Symbol	Typ	Titel
C	**Sektion**	**SECTION C — CHEMISTRY; METALLURGY**
C23	**Klasse**	**COATING METALLIC MATERIAL; COATING MATERIAL WITH METALLIC MATERIAL (by metallising textiles D06M 11/83; decorating textiles by locally metallising D06Q 1/04); CHEMICAL SURFACE TREATMENT; DIFFUSION TREATMENT OF METALLIC MATERIAL; COATING BY VACUUM EVAPORATION, BY SPUTTERING, BY ION IMPLANTATION OR BY CHEMICAL VAPOUR DEPOSITION, IN GENERAL (for specific applications, see the relevant places, e.g. for manufacturing resistors H01C 17/06); INHIBITING CORROSION OF METALLIC MATERIAL OR INCRUSTATION IN GENERAL (treating metal surfaces or coating of metals by electrolysis or electrophoresis C25D, C25F) [2]**
C23C	**Unterklasse**	**COATING METALLIC MATERIAL; COATING MATERIAL WITH METALLIC MATERIAL; SURFACE TREATMENT OF METALLIC MATERIAL BY DIFFUSION INTO THE SURFACE, BY CHEMICAL CONVERSION OR SUBSTITUTION; COATING BY VACUUM EVAPORATION, BY SPUTTERING, BY ION IMPLANTATION OR BY CHEMICAL VAPOUR DEPOSITION, IN GENERAL (applying liquids or other fluent materials to surfaces in general B05; making metal-coated products by extrusion B21C 23/22; covering with metal by connecting pre-existing layers to articles, see the relevant places, e.g. B21D 39/00, B23K; working of metal by the action of a high concentration of electric current on a workpiece using an electrode B23H; metallising of glass C03C; metallising mortars, concrete, artificial stone, ceramics or natural stone C04B 41/00; paints, varnishes, laquers C09D; enamelling of, or applying a vitreous layer to, metals C23D; inhibiting corrosion of metallic material or incrustation in general C23F; single-crystal film growth C30B; details of scanning-probe apparatus, in general G12B 21/00; manufacture of semiconductor devices H01L; manufacture of printed circuits H05K) [4]**
		Coating by applying the coating material in the molten state (casting B22D, e.g. B22D 19/08, B22D 23/04, B29; built-up welding B23K, e.g. B23K 5/18, B23K 9/04) [4]
C23C 2/00	**Hauptgruppe**	**Hot-dipping or immersion processes for applying the coating material in the molten state without affecting the shape; Apparatus therefor [4]**
C23C 2/02	1-Punkt Untergruppe	. Pretreatment of the material to be coated, e.g. for coating on selected surface areas (C23C 2/30 takes precedence) [4]
C23C 2/04	1-Punkt Untergruppe	. characterised by the coating material [4]
C23C 2/06	2-Punkt Untergruppe	. . Zinc or cadmium or alloys based thereon [4]
C23C 2/08	2-Punkt Untergruppe	. . Tin or alloys based thereon [4]
C23C 2/10	2-Punkt Untergruppe	. . Lead or alloys based thereon [4]
C23C 2/12	2-Punkt Untergruppe	. . Aluminium or alloys based thereon [4]
C23C 2/14	1-Punkt Untergruppe	. Removing excess of molten coatings; Controlling or regulating the coating thickness (controlling or regulating thickness in general G05D 5/02) [4]
C23C 2/16	2-Punkt Untergruppe	. . using fluids under pressure, e.g. air knives [4]
C23C 2/18	3-Punkt Untergruppe	. . . Removing excess of molten coatings from elongated material [4]
C23C 2/20	4-Punkt Untergruppe	. . . . Strips; Plates [4]
C23C 2/22	2-Punkt Untergruppe	. . by rubbing, e.g. using knives [4]
C23C 2/24	2-Punkt Untergruppe	. . using magnetic or electric fields [4]
C23C 2/26	1-Punkt Untergruppe	. After-treatment (C23C 2/14 takes precedence) [4]

Symbol	Typ	Titel
C23C 2/28	2-Punkt Untergruppe	. . Thermal after-treatment, e.g. treatment in oil bath [4]
C23C 2/30	1-Punkt Untergruppe	. Fluxes or coverings on molten baths (C23C 2/22 takes precedence) [4]
C23C 2/32	1-Punkt Untergruppe	. using vibratory energy applied to the bath or substrate (C23C 2/14 takes precedence) [4]
