Symbol	Typ	Titel
B	**Sektion**	**SECTION B — PERFORMING OPERATIONS; TRANSPORTING**
B01	**Untersektion**	**SEPARATING; MIXING**
B01	**Klasse**	**PHYSICAL OR CHEMICAL PROCESSES OR APPARATUS IN GENERAL (furnaces, kilns, ovens, retorts, in general F27)**
B01D	**Unterklasse**	**SEPARATION (separating solids from solids by wet methods B03B, B03D, by pneumatic jigs or tables B03B, by other dry methods B07; magnetic or electrostatic separation of solid materials from solid materials or fluids, separation by high-voltage electric fields B03C; centrifuges, vortex apparatus B04; presses per se for squeezing-out liquid from liquid-containing material B30B 9/02; treatment of water C02F, e.g. softening by ion-exchange C02F 1/42; arrangement or mounting of filters in air-conditioning, air-humidification or ventilation F24F 13/28) [5]**
B01D 1/00	**Hauptgruppe**	**Evaporating (removal of incrustation B08B; preparation of starch C08B 30/00; sugar industry C13; prevention of incrustation C23F; drying solid materials or objects by evaporating liquids therefrom F26)**
B01D 1/02	1-Punkt Untergruppe	. Evaporators with heating coils
B01D 1/04	1-Punkt Untergruppe	. Evaporators with horizontal tubes
B01D 1/06	1-Punkt Untergruppe	. Evaporators with vertical tubes
B01D 1/08	2-Punkt Untergruppe	. . with short tubes (B01D 1/12 takes precedence)
B01D 1/10	2-Punkt Untergruppe	. . with long tubes, e.g. Kestner evaporators (B01D 1/12 takes precedence)
B01D 1/12	2-Punkt Untergruppe	. . and forced circulation
B01D 1/14	1-Punkt Untergruppe	. with heated gases or vapours in contact with the liquid
B01D 1/16	1-Punkt Untergruppe	. by spraying (B01D 1/22 takes precedence)
B01D 1/18	2-Punkt Untergruppe	. . to obtain dry solids (B01D 1/24 takes precedence)
B01D 1/20	2-Punkt Untergruppe	. . Sprayers (in general B05B)
B01D 1/22	1-Punkt Untergruppe	. by bringing a thin layer of the liquid into contact with a heated surface
B01D 1/24	2-Punkt Untergruppe	. . to obtain dry solids
B01D 1/26	1-Punkt Untergruppe	. Multiple-effect evaporating
B01D 1/28	1-Punkt Untergruppe	. with vapour compression
B01D 1/30	1-Punkt Untergruppe	. Accessories for evaporators
B01D 3/00	**Hauptgruppe**	**Distillation or related exchange processes in which liquids are contacted with gaseous media, e.g. stripping (gas chromatography B01D 15/08; destructive distillation C10B; preparation of alcoholic beverages by distillation C12G 3/12) [2]**
B01D 3/02	1-Punkt Untergruppe	. in boilers or stills [2]
B01D 3/04	1-Punkt Untergruppe	. pipe stills
B01D 3/06	1-Punkt Untergruppe	. Flash distillation [2]
B01D 3/08	1-Punkt Untergruppe	. in rotating vessels; Atomisation on rotating discs (B01D 3/10 takes precedence)
B01D 3/10	1-Punkt Untergruppe	. Vacuum distillation (B01D 3/12 takes precedence) [2]

Symbol	Typ	Titel
B01D 3/12	1-Punkt Untergruppe	. Molecular distillation [2]
B01D 3/14	1-Punkt Untergruppe	. Fractional distillation
B01D 3/16	2-Punkt Untergruppe	. . Fractionating columns in which vapour bubbles through liquid (packing elements B01J 19/30, B01J 19/32)
B01D 3/18	3-Punkt Untergruppe	. . . with horizontal bubble plates
B01D 3/20	4-Punkt Untergruppe	. . . . Bubble caps; Risers for vapour; Discharge pipes for liquid
B01D 3/22	3-Punkt Untergruppe	. . . with horizontal sieve plates or grids; Construction of sieve plates or grids
B01D 3/24	3-Punkt Untergruppe	. . . with sloping plates or elements mounted stepwise
B01D 3/26	2-Punkt Untergruppe	. . Fractionating columns in which vapour and liquid flow pass each other, or in which the fluid is sprayed into the vapour, or in which a two-phase mixture is passed in one direction
B01D 3/28	3-Punkt Untergruppe	. . . Fractionating columns with surface contact and vertical guides, e.g. film action
B01D 3/30	2-Punkt Untergruppe	. . Fractionating columns with movable parts or in which centrifugal movement is caused
B01D 3/32	2-Punkt Untergruppe	. . Other features of fractionating columns
B01D 3/34	1-Punkt Untergruppe	. with one or more auxiliary substances
B01D 3/36	2-Punkt Untergruppe	. . Azeotropic distillation
B01D 3/38	2-Punkt Untergruppe	. . Steam distillation
B01D 3/40	2-Punkt Untergruppe	. . Extractive distillation
B01D 3/42	1-Punkt Untergruppe	. Regulation; Control
B01D 5/00	**Hauptgruppe**	**Condensation of vapours; Recovering volatile solvents by condensation (B01D 8/00 takes precedence; condensers F28B) [3]**
B01D 7/00	**Hauptgruppe**	**Sublimation (B01D 8/00 takes precedence; freeze-drying F26)**
B01D 7/02	1-Punkt Untergruppe	. Crystallisation directly from the vapour phase (into single crystals C30B 23/00) [2]
B01D 8/00	**Hauptgruppe**	**Cold traps; Cold baffles (pumps for evacuating by condensing or freezing F04B 37/08) [3]**
B01D 9/00	**Hauptgruppe**	**Crystallisation (crystallisation directly from the vapour phase B01D 7/02; making single crystals C30B)**
B01D 9/02	1-Punkt Untergruppe	. from solutions
B01D 9/04	2-Punkt Untergruppe	. . concentrating solutions by removing frozen solvent therefrom
B01D 11/00	**Hauptgruppe**	**Solvent extraction**
B01D 11/02	1-Punkt Untergruppe	. of solids
B01D 11/04	1-Punkt Untergruppe	. of solutions which are liquid
B01D 12/00	**Hauptgruppe**	**Displacing liquid, e.g. from wet solids or from dispersions of liquids or from solids in liquids, by means of another liquid**
B01D 15/00	**Hauptgruppe**	**Separating processes involving the treatment of liquids with solid sorbents (using liquid sorbents B01D 11/00; ion exchange processes or materials, sorbent materials in general B01J, e.g. sorbents for chromatography B01J 20/281; for investigating or analysing materials G01N 30/00); Apparatus therefor [4]**
B01D 15/02	1-Punkt Untergruppe	. with moving adsorbents
B01D 15/04	*1-Punkt Untergruppe*	*. with ion-exchange materials as adsorbents (B01D 15/36 takes precedence) [1, 2006.01]*
B01D 15/08	1-Punkt Untergruppe	. Selective adsorption, e.g. chromatography

