# SECTION C — CHEMISTRY; METALLURGY

## C25 ELECTROLYTIC OR ELECTROPHORETIC PROCESSES; APPARATUS THEREFOR

**Note(s) [2, 2012.01]**

1. Electrolytic or electrophoretic processes or apparatus or operational features are classified
   i. in the groups for the compounds or articles produced, and
   ii. in the groups which cover the apparatus or operational features.
2. The electrolytic or electrophoretic purification of materials is classified according to the nature of the liquid in the relevant places, e.g. A01K 63/00, C02F 1/46, C25B 15/08, C25D 21/16, C25F 7/02.
3. Multi-step processes for surface treatment of metallic material involving at least one process provided for in class C23 and at least one process provided for in class are classified in group C23F 17/00.

**Class index**



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### C25B ELECTROLYTIC OR ELECTROPHORETIC PROCESSES FOR THE PRODUCTION OF COMPOUNDS OR NON-METALS; APPARATUS THEREFOR (anodic or cathodic protection C23F 13/00; single-crystal growth C30B) **[2]**

**Note(s) [2]**

Compounds of particular interest are also classified in the relevant classes, e.g. in C01, C07.

**1/00 Electrolytic production of inorganic compounds or non-metals [2, 2006.01, 2021.01]**

1/01 • Products **[2021.01]**

1/02 • • Hydrogen or oxygen **[2, 2006.01]**

1/04 • • • by electrolysis of water **[2, 2006.01, 2021.01]**

1/042 • • • • by electrolysis of steam **[2021.01]**

1/044 • • • • producing mixed hydrogen and oxygen gas, e.g. Brown's gas [HHO] **[2021.01]**

1/13 • • Ozone **[7, 2006.01]**

1/135 • • Carbon **[2021.01]**

1/14 • • Alkali metal compounds **[2, 2006.01]**

1/16 • • • Hydroxides (by simultaneous production of alkali metal hydroxides and chlorine, oxyacids or salts of chlorine C25B 1/34) **[2, 2006.01]**

1/18 • • Alkaline earth metal compounds or magnesium compounds **[2, 2006.01]**

1/20 • • • Hydroxides **[2, 2006.01]**

1/21 • • Manganese oxides **[7, 2006.01]**

1/22 • • Inorganic acids **[2, 2006.01]**

1/23 • • Carbon monoxide or syngas **[2021.01]**

1/24 • • Halogens or compounds thereof **[2, 2006.01, 2021.01]**

1/245 • • • Fluorine; Compounds thereof **[2021.01]**

1/26 • • • Chlorine; Compounds thereof (by simultaneous production of alkali metal hydroxides and chlorine, oxyacids or salts of chlorine C25B 1/34) **[2, 2006.01]**
1/27 • • Ammonia **[2021.01]**
1/28 • • Per-compounds **[2, 2006.01, 2021.01]**
1/29 • • • Persulfates **[2021.01]**
1/30 • • • Peroxides **[2, 2006.01]**
1/32 • • • Perborates **[2, 2006.01]**
1/33 • • Silicon **[2021.01]**
1/34 • • Simultaneous production of alkali metal hydroxides and chlorine, oxyacids or salts of chlorine, e.g. by chlor-alkali electrolysis **[2, 2006.01]**
1/36 • • • in mercury cathode cells **[2, 2006.01, 2021.01]**
1/42 • • • • Decomposition of amalgams **[2, 2006.01]**
1/44 • • • • • with the aid of catalysts **[2, 2006.01]**
1/46 • • • in diaphragm cells **[2, 2006.01]**
1/50 • Processes **[2021.01]**
1/55 • • Photoelectrolysis **[2021.01]**

**3/00 Electrolytic production of organic compounds [2, 2006.01, 2021.01]**
3/01 • Products **[2021.01]**
3/03 • • Acyclic or carbocyclic hydrocarbons **[2021.01]**
3/05 • • Heterocyclic compounds **[2021.01]**
3/07 • • Oxygen containing compounds **[2021.01]**
3/09 • • Nitrogen containing compounds **[2021.01]**
3/11 • • Halogen containing compounds **[2021.01]**
3/13 • • Organo-metallic compounds **[2021.01]**
3/20 • Processes **[2021.01]**
3/21 • • Photoelectrolysis **[2021.01]**
3/23 • • Oxidation (halogenation C25B 3/27) **[2021.01]**
3/25 • • Reduction **[2021.01]**
3/26 • • • of carbon dioxide **[2021.01]**
3/27 • • Halogenation **[2021.01]**
3/28 • • • Fluorination **[2021.01]**
3/29 • • Coupling reactions **[2021.01]**