C23C 2/34	1-Punkt Untergruppe	. characterised by the shape of the material to be treated (C23C 2/14 takes precedence) [4]
C23C 2/36	2-Punkt Untergruppe	. . Elongated material [4]
C23C 2/38	3-Punkt Untergruppe	. . . Wires; Tubes [4]
C23C 2/40	3-Punkt Untergruppe	. . . Plates; Strips [4]
C23C 4/00	**Hauptgruppe**	**Coating by spraying the coating material in the molten state, e.g. by flame, plasma or electric discharge (spraying guns B05B; making alloys containing fibres or filaments by thermal spraying of metal C22C 47/16; plasma guns H05H) [4]**
C23C 4/02	1-Punkt Untergruppe	. Pretreatment of the material to be coated, e.g. for coating on selected surface areas [4]
C23C 4/04	1-Punkt Untergruppe	. characterised by the coating material [4]
C23C 4/06	2-Punkt Untergruppe	. . Metallic material [4]
C23C 4/08	3-Punkt Untergruppe	. . . containing only metal elements [4]
C23C 4/10	2-Punkt Untergruppe	. . Oxides, borides, carbides, nitrides, silicides or mixtures thereof [4]
C23C 4/12	1-Punkt Untergruppe	. characterised by the method of spraying [4]
C23C 4/14	2-Punkt Untergruppe	. . for covering elongated material [4]
C23C 4/16	3-Punkt Untergruppe	. . . Wires; Tubes [4]
C23C 4/18	1-Punkt Untergruppe	. After-treatment [4]
C23C 6/00	**Hauptgruppe**	**Coating by casting molten material on the substrate [4]**
		Solid state diffusion into metallic material surfaces [4]
C23C 8/00	**Hauptgruppe**	**Solid state diffusion of only non-metal elements into metallic material surfaces (diffusion of silicon C23C 10/00); Chemical surface treatment of metallic material by reaction of the surface with a reactive gas, leaving reaction products of surface material in the coating, e.g. conversion coatings, passivation of metals (C23C 14/00 takes precedence) [4]**
C23C 8/02	1-Punkt Untergruppe	. Pretreatment of the material to be coated (C23C 8/04 takes precedence) [4]
C23C 8/04	1-Punkt Untergruppe	. Treatment of selected surface areas, e.g. using masks [4]
C23C 8/06	1-Punkt Untergruppe	. using gases [4]
C23C 8/08	2-Punkt Untergruppe	. . only one element being applied [4]
C23C 8/10	3-Punkt Untergruppe	. . . Oxidising [4]
C23C 8/12	4-Punkt Untergruppe	. . . . using elemental oxygen or ozone [4]
C23C 8/14	5-Punkt Untergruppe	. . . . . Oxidising of ferrous surfaces [4]
C23C 8/16	4-Punkt Untergruppe	. . . . using oxygen-containing compounds, e.g. H_2O, CO_2 [4]
C23C 8/18	5-Punkt Untergruppe	. . . . . Oxidising of ferrous surfaces [4]
C23C 8/20	3-Punkt Untergruppe	. . . Carburising [4]
C23C 8/22	4-Punkt Untergruppe	. . . . of ferrous surfaces [4]

Symbol	Typ	Titel
C23C 8/24	3-Punkt Untergruppe	. . . Nitriding [4]
C23C 8/26	4-Punkt Untergruppe	. . . . of ferrous surfaces [4]
C23C 8/28	2-Punkt Untergruppe	. . more than one element being applied in one step [4]
C23C 8/30	3-Punkt Untergruppe	. . . Carbo-nitriding [4]
C23C 8/32	4-Punkt Untergruppe	. . . . of ferrous surfaces [4]
C23C 8/34	2-Punkt Untergruppe	. . more than one element being applied in more than one step [4]
C23C 8/36	2-Punkt Untergruppe	. . using ionised gases, e.g. ionitriding (discharge tubes with provision for introducing objects or material to be exposed to the discharge H01J 37/00) [4]
C23C 8/38	3-Punkt Untergruppe	. . . Treatment of ferrous surfaces [4]
C23C 8/40	1-Punkt Untergruppe	. using liquids, e.g. salt baths, liquid suspensions [4]
C23C 8/42	2-Punkt Untergruppe	. . only one element being applied [4]
C23C 8/44	3-Punkt Untergruppe	. . . Carburising [4]
C23C 8/46	4-Punkt Untergruppe	. . . . of ferrous surfaces [4]