Symbol	Typ	Titel
B01D 15/10	*2-Punkt Untergruppe*	*. . characterised by constructional or operational features [2006.01]*
B01D 15/12	*3-Punkt Untergruppe*	*. . . relating to the preparation of the feed [2006.01]*
B01D 15/14	*3-Punkt Untergruppe*	*. . . relating to the introduction of the feed to the apparatus [2006.01]*
B01D 15/16	*3-Punkt Untergruppe*	*. . . relating to the conditioning of the fluid carrier [2006.01]*
B01D 15/18	*3-Punkt Untergruppe*	*. . . relating to flow patterns [2006.01]*
B01D 15/20	*3-Punkt Untergruppe*	*. . . relating to the conditioning of the sorbent material [2006.01]*
B01D 15/22	*3-Punkt Untergruppe*	*. . . relating to the construction of the column [2006.01]*
B01D 15/24	*3-Punkt Untergruppe*	*. . . relating to the treatment of the fractions to be distributed [2006.01]*
B01D 15/26	*2-Punkt Untergruppe*	*. . characterised by the separation mechanism [2006.01]*
B01D 15/30	*3-Punkt Untergruppe*	*. . . Partition chromatography [2006.01]*
B01D 15/32	*3-Punkt Untergruppe*	*. . . Bonded phase chromatography, e.g. with normal bonded phase, reversed phase or hydrophobic interaction [2006.01]*
B01D 15/34	*3-Punkt Untergruppe*	*. . . Size-selective separation, e.g. size-exclusion chromatography ; Gel filtration ; Permeation [2006.01]*
B01D 15/36	*3-Punkt Untergruppe*	*. . . involving ionic interaction, e.g. ion-exchange, ion-pair, ion-suppression or ion-exclusion [2006.01]*
B01D 15/38	*3-Punkt Untergruppe*	*. . . involving specific interaction not covered by one or more of groups B01D 15/30-B01D 15/36 , e.g. affinity, ligand exchange or chiral chromatography [2006.01]*
B01D 15/40	*3-Punkt Untergruppe*	*. . . using supercritical fluid as mobile phase or eluent [2006.01]*
B01D 15/42	*2-Punkt Untergruppe*	*. . characterised by the development mode, e.g. by displacement or by elution [2006.01]*
B01D 17/00	**Hauptgruppe**	**Separation of liquids, not provided for elsewhere, e.g. by thermal diffusion (devices for separating or removing fatty or oily substances or similar floating material from water, waste water, or sewage C02F 1/40; cleaning or keeping clear the surface of open water from oil or like materials E02B 15/04; arrangements for separating lubricants from refrigerants F25B 43/02)**
B01D 17/02	1-Punkt Untergruppe	. Separation of non-miscible liquids
B01D 17/022	2-Punkt Untergruppe	. . by contact with a preferentially wettable solid [4]
B01D 17/025	2-Punkt Untergruppe	. . by gravity, in a settling tank [4]
B01D 17/028	3-Punkt Untergruppe	. . . provided with a set of baffles [4]
B01D 17/032	3-Punkt Untergruppe	. . . provided with special equipment for removing at least one of the separated liquids [4]
B01D 17/035	2-Punkt Untergruppe	. . by using gas-bubbles or moving solids introduced into the mixture [4]
B01D 17/038	2-Punkt Untergruppe	. . by centrifugal force (centrifuges B04B; cyclones B04C) [4]
B01D 17/04	2-Punkt Untergruppe	. . Breaking emulsions
B01D 17/05	3-Punkt Untergruppe	. . . by chemical treatment [4]
B01D 17/06	1-Punkt Untergruppe	. Separation of liquids from each other by electricity
B01D 17/09	1-Punkt Untergruppe	. by thermal diffusion [4]
B01D 17/12	1-Punkt Untergruppe	. Auxiliary equipment particularly adapted for use with liquid-separating apparatus, e.g. control circuits [4]
B01D 19/00	**Hauptgruppe**	**Degasification of liquids**

Symbol	Typ	Titel
B01D 19/02	1-Punkt Untergruppe	. Foam dispersion or prevention (during boiling B01B 1/02; during fermentation C12)
B01D 19/04	2-Punkt Untergruppe	. . by addition of chemical substances
B01D 21/00	**Hauptgruppe**	**Separation of suspended solid particles from liquids by sedimentation (differential sedimentation B03D 3/00; devices for separating or removing fatty or oily substances or similar floating material from water, waste water, or sewage C02F 1/40)**
B01D 21/01	1-Punkt Untergruppe	. using flocculating agents (for purifying water C02F 1/52; for liquid radioactive waste G21F 9/10) [2]
B01D 21/02	1-Punkt Untergruppe	. Settling tanks [4]
B01D 21/04	2-Punkt Untergruppe	. . with moving scrapers
B01D 21/06	3-Punkt Untergruppe	. . . with rotating scrapers
B01D 21/08	2-Punkt Untergruppe	. . provided with flocculating compartments
B01D 21/18	1-Punkt Untergruppe	. Construction of the scrapers or the driving mechanisms for settling tanks
B01D 21/20	2-Punkt Untergruppe	. . Driving mechanisms
B01D 21/22	2-Punkt Untergruppe	. . Safety mechanisms
B01D 21/24	1-Punkt Untergruppe	. Feed or discharge mechanisms for settling tanks
B01D 21/26	1-Punkt Untergruppe	. Separation of sediment aided by centrifugal force (centrifuges B04B; cyclones B04C)
B01D 21/28	1-Punkt Untergruppe	. Mechanical auxiliary equipment for acceleration of sedimentation, e.g. by vibrators or the like [4]
B01D 21/30	1-Punkt Untergruppe	. Control equipment [4]
B01D 21/32	2-Punkt Untergruppe	. . Density control of clear liquid or sediment, e.g. optical control [4]
B01D 21/34	2-Punkt Untergruppe	. . Regulation of feed distribution; Regulation of liquid level [4]
		Filtration; Filtering material, regeneration thereof (blood or infusion liquid filters A61M 5/165; screens or sieves per seB07B 1/00; extrusion filters B29C 47/68; filtering spinning solution or melt D01D 1/10; filtration of lubricants F16N 39/06) [2]
B01D 24/00	**Hauptgruppe**	**Filters comprising loose filtering material, i.e. filtering material without any binder between the individual particles or fibres thereof (B01D 27/02 takes precedence) [5]**
B01D 24/02	1-Punkt Untergruppe	. with the filter bed stationary during the filtration [5]
B01D 24/04	2-Punkt Untergruppe	. . the filtering material being clamped between pervious fixed walls (B01D 24/10, B01D 24/20 take precedence) [5]
B01D 24/06	3-Punkt Untergruppe	. . . the pervious walls comprising a series of louvres or slots [5]
B01D 24/08	3-Punkt Untergruppe	. . . the filtering material being supported by at least two pervious coaxial walls [5]
B01D 24/10	2-Punkt Untergruppe	. . the filtering material being held in a closed container [5]
B01D 24/12	3-Punkt Untergruppe	. . . Downward filtration, the filtering material being supported by pervious surfaces (B01D 24/18 takes precedence) [5]
B01D 24/14	3-Punkt Untergruppe	. . . Downward filtration, the container having distribution or collection headers or pervious conduits (B01D 24/18 takes precedence) [5]
B01D 24/16	3-Punkt Untergruppe	. . . Upward filtration (B01D 24/18 takes precedence) [5]
B01D 24/18	3-Punkt Untergruppe	. . . Combined upward and downward filtration [5]
B01D 24/20	2-Punkt Untergruppe	. . the filtering material being provided in an open container [5]

