuum)	H01J 37/18

B01L 3/5082

{Test tubes per se}

Definition statement

This place covers:

Sample containers having the form of tubes, also covers centrifugal type test tubes and test tube caps.

References

Limiting references

This place does not cover:

Sample containers with other geometrical forms	B01L 3/50
Test tubes with sample transport other than by centrifugation	B01L 3/502
Racks and holders for test tubes	B01L 9/06
Devices for taking samples of blood	A61B 5/14

Informative references

Attention is drawn to the following places, which may be of interest for search:

Producing plastic containers	B29D 22/003
Tubular or bottle type culture devices	C12M 23/08

B01L 3/50825

{Closing or opening means, corks, bungs (closures for containers [B65D](#); means for removing stoppers [B67B 7/02](#))}

Relationships with other classification places

Test tube caps having additional chambers, e.g. for reagents, are also classified in [B01L 3/502](#).

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Producing plastic closure caps	B29D 99/0096
Closures for packaging containers	B65D 39/00 - B65D 55/00
Means for removing stoppers	B67B 7/02

Special rules of classification

For details use [B01L 2300/04](#).

Synonyms and Keywords

In patent documents, the following words/expressions are often used as synonyms:

- "stopper", "closure", "bung", "cork", "seal" and "cap"

B01L 3/5085

{for multiple samples, e.g. microtitration plates}

Relationships with other classification places

Microarray sensors such as DNA-chips without any sample storage are classified elsewhere, e.g. in [B01J 19/0046](#) or [G01N 33/50](#).

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Processes and Apparatus for making combinatorial libraries	B01J 19/0046
Chemical or biological libraries	C40B
Automated analysis with microtitration plates	G01N 35/028

Special rules of classification

Use [B01L 2300/0829](#) for standard microtiter plate format.

B01L 3/50851

{specially adapted for heating or cooling samples (laboratory heating apparatus [B01L 7/00](#); incubators [C12M](#))}

Definition statement

This place covers:

Sample containers for thermal treatment of samples, such as PCR containers.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Thermostats	B01L 7/00
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B01L 3/50853

{with covers or lids}

Definition statement

This place covers:

Constructional details of closures for multisample containers.

References

Limiting references

This place does not cover:

Closures for test tubes	B01L 3/50825
Handling of closures in automated systems	G01N 35/00

Special rules of classification

For details use Indexing Codes [B01L 2300/04](#).

B01L 3/50855

{using modular assemblies of strips or of individual wells}

Definition statement

This place covers:

Multisample containers which can be assembled and/or disassembled during use but which form a single unit when they are assembled. These are typically assembled into a standard format using a frame.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Holders and racks for test tubes	B01L 9/06
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B01L 3/50857

{using arrays or bundles of open capillaries for holding samples}

Definition statement

This place covers:

Multiple parallel capillaries which hold a sample by surface tension at a specific location. The sample is not transported within the device except for filling or draining.

References

Limiting references

This place does not cover:

Parallel capillaries as sample containers involving transport within said capillaries	B01L 3/5027 , B01L 3/5025
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B01L 3/5088

{confining liquids at a location by surface tension, e.g. virtual wells on plates, wires ([B01L 3/50857](#) takes precedence)}

References

Limiting references

This place does not cover:

Droplet is also moved, transported on the substrate	B01L 3/502
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Applying liquids to render a surface hydrophobic	B05D 5/08
Surface shaping of plastic parts	B29C 59/00
Maldi-TOF sample plates	H01J 49/0418

Special rules of classification

For multiple samples double classify with [B01L 3/5085](#).

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](#))}

Definition statement

This place covers:

Reagent containers.

Relationships with other classification places

Sample containers with integrated reagent containers are not classified in this group. However, if the reagent container is a (modular) unit which can be inserted into a sample container and is thus not an integral part of the sample container it should be classified in this group.

References

Limiting references

This place does not cover:

Pipettes, Burettes, Droppers	B01L 3/02
Sample container	B01L 3/50
Automated reagent dispensers	G01N 35/1002

Informative references

Attention is drawn to the following places, which may be of interest for search:

Sample containers	B01L 3/50
Lab container with identification means	B01L 3/545
Medical containers	A61J 1/00
Containers for storage of materials	B65D
Storing or dispensing test elements	G01N 33/4875

Special rules of classification

Sample containers having additional integrated compartments for reagents are not classified in this group but in [B01L 3/50](#) use mirror Indexing Codes [B01L 3/52](#) instead or [B01L 2200/16](#).

B01L 3/523

{with means for closing or opening}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Test tube closures	B01L 3/50825
Closures for multiwell containers	B01L 3/50853

B01L 3/527

{for a plurality of reagents}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Sample containers for multiple samples	B01L 3/5085
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B01L 3/54

{Labware with identification means (identification of carriers, materials or components in automatic analysers [G01N 35/00732](#))}

Definition statement

This place covers:

Labels, barcodes, RFIDs and other identification means used for labware.

References**Limiting references**

This place does not cover:

Record carrier designed to carry digital markings like barcodes, RFID	G06K 19/00
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Control arrangements for automated analysers	G01N 35/00584
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B01L 3/545

{for laboratory containers}

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

ICT specially adapted for the handling or processing of patient-related medical or healthcare data related to laboratory analysis	G16H 10/40
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B01L 3/56

{Labware specially adapted for transferring fluids}

Definition statement

This place covers:

Simple labware to transfer fluids, in particular traditional glassware and its accessories, such as connectors, valves, tubes, funnels.