C23C 8/48	3-Punkt Untergruppe	. . . Nitriding [4]
C23C 8/50	4-Punkt Untergruppe	. . . . of ferrous surfaces [4]
C23C 8/52	2-Punkt Untergruppe	. . more than one element being applied in one step [4]
C23C 8/54	3-Punkt Untergruppe	. . . Carbo-nitriding [4]
C23C 8/56	4-Punkt Untergruppe	. . . . of ferrous surfaces [4]
C23C 8/58	2-Punkt Untergruppe	. . more than one element being applied in more than one step [4]
C23C 8/60	1-Punkt Untergruppe	. using solids, e.g. powders, pastes (using liquid suspensions of solids C23C 8/40) [4]
C23C 8/62	2-Punkt Untergruppe	. . only one element being applied [4]
C23C 8/64	3-Punkt Untergruppe	. . . Carburising [4]
C23C 8/66	4-Punkt Untergruppe	. . . . of ferrous surfaces [4]
C23C 8/68	3-Punkt Untergruppe	. . . Boronising [4]
C23C 8/70	4-Punkt Untergruppe	. . . . of ferrous surfaces [4]
C23C 8/72	2-Punkt Untergruppe	. . more than one element being applied in one step [4]
C23C 8/74	3-Punkt Untergruppe	. . . Carbo-nitriding [4]
C23C 8/76	4-Punkt Untergruppe	. . . . of ferrous surfaces [4]
C23C 8/78	2-Punkt Untergruppe	. . more than one element being applied in more than one step [4]
C23C 8/80	1-Punkt Untergruppe	. After-treatment [4]
C23C 10/00	**Hauptgruppe**	**Solid state diffusion of only metal elements or silicon into metallic material surfaces [4]**
C23C 10/02	1-Punkt Untergruppe	. Pretreatment of the material to be coated (C23C 10/04 takes precedence) [4]
C23C 10/04	1-Punkt Untergruppe	. Diffusion into selected surface areas, e.g. using masks [4]

Symbol	Typ	Titel
C23C 10/06	1-Punkt Untergruppe	. using gases [4]
C23C 10/08	2-Punkt Untergruppe	. . only one element being diffused [4]
C23C 10/10	3-Punkt Untergruppe	. . . Chromising [4]
C23C 10/12	4-Punkt Untergruppe	. . . . of ferrous surfaces [4]
C23C 10/14	2-Punkt Untergruppe	. . more than one element being diffused in one step [4]
C23C 10/16	2-Punkt Untergruppe	. . more than one element being diffused in more than one step [4]
C23C 10/18	1-Punkt Untergruppe	. using liquids, e.g. salt baths, liquid suspensions [4]
C23C 10/20	2-Punkt Untergruppe	. . only one element being diffused [4]
C23C 10/22	3-Punkt Untergruppe	. . . Metal melt containing the element to be diffused [4]
C23C 10/24	3-Punkt Untergruppe	. . . Salt bath containing the element to be diffused [4]
C23C 10/26	2-Punkt Untergruppe	. . more than one element being diffused [4]
C23C 10/28	1-Punkt Untergruppe	. using solids, e.g. powders, pastes [4]
C23C 10/30	2-Punkt Untergruppe	. . using a layer of powder or paste on the surface (using liquid suspensions of solids C23C 10/18) [4]
C23C 10/32	3-Punkt Untergruppe	. . . Chromising [4]
C23C 10/34	2-Punkt Untergruppe	. . Embedding in a powder mixture, i.e. pack cementation [4]
C23C 10/36	3-Punkt Untergruppe	. . . only one element being diffused [4]
C23C 10/38	4-Punkt Untergruppe	. . . . Chromising [4]
C23C 10/40	5-Punkt Untergruppe	. . . . . of ferrous surfaces [4]
C23C 10/42	6-Punkt Untergruppe	. . . . . in the presence of volatile transport additives, e.g. halogenated substances [4]
C23C 10/44	4-Punkt Untergruppe	. . . . Siliconising [4]
C23C 10/46	5-Punkt Untergruppe	. . . . . of ferrous surfaces [4]
C23C 10/48	4-Punkt Untergruppe	. . . . Aluminising [4]
C23C 10/50	5-Punkt Untergruppe	. . . . . of ferrous surfaces [4]
C23C 10/52	3-Punkt Untergruppe	. . . more than one element being diffused in one step [4]
C23C 10/54	4-Punkt Untergruppe	. . . . Diffusion of at least chromium [4]
C23C 10/56	5-Punkt Untergruppe	. . . . . and at least aluminium [4]
C23C 10/58	3-Punkt Untergruppe	. . . more than one element being diffused in more than one step [4]