Symbol	Typ	Titel
B01D 24/22	3-Punkt Untergruppe	. . . Downward filtration, the filter material being supported by pervious surfaces [5]
B01D 24/24	3-Punkt Untergruppe	. . . Downward filtration, the container having distribution or collection headers or pervious conduits [5]
B01D 24/26	3-Punkt Untergruppe	. . . Upward filtration [5]
B01D 24/28	1-Punkt Untergruppe	. with the filter bed moving during the filtration (with the filter bed fluidised B01D 24/36) [5]
B01D 24/30	2-Punkt Untergruppe	. . Translation [5]
B01D 24/32	2-Punkt Untergruppe	. . Rotation [5]
B01D 24/34	1-Punkt Untergruppe	. with the filtering material and its pervious support moving (tipping buckets, trays or like sections B01D 33/327) [5]
B01D 24/36	1-Punkt Untergruppe	. with the filter bed fluidised during the filtration (with the filter bed being stationary B01D 24/02) [5]
B01D 24/38	1-Punkt Untergruppe	. Feed or discharge devices [5]
B01D 24/40	2-Punkt Untergruppe	. . for feeding [5]
B01D 24/42	2-Punkt Untergruppe	. . for discharging filtrate [5]
B01D 24/44	2-Punkt Untergruppe	. . for discharging filter cake, e.g. chutes [5]
B01D 24/46	1-Punkt Untergruppe	. Regenerating the filtering material in the filter (B01D 24/44 takes precedence) [5]
B01D 24/48	1-Punkt Untergruppe	. integrally combined with devices for controlling the filtration [5]
B01D 25/00	**Hauptgruppe**	**Filters formed by clamping together several filtering elements or parts of such elements (disc filters B01D 29/39) [5]**
B01D 25/02	1-Punkt Untergruppe	. in which the elements are pre-formed independent filtering units, e.g. modular systems
B01D 25/12	1-Punkt Untergruppe	. Filter presses, i.e. of the plate or plate and frame type
B01D 25/127	2-Punkt Untergruppe	. . with one or more movable filter bands arranged to be clamped between the press plates or between a plate and a frame during filtration, e.g. zigzag endless filter bands (B01D 25/172, B01D 25/176, B01D 25/19 take precedence) [5]
B01D 25/133	3-Punkt Untergruppe	. . . with compression of the filter cake, e.g. by inflatable membranes [5]
B01D 25/164	2-Punkt Untergruppe	. . Chamber-plate presses, i.e. the sides of the filtering elements being clamped between two successive filtering plates (B01D 25/127, B01D 25/172, B01D 25/176, B01D 25/19 take precedence) [5]
B01D 25/168	3-Punkt Untergruppe	. . . with compression of the filter cake, e.g. by inflatable membranes [5]
B01D 25/172	2-Punkt Untergruppe	. . Plate spreading means (removal of filter cakes B01D 25/32) [5]
B01D 25/176	2-Punkt Untergruppe	. . attaching the filter element to the filter press plates, e.g. around the central feed hole in the plates [5]
B01D 25/19	2-Punkt Untergruppe	. . Clamping means for closing the filter press, e.g. hydraulic jacks [5]
B01D 25/21	2-Punkt Untergruppe	. . Plate and frame presses (B01D 25/172, B01D 25/176, B01D 25/19 take precedence) [5]
B01D 25/22	1-Punkt Untergruppe	. Cell-type filters
B01D 25/24	2-Punkt Untergruppe	. . Cell-type roll filters
B01D 25/26	2-Punkt Untergruppe	. . Cell-type stack filters
B01D 25/28	1-Punkt Untergruppe	. Leaching or washing filter cakes in the filter
B01D 25/30	1-Punkt Untergruppe	. Feeding devices

Symbol	Typ	Titel
B01D 25/32	1-Punkt Untergruppe	. Removal of filter cakes
B01D 25/34	2-Punkt Untergruppe	. . by moving the filter elements
B01D 25/36	3-Punkt Untergruppe	. . . by centrifugal force
B01D 25/38	2-Punkt Untergruppe	. . by moving parts, e.g. scrapers, contacting stationary filter elements
B01D 27/00	**Hauptgruppe**	**Cartridge filters of the throw-away type [5]**
B01D 27/02	1-Punkt Untergruppe	. with cartridges made from a mass of loose material
B01D 27/04	1-Punkt Untergruppe	. with cartridges made of a piece of unitary material, e.g. filter paper
B01D 27/06	2-Punkt Untergruppe	. . with corrugated, folded or wound material
B01D 27/07	3-Punkt Untergruppe	. . . having a coaxial stream through the filtering element [5]
B01D 27/08	1-Punkt Untergruppe	. Construction of the casing
B01D 27/10	1-Punkt Untergruppe	. Safety devices, e.g. by-passes
B01D 27/14	1-Punkt Untergruppe	. having more than one filtering element [5]
B01D 29/00	**Hauptgruppe**	**Other filters with filtering elements stationary during filtration, e.g. pressure or suction filters, or filtering elements therefor**
B01D 29/01	1-Punkt Untergruppe	. with flat filtering elements (B01D 29/39 takes precedence) [5]
B01D 29/03	2-Punkt Untergruppe	. . self-supporting [5]
B01D 29/05	2-Punkt Untergruppe	. . supported [5]
B01D 29/07	3-Punkt Untergruppe	. . . with corrugated, folded or wound filtering sheets [5]
B01D 29/075	2-Punkt Untergruppe	. . located in a closed housing and comprising scrapers or agitators on the cake side of the filtering elements, e.g. Nutsche- or Rosenmund-type filters for performing multiple step operations such as chemical reactions, filtering and cake treatment [5]
B01D 29/085	1-Punkt Untergruppe	. Funnel filters; Holders therefor [5]
B01D 29/09	1-Punkt Untergruppe	. with filtering bands, e.g. movable between filtering operations [5]
B01D 29/11	1-Punkt Untergruppe	. with bag, cage, hose, tube, sleeve or like filtering elements [5]
B01D 29/13	2-Punkt Untergruppe	. . Supported filter elements [5]
B01D 29/15	3-Punkt Untergruppe	. . . arranged for inward flow filtration [5]
B01D 29/17	4-Punkt Untergruppe	. . . . open-ended [5]
B01D 29/19	4-Punkt Untergruppe	. . . . on solid frames with surface grooves or the like [5]
B01D 29/21	4-Punkt Untergruppe	. . . . with corrugated, folded or wound sheets [5]
B01D 29/23	3-Punkt Untergruppe	. . . arranged for outward flow filtration [5]
B01D 29/25	4-Punkt Untergruppe	. . . . open-ended [5]
B01D 29/27	4-Punkt Untergruppe	. . . . Filter bags [5]
B01D 29/31	2-Punkt Untergruppe	. . Self-supporting filtering elements [5]
B01D 29/33	3-Punkt Untergruppe	. . . arranged for inward flow filtration [5]

Symbol	Typ	Titel
B01D 29/35	3-Punkt Untergruppe	. . . arranged for outward flow filtration [5]
B01D 29/37	3-Punkt Untergruppe	. . . open-ended [5]
B01D 29/39	1-Punkt Untergruppe	. with hollow discs side by side on, or around, one or more tubes, e.g. of the leaf type [5]
B01D 29/41	2-Punkt Untergruppe	. . mounted transversely on the tube [5]
B01D 29/43	2-Punkt Untergruppe	. . mounted otherwise than transversely on the tube [5]
B01D 29/44	1-Punkt Untergruppe	. Edge filtering elements, i.e. using contiguous impervious surfaces [4]
B01D 29/46	2-Punkt Untergruppe	. . of flat, stacked bodies [4]
B01D 29/48	2-Punkt Untergruppe	. . of spirally or helically wound bodies [4]
B01D 29/50	1-Punkt Untergruppe	. with multiple filtering elements, characterised by their mutual disposition (B01D 29/39 takes precedence) [5]
B01D 29/52	2-Punkt Untergruppe	. . in parallel connection [5]
B01D 29/54	3-Punkt Untergruppe	. . . arranged concentrically or coaxially [5]
B01D 29/56	2-Punkt Untergruppe	. . in series connection [5]
B01D 29/58	3-Punkt Untergruppe	. . . arranged concentrically or coaxially [5]
B01D 29/60	1-Punkt Untergruppe	. integrally combined with devices for controlling the filtration [5]
B01D 29/62	1-Punkt Untergruppe	. Regenerating the filter material in the filter (devices for taking out of action one or more units of multi-unit filters, e.g. for regeneration, B01D 35/12) [5]
B01D 29/64	2-Punkt Untergruppe	. . by scrapers, brushes or the like, acting on the cake side of the filtering element [5]
B01D 29/66	2-Punkt Untergruppe	. . by flushing, e.g. counter-current air-bumps [5]
B01D 29/68	3-Punkt Untergruppe	. . . with backwash arms, shoes or nozzles [5]
B01D 29/70	2-Punkt Untergruppe	. . by forces created by movement of the filter element [5]
B01D 29/72	3-Punkt Untergruppe	. . . involving vibrations [5]
B01D 29/74	3-Punkt Untergruppe	. . . involving centrifugal force [5]
B01D 29/76	1-Punkt Untergruppe	. Handling the filter cake in the filter for purposes other than for regenerating (B01D 29/94 takes precedence) [5]
B01D 29/78	2-Punkt Untergruppe	. . for washing [5]
B01D 29/80	2-Punkt Untergruppe	. . for drying [5]
B01D 29/82	3-Punkt Untergruppe	. . . by compression [5]
B01D 29/84	3-Punkt Untergruppe	. . . by gases or by heating [5]
B01D 29/86	2-Punkt Untergruppe	. . Retarding cake deposition on the filter during the filtration period, e.g. using stirrers [5]
B01D 29/88	1-Punkt Untergruppe	. having feed or discharge devices [5]
B01D 29/90	2-Punkt Untergruppe	. . for feeding [5]
B01D 29/92	2-Punkt Untergruppe	. . for discharging filtrate [5]

