

B01L

CHEMICAL OR PHYSICAL LABORATORY APPARATUS FOR GENERAL USE

Relationships with other classification places

Apparatus for medical or pharmaceutical purposes - class [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 classes [B01](#) or [C12](#):

- Separating or distilling apparatus - subclass [B01D](#);
- Mixing or stirring devices - subclass [B01F](#);
- Apparatus for enzymology or microbiology - subclass [C12M](#);
- Microorganisms or enzymes; Compositions thereof; Propagating, preserving or maintaining microorganisms; Mutation or genetic engineering; Culture media - subclass [C12N](#); or
- Measuring or testing processes involving enzymes, nucleic acids or microorganisms; Compositions or test papers therefor; Processes of preparing such compositions; Condition-responsive control in microbiological or enzymological processes - subclass [C12Q](#).

Atomisers - subclass [B05B](#);

Sieves - subclass [B07B](#);

Corks or bungs - subclass [B65D](#);

Handling liquids in general - class [B67](#);

Vacuum pumps - class [F04](#);

Tubes or tube joints - subclass [F16L](#);

Apparatus specially adapted for investigating or analysing materials - class [G01](#), particularly subclass [G01N](#); or

Electrical or optical apparatus - see the relevant classes in sections G or H.

References

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Apparatus for enzymology or microbiology	C12M
Microorganisms or enzymes; Compositions thereof; Propagating, preserving or maintaining microorganisms; Mutation or genetic engineering; Culture media	C12N
Measuring or testing processes involving enzymes, nucleic acids or microorganisms; Compositions or test papers therefor; Processes of preparing such compositions; Condition-responsive control in microbiological or enzymological processes	C12Q
Apparatus specially adapted for investigating or analysing materials	G01 , G01N

Informative references

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

Apparatus for medical or pharmaceutical purposes	A61
Mixing or stirring devices	B01F
Atomisers	B05B
Sieves	B07B
Corks or bungs	B65D
Handling liquids in general	B67
Vacuum pumps	F04
Siphons	F04F 10/00
Taps or stop-cocks	F16K
Tubes or tube joints	F16L

Special rules of classification

The use of indexing codes in the range [B01L 2200/00](#) - [B01L 2400/00](#) with [B01L](#) main trunk groups is mandatory.

Documents classified in a group in [B01L](#) are often also classified in another group in [B01L](#) or in a group in another subclass. For example, a document that relates to sample containers might also be classified for sample taking in group [A61B 10/0045](#), for sample storage, in group [B01L 3/50](#), and for a specific analysis technique, in subclass [G01N](#).

B01L 1/00**Enclosures; Chambers (provided with manipulation devices or glove boxes
[B25J 21/00](#))****Definition statement**

This place covers:

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

Air-pressure chambers.

References**Limiting references**

This place does not cover:

Chambers provided with manipulation devices, glove boxes	B25J 21/00
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Informative references

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

Fume cupboards	B08B
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}****Definition statement**

This place covers:

Closed chambers that are without specific application and provide a defined environment such as temperature, pressure, humidity or other gas concentrations, climate chambers.

References**Application-oriented references**

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Incubators for culturing cells	C12M 41/14
Test chambers to test weather resistance	G01N 17/002

B01L 1/04**Dust-free rooms or enclosures****References****Informative references**

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

Treatment rooms for medical purposes	A61G 10/00
Clean rooms for industrial use	F24F 3/167
Ventilation	F24F 7/00

B01L 1/50

{for storing hazardous materials in the laboratory, e.g. cupboards, waste containers (sample containers [B01L 3/50](#))}

Definition statement

This place covers:

Enclosures or chambers for storing hazardous materials in the laboratory.

References**Limiting references**

This place does not cover:

Sample containers	B01L 3/50
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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; Droppers

Definition statement

This place covers:

Simple fluid transfer means, such as tubes, valves or 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**Application-oriented references**

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Petri dishes	C12M 1/22
Tube or bottle type	C12M 1/24

Informative references

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

Chemical reactors	B01J 19/00
Bottles	B65D
Culturing devices	C12M 23/02

Receptacles for volumetric purposes	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 accesories 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}****Definition statement***This place covers:*

Piston or plunger-type pipettes.

