B01L

COOPERATIVE PATENT CLASSIFICATION

B PERFORMING OPERATIONS; TRANSPORTING

(NOTES omitted)

SEPARATING; MIXING

B01 PHYSICAL OR CHEMICAL PROCESSES OR APPARATUS IN GENERAL

B01L CHEMICAL OR PHYSICAL LABORATORY APPARATUS FOR GENERAL USE

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

NOTE

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

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:
   - B01L 3/14 covered by B01L 3/50
2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

1/00 Enclosures; Chambers (fume cupboards B08B; provided with manipulation devices, glove boxes B25J; {industrial clean rooms F24F 3/161;} cooling chambers F25D)

WARNING

Group B01L 1/00 is impacted by reclassification into group B01L 1/52
Groups B01L 1/00 and B01L 1/52 should be considered in order to perform a complete search.

1/02 Air-pressure chambers; Air-locks therefor
1/025 . . . {Environmental chambers (incubators for culturing cells C12M 41/14; test chambers to test weather resistance G01N 17/002)}
1/04 Dust-free rooms or enclosures {clean rooms suitable for industrial purposes F24F 3/161}
1/50 . . . {for storing hazardous materials in the laboratory, e.g. cupboards, waste containers (sample containers B01L 3/50)}

1/52 . . . {Transportable laboratories; Field kits}

WARNING

Group B01L 1/52 is incomplete pending reclassification of documents from groups B01L 1/00 and B01L 99/00.
Groups B01L 1/00, B01L 99/00, and B01L 1/52 should be considered in order to perform a complete search.

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)

3/02 Burettes; Pipettes
3/0203 . . . {Burettes, i.e. for withdrawing and redistributing liquids through different conduits}
3/0206 . . . {of the plunger pump type}
3/021 Pipettes, i.e. with only one conduit for withdrawing and redistributing liquids]
3/0213 . . . {Accessories for glass pipettes; Gun-type pipettes, e.g. safety devices, pumps}
3/0217 . . . {of the plunger pump type (medical syringes A61M)}
3/22 . . . . [Capillary pipettes, i.e. having very small bore (B01L 3/0224 - B01L 3/0237 take precedence)]
3/224 . . . . [having mechanical means to set stroke length, e.g. movable stops (B01L 3/0231, B01L 3/0234 take precedence)]
3/227 . . . . [Details of motor drive means (B01L 3/0231, B01L 3/0234 take precedence)]
3/231 . . . . [having several coaxial pistons]
3/234 . . . . [Repeating pipettes, i.e. for dispensing multiple doses from a single charge]
3/237 . . . . [Details of electronic control, e.g. relating to user interface]
3/241 . . . . [Drop counters; Drop formers (making arrays for combinatorial libraries B01J 19/0046; automation of dispensing for analysis G01N 35/10)]
3/244 . . . . [using pins]
3/248 . . . . [Prongs, quill pen type dispenser]
3/251 . . . . [Pin and ring type or pin in tube type dispenser]
3/255 . . . . [characterized by the form or material of the pin tip]
3/258 . . . . [using stamps]
3/262 . . . . [using touch-off at substrate or container]
3/265 . . . . [using valves to interrupt or meter fluid flow, e.g. using solenoids or metering valves]
3/268 . . . . [using pulse dispensing or spraying, e.g. inkjet type, piezo actuated ejection of droplets from capillaries]
3/272 . . . . [Dropper bottles]
3/275 . . . . [Interchangeable or disposable dispensing tips]
3/279 . . . . [co-operating with positive ejection means]
3/282 . . . . [mounted within a receptacle (wash bottles B01L 3/10)]
3/286 . . . . [Ergonomic aspects, e.g. form or arrangement of controls]
3/289 . . . . [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 G01E)]
3/293 . . . . [for liquids]
3/296 . . . . [from piercable tubing, e.g. in extracorporeal blood sampling]
3/04 . Crucibles
3/06 . Crystallising dishes
3/08 . Flasks (specially adapted for distillation B01D (B01D 3/10))
3/10 . Wash bottles
3/12 . Gas jars or cylinders

3/14 . Test tubes [(devices for taking samples of blood (Frozen) A61B 5/15)]

**WARNING**


All groups listed in this Warning should be considered in order to perform a complete search.

3/16 . Retorts
3/18 . Spatulas
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)]

**WARNING**

Groups B01L 3/50 - B01L 3/5088 are incomplete pending reclassification of documents from group B01L 3/14.