Symbol	Typ	Titel
B01D 29/94	2-Punkt Untergruppe	. . for discharging the filter cake, e.g. chutes [5]
B01D 29/96	1-Punkt Untergruppe	. in which the filtering elements are moved between filtering operations; Particular measures for removing or replacing the filtering elements; Transport systems for filters (B01D 29/09, B01D 29/70 take precedence) [5]
B01D 33/00	**Hauptgruppe**	**Filters with filtering elements which move during the filtering operation (filters comprising loose filtering material moving or fluidised during filtration B01D 24/28-B01D 24/36; centrifuges B04B) [5]**
B01D 33/01	1-Punkt Untergruppe	. with translationally moving filtering elements, e.g. pistons (B01D 33/04-B01D 33/327 take precedence) [5]
B01D 33/03	2-Punkt Untergruppe	. . with vibrating filter elements [5]
B01D 33/04	1-Punkt Untergruppe	. with filtering bands or the like supported on cylinders which are impervious for filtering [5]
B01D 33/044	1-Punkt Untergruppe	. with filtering bands or the like supported on cylinders which are pervious for filtering [5]
B01D 33/048	2-Punkt Untergruppe	. . with endless filtering bands [5]
B01D 33/052	3-Punkt Untergruppe	. . . combined with a compression device (B01D 33/64 takes precedence; presses per se for squeezing out liquid using an endless pressing band B30B 9/24) [5]
B01D 33/056	1-Punkt Untergruppe	. Construction of filtering bands or supporting belts, e.g. devices for centering, mounting or sealing the filtering bands or the supporting belts [5]
B01D 33/06	1-Punkt Untergruppe	. with rotary cylindrical filtering surfaces, e.g. hollow drums (B01D 33/044 takes precedence)
B01D 33/067	2-Punkt Untergruppe	. . Construction of the filtering drums, e.g. mounting or sealing arrangements [5]
B01D 33/073	2-Punkt Untergruppe	. . arranged for inward flow filtration [5]
B01D 33/09	3-Punkt Untergruppe	. . . with surface cells independently connected to pressure distributors [5]
B01D 33/11	2-Punkt Untergruppe	. . arranged for outward flow filtration [5]
B01D 33/13	3-Punkt Untergruppe	. . . with surface cells independently connected to pressure distributors [5]
B01D 33/15	1-Punkt Untergruppe	. with rotary plane filtering surfaces [5]
B01D 33/17	2-Punkt Untergruppe	. . with rotary filtering tables (tables divided into separately tiltable buckets, trays or like sections B01D 33/327) [5]
B01D 33/19	3-Punkt Untergruppe	. . . the table surface being divided in successively tilted sectors or cells, e.g. for discharging the filter cake [5]
B01D 33/21	2-Punkt Untergruppe	. . with hollow filtering discs transversely mounted on a hollow rotary shaft [5]
B01D 33/23	3-Punkt Untergruppe	. . . Construction of discs or component sectors thereof [5]
B01D 33/25	2-Punkt Untergruppe	. . with hollow frames axially mounted on a hollow rotary shaft [5]
B01D 33/27	1-Punkt Untergruppe	. with rotary filtering surfaces, which are neither cylindrical nor planar, e.g. helical surfaces [5]
B01D 33/29	1-Punkt Untergruppe	. the movement of the filter elements being a combination of movements (B01D 33/19 takes precedence) [5]
B01D 33/31	2-Punkt Untergruppe	. . Planetary movement [5]
B01D 33/327	2-Punkt Untergruppe	. . Tipping buckets, trays or like sections [5]
B01D 33/333	1-Punkt Untergruppe	. with individual filtering elements moving along a closed path (tipping buckets, trays or like sections B01D 33/327) [5]
B01D 33/35	1-Punkt Untergruppe	. with multiple filtering elements characterised by their mutual disposition (B01D 33/21 takes precedence) [5]

Symbol	Typ	Titel
B01D 33/37	2-Punkt Untergruppe	. . in parallel connection [5]
B01D 33/39	3-Punkt Untergruppe	. . . concentrically or coaxially [5]
B01D 33/41	2-Punkt Untergruppe	. . in series connection [5]
B01D 33/42	3-Punkt Untergruppe	. . . concentrically or coaxially [5]
B01D 33/44	1-Punkt Untergruppe	. Regenerating the filter material in the filter (devices for taking out of action one or more units of multi-unit filters, e.g. for regeneration, B01D 35/12) [5]
B01D 33/46	2-Punkt Untergruppe	. . by scrapers, brushes or the like acting on the cake-side of the filtering element [5]
B01D 33/48	2-Punkt Untergruppe	. . by flushing, e.g. counter-current air-bumps [5]
B01D 33/50	3-Punkt Untergruppe	. . . with backwash arms, shoes or nozzles [5]
B01D 33/52	2-Punkt Untergruppe	. . by forces created by movement of the filter element [5]
B01D 33/54	3-Punkt Untergruppe	. . . involving vibrations [5]
B01D 33/56	3-Punkt Untergruppe	. . . involving centrifugal force [5]
B01D 33/58	1-Punkt Untergruppe	. Handling the filter cake in the filter for purposes other than for regenerating (B01D 33/76 takes precedence) [5]
B01D 33/60	2-Punkt Untergruppe	. . for washing [5]
B01D 33/62	2-Punkt Untergruppe	. . for drying [5]
B01D 33/64	3-Punkt Untergruppe	. . . by compression [5]
B01D 33/66	3-Punkt Untergruppe	. . . by gases or by heating [5]
B01D 33/68	2-Punkt Untergruppe	. . Retarding cake deposition on the filter during the filtration period, e.g. using stirrers [5]
B01D 33/70	1-Punkt Untergruppe	. having feed or discharge devices (B01D 33/82 takes precedence) [5]
B01D 33/72	2-Punkt Untergruppe	. . for feeding [5]
B01D 33/74	2-Punkt Untergruppe	. . for discharging filtrate [5]
B01D 33/76	2-Punkt Untergruppe	. . for discharging the filter cake, e.g. chutes [5]
B01D 33/80	1-Punkt Untergruppe	. Accessories [5]
B01D 33/82	2-Punkt Untergruppe	. . Means for pressure distribution [5]
B01D 35/00	**Hauptgruppe**	**Other filtering devices; Auxiliary devices for filtration; Filter housing constructions**
B01D 35/01	1-Punkt Untergruppe	. Devices for the removal of gas, e.g. air purge systems [5]
B01D 35/02	1-Punkt Untergruppe	. Filters adapted for location in special places, e.g. pipe-lines, pumps, stop-cocks (B01D 35/05 takes precedence)
B01D 35/027	2-Punkt Untergruppe	. . rigidly mounted in or on tanks or reservoirs (B01D 35/04 takes precedence) [5]
B01D 35/04	2-Punkt Untergruppe	. . Plug, tap, or cock filters
B01D 35/05	1-Punkt Untergruppe	. Floating filters [5]
B01D 35/06	1-Punkt Untergruppe	. Filters making use of electricity or magnetism (ultrafiltration, microfiltration B01D 61/14; electrodialysis, electro-osmosis B01D 61/42; devices comprising filters and magnetic separators B03C 1/30) [5]