References**Application-oriented references***Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:*

Fluid dosing with measuring chambers in general	G01F 11/02
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Informative references*Attention is drawn to the following places, which may be of interest for search:*

Medical syringes	A61M 5/178
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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 placesPipettes 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
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}****Definition statement***This place covers:*

Droplet counters, the constructional details of the dispensing portion of droplet dispensers or how droplets form and fall.

References**Application-oriented references***Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:*

Making arrays for combinatorial libraries	B01J 19/0046
Microinjections	C12N 15/89
Investigating characteristics of particles	G01N 15/00
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
Spraying or atomising in general	B05B
Printing	B41J

Special rules of classificationIf drop formers or drop counters are used in conjunction with multi-well plates, classification must also be made in group [B01L 2300/0829](#) as additional information.

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 classificationUse [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, spray heads or other outlets, with or without auxiliary devices such as valves or heating means	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}****Definition statement***This place covers:*

Apparatus for handling fluids, e.g. gas, beads or pulverised materials.

References**Application-oriented references***Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:*

Volume measuring in general	G01F
Sample taking	G01N 1/00
Sample taking within automatic analysers	G01N 35/00

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

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.

References

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Specially adapted for distillation	B01D
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B01L 3/12

Gas jars or cylinders

References

Informative references

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

Gas storage containers in general	F17C
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B01L 3/16

Retorts

Definition statement

This place covers:

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

References

Informative references

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

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 5/15](#))}

Definition statement

This place covers:

Simple containers that only store the sample and also more complex containers with integrated passive or active parts, which inter alia transport samples within them.

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:

Devices for taking samples of blood	A61B 5/15
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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
Apparatus for preservation of excised living parts of the human or animal body	A01N 1/142
Body liquid sampling	A61B 10/0045
Medical containers	A61J
Synthesis reactors	B01J
Containers for storage of materials	B65D
Constructional details of bioreactors for culturing	C12M 23/00
Petri dishes	C12M 23/10
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}****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 functions as well, such as sample preparation or analysis. Double classification in subclass [G01N](#) is preferred.

References**Application-oriented references**

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

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

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

B01L 3/5021**{Test tubes specially adapted for centrifugation purposes}****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 or flow shaping in sample containers where liquid is transported through an absorbent, e.g. lateral flow devices.

Relationships with other classification places

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

References**Application-oriented references**

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

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

Informative references

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

Layered products	B32B
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Special rules of classification

Porous microchannels in a substrate with an absorbent should be double classified in group [B01L 3/5023](#) and group [B01L 3/5027](#).

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}****Definition statement***This place covers:*

Sample containers with integrated microfluidic components, which 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. Group [B01L 3/5027](#) covers only those devices that are used to analyse a sample, while devices used for synthesis are classified in group [B01J 19/0093](#). Lab-on-a-chip is classified in this place, but if the inventive portion is a micromixer, it is classified in group [B01F 33/30](#). The focus of group [B01L 3/5027](#) is on the sample handling per se in such devices, i.e. handling of fluids, beads and single molecules. The specifics of the analysis itself are, for example, classified in subclass [G01N](#) or subclass [C12Q](#).

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

References**Application-oriented references***Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:*

Sample preparation	G01N 1/00
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Informative references*Attention is drawn to the following places, which may be of interest for search:*

Microdevices for drug release	A61K 9/0097
Microcapillary devices in general	B81B 1/00
Introducing samples into mass spectrometers	H01J 49/04

Special rules of classification

Microfluidic devices characterised by the specific integrated thermal control, e.g. for PCR, should be classified in groups [B01L 3/5027](#) and [B01L 7/00](#).

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}

Definition statement

This place covers:

Sample containers with integrated microfluidic components with specific manufacturing details.

References

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Microdevices for electrophoresis	G01N 27/44791
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Informative references

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

Surface shaping of plastic articles	B29C 59/00
Joining of preformed plastic parts	B29C 65/00
Laminating	B32B 37/00
Manufacture of microstructural devices in general	B81C
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}

Definition statement

This place covers:

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

References

Informative references

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

Influencing the flow rate for a given force	B01L 3/502746
Infusion devices with flow control	A61M 5/168
Micromixers	B01F 33/30
Micropumps in general	F04B 19/006
Micropumps of the membrane type in general	F04B 43/043

Special rules of classification

The kind of force or means to move the fluid must be classified in indexing code [B01L 2400/04](#).