Group B01L 3/14 should also be considered in order to perform a complete search.

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)]
3/5021 . . . . [Test tubes specially adapted for centrifugation purposes (centrifuges B04B 5/04)]
3/50215 . . . . [using a float to separate phases]
3/5023 . . . . [with a sample being transported to, and subsequently stored in an absorbent for analysis]
3/5025 . . . . [for parallel transport of multiple samples]
3/50255 . . . . [Multi-well filtration]
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 3/023 takes precedence; micromixers B01F 13/0059; microreactors for synthesis B01J 19/0093; microcapillary devices in general B81B 1/00)]
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)]
3/502715 . . . . [characterised by interfacing components, e.g. fluidic, electrical, optical or mechanical interfaces]
3/502723 . . . . [characterised by venting arrangements]
analysers G01N 35/0073;2
of carriers, materials or components in automatic
{ Labware with identification means (identification
reagent dispensing G01N 35/1002}
dispensing test elements G01N 33/4875
A61J 1/00
containers for medical or pharmaceutical purposes
dispensing a reagent (B01L 3/02); automated
takes precedence; containers in general B65D
{ Containers specially adapted for storing or
{ for laboratory containers }
{ rigid containers not provided for above }
{ flexible containers not provided for above }
(B01L 3/50857)
tension, e.g. virtual wells on plates, wires
plates }
{ Test tubes per se }
{ using arrays or bundles of open capillaries
for holding samples }
{ containing liquids at a location by surface
tension, e.g. virtual wells on plates, wires
(B01L 3/50857 takes precedence) }
{ 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) }
{ with means for closing or opening }
{ for a plurality of reagents }
{ Labware with identification means (identification
of carriers, materials or components in automatic
analysers G01N 35/00732) }
{ for laboratory containers }

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 B01L 7/00; steam traps F16T)
5/03 . Gas collection apparatus, e.g. by bubbling under
water (for sampling G01N)
5/04 . Gas washing apparatus, e.g. by bubbling

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
Water baths; Sand baths; Air baths
Heat insulating devices, e.g. jackets for flasks
7/50 . (Cryostats)
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)
7/525 . (with physical movement of samples between
temperature zones)
7/5255 . (by moving sample containers)
7/54 . (using spatial temperature gradients)

9/00 Supporting devices; Holding devices (tweezers,
tongs B25D)
WARNING
Group B01L 9/00 is impacted by reclassification
into group B01L 9/56.
Groups B01L 9/00 and B01L 9/56 should be
considered in order to perform a complete search.
9/02 . Laboratory benches or tables; Fittings therefor
9/04 . Retort stands; Retort clamps
9/06 . Test-tube stands; Test-tube holders
9/065 . (specially adapted for capillary tubes)
9/50 . (Clamping means, tongs (in general F16B 2/06))
9/52 . (Supports specially adapted for flat sample carriers,
e.g. for plates, slides, chips)
9/523 . (for multisample carriers, e.g. used for
microtitation plates)
9/527 . (for microfluidic devices, e.g. used for lab-on-a-
chip)
9/54 . (Supports specially adapted for pipettes and burettes
(automated pipetting stations G01N 35/10))
9/543 . (for disposable pipette tips, e.g. racks or
cassettes)
9/547 . (for dispensing pins)
WARNING

Group B01L 9/56 is incomplete pending reclassification of documents from groups B01L 9/00 and B01L 99/00.

Groups B01L 9/00, B01L 99/00, and B01L 9/56 should be considered in order to perform a complete search.

13/00 {Cleaning or rinsing apparatus}

WARNING

Group B01L 13/00 is incomplete pending reclassification of documents from group B01L 99/00.

Groups B01L 99/00 and B01L 13/00 should be considered in order to perform a complete search.

13/02 . {for receptacle or instruments}

WARNING

Group B01L 13/02 is incomplete pending reclassification of documents from group B01L 99/00.

Groups B01L 99/00 and B01L 13/02 should be considered in order to perform a complete search.

99/00 Subject matter not provided for in other groups of this subclass

WARNING

Group B01L 99/00 is impacted by reclassification into groups B01L 1/52, B01L 9/56, B01L 13/00, and B01L 13/02.

All groups listed in this Warning should be considered in order to perform a complete search.