Symbol	Typ	Titel
B01D 35/10	1-Punkt Untergruppe	. Brush filters
B01D 35/12	1-Punkt Untergruppe	. Devices for taking out of action one or more units of multi-unit filters, e.g. for regeneration
B01D 35/14	1-Punkt Untergruppe	. Safety devices specially adapted for filtration (preventing or minimising fires or explosions A62C); Devices for indicating clogging (incorporated in a throw-away filter B01D 27/10)
B01D 35/143	2-Punkt Untergruppe	. . Filter condition indicators [5]
B01D 35/147	2-Punkt Untergruppe	. . Bypass or safety valves [5]
B01D 35/15	2-Punkt Untergruppe	. . Bidirectional working filters [5]
B01D 35/153	2-Punkt Untergruppe	. . Anti-leakage or anti-return valves [5]
B01D 35/157	2-Punkt Untergruppe	. . Flow control valves; Damping or calibrated passages [5]
B01D 35/16	1-Punkt Untergruppe	. Cleaning-out devices
B01D 35/18	1-Punkt Untergruppe	. Heating or cooling the filters
B01D 35/20	1-Punkt Untergruppe	. Vibrating the filters (regenerating filter material by vibrations in filters with stationary filtering elements B01D 29/72; discharging the filter cake by vibrations in filters with moving filtering elements B01D 33/54, B01D 33/76) [5]
B01D 35/22	1-Punkt Untergruppe	. Directing the mixture to be filtered on to the filters in a manner to clean the filters
B01D 35/24	1-Punkt Untergruppe	. Providing loose granular material to scratch the filters clean
B01D 35/26	1-Punkt Untergruppe	. Filters with built-in pumps
B01D 35/28	1-Punkt Untergruppe	. Strainers not provided for elsewhere
B01D 35/30	1-Punkt Untergruppe	. Filter housing constructions [4]
B01D 35/31	2-Punkt Untergruppe	. . including arrangements for environmental protection, e.g. pressure resisting features [5]
B01D 35/32	3-Punkt Untergruppe	. . . against radiation [5]
B01D 35/34	2-Punkt Untergruppe	. . open-topped (B01D 35/31 takes precedence) [5]
B01D 36/00	**Hauptgruppe**	**Filter circuits or combinations of filters with other separating devices (devices for the removal of gas, e.g. air purge systems, B01D 35/01) [4, 5]**
B01D 36/02	1-Punkt Untergruppe	. Combinations of filters of different kinds (B01D 29/50, B01D 33/35 take precedence) [4, 5]
B01D 36/04	1-Punkt Untergruppe	. Combinations of filters with settling tanks [4]
B01D 37/00	**Hauptgruppe**	**Processes of filtration (processes specially adapted for filtering gases B01D 46/00)**
B01D 37/02	1-Punkt Untergruppe	. Precoating the filtering elements or material; Addition of filter aids to the liquid being filtered
B01D 37/03	1-Punkt Untergruppe	. using flocculating agents [5]
B01D 37/04	1-Punkt Untergruppe	. Controlling the filtration
B01D 39/00	**Hauptgruppe**	**Filtering material for liquid or gaseous fluids**
B01D 39/02	1-Punkt Untergruppe	. Loose filtering material, e.g. loose fibres
B01D 39/04	2-Punkt Untergruppe	. . Organic material, e.g. cellulose, cotton
B01D 39/06	2-Punkt Untergruppe	. . Inorganic material, e.g. asbestos fibres, glass beads or fibres
B01D 39/08	1-Punkt Untergruppe	. Filter cloth, i.e. woven, knitted or interlaced material (metallic B01D 39/10)

Symbol	Typ	Titel
B01D 39/10	1-Punkt Untergruppe	. Filter screens essentially made of metal
B01D 39/12	2-Punkt Untergruppe	. . of wire gauze; of knitted wire; of expanded metal
B01D 39/14	1-Punkt Untergruppe	. Other self-supporting filtering material
B01D 39/16	2-Punkt Untergruppe	. . of organic material, e.g. synthetic fibres
B01D 39/18	3-Punkt Untergruppe	. . . the material being cellulose or derivatives thereof (making filter paper D21F 11/14)
B01D 39/20	2-Punkt Untergruppe	. . of inorganic material, e.g. asbestos paper, metallic filtering material of non-woven wires (porous ceramic material C04B; sintering metals C22C 1/04)
B01D 41/00	**Hauptgruppe**	**Regeneration of the filtering material or filter elements outside the filter for liquid or gaseous fluids**
B01D 41/02	1-Punkt Untergruppe	. of loose filtering material
B01D 41/04	1-Punkt Untergruppe	. of rigid self-supporting filtering material
B01D 43/00	**Hauptgruppe**	**Separating particles from liquids, or liquids from solids, otherwise than by sedimentation or filtration (flotation processes B03D 1/00; drying solid materials or objects F26B)** **Separating dispersed particles from gases or vapours (suction cleaner filters A47L 9/10; filters for breathing-protection purposes A62B 23/00; filtering air for vehicles B60H 3/06; separating pneumatically-conveyed materials from propelling gas B65G 53/60; exhaust or silencing apparatus for machines or engines having means for removing solid constituents of exhaust F01N 3/02; air cleaners for the intakes of gas-turbine or jet-propulsion plants F02C 7/05, of combustion engines F02M 35/024, of compressors F04B 39/16; filtering in air-conditioning F24F 3/16)**
B01D 45/00	**Hauptgruppe**	**Separating dispersed particles from gases or vapours by gravity, inertia, or centrifugal forces**
B01D 45/02	1-Punkt Untergruppe	. by utilising gravity
B01D 45/04	1-Punkt Untergruppe	. by utilising inertia (B01D 45/12 takes precedence)
B01D 45/06	2-Punkt Untergruppe	. . by reversal of direction of flow
B01D 45/08	2-Punkt Untergruppe	. . by impingement against baffle separators
B01D 45/10	3-Punkt Untergruppe	. . . which are wetted
B01D 45/12	1-Punkt Untergruppe	. by centrifugal forces (centrifuges B04B; cyclones B04C)
B01D 45/14	2-Punkt Untergruppe	. . generated by rotating vanes, discs, drums or brushes
B01D 45/16	2-Punkt Untergruppe	. . generated by the winding course of the gas stream
B01D 45/18	1-Punkt Untergruppe	. Cleaning-out devices
B01D 46/00	**Hauptgruppe**	**Filters or filtering processes specially modified for separating dispersed particles from gases or vapours (filtering elements B01D 24/00-B01D 35/00; filtering material B01D 39/00; their regeneration outside the filters B01D 41/00)**
B01D 46/02	1-Punkt Untergruppe	. Particle separators, e.g. dust precipitators, having hollow filters made of flexible material
B01D 46/04	2-Punkt Untergruppe	. . Cleaning filters
B01D 46/06	2-Punkt Untergruppe	. . with means keeping the working surfaces flat
B01D 46/08	3-Punkt Untergruppe	. . . the working surfaces forming a star shape
B01D 46/10	1-Punkt Untergruppe	. Particle separators, e.g. dust precipitators, using filter plates, sheets, or pads having plane surfaces
B01D 46/12	2-Punkt Untergruppe	. . in multiple arrangements