C23C 10/60	1-Punkt Untergruppe	. After-treatment [4]
C23C 12/00	**Hauptgruppe**	**Solid state diffusion of at least one non-metal element other than silicon and at least one metal element or silicon into metallic material surfaces [4]**
C23C 12/02	1-Punkt Untergruppe	. Diffusion in one step [4]
		Coating by vacuum evaporation, by sputtering or by ion implantation [4]
C23C 14/00	**Hauptgruppe**	**Coating by vacuum evaporation, by sputtering or by ion implantation of the coating forming material (discharge tubes with provision for introducing objects or material to be exposed to the**

Symbol	Typ	Titel
		discharge H01J 37/00) [4]
C23C 14/02	1-Punkt Untergruppe	. Pretreatment of the material to be coated (C23C 14/04 takes precedence) [4]
C23C 14/04	1-Punkt Untergruppe	. Coating on selected surface areas, e.g. using masks [4]
C23C 14/06	1-Punkt Untergruppe	. characterised by the coating material (C23C 14/04 takes precedence) [4]
C23C 14/08	2-Punkt Untergruppe	. . Oxides (C23C 14/10 takes precedence) [4]
C23C 14/10	2-Punkt Untergruppe	. . Glass or silica [4]
C23C 14/12	2-Punkt Untergruppe	. . Organic material [4]
C23C 14/14	2-Punkt Untergruppe	. . Metallic material, boron or silicon [4]
C23C 14/16	3-Punkt Untergruppe	. . . on metallic substrates or on substrates of boron or silicon [4]
C23C 14/18	3-Punkt Untergruppe	. . . on other inorganic substrates [4]
C23C 14/20	3-Punkt Untergruppe	. . . on organic substrates [4]
C23C 14/22	1-Punkt Untergruppe	. characterised by the process of coating [4]
C23C 14/24	2-Punkt Untergruppe	. . Vacuum evaporation [4]
C23C 14/26	3-Punkt Untergruppe	. . . by resistance or inductive heating of the source [4]
C23C 14/28	3-Punkt Untergruppe	. . . by wave energy or particle radiation (C23C 14/32-C23C 14/48 take precedence) [4]
C23C 14/30	4-Punkt Untergruppe	. . . . by electron bombardment [4]
C23C 14/32	3-Punkt Untergruppe	. . . by explosion; by evaporation and subsequent ionisation of the vapours (C23C 14/34-C23C 14/48 take precedence) [4]
C23C 14/34	2-Punkt Untergruppe	. . Sputtering [4]
C23C 14/35	3-Punkt Untergruppe	. . . by application of a magnetic field, e.g. magnetron sputtering [5]
C23C 14/36	3-Punkt Untergruppe	. . . Diode sputtering (C23C 14/35 takes precedence) [4, 5]
C23C 14/38	4-Punkt Untergruppe	. . . . by direct current glow discharge [4]
C23C 14/40	4-Punkt Untergruppe	. . . . with alternating current discharge, e.g. high-frequency discharge [4]
C23C 14/42	3-Punkt Untergruppe	. . . Triode sputtering (C23C 14/35 takes precedence) [4, 5]
C23C 14/44	4-Punkt Untergruppe	. . . . by application of high frequencies and additional direct voltages [4]
C23C 14/46	3-Punkt Untergruppe	. . . by ion beam produced by an external ion source (C23C 14/40 takes precedence) [4]
C23C 14/48	2-Punkt Untergruppe	. . Ion implantation [4]
C23C 14/50	2-Punkt Untergruppe	. . Substrate holders [4]
C23C 14/52	2-Punkt Untergruppe	. . Means for observation of the coating process [4]
C23C 14/54	2-Punkt Untergruppe	. . Controlling or regulating the coating process (controlling or regulating in general G05) [4]
C23C 14/56	2-Punkt Untergruppe	. . Apparatus specially adapted for continuous coating; Arrangements for maintaining the vacuum, e.g. vacuum locks [4]
C23C 14/58	1-Punkt Untergruppe	. After-treatment [4]
		Chemical deposition or plating by decomposition; Contact plating (solid state diffusion C23C 8/00-

Symbol	Typ	Titel
		C23C 12/00) [4]
C23C 16/00	**Hauptgruppe**	**Chemical coating by decomposition of gaseous compounds, without leaving reaction products of surface material in the coating, i.e. chemical vapour deposition (CVD) processes (reactive sputtering or vacuum evaporation C23C 14/00) [4]**