References**Limiting references**

This place does not cover:

Pipettes, Burettes, Droppers	B01L 3/02
Devices for withdrawing samples	G01N 1/02

Informative references

Attention is drawn to the following places, which may be of interest for search:

Medical tubes, connectors, couplings, valves and the like	A61M 39/00
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B01L 3/561

{Tubes; Conduits (in general [F16L](#))}

References**Limiting references**

This place does not cover:

Pipes in general	F16L
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B01L 3/563

{Joints or fittings (in general [F16L](#)); Separable fluid transfer means to transfer fluids between at least two containers, e.g. connectors}

References**Limiting references**

This place does not cover:

If connectors are integrated into a sample container use	B01L 3/502
Joints and fittings in general	F16L

B01L 3/5635

{connecting two containers face to face, e.g. comprising a filter}

Definition statement

This place covers:

Direct connection between only two containers.

B01L 3/565

{Seals (in general [F16L](#))}

References**Limiting references**

This place does not cover:

Joints and fittings in general	F16L
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B01L 3/567

{Valves, taps or stop-cocks (in combination with burettes [B01L 3/0203](#); in general [F16K](#))}

Definition statement

This place covers:

Valves specifically used in connection with laboratory equipment.

References**Limiting references**

This place does not cover:

Valves in general	F16K
Automated sample transfer characterised by valves	G01N 35/1097

Informative references

Attention is drawn to the following places, which may be of interest for search:

Burettes	B01L 3/0203
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B01L 3/569

{Glassware}

Definition statement

This place covers:

Residual group for glassware not falling in any of the above groups, i.e. must be made of glass.

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](#))

References**Limiting references**

This place does not cover:

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
Gas vessels	F17C
Taking gas samples	G01N 1/22
Investigating gases	G01N 33/0004

Special rules of classification

This group is mostly inactive.

B01L 5/02

Gas collection apparatus, e.g. by bubbling under water (for sampling [G01N](#))

References**Limiting references**

This place does not cover:

For sampling	G01N
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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

Definition statement

This place covers:

Thermostats for heating or cooling and heat insulation devices.

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Evaporators	B01D 1/00
Cold traps	B01D 8/00
Heating or cooling for centrifuges	B04B 15/02
Incubators	C12M 41/14
Heating in general	F24
Cooling in general	F25
Drying in general	F26
Heat exchanger in general	F28
Sample preparation	G01N 1/00
Controlling temperature.	G05D 23/00
Chip cooling	H02N 1/00
Electric heating	H05B

Special rules of classification

Use Indexing Code range [B01L 2300/18](#) to specify the thermostating means.

B01L 7/02**Water baths; Sand baths; Air baths****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Direct contact heat exchange apparatus	F28C 3/00
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B01L 7/04**Heat insulating devices, e.g. jackets for flasks****Definition statement***This place covers:*

Stand alone heat insulation device.

B01L 7/50**{Cryostats}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Temperature processes for preservation of (parts of) animals or humans	A01N 1/0284
Refrigeration or cooling in general	F25

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](#))}****Definition statement***This place covers:*

Thermocyclers and other thermostats where a sample is exposed to a defined sequence of different temperatures. For example used for PCR.

Relationships with other classification placesThe specific analysis methods of polymerase chain reactions (PCR) are classified in [C12Q 1/68](#).Other integrated means such as specific detectors, or means for automation are classified in [G01N](#).

References

Limiting references

This place does not cover:

PCR methods	C12Q 1/68
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Special rules of classification

Use double classification with microfluidic sample containers of [B01L 3/5027](#).

B01L 7/54

{using spatial temperature gradients}

Definition statement

This place covers:

Thermostats creating a defined temperature gradient in space.

B01L 9/00

Supporting devices; Holding devices (tweezers, tongs [B25B](#))

Definition statement

This place covers:

Holding frame constructions, trays for drying labware, holders for labware not provided for in a subgroup.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Fastening tools in general	B25B
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B01L 9/02

Laboratory benches or tables; Fittings therefor

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Work space management systems	A47B 83/001
Dental work stands	A61G 15/14

B01L 9/06**Test-tube stands; Test-tube holders****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Automated analysers with conveyors for sample containers	G01N 35/026
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B01L 9/50**{Clamping means, tongs (in general [F16B 2/06](#))}****Definition statement**

This place covers:

Indicating positions of wells and other receptacles by numbers, characters, grooves or other means.

B01L 9/52**{Supports for flat sample carrier, e.g. used for plates, slides, chips}****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Staining of samples	G01N 1/30
Automated analysers	G01N 35/00
Microscopic slides	G02B 21/34

Special rules of classification

Use Indexing Codes to identify specific carrier.

B01L 9/54**{Supports related to pipettes and burettes}****Relationships with other classification places**

Automated handling of pipettes or pipette tips is classified in [G01N 35/10](#) and [B01J 19/0046](#).

References**Limiting references**

This place does not cover:

Automated pipetting stations	G01N 35/10
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Packages for Syringes, Needles	A61M 5/002
Racks for Syringes, Needles	A61M 5/008
Positioning tool for sampling or inoculating	C12M 1/265

B01L 99/00

Subject matter not provided for in other groups of this subclass {(chemical indicators in general [G01N](#))}

Definition statement

This place covers:

Residual group.

Indicating position in recipients.

Cleaning of labware.

Transportable labs.