Symbol	Typ	Titel
B01D 46/14	2-Punkt Untergruppe	. . arranged in a star shape
B01D 46/16	2-Punkt Untergruppe	. . arranged on non-filtering conveyers
B01D 46/18	1-Punkt Untergruppe	. Particle separators, e.g. dust precipitators, using filtering belts
B01D 46/20	2-Punkt Untergruppe	. . the belts combined with drums
B01D 46/22	2-Punkt Untergruppe	. . the belts travelling during filtering
B01D 46/24	1-Punkt Untergruppe	. Particle separators, e.g. dust precipitators, using rigid hollow filter bodies
B01D 46/26	2-Punkt Untergruppe	. . rotatable
B01D 46/28	1-Punkt Untergruppe	. Particle separators, e.g. dust precipitators, using filter brushes
B01D 46/30	1-Punkt Untergruppe	. Particle separators, e.g. dust precipitators, using loose filtering material
B01D 46/32	2-Punkt Untergruppe	. . the material moving during filtering
B01D 46/34	3-Punkt Untergruppe	. . . not horizontally, e.g. using shoots
B01D 46/36	3-Punkt Untergruppe	. . . as a substantially horizontal layer, e.g. on rotary tables, drums, conveyer belts
B01D 46/38	3-Punkt Untergruppe	. . . as fluidised bed
B01D 46/40	1-Punkt Untergruppe	. Particle separators, e.g. dust precipitators, using edge filters, i.e. using contiguous impervious surfaces
B01D 46/42	1-Punkt Untergruppe	. Auxiliary equipment or operation thereof
B01D 46/44	2-Punkt Untergruppe	. . controlling filtration
B01D 46/46	3-Punkt Untergruppe	. . . automatic
B01D 46/48	2-Punkt Untergruppe	. . Removing dust other than cleaning filters
B01D 46/50	2-Punkt Untergruppe	. . Means for discharging electrostatic potential
B01D 46/52	1-Punkt Untergruppe	. Particle separators, e.g. dust precipitators, using filters embodying folded material
B01D 46/54	1-Punkt Untergruppe	. Particle separators, e.g. dust precipitators, using ultra-fine filter sheets or diaphragms
B01D 47/00	**Hauptgruppe**	**Separating dispersed particles from gases, air or vapours by liquid as separating agent (B01D 45/10 takes precedence; fractionating columns or parts thereof B01D 3/16)**
B01D 47/02	1-Punkt Untergruppe	. by passing the gas or air or vapour over or through a liquid bath
B01D 47/04	1-Punkt Untergruppe	. by passing the gas or air or vapour through foam
B01D 47/05	1-Punkt Untergruppe	. by condensation of the separating agent [3]
B01D 47/06	1-Punkt Untergruppe	. Spray cleaning
B01D 47/08	2-Punkt Untergruppe	. . with rotary nozzles
B01D 47/10	1-Punkt Untergruppe	. Venturi scrubbers
B01D 47/12	1-Punkt Untergruppe	. Washers with plural different washing sections (B01D 47/14 takes precedence) [3]
B01D 47/14	1-Punkt Untergruppe	. Packed scrubbers (packing elements B01J 19/30, B01J 19/32) [3]
B01D 47/16	1-Punkt Untergruppe	. Apparatus having rotary means, other than rotatable nozzles, for atomising the cleaning liquid
B01D 47/18	2-Punkt Untergruppe	. . with horizontally-arranged shafts

Symbol	Typ	Titel
B01D 49/00	**Hauptgruppe**	**Separating dispersed particles from gases, air or vapours by other methods**
B01D 49/02	1-Punkt Untergruppe	. by thermal repulsion
B01D 50/00	**Hauptgruppe**	**Combinations of devices for separating particles from gases or vapours**
B01D 51/00	**Hauptgruppe**	**Auxiliary pretreatment of gases or vapours to be cleaned (preventing dust fires A62C; pretreatment specially adapted for magnetic or electrostatic separation B03C) [6]**
B01D 51/02	1-Punkt Untergruppe	. Amassing the particles, e.g. by flocculation
B01D 51/04	2-Punkt Untergruppe	. . by seeding, e.g. by adding particles
B01D 51/06	2-Punkt Untergruppe	. . by varying the pressure of the gas or vapour
B01D 51/08	3-Punkt Untergruppe	. . . by sound or ultrasonics
B01D 51/10	1-Punkt Untergruppe	. Conditioning the gas to be cleaned
B01D 53/00	**Hauptgruppe**	**Separation of gases or vapours; Recovering vapours of volatile solvents from gases; Chemical or biological purification of waste gases, e.g. engine exhaust gases, smoke, fumes, flue gases, aerosols (recovery of volatile solvents by condensation B01D 5/00; sublimation B01D 7/00; cold traps, cold baffles B01D 8/00; for the separation of specific gases or vapours, see the relevant places, e.g. for purification or separation of nitrogen C01B 21/04; working-up undefined gaseous mixtures obtained by cracking hydrocarbon oils C10G 70/00; cleaning coal gas C10K; working-up of natural gas, or synthetic natural gas, C10L 3/10; separation of difficult-to-condense gases or air by liquefaction F25J; for investigating materials G01N 30/00) [3, 5]**
B01D 53/02	1-Punkt Untergruppe	. by adsorption, e.g. preparative gas chromatography
B01D 53/04	2-Punkt Untergruppe	. . with stationary adsorbents
B01D 53/047	3-Punkt Untergruppe	. . . Pressure swing adsorption [6]
B01D 53/053	4-Punkt Untergruppe	. . . . with storage or buffer vessel [6]
B01D 53/06	2-Punkt Untergruppe	. . with moving adsorbents
B01D 53/08	3-Punkt Untergruppe	. . . according to the "moving bed" method
B01D 53/10	3-Punkt Untergruppe	. . . with dispersed adsorbents
B01D 53/12	4-Punkt Untergruppe	. . . . according to the "fluidised technique"
B01D 53/14	1-Punkt Untergruppe	. by absorption
B01D 53/18	2-Punkt Untergruppe	. . Absorbing units; Liquid distributors therefor (B01D 3/16, B01D 3/26, B01D 3/30 take precedence; packing elements B01J 19/30, B01J 19/32)
B01D 53/22	1-Punkt Untergruppe	. by diffusion (manufacturing semi-permeable membranes B01D 67/00; form, structure or properties of semi-permeable membranes B01D 69/00; material for semi-permeable membranes B01D 71/00)
B01D 53/24	1-Punkt Untergruppe	. by centrifugal force (centrifuges B04B; cyclones B04C)
B01D 53/26	1-Punkt Untergruppe	. Drying gases or vapours
B01D 53/28	2-Punkt Untergruppe	. . Selection of materials for use as drying agents
B01D 53/30	1-Punkt Untergruppe	. Controlling by gas-analysis apparatus
B01D 53/32	1-Punkt Untergruppe	. by electrical effects other than those provided for in group B01D 61/00 [5]
B01D 53/34	1-Punkt Untergruppe	. Chemical or biological purification of waste gases [3, 6]
B01D 53/38	2-Punkt Untergruppe	. . Removing components of undefined structure [6]

Symbol	Typ	Titel
B01D 53/40	3-Punkt Untergruppe	. . . Acidic components (B01D 53/44 takes precedence) [6]
B01D 53/42	3-Punkt Untergruppe	. . . Basic components (B01D 53/44 takes precedence) [6]
B01D 53/44	3-Punkt Untergruppe	. . . Organic components [6]
B01D 53/46	2-Punkt Untergruppe	. . Removing components of defined structure [6]
B01D 53/48	3-Punkt Untergruppe	. . . Sulfur compounds [6]
B01D 53/50	4-Punkt Untergruppe	. . . . Sulfur oxides (B01D 53/60 takes precedence) [6]
B01D 53/52	4-Punkt Untergruppe	. . . . Hydrogen sulfide [6]
B01D 53/54	3-Punkt Untergruppe	. . . Nitrogen compounds [6]
B01D 53/56	4-Punkt Untergruppe	. . . . Nitrogen oxides (B01D 53/60 takes precedence) [6]
B01D 53/58	4-Punkt Untergruppe	. . . . Ammonia [6]
B01D 53/60	3-Punkt Untergruppe	. . . Simultaneously removing sulfur oxides and nitrogen oxides [6]
B01D 53/62	3-Punkt Untergruppe	. . . Carbon oxides [6]
B01D 53/64	3-Punkt Untergruppe	. . . Heavy metals or compounds thereof, e.g. mercury [6]
B01D 53/66	3-Punkt Untergruppe	. . . Ozone [6]
B01D 53/68	3-Punkt Untergruppe	. . . Halogens or halogen compounds [6]
B01D 53/70	4-Punkt Untergruppe	. . . . Organic halogen compounds [6]
B01D 53/72	3-Punkt Untergruppe	. . . Organic compounds not provided for in groups B01D 53/48-B01D 53/70, e.g. hydrocarbons [6]
B01D 53/73	2-Punkt Untergruppe	. . After-treatment of removed components [6]
B01D 53/74	2-Punkt Untergruppe	. . General processes for purification of waste gases; Apparatus or devices specially adapted therefor (B01D 53/92 takes precedence) [6]
B01D 53/75	3-Punkt Untergruppe	. . . Multi-step processes [6]
B01D 53/76	3-Punkt Untergruppe	. . . Gas phase processes, e.g. by using aerosols [6]
B01D 53/77	3-Punkt Untergruppe	. . . Liquid phase processes [6]
B01D 53/78	4-Punkt Untergruppe	. . . . with gas-liquid contact [6]
B01D 53/79	4-Punkt Untergruppe	. . . . Injecting reactants [6]
B01D 53/80	3-Punkt Untergruppe	. . . Semi-solid phase processes, i.e. by using slurries [6]
B01D 53/81	3-Punkt Untergruppe	. . . Solid phase processes [6]
B01D 53/82	4-Punkt Untergruppe	. . . . with stationary reactants [6]
B01D 53/83	4-Punkt Untergruppe	. . . . with moving reactants [6]
B01D 53/84	3-Punkt Untergruppe	. . . Biological processes [6]
B01D 53/85	4-Punkt Untergruppe	. . . . with gas-solid contact [6]
B01D 53/86	3-Punkt Untergruppe	. . . Catalytic processes [6]