**5/00 Electrogenerative processes, i.e. processes for producing compounds in which electricity is generated simultaneously [2, 2006.01]**

**7/00 Electrophoretic production of compounds or non-metals** (separation or purification of peptides, e.g. of proteins, by electrophoresis C07K 1/26) **[2, 2006.01]**

**9/00 Cells or assemblies of cells; Constructional parts of cells; Assemblies of constructional parts, e.g. electrode-diaphragm assemblies; Process-related cell features [2, 7, 2006.01, 2021.01]**
9/01 • Electrolytic cells characterised by shape or form **[2021.01]**
9/015 • • Cylindrical cells **[2021.01]**
9/05 • Pressure cells **[2021.01]**
9/07 • Common duct cells **[2021.01]**
9/09 • Fused bath cells **[2021.01]**
9/13 • Single electrolytic cells with circulation of an electrolyte **[2021.01]**
9/15 • • Flow-through cells **[2021.01]**
9/17 • Cells comprising dimensionally-stable non-movable electrodes; Assemblies of constructional parts thereof **[2021.01]**
9/19 • • with diaphragms **[2021.01]**
9/21 • • • two or more diaphragms **[2021.01]**
9/23 • • • comprising ion-exchange membranes in or on which electrode material is embedded **[2021.01]**
9/30 • Cells comprising movable electrodes, e.g. rotary electrodes; Assemblies of constructional parts thereof **[2021.01]**
9/40 • Cells or assemblies of cells comprising electrodes made of particles; Assemblies of constructional parts thereof **[2021.01]**
9/50 • Cells or assemblies of cells comprising photoelectrodes; Assemblies of constructional parts thereof **[2021.01]**
9/60 • Constructional parts of cells **[2021.01]**
9/63 • • Holders for electrodes; Positioning of the electrodes **[2021.01]**
9/65 • • Means for supplying current; Electrode connections; Electric inter-cell connections **[2021.01]**
9/67 • • Heating or cooling means **[2021.01]**
9/70 • Assemblies comprising two or more cells **[2021.01]**
9/73 • • of the filter-press type **[2021.01]**
9/75 • • • having bipolar electrodes **[2021.01]**
9/77 • • • having diaphragms **[2021.01]**

**11/00 Electrodes; Manufacture thereof not otherwise provided for [2, 2006.01, 2021.01]**
11/02 • characterised by shape or form **[2, 2006.01, 2021.01]**
11/03 • • perforated or foraminous **[2, 2006.01, 2021.01]**
11/031 • • • Porous electrodes **[2021.01]**
11/032 • • • • Gas diffusion electrodes **[2021.01]**
11/033 • • Liquid electrodes **[2021.01]**
11/034 • • Rotary electrodes **[2021.01]**
11/036 • • Bipolar electrodes **[2021.01]**
11/037 • • Electrodes made of particles **[2021.01]**
11/04 • characterised by the material **[2, 2006.01, 2021.01]**
11/042 • • Electrodes formed of a single material **[2021.01]**
11/043 • • • Carbon, e.g. diamond or graphene **[2021.01]**
11/044 • • • • Impregnation of carbon **[2021.01]**
11/045 • • • Mercury or amalgam **[2021.01]**
11/046 • • • Alloys **[2021.01]**
11/047 • • • Ceramics **[2021.01]**
11/048 • • • Organic compounds **[2021.01]**
11/049 • • • Photocatalysts **[2021.01]**
11/051 • • Electrodes formed of electrocatalysts on a substrate or carrier **[2021.01]**
11/052 • • • Electrodes comprising one or more electrocatalytic coatings on a substrate **[2021.01]**
11/053 • • • • characterised by multilayer electrocatalytic coatings **[2021.01]**
11/054 • • • Electrodes comprising electrocatalysts supported on a carrier **[2021.01]**
11/055 • • • characterised by the substrate or carrier material **[2021.01]**
11/056 • • • • consisting of textile or non-woven fabric **[2021.01]**
11/057 • • • • consisting of a single element or compound **[2021.01]**
11/059 • • • • • Silicon **[2021.01]**
11/061 • • • • • Metal or alloy **[2021.01]**
11/063 • • • • • • Valve metal, e.g. titanium **[2021.01]**
11/065 • • • • • Carbon **[2021.01]**
11/067 • • • • • Inorganic compound e.g. ITO, silica or titania **[2021.01]**