C23C 16/01	1-Punkt Untergruppe	. on temporary substrates, e.g. on substrates subsequently removed by etching [7]
C23C 16/02	1-Punkt Untergruppe	. Pretreatment of the material to be coated (C23C 16/04 takes precedence) [4]
C23C 16/04	1-Punkt Untergruppe	. Coating on selected surface areas, e.g. using masks [4]
C23C 16/06	1-Punkt Untergruppe	. characterised by the deposition of metallic material [4]
C23C 16/08	2-Punkt Untergruppe	. . from metal halides [4]
C23C 16/10	3-Punkt Untergruppe	. . . Deposition of chromium only [4]
C23C 16/12	3-Punkt Untergruppe	. . . Deposition of aluminium only [4]
C23C 16/14	3-Punkt Untergruppe	. . . Deposition of only one other metal element [4]
C23C 16/16	2-Punkt Untergruppe	. . from metal carbonyl compounds [4]
C23C 16/18	2-Punkt Untergruppe	. . from metallo-organic compounds [4]
C23C 16/20	3-Punkt Untergruppe	. . . Deposition of aluminium only [4]
C23C 16/22	1-Punkt Untergruppe	. characterised by the deposition of inorganic material, other than metallic material [4]
C23C 16/24	2-Punkt Untergruppe	. . Deposition of silicon only [4]
C23C 16/26	2-Punkt Untergruppe	. . Deposition of carbon only [4]
C23C 16/27	3-Punkt Untergruppe	. . . Diamond only [7]
C23C 16/28	2-Punkt Untergruppe	. . Deposition of only one other non-metal element [4]
C23C 16/30	2-Punkt Untergruppe	. . Deposition of compounds, mixtures or solid solutions, e.g. borides, carbides, nitrides [4]
C23C 16/32	3-Punkt Untergruppe	. . . Carbides [4]
C23C 16/34	3-Punkt Untergruppe	. . . Nitrides [4]
C23C 16/36	3-Punkt Untergruppe	. . . Carbo-nitrides [4]
C23C 16/38	3-Punkt Untergruppe	. . . Borides [4]
C23C 16/40	3-Punkt Untergruppe	. . . Oxides [4]
C23C 16/42	3-Punkt Untergruppe	. . . Silicides [4]
C23C 16/44	1-Punkt Untergruppe	. characterised by the method of coating (C23C 16/04 takes precedence) [4]
C23C 16/442	2-Punkt Untergruppe	. . using fluidised bed processes [7]
C23C 16/448	2-Punkt Untergruppe	. . characterised by the method used for generating reactive gas streams, e.g. by evaporation or sublimation of precursor materials [7]
C23C 16/452	3-Punkt Untergruppe	. . . by activating reactive gas streams before introduction into the reaction chamber, e.g. by ionization or by addition of reactive species [7]
C23C 16/453	2-Punkt Untergruppe	. . passing the reaction gases through burners or torches, e.g. atmospheric pressure CVD (C23C 16/513 takes precedence; for flame or plasma spraying of coating material in the molten state C23C 4/00) [7]

Symbol	Typ	Titel
C23C 16/455	2-Punkt Untergruppe	. . characterised by the method used for introducing gases into the reaction chamber or for modifying gas flows in the reaction chamber [7]
C23C 16/458	2-Punkt Untergruppe	. . characterised by the method used for supporting substrates in the reaction chamber [7]
C23C 16/46	2-Punkt Untergruppe	. . characterised by the method used for heating the substrate (C23C 16/48, C23C 16/50 take precedence) [4]
C23C 16/48	2-Punkt Untergruppe	. . by irradiation, e.g. photolysis, radiolysis, particle radiation [4]
C23C 16/50	2-Punkt Untergruppe	. . using electric discharges [4]
C23C 16/503	3-Punkt Untergruppe	. . . using dc or ac discharges [7]
C23C 16/505	3-Punkt Untergruppe	. . . using radio frequency discharges [7]
C23C 16/507	4-Punkt Untergruppe	. . . . using external electrodes, e.g. in tunnel type reactors [7]
C23C 16/509	4-Punkt Untergruppe	. . . . using internal electrodes [7]
C23C 16/511	3-Punkt Untergruppe	. . . using microwave discharges [7]