Symbol	Typ	Titel
B01D 53/88	4-Punkt Untergruppe	. . . . Handling or mounting catalysts [6]
B01D 53/90	4-Punkt Untergruppe	. . . . Injecting reactants [6]
B01D 53/92	2-Punkt Untergruppe	. . of engine exhaust gases (exhaust apparatus having means for purifying or otherwise treating exhaust gases F01N 3/00) [6]
B01D 53/94	3-Punkt Untergruppe	. . . by catalytic processes [6]
B01D 53/96	2-Punkt Untergruppe	. . Regeneration, reactivation or recycling of reactants [6]
B01D 57/00	**Hauptgruppe**	**Separation, other than separation of solids, not fully covered by a single other group or subclass, e.g. B03C**
B01D 57/02	1-Punkt Untergruppe	. by electrophoresis (treatment of water, waste water, sewage or sludge by electrophoresis C02F 1/469; electrophoretic production of compounds or non-metals C25B 7/00; investigating or analysing materials by using electrophoresis G01N 27/26) [3, 5]
B01D 59/00	**Hauptgruppe**	**Separation of different isotopes of the same chemical element (preventing occurrence of critical conditions when producing fissile material G21; shielding from radioactivity G21F)**
B01D 59/02	1-Punkt Untergruppe	. Separation by phase transition
B01D 59/04	2-Punkt Untergruppe	. . by distillation
B01D 59/06	2-Punkt Untergruppe	. . by fractional melting; by zone melting
B01D 59/08	2-Punkt Untergruppe	. . by fractional crystallisation, by precipitation, by zone freezing
B01D 59/10	1-Punkt Untergruppe	. Separation by diffusion
B01D 59/12	2-Punkt Untergruppe	. . by diffusion through barriers
B01D 59/14	3-Punkt Untergruppe	. . . Construction of the barrier
B01D 59/16	2-Punkt Untergruppe	. . by thermal diffusion
B01D 59/18	2-Punkt Untergruppe	. . by separation jets
B01D 59/20	1-Punkt Untergruppe	. Separation by centrifuging
B01D 59/22	1-Punkt Untergruppe	. Separation by extracting
B01D 59/24	2-Punkt Untergruppe	. . by solvent extraction
B01D 59/26	2-Punkt Untergruppe	. . by sorption, i.e. absorption, adsorption, persorption
B01D 59/28	1-Punkt Untergruppe	. Separation by chemical exchange
B01D 59/30	2-Punkt Untergruppe	. . by ion exchange
B01D 59/32	2-Punkt Untergruppe	. . by exchange between fluids
B01D 59/33	3-Punkt Untergruppe	. . . involving dual temperature exchange [2]
B01D 59/34	1-Punkt Untergruppe	. Separation by photochemical methods
B01D 59/36	1-Punkt Untergruppe	. Separation by biological methods
B01D 59/38	1-Punkt Untergruppe	. Separation by electrochemical methods (in general B01J)
B01D 59/40	2-Punkt Untergruppe	. . by electrolysis
B01D 59/42	2-Punkt Untergruppe	. . by electromigration; by electrophoresis

Symbol	Typ	Titel
B01D 59/44	1-Punkt Untergruppe	. Separation by mass spectrography (particle spectrometers or separator tubes H01J 49/00)
B01D 59/46	2-Punkt Untergruppe	. . using only electrostatic fields
B01D 59/48	2-Punkt Untergruppe	. . using electrostatic and magnetic fields
B01D 59/50	1-Punkt Untergruppe	. Separation involving two or more processes covered by different groups selected from groups B01D 59/02, B01D 59/10, B01D 59/20, B01D 59/22, B01D 59/28, B01D 59/34, B01D 59/36, B01D 59/38, B01D 59/44
		Processes of separation using semi-permeable membranes, e.g. dialysis, osmosis, ultrafiltration; Apparatus specially adapted therefor; Semi-permeable membranes or their production (separation of gases or vapours by diffusion B01D 53/22; treatment of milk by dialysis, reverse osmosis or ultrafiltration A23C 9/142, by electrodialysis A23C 9/144; artificial kidneys A61M 1/14; treatment of water by dialysis, osmosis or reverse osmosis C02F 1/44, by electrodialysis C02F 1/469; apparatus for enzymology or microbiology with dialysis means C12M 1/12; production or purification of sugar juices, e.g. by osmosis, C13D 3/16; extraction of sugar from molasses, e.g. by osmosis, C13J 1/08; diaphragms for electrolysis C25B 13/00, C25C 7/04; osmosis as energy source F03G 7/00) [5]
B01D 61/00	**Hauptgruppe**	**Processes of separation using semi-permeable membranes, e.g. dialysis, osmosis, ultrafiltration; Apparatus, accessories or auxiliary operations specially adapted therefor [5]**
B01D 61/02	1-Punkt Untergruppe	. Reverse osmosis; Hyperfiltration [5]
B01D 61/04	2-Punkt Untergruppe	. . Feed pretreatment [5]
B01D 61/06	2-Punkt Untergruppe	. . Energy recovery [5]
B01D 61/08	2-Punkt Untergruppe	. . Apparatus therefor [5]
B01D 61/10	2-Punkt Untergruppe	. . Accessories; Auxiliary operations [5]
B01D 61/12	2-Punkt Untergruppe	. . Controlling or regulating [5]
B01D 61/14	1-Punkt Untergruppe	. Ultrafiltration; Microfiltration [5]
B01D 61/16	2-Punkt Untergruppe	. . Feed pretreatment [5]
B01D 61/18	2-Punkt Untergruppe	. . Apparatus therefor [5]
B01D 61/20	2-Punkt Untergruppe	. . Accessories; Auxiliary operations [5]
B01D 61/22	2-Punkt Untergruppe	. . Controlling or regulating [5]
B01D 61/24	1-Punkt Untergruppe	. Dialysis [5]
B01D 61/26	2-Punkt Untergruppe	. . Dialysate solution flow, e.g. preparation, regeneration [5]
B01D 61/28	2-Punkt Untergruppe	. . Apparatus therefor [5]
B01D 61/30	2-Punkt Untergruppe	. . Accessories; Auxiliary operation [5]
B01D 61/32	2-Punkt Untergruppe	. . Controlling or regulating [5]
B01D 61/34	3-Punkt Untergruppe	. . . Measuring ultrafiltrate during dialysis [5]
B01D 61/36	1-Punkt Untergruppe	. Pervaporation; Membrane distillation; Liquid permeation [5]
B01D 61/38	1-Punkt Untergruppe	. Liquid-membrane separation [5]
B01D 61/40	2-Punkt Untergruppe	. . using emulsion-type membranes [5]
B01D 61/42	1-Punkt Untergruppe	. Electrodialysis; Electro-osmosis [5]
B01D 61/44	2-Punkt Untergruppe	. . Ion-selective electrodialysis [5]