B01L 3/502738

{characterised by integrated valves (throttle valves in microfluidic sample containers [B01L 3/502746](#))}

Definition statement

This place covers:

The constructional details of valves specific to microfluidic sample containers or valving schemes when they depend on integrated structures, e.g. cascades of capillary valves.

References**Limiting references**

This place does not cover:

Throttle valves in microfluidic sample containers	B01L 3/502746
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Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Valves in automated analysers	G01N 35/1097
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Informative references

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

Microvalves and actuators in general	F16K 99/0001
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Special rules of classification

Details of valves must be classified in indexing code [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 or throttle valves}

Definition statement

This place covers:

Controlling the flow resistance in a microfluidic sample container with neither valving, which stops the flow, 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; or
- Adapting the channel dimensions to obtain a specific flow pattern.

References

Informative references

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

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

Flow control details are classified in indexing code [B01L 2400/08](#).

B01L 3/502753

{characterised by bulk separation arrangements on lab-on-a-chip devices, e.g. for filtration or centrifugation}

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 that is separated. In a bulk separation a certain type of particle or fluid is usually separated from another type as a group, based on similarity of their properties. For example, centrifugation leads to classification of particle groups based on density.

Relationships with other classification places

A device that has the sole purpose of separation and that is not combined with sample storage, i.e. not integrated, should be classified in subclass [B01D](#).

Group [B01L 3/502753](#) covers bulk separation while group [B01L 3/502761](#) covers separation of individual particles in a microfluidic device.

References

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Sample preparation	G01N 1/28
Centrifugal-type cuvettes	G01N 21/07
Microapparatus for analysis using electrophoresis	G01N 27/44791
Analysing blood by separating its components	G01N 33/491
Automatic analysers using bio-disks	G01N 35/00069

Informative references

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

Centrifugal test tubes	B01L 3/5021
Separation in general	B01D

Separation of solids from solids or fluids by e.g. electric or magnetic means, dielectrophoresis	B03C
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B01L 3/502761

{specially adapted for handling suspended solids or molecules independently from the bulk fluid flow, e.g. for trapping or sorting beads or physically stretching molecules}

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 or orientating particles or molecules.

Usually, particles or molecules are handled individually and thus can be selectively handled irrespective of whether more particles or molecules of the same type or 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.

Relationships with other classification places

If a document teaches handling of particles in a device, it should be classified in subclass [B01L](#). If it teaches the detection aspects of the particles, it should be classified in group [G01N 15/00](#). If it teaches both, it should be classified in both areas.

References

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

Particles or molecules that are separated as part of a whole class (as bulk) are classified in group [B01L 3/502753](#).

Additional details of handling of particles or molecules must be classified in indexing code [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, e.g. sheath flow.

References

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

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:

Micromixers	B01F 33/30
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B01L 3/502784

{specially adapted for droplet or plug flow, e.g. digital microfluidics}

Definition statement

This place covers:

Droplets or plug flow in sample containers with integrated microfluidic components, e.g. digital microfluidics.

References

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

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.

Definition statement

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 without fluid transport within}

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 without fluid transport within}****Definition statement***This place covers:*

Sample containers that have rigid walls and do not comprise any internal sample transport.

References**Application-oriented references***Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:*

Cuvettes	G01N 21/03
Microscope slides	G02B 21/34

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

Containers with fluid transport within	B01L 3/502
Urine sample containers	A61B 10/007
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.

References**Application-oriented references***Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:*

Tubular or bottle type culture devices	C12M 23/08
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Informative references*Attention is drawn to the following places, which may be of interest for search:*

Containers for the purpose of retaining a material to be analysed with fluid transport	B01L 3/502
Racks and holders for test tubes	B01L 9/06
Devices for taking samples of blood	A61B 5/14
Producing plastic containers	B29D 22/003

B01L 3/50825**{Closing or opening means, corks, bungs}****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}****Definition statement**

This place covers:

Sample containers for thermal treatment of samples, e.g. 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 (closures for test tubes [B01L 3/50825](#))}

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
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Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Handling of closures in automated systems	G01N 35/00
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Special rules of classification

Details are classified in indexing code [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; storing or dispensing test elements [G01N 33/4875](#); automated reagent dispensing [G01N 35/1002](#))}****Definition statement***This place covers:*

Reagent containers that are modular units that can be inserted into a sample container and are thus not an integral part of the sample container.