2200/00 Solutions for specific problems relating to chemical or physical laboratory apparatus

2200/02 . Adapting objects or devices to another
2200/021 . Adjust spacings in an array of wells, pipettes or holders, format transfer between arrays of different size or geometry
2200/022 . . Variable spacings
2200/023 . . adapted for different sizes of tubes, tips or container
2200/025 . . Align devices or objects to ensure defined positions relative to each other
2200/026 . . Fluid interfacing between devices or objects, e.g. connectors, inlet details
2200/027 . . for microfluidic devices
2200/028 . . Modular arrangements
2200/04 . Exchange or ejection of cartridges, containers or reservoirs
2200/06 . Fluid handling related problems
2200/0605 . . Metering of fluids
2200/061 . . Counting droplets
2200/0615 . . Loss of fluid by dripping
2200/0621 . . Control of the sequence of chambers filled or emptied
2200/0626 . . using levitated droplets
2200/0631 . . Purification arrangements, e.g. solid phase extraction [SPE]
2200/0636 . . Focussing flows, e.g. to laminate flows
2200/0642 . . Filling fluids into wells by specific techniques
2200/0647 . . Handling flowable solids, e.g. microscopic beads, cells, particles
2200/0652 . . Sorting or classification of particles or molecules
2200/0657 . . Pipetting powder
2200/0663 . . Stretching or orienting elongated molecules or particles
2200/0668 . . Trapping microscopic beads
2200/0673 . . Handling of plugs of fluid surrounded by immiscible fluid
2200/0678 . . Facilitating or initiating evaporation
2200/0684 . . Venting, avoiding backpressure, avoid gas bubbles
2200/0689 . . Sealing
2200/0694 . . Creating chemical gradients in a fluid
2200/08 . . Ergonomic or safety aspects of handling devices
2200/082 . . Handling hazardous material
2200/085 . . Protection against injuring the user
2200/087 . . Ergonomic aspects
2200/10 . . Integrating sample preparation and analysis in single entity, e.g. lab-on-a-chip concept
2200/12 . . Specific details about manufacturing devices
2200/14 . . Process control and prevention of errors
2200/141 . . Preventing contamination, tampering
2200/142 . . Preventing evaporation
2200/143 . . Quality control, feedback systems
2200/145 . . . Detecting door closure
2200/146 . . . Employing pressure sensors
2200/147 . . . Employing temperature sensors
2200/148 . . . Specific details about calibrations
2200/16 . . Reagents, handling or storing thereof
2200/18 . . Transport of container or devices
2200/185 . . Long distance transport, e.g. mailing
2200/186 . . . Additional chamber, reservoir
2200/187 . . . wherein the whole cover is slidable
2200/188 . . . Function or devices integrated in the closure
2200/189 . . . Auxiliary integrated devices, integrated components
2200/190 . . . Hinged closures
Moving or stopping fluids

2400/02 Drop detachment mechanisms of single droplets from nozzles or pins
2400/01 non contact spotting by inertia, i.e. abrupt deceleration of the nozzle or pin
2400/02 droplet contacts the surface of the receptacle
2400/02 touch-off at the side wall of the receptacle
2400/02 tapping tip on substrate
2400/02 electrostatic forces between substrate and tip
2400/02 Pin is moved through a ring which is filled with a fluid
2400/04 Moving fluids with specific forces or mechanical means
2400/04 specific forces
2400/04 capillary forces
2400/04 centrifugal forces
2400/04 using additionally coriolis forces
2400/04 electrical forces, e.g. electrokinetic
2400/04 electro-osmotic flow [EOF]
2400/04 electroosmotic flow
2400/04 Dielectrophoretic forces
2400/04 Electrowetting
2400/04 magnetic forces
2400/04 Vibrational forces
2400/04 acoustic forces, e.g. surface acoustic waves [SAW]
2400/04 ultrasonic vibrations, vibrating piezo elements
2400/04 thermal energy, e.g. vaporisation, bubble jet
2400/04 Natural or forced convection
2400/04 Marangoni flow; Thermocapillary effect
2400/04 Thermophoresis; Thermodiffusion; Soret-effect
2400/04 radiation pressure, optical tweezers
2400/04 passive flow or gravitation
2400/04 Chemical or electrochemical formation of bubbles
2400/04 Hydrodynamic forces, venturi nozzles
2400/04 Evaporation to induce underpressure
2400/04 Buoyancy
2400/04 Diffusion
2400/04 specific mechanical means and fluid pressure
B01L

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