11/069 • • • • consisting of at least one single element and at least one compound; consisting of two or more compounds **[2021.01]**
11/071 • • • • • comprising metal or alloy powder and non-metallic binders **[2021.01]**
11/073 • • • characterised by the electrocatalysts material **[2021.01]**
11/075 • • • • consisting of a single catalytic element or catalytic compound **[2021.01]**
11/077 • • • • • the compound being a non-noble metal oxide **[2021.01]**
11/079 • • • • • • Manganese dioxide; Lead dioxide **[2021.01]**
11/081 • • • • • the element being a noble metal **[2021.01]**
11/083 • • • • • Diamond **[2021.01]**
11/085 • • • • • Organic compound **[2021.01]**
11/087 • • • • • Photocatalytic compound **[2021.01]**
11/089 • • • • • Alloys **[2021.01]**
11/091 • • • • consisting of at least one catalytic element and at least one catalytic compound; consisting of two or more catalytic elements or catalytic compounds **[2021.01]**
11/093 • • • • • at least one noble metal or noble metal oxide and at least one non-noble metal oxide **[2021.01]**
11/095 • • • • • at least one of the compounds being organic **[2021.01]**
11/097 • • • • • comprising two or more noble metals or noble metal alloys **[2021.01]**

**13/00** **Diaphragms; Spacing elements [4, 2006.01]**
13/02 • characterised by shape or form **[2, 2006.01]**
13/04 • characterised by the material **[2, 2006.01, 2021.01]**
13/05 • • based on inorganic materials **[2021.01]**
13/06 • • • based on asbestos **[2, 2006.01]**
13/07 • • • based on ceramics **[2021.01]**
13/08 • • based on organic materials **[2, 2006.01]**

**15/00** **Operating or servicing cells [2, 2006.01]**
15/02 • Process control or regulation **[2, 2006.01, 2021.01]**
15/021 • • of heating or cooling **[2021.01]**
15/023 • • Measuring, analysing or testing during electrolytic production **[2021.01]**
15/025 • • • of electrolyte parameters **[2021.01]**
15/027 • • • • Temperature **[2021.01]**
15/029 • • • • Concentration **[2021.01]**
15/031 • • • • • pH **[2021.01]**
15/033 • • • • Conductivity **[2021.01]**
15/04 • Regulation of the inter-electrode distance **[2, 2006.01]**
15/06 • Detection or inhibition of short circuits in the cell **[2, 2006.01]**
15/08 • Supplying or removing reactants or electrolytes; Regeneration of electrolytes **[2, 2006.01]**

## C25C PROCESSES FOR THE ELECTROLYTIC PRODUCTION, RECOVERY OR REFINING OF METALS; APPARATUS THEREFOR (anodic or cathodic protection C23F 13/00; single-crystal growth C30B) **[2]**

**1/00** **Electrolytic production, recovery or refining of metals by electrolysis of solutions** (C25C 5/00 takes precedence) **[2, 2006.01]**
1/02 • of light metals **[2, 2006.01]**
1/04 • • in mercury cathode cells **[2, 2006.01]**
1/06 • of iron group metals, refractory metals or manganese **[2, 2006.01]**
1/08 • • of nickel or cobalt **[2, 2006.01]**
1/10 • • of chromium or manganese **[2, 2006.01]**
1/12 • of copper **[2, 2006.01]**
1/14 • of tin **[2, 2006.01]**
1/16 • of zinc, cadmium or mercury **[2, 2006.01]**
1/18 • of lead **[2, 2006.01]**
1/20 • of noble metals **[2, 2006.01]**
1/22 • of metals not provided for in groups C25C 1/02-C25C 1/20 **[2, 2006.01]**
1/24 • Alloys obtained by cathodic reduction of all their ions **[2, 2006.01]**

**3/00** **Electrolytic production, recovery or refining of metals by electrolysis of melts** (C25C 5/00 takes precedence) **[2, 2006.01]**
3/02 • of alkali or alkaline earth metals **[2, 2006.01]**
3/04 • of magnesium **[2, 2006.01]**
3/06 • of aluminium **[2, 2006.01]**
3/08 • • Cell construction, e.g. bottoms, walls, cathodes **[2, 2006.01]**
3/10 • • • External supporting frames or structures **[2, 2006.01]**
3/12 • • • Anodes **[2, 2006.01]**
3/14 • • Devices for feeding or crust breaking **[2, 2006.01]**
3/16 • • Electric current supply devices, e.g. bus bars **[2, 2006.01]**
3/18 • • Electrolytes **[2, 2006.01]**
3/20 • • Automatic control or regulation of cells (controlling or regulating in general G05) **[2, 2006.01]**
3/22 • • Collecting emitted gases **[2, 2006.01]**
3/24 • • Refining **[2, 2006.01]**
3/26 • of titanium, zirconium, hafnium, tantalum or vanadium **[2, 2006.01]**
3/28 • • of titanium **[2, 2006.01]**
3/30 • of manganese **[2, 2006.01]**
3/32 • of chromium **[2, 2006.01]**
3/34 • of metals not provided for in groups C25C 3/02-C25C 3/32 **[2, 2006.01]**
3/36 • Alloys obtained by cathodic reduction of all their ions **[2, 2006.01]**