Relationships with other classification places

Sample containers with integrated reagent containers are classified in group [B01L 3/50](#).

References

Limiting references

This place does not cover:

Burettes; Pipettes	B01L 3/02
Storing or dispensing test elements	G01N 33/4875
Automated reagent dispensers	G01N 35/1002

Informative references

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

Lab container with identification means	B01L 3/545
Medical containers	A61J 1/00
Containers for storage of materials	B65D

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}****Definition statement***This place covers:*

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

References**Application-oriented references***Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:*

Control arrangements for automated analysers	G01N 35/00584
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Informative references*Attention is drawn to the following places, which may be of interest for search:*

Record carriers for use with machines and with at least a part designed to carry digital markings	G06K 19/00
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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}

References**Informative references**

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

Pipes in general	F16L
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B01L 3/563

{Joints or fittings; Separable fluid transfer means to transfer fluids between at least two containers, e.g. connectors}

References**Informative references**

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

Connectors for a single sample container that retains material to be analysed and has fluid transport within the single container	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}

References**Informative references**

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

Joints and fittings in general	F16L
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B01L 3/567**{Valves, taps or stop-cocks}****Definition statement***This place covers:*

Valves specifically used in connection with laboratory equipment.

References**Application-oriented references***Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:*

Automated sample transfer characterised by valves	G01N 35/1097
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Informative references*Attention is drawn to the following places, which may be of interest for search:*

Burettes	B01L 3/0203
Valves in general	F16K

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 or cold baffles [B01D 8/00](#))****References****Limiting references***This place does not cover:*

Gas jars or cylinders	B01L 3/12
Cold traps or cold baffles	B01D 8/00

Application-oriented references*Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:*

Separation of gases or vapours	B01D 53/00
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Informative references

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

Gas generators	B01J 7/00
Steam traps	F16T
Gas vessels	F17C
Investigating gases	G01N 33/0004

B01L 5/02

Gas collection apparatus, e.g. by bubbling under water (for sampling [G01N 1/22](#))

References**Limiting references**

This place does not cover:

For sampling	G01N 1/22
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B01L 7/00

Heating or cooling apparatus (autoclaves [B01J 3/04](#)); Heat insulating devices

Definition statement

This place covers:

Thermostats for heating or cooling or heat insulation devices.

References**Limiting references**

This place does not cover:

Autoclaves	B01J 3/04
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Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Incubators	C12M 41/14
Sample preparation	G01N 1/00

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
Drying gases or vapours, e.g. desiccators	B01D 53/26
Heating or cooling for centrifuges	B04B 15/02

Heating in general	F24
Cooling in general	F25
Drying ovens	F26B
Furnaces or ovens	F27
Heat exchanger in general	F28
Controlling temperature.	G05D 23/00
Chip cooling	H02N 1/00
Electric heating	H05B

Special rules of classification

To specify the thermostating means, indexing code [B01L 2300/18](#) is used.

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 excised living parts of the human or animal body	A01N 1/162
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}

Definition statement

This place covers:

Thermocyclers or other thermostats where a sample is exposed to a defined sequence of different temperatures, e.g. the sequences used for polymerase chain reactions [PCR].

Relationships with other classification places

The specific analysis methods of PCRs are classified in group [C12Q 1/68](#).

Other integrated means such as specific detectors, or means for automation are classified in subclass [G01N](#).

References**Informative references**

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

Sequential or parallel reactions	B01J 19/0046
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Special rules of classification

Use double classification with microfluidic sample containers of group [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

Definition statement

This place covers:

Holding frame constructions, trays for drying labware or 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:

Tweezers or tongs	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, e.g. tongs}****Definition statement**

This place covers:

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

References**Informative references**

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

Clamps in general	F16B 2/06
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B01L 9/52**{Supports specially adapted for flat sample carriers, e.g. for plates, slides, chips}****Definition statement**

This place covers:

Supports specially adapted for flat sample carriers.

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

B01L 9/54

{Supports specially adapted for pipettes and burettes}

References

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Positioning tool for sampling or inoculating	C12M 1/265
Automated pipetting stations	G01N 35/10

Informative references

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

Packages for syringes or needles	A61M 5/002
Racks for syringes or needles	A61M 5/008