Symbol	Typ	Titel
B01D 61/46	3-Punkt Untergruppe	. . . Apparatus therefor [5]
B01D 61/48	4-Punkt Untergruppe	. . . . having one or more compartments filled with ion-exchange material [5]
B01D 61/50	4-Punkt Untergruppe	. . . . Stacks of the plate-and-frame type [5]
B01D 61/52	3-Punkt Untergruppe	. . . Accessories; Auxiliary operation [5]
B01D 61/54	3-Punkt Untergruppe	. . . Controlling or regulating [5]
B01D 61/56	2-Punkt Untergruppe	. . Electro-osmotic dewatering [5]
B01D 61/58	1-Punkt Untergruppe	. Multistep processes [5]
B01D 63/00	**Hauptgruppe**	**Apparatus in general for separation processes using semi-permeable membranes [5]**
B01D 63/02	1-Punkt Untergruppe	. Hollow fibre modules [5]
B01D 63/04	2-Punkt Untergruppe	. . comprising multiple hollow fibre assemblies [5]
B01D 63/06	1-Punkt Untergruppe	. Tubular membrane modules [5]
B01D 63/08	1-Punkt Untergruppe	. Flat membrane modules [5]
B01D 63/10	1-Punkt Untergruppe	. Spiral-wound membrane modules [5]
B01D 63/12	2-Punkt Untergruppe	. . comprising multiple spiral-wound assemblies [5]
B01D 63/14	1-Punkt Untergruppe	. Pleat-type membrane modules [5]
B01D 63/16	1-Punkt Untergruppe	. Rotary, reciprocated or vibrated modules [5]
B01D 65/00	**Hauptgruppe**	**Accessories or auxiliary operations, in general, for separation processes or apparatus using semi-permeable membranes [5]**
B01D 65/02	1-Punkt Untergruppe	. Membrane cleaning or sterilisation [5]
B01D 65/04	2-Punkt Untergruppe	. . with movable bodies, e.g. foam balls [5]
B01D 65/06	2-Punkt Untergruppe	. . with special washing compositions [5]
B01D 65/08	1-Punkt Untergruppe	. Prevention of membrane fouling or of concentration polarisation [5]
B01D 65/10	1-Punkt Untergruppe	. Testing of membranes or membrane apparatus; Detecting or repairing leaks [5]
B01D 67/00	**Hauptgruppe**	**Processes specially adapted for manufacturing semi-permeable membranes for separation processes or apparatus [5]**
B01D 69/00	**Hauptgruppe**	**Semi-permeable membranes for separation processes or apparatus characterised by their form, structure or properties; Manufacturing processes specially adapted therefor [5]**
B01D 69/02	1-Punkt Untergruppe	. characterised by their properties [5]
B01D 69/04	1-Punkt Untergruppe	. Tubular membranes [5]
B01D 69/06	1-Punkt Untergruppe	. Flat membranes [5]
B01D 69/08	1-Punkt Untergruppe	. Hollow fibre membranes (manufacture of hollow fibres D01D 5/24, D01F 1/08) [5]
B01D 69/10	1-Punkt Untergruppe	. Supported membranes; Membrane supports [5]
B01D 69/12	1-Punkt Untergruppe	. Composite membranes; Ultra-thin membranes [5]
B01D 69/14	1-Punkt Untergruppe	. Dynamic membranes [5]
B01D 71/00	**Hauptgruppe**	**Semi-permeable membranes for separation processes or apparatus characterised by the material; Manufacturing processes specially adapted therefor [5]**

Symbol	Typ	Titel
B01D 71/02	1-Punkt Untergruppe	. Inorganic material [5]
B01D 71/04	2-Punkt Untergruppe	. . Glass [5]
B01D 71/06	1-Punkt Untergruppe	. Organic material [5]
B01D 71/08	2-Punkt Untergruppe	. . Polysaccharides [5]
B01D 71/10	3-Punkt Untergruppe	. . . Cellulose; Modified cellulose [5]
B01D 71/12	3-Punkt Untergruppe	. . . Cellulose derivatives [5]
B01D 71/14	4-Punkt Untergruppe	. . . . Esters of organic acids [5]
B01D 71/16	5-Punkt Untergruppe	. . . . . Cellulose acetate [5]
B01D 71/18	5-Punkt Untergruppe	. . . . . Mixed esters, e.g. cellulose acetate-butyrate [5]
B01D 71/20	4-Punkt Untergruppe	. . . . Esters of inorganic acids, e.g. cellulose nitrate [5]
B01D 71/22	4-Punkt Untergruppe	. . . . Cellulose ethers [5]
B01D 71/24	2-Punkt Untergruppe	. . Rubbers [5]
B01D 71/26	2-Punkt Untergruppe	. . Polyalkenes [5]
B01D 71/28	2-Punkt Untergruppe	. . Polymers of vinyl aromatic compounds [5]
B01D 71/30	2-Punkt Untergruppe	. . Polyalkenyl halides [5]
B01D 71/32	3-Punkt Untergruppe	. . . containing fluorine atoms [5]
B01D 71/34	4-Punkt Untergruppe	. . . . Polyvinylidene fluoride [5]
B01D 71/36	4-Punkt Untergruppe	. . . . Polytetrafluoroethene [5]
B01D 71/38	2-Punkt Untergruppe	. . Polyalkenylalcohols; Polyalkenylesters; Polyalkenylethers; Polyalkenylaldehydes; Polyalkenylketones; Polyalkenylacetals; Polyalkenylketals [5]
B01D 71/40	2-Punkt Untergruppe	. . Polymers of unsaturated acids or derivatives thereof, e.g. salts, amides, imides, nitriles, anhydrides, esters [5]
B01D 71/42	3-Punkt Untergruppe	. . . Polymers of nitriles, e.g. polyacrylonitrile [5]
B01D 71/44	2-Punkt Untergruppe	. . Polymers obtained by reactions only involving carbon-to-carbon unsaturated bonds, not provided for in a single one of groups B01D 71/26-B01D 71/42 [5]
B01D 71/46	2-Punkt Untergruppe	. . Epoxy resins [5]
B01D 71/48	2-Punkt Untergruppe	. . Polyesters [5]
B01D 71/50	2-Punkt Untergruppe	. . Polycarbonates [5]
B01D 71/52	2-Punkt Untergruppe	. . Polyethers [5]
B01D 71/54	2-Punkt Untergruppe	. . Polyureas; Polyurethanes [5]
B01D 71/56	2-Punkt Untergruppe	. . Polyamides, e.g. polyester-amides [5]
B01D 71/58	2-Punkt Untergruppe	. . Other polymers having nitrogen in the main chain, with or without oxygen or carbon only [5]
B01D 71/60	3-Punkt Untergruppe	. . . Polyamines [5]

Symbol	Typ	Titel
B01D 71/62	3-Punkt Untergruppe	. . . Polycondensates having nitrogen-containing heterocyclic rings in the main chain [5]
B01D 71/64	4-Punkt Untergruppe	. . . . Polyimides; Polyamide-imides; Polyester-imides; Polyamide acids or similar polyimide precursors [5]
B01D 71/66	2-Punkt Untergruppe	. . Polymers having sulfur in the main chain, with or without nitrogen, oxygen or carbon only [5]
B01D 71/68	3-Punkt Untergruppe	. . . Polysulfones; Polyethersulfones [5]
B01D 71/70	2-Punkt Untergruppe	. . Polymers having silicon in the main chain, with or without sulfur, nitrogen, oxygen or carbon only [5]
B01D 71/72	2-Punkt Untergruppe	. . Macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds, not provided for in a single one of groups B01D 71/46-B01D 71/70 [5]
B01D 71/74	2-Punkt Untergruppe	. . Natural macromolecular material or derivatives thereof (B01D 71/08, B01D 71/24 take precedence) [5]
B01D 71/76	2-Punkt Untergruppe	. . Macromolecular material not specifically provided for in a single one of groups B01D 71/08-B01D 71/74 (rubbers in general B01D 71/24) [5]
B01D 71/78	3-Punkt Untergruppe	. . . Graft polymers [5]
B01D 71/80	3-Punkt Untergruppe	. . . Block polymers [5]
B01D 71/82	3-Punkt Untergruppe	. . . characterised by the presence of specified groups, e.g. introduced by chemical after-treatment [5]