**5/00** **Electrolytic production, recovery or refining of metal powders or porous metal masses [2, 2006.01]**
5/02 • from solutions **[2, 2006.01]**
5/04 • from melts **[2, 2006.01]**

**7/00** **Constructional parts, or assemblies thereof, of cells; Servicing or operating of cells** (for the production of aluminium C25C 3/06-C25C 3/22) **[2, 2006.01]**
7/02 • Electrodes (consumable anodes for the refining of metals C25C 1/00-C25C 5/00); Connections thereof **[2, 2006.01]**
7/04 • Diaphragms; Spacing elements **[2, 2006.01]**
7/06 • Operating or servicing **[2, 2006.01]**
7/08 • • Separating of deposited metals from the cathode **[2, 2006.01]**

**C25D PROCESSES FOR THE ELECTROLYTIC OR ELECTROPHORETIC PRODUCTION OF COATINGS; ELECTROFORMING** (manufacturing printed circuits by metal deposition H05K 3/18)**; JOINING WORKPIECES BY ELECTROLYSIS; APPARATUS THEREFOR** (anodic or cathodic protection C23F 13/00; single-crystal growth C30B) **[2, 6]**

**Note(s) [2012.01]**

Coating with two or more superposed coatings obtained by combination of methods provided for in this subclass and in subclass C23C is classified in group C23C 28/00.

**1/00 Electroforming [2, 2006.01]**
1/02 • Tubes; Rings; Hollow bodies **[2, 2006.01]**
1/04 • Wires; Strips; Foils **[2, 2006.01]**
1/06 • Wholly-metallic mirrors **[2, 2006.01]**
1/08 • Perforated or foraminous objects, e.g. sieves (C25D 1/10 takes precedence) **[2, 2006.01]**
1/10 • Moulds; Masks; Masterforms **[2, 2006.01]**
1/12 • by electrophoresis **[2, 2006.01]**
1/14 • • of inorganic material **[2, 2006.01]**
1/16 • • • Metals **[2, 2006.01]**
1/18 • • of organic material **[2, 2006.01]**
1/20 • Separation of the formed objects from the electrodes **[2, 2006.01]**
1/22 • • Separating compounds **[2, 2006.01]**

**2/00 Joining workpieces by electrolysis [6, 2006.01]**

**3/00 Electroplating; Baths therefor [2, 2006.01]**
3/02 • from solutions (C25D 5/24-C25D 5/32 take precedence) **[2, 2006.01]**
3/04 • • of chromium **[2, 2006.01]**
3/06 • • • from solutions of trivalent chromium **[2, 2006.01]**
3/08 • • • Deposition of black chromium **[2, 2006.01]**
3/10 • • • characterised by the organic bath constituents used **[2, 2006.01]**
3/12 • • of nickel or cobalt **[2, 2006.01]**
3/14 • • • from baths containing acetylenic or heterocyclic compounds **[2, 2006.01]**
3/16 • • • • Acetylenic compounds **[2, 2006.01]**
3/18 • • • • Heterocyclic compounds **[2, 2006.01]**
3/20 • • of iron **[2, 2006.01]**
3/22 • • of zinc **[2, 2006.01]**
3/24 • • • from cyanide baths **[2, 2006.01]**
3/26 • • of cadmium **[2, 2006.01]**
3/28 • • • from cyanide baths **[2, 2006.01]**
3/30 • • of tin **[2, 2006.01]**
3/32 • • • characterised by the organic bath constituents used **[2, 2006.01]**
3/34 • • of lead **[2, 2006.01]**
3/36 • • • characterised by the organic bath constituents used **[2, 2006.01]**
3/38 • • of copper **[2, 2006.01]**
3/40 • • • from cyanide baths **[2, 2006.01]**
3/42 • • of light metals **[2, 2006.01]**
3/44 • • • Aluminium **[2, 2006.01]**
3/46 • • of silver **[2, 2006.01]**
3/48 • • of gold **[2, 2006.01]**
3/50 • • of platinum group metals **[2, 2006.01]**
3/52 • • • characterised by the organic bath constituents used **[2, 2006.01]**
3/54 • • of metals not provided for in groups C25D 3/04-C25D 3/50 **[2, 2006.01]**
3/56 • • of alloys **[2, 2006.01]**
3/58 • • • containing more than 50% by weight of copper **[2, 2006.01]**
3/60 • • • containing more than 50% by weight of tin **[2, 2006.01]**
3/62 • • • containing more than 50% by weight of gold **[2, 2006.01]**
3/64 • • • containing more than 50% by weight of silver **[2, 2006.01]**
3/66 • from melts **[2, 2006.01]**