C23C 16/513	3-Punkt Untergruppe	. . . using plasma jets [7]
C23C 16/515	3-Punkt Untergruppe	. . . using pulsed discharges [7]
C23C 16/517	3-Punkt Untergruppe	. . . using a combination of discharges covered by two or more of groups C23C 16/503-C23C 16/515 [7]
C23C 16/52	2-Punkt Untergruppe	. . Controlling or regulating the coating process (controlling or regulating in general G05) [4]
C23C 16/54	2-Punkt Untergruppe	. . Apparatus specially adapted for continuous coating [4]
C23C 16/56	1-Punkt Untergruppe	. After-treatment [4]
C23C 18/00	**Hauptgruppe**	**Chemical coating by decomposition of either liquid compounds or solutions of the coating forming compounds, without leaving reaction products of surface material in the coating (chemical surface reaction C23C 8/00, C23C 22/00); Contact plating [4]**
C23C 18/02	1-Punkt Untergruppe	. by thermal decomposition [4]
C23C 18/04	2-Punkt Untergruppe	. . Pretreatment of the material to be coated (C23C 18/06 takes precedence) [4]
C23C 18/06	2-Punkt Untergruppe	. . Coating on selected surface areas, e.g. using masks [4]
C23C 18/08	2-Punkt Untergruppe	. . characterised by the deposition of metallic material [4]
C23C 18/10	3-Punkt Untergruppe	. . . Deposition of aluminium only [4]
C23C 18/12	2-Punkt Untergruppe	. . characterised by the deposition of inorganic material other than metallic material [4]
C23C 18/14	1-Punkt Untergruppe	. Decomposition by irradiation, e.g. photolysis, particle radiation [4]
C23C 18/16	1-Punkt Untergruppe	. by reduction or substitution, i.e. electroless plating (C23C 18/54 takes precedence) [4]
C23C 18/18	2-Punkt Untergruppe	. . Pretreatment of the material to be coated [4]
C23C 18/20	3-Punkt Untergruppe	. . . of organic surfaces, e.g. resins [4]
C23C 18/22	4-Punkt Untergruppe	. . . . Roughening, e.g. by etching [4]
C23C 18/24	5-Punkt Untergruppe	. . . . . using acid aqueous solutions [4]
C23C 18/26	5-Punkt Untergruppe	. . . . . using organic liquids [4]
C23C 18/28	4-Punkt Untergruppe	. . . . Sensitising or activating [4]

Symbol	Typ	Titel
C23C 18/30	5-Punkt Untergruppe	. . . . . Activating [4]
C23C 18/31	2-Punkt Untergruppe	. . Coating with metals [5]
C23C 18/32	3-Punkt Untergruppe	. . . Coating with one of iron, cobalt or nickel; Coating with mixtures of phosphorus or boron with one of these metals [4, 5]
C23C 18/34	4-Punkt Untergruppe	. . . . using reducing agents [4, 5]
C23C 18/36	5-Punkt Untergruppe	. . . . . using hypophosphites [4, 5]
C23C 18/38	3-Punkt Untergruppe	. . . Coating with copper [4, 5]
C23C 18/40	4-Punkt Untergruppe	. . . . using reducing agents [4, 5]
C23C 18/42	3-Punkt Untergruppe	. . . Coating with noble metals [4, 5]
C23C 18/44	4-Punkt Untergruppe	. . . . using reducing agents [4, 5]
C23C 18/48	2-Punkt Untergruppe	. . Coating with alloys [4, 5]
C23C 18/50	3-Punkt Untergruppe	. . . with alloys based on iron, cobalt or nickel (C23C 18/32 takes precedence) [4, 5]
C23C 18/52	2-Punkt Untergruppe	. . using reducing agents for coating with metallic material not provided for in a single one of groups C23C 18/32-C23C 18/50 [4]
C23C 18/54	1-Punkt Untergruppe	. Contact plating, i.e. electroless electrochemical plating [4]
C23C 20/00	**Hauptgruppe**	**Chemical coating by decomposition of either solid compounds or suspensions of the coating forming compounds, without leaving reaction products of surface material in the coating (chemical surface reaction C23C 8/00, C23C 22/00) [4]**
C23C 20/02	1-Punkt Untergruppe	. Coating with metallic material [4]
C23C 20/04	2-Punkt Untergruppe	. . with metals [4]
C23C 20/06	1-Punkt Untergruppe	. Coating with inorganic material, other than metallic material [4]