**5/00 Electroplating characterised by the process; Pretreatment or after-treatment of workpieces [2, 2006.01]**
5/02 • Electroplating of selected surface areas **[2, 2006.01]**
5/04 • Electroplating with moving electrodes **[2, 2006.01]**
5/06 • • Brush or pad plating **[2, 2006.01]**
5/08 • Electroplating with moving electrolyte, e.g. jet electroplating **[2, 2006.01]**
5/10 • Electroplating with more than one layer of the same or of different metals (for bearings C25D 7/10) **[2, 2006.01]**
5/12 • • at least one layer being of nickel or chromium **[2, 2006.01]**
5/14 • • • two or more layers being of nickel or chromium, e.g. duplex or triplex layers **[2, 2006.01]**
5/16 • Electroplating with layers of varying thickness **[2, 2006.01]**
5/18 • Electroplating using modulated, pulsed or reversing current **[2, 2006.01]**
5/20 • Electroplating using ultrasonics **[2, 2006.01]**
5/22 • Electroplating combined with mechanical treatment during the deposition **[2, 2006.01]**
5/24 • Electroplating of metal surfaces to which a coating cannot readily be applied (C25D 5/34 takes precedence) **[2, 2006.01]**
5/26 • • of iron or steel surfaces **[2, 2006.01]**
5/28 • • of surfaces of refractory metals **[2, 2006.01]**
5/30 • • of surfaces of light metals **[2, 2006.01]**
5/32 • • of surfaces of actinides **[2, 2006.01]**
5/34 • Pretreatment of metallic surfaces to be electroplated **[2, 2006.01]**
5/36 • • of iron or steel **[2, 2006.01]**
5/38 • • of refractory metals or nickel **[2, 2006.01]**
5/40 • • • Nickel; Chromium **[2, 2006.01]**
5/42 • • of light metals **[2, 2006.01]**
5/44 • • • Aluminium **[2, 2006.01]**
5/46 • • of actinides **[2, 2006.01]**
5/48 • After-treatment of electroplated surfaces **[2, 2006.01]**
5/50 • • by heat-treatment **[2, 2006.01]**
5/52 • • by brightening or burnishing **[2, 2006.01]**
5/54 • Electroplating of non-metallic surfaces (C25D 7/12 takes precedence) **[2, 2006.01]**
5/56 • • of plastics **[2, 2006.01]**

**7/00 Electroplating characterised by the article coated [2, 2006.01]**
7/02 • Slide fasteners **[2, 2006.01]**
7/04 • Tubes; Rings; Hollow bodies **[2, 2006.01]**
7/06 • Wires; Strips; Foils **[2, 2006.01]**
7/08 • Mirrors; Reflectors **[2, 2006.01]**
7/10 • Bearings **[2, 2006.01]**
7/12 • Semiconductors **[2, 2006.01]**

**9/00 Electrolytic coating other than with metals** (C25D 11/00, C25D 15/00 take precedence; electrophoretic coating C25D 13/00) **[2, 2006.01]**
9/02 • with organic materials **[2, 2006.01]**
9/04 • with inorganic materials **[2, 2006.01]**
9/06 • • by anodic processes **[2, 2006.01]**
9/08 • • by cathodic processes **[2, 2006.01]**
9/10 • • • on iron or steel **[2, 2006.01]**
9/12 • • • on light metals **[2, 2006.01]**

**11/00 Electrolytic coating by surface reaction, i.e. forming conversion layers [2, 2006.01]**
11/02 • Anodisation **[2, 2006.01]**
11/04 • • of aluminium or alloys based thereon **[2, 2006.01]**
11/06 • • • characterised by the electrolytes used **[2, 2006.01]**
11/08 • • • • containing inorganic acids **[2, 2006.01]**
11/10 • • • • containing organic acids **[2, 2006.01]**
11/12 • • • Anodising more than once