C23C 20/08	2-Punkt Untergruppe	. . with compounds, mixtures or solid solutions, e.g. borides, carbides, nitrides [4]
		Chemical surface treatment of metallic material by reaction of the surface with a reactive medium (with a reactive gas C23C 8/00) [4]
C23C 22/00	**Hauptgruppe**	**Chemical surface treatment of metallic material by reaction of the surface with a reactive liquid, leaving reaction products of surface material in the coating, e.g. conversion coatings, passivation of metals (wash primers C09D 5/12) [4]**
C23C 22/02	1-Punkt Untergruppe	. using non-aqueous solutions [4]
C23C 22/03	2-Punkt Untergruppe	. . containing phosphorus compounds [4]
C23C 22/04	2-Punkt Untergruppe	. . containing hexavalent chromium compounds [4]
C23C 22/05	1-Punkt Untergruppe	. using aqueous solutions [5]
C23C 22/06	2-Punkt Untergruppe	. . using aqueous acidic solutions with pH < 6 [4, 5]
C23C 22/07	3-Punkt Untergruppe	. . . containing phosphates [4, 5]
C23C 22/08	4-Punkt Untergruppe	. . . . Orthophosphates [4, 5]
C23C 22/10	5-Punkt Untergruppe	. . . . . containing oxidants [4, 5]
C23C 22/12	5-Punkt Untergruppe	. . . . . containing zinc cations [4, 5]
C23C 22/13	6-Punkt Untergruppe	. . . . . containing also nitrate or nitrite anions [4, 5]

Symbol	Typ	Titel
C23C 22/14	6-Punkt Untergruppe	. . . . . containing also chlorate anions [4, 5]
C23C 22/16	6-Punkt Untergruppe	. . . . . containing also peroxy-compounds [4, 5]
C23C 22/17	6-Punkt Untergruppe	. . . . . containing also organic acids [4, 5]
C23C 22/18	5-Punkt Untergruppe	. . . . . containing manganese cations [4, 5]
C23C 22/20	5-Punkt Untergruppe	. . . . . containing aluminium cations [4, 5]
C23C 22/22	5-Punkt Untergruppe	. . . . . containing alkaline earth metal cations [4, 5]
C23C 22/23	4-Punkt Untergruppe	. . . . Condensed phosphates [4, 5]
C23C 22/24	3-Punkt Untergruppe	. . . containing hexavalent chromium compounds [4, 5]
C23C 22/26	4-Punkt Untergruppe	. . . . containing also organic compounds [4, 5]
C23C 22/27	5-Punkt Untergruppe	. . . . . Acids [4, 5]
C23C 22/28	5-Punkt Untergruppe	. . . . . Macromolecular compounds [4, 5]
C23C 22/30	4-Punkt Untergruppe	. . . . containing also trivalent chromium [4, 5]
C23C 22/32	4-Punkt Untergruppe	. . . . containing also pulverulent metals [4, 5]
C23C 22/33	4-Punkt Untergruppe	. . . . containing also phosphates [4, 5]
C23C 22/34	3-Punkt Untergruppe	. . . containing fluorides or complex fluorides [4, 5]
C23C 22/36	4-Punkt Untergruppe	. . . . containing also phosphates [4, 5]
C23C 22/37	4-Punkt Untergruppe	. . . . containing also hexavalent chromium compounds [4, 5]
C23C 22/38	5-Punkt Untergruppe	. . . . . containing also phosphates [4, 5]
C23C 22/40	3-Punkt Untergruppe	. . . containing molybdates, tungstates or vanadates [4, 5]
C23C 22/42	4-Punkt Untergruppe	. . . . containing also phosphates [4, 5]
C23C 22/43	4-Punkt Untergruppe	. . . . containing also hexavalent chromium compounds [4, 5]
C23C 22/44	4-Punkt Untergruppe	. . . . containing also fluorides or complex fluorides [4, 5]
C23C 22/46	3-Punkt Untergruppe	. . . containing oxalates [4, 5]
C23C 22/47	4-Punkt Untergruppe	. . . . containing also phosphates [4, 5]
C23C 22/48	3-Punkt Untergruppe	. . . not containing phosphates, hexavalent chromium compounds, fluorides or complex fluorides, molybdates, tungstates, vanadates or oxalates [4, 5]
C23C 22/50	4-Punkt Untergruppe	. . . . Treatment of iron or alloys based thereon [4, 5]
C23C 22/52	4-Punkt Untergruppe	. . . . Treatment of copper or alloys based thereon [4, 5]
C23C 22/53	4-Punkt Untergruppe	. . . . Treatment of zinc or alloys based thereon [4, 5]
C23C 22/54	4-Punkt Untergruppe	. . . . Treatment of refractory metals or alloys based thereon [4, 5]
C23C 22/56	4-Punkt Untergruppe	. . . . Treatment of aluminium or alloys based thereon [4, 5]
C23C 22/57	4-Punkt Untergruppe	. . . . Treatment of magnesium or alloys based thereon [4, 5]

Symbol	Typ	Titel
C23C 22/58	4-Punkt Untergruppe	. . . . Treatment of other metallic material [4, 5]
C23C 22/60	2-Punkt Untergruppe	. . using alkaline aqueous solutions with pH > 8 [4, 5]
C23C 22/62	3-Punkt Untergruppe	. . . Treatment of iron or alloys based thereon [4, 5]
C23C 22/63	3-Punkt Untergruppe	. . . Treatment of copper or alloys based thereon [4, 5]
C23C 22/64	3-Punkt Untergruppe	. . . Treatment of refractory metals or alloys based thereon [4, 5]
C23C 22/66	3-Punkt Untergruppe	. . . Treatment of aluminium or alloys based thereon [4, 5]
C23C 22/67	4-Punkt Untergruppe	. . . . with solutions containing hexavalent chromium [4, 5]
C23C 22/68	2-Punkt Untergruppe	. . using aqueous solutions with pH between 6 and 8 [4, 5]
C23C 22/70	1-Punkt Untergruppe	. using melts [4]
C23C 22/72	2-Punkt Untergruppe	. . Treatment of iron or alloys based thereon [4]
C23C 22/73	1-Punkt Untergruppe	. characterised by the process [4]
C23C 22/74	2-Punkt Untergruppe	. . for obtaining burned-in conversion coatings [4]
C23C 22/76	2-Punkt Untergruppe	. . Applying the liquid by spraying [4]
C23C 22/77	2-Punkt Untergruppe	. . Controlling or regulating of the coating process (controlling or regulating in general G05) [4]
C23C 22/78	1-Punkt Untergruppe	. Pretreatment of the material to be coated [4]
C23C 22/80	2-Punkt Untergruppe	. . with solutions containing titanium or zirconium compounds [4]
C23C 22/82	1-Punkt Untergruppe	. After-treatment [4]
C23C 22/83	2-Punkt Untergruppe	. . Chemical after-treatment [4]
C23C 22/84	2-Punkt Untergruppe	. . Dyeing [4]
C23C 22/86	1-Punkt Untergruppe	. Regeneration of coating baths [4]
C23C 24/00	**Hauptgruppe**	**Coating starting from inorganic powder (spraying of the coating material in molten state C23C 4/00; solid state diffusion C23C 8/00-C23C 12/00; manufacture of composite layers, workpieces or articles by sintering metallic powder B22F 7/00; friction welding B23K 20/12) [4]**
C23C 24/02	1-Punkt Untergruppe	. by application of pressure only [4]
C23C 24/04	2-Punkt Untergruppe	. . Impact or kinetic deposition of particles [4]
C23C 24/06	2-Punkt Untergruppe	. . Compressing powdered coating material, e.g. by milling [4]
C23C 24/08	1-Punkt Untergruppe	. by application of heat or pressure and heat (C23C 24/04 takes precedence) [4]
C23C 24/10	2-Punkt Untergruppe	. . with intermediate formation of a liquid phase in the layer [4]
C23C 26/00	**Hauptgruppe**	**Coating not provided for in groups C23C 2/00-C23C 24/00 [4]**
C23C 26/02	1-Punkt Untergruppe	. applying molten material to the substrate (applying melts to surfaces, in general B05) [4]
C23C 28/00	**Hauptgruppe**	**Coating for obtaining at least two superposed coatings either by methods not provided for in a single one of main groups C23C 2/00-C23C 26/00, or by combinations of methods provided for in subclasses C23C and C25C or C25D [4]**
C23C 28/02	1-Punkt Untergruppe	. only coatings of metallic material [4]
C23C 28/04	1-Punkt Untergruppe	. only coatings of inorganic non-metallic material [4]

Symbol	Typ	Titel
C23C 30/00	**Hauptgruppe**	**Coating with metallic material characterised only by the composition of the metallic material, i.e. not characterised by the coating process (C23C 26/00, C23C 28/00 take precedence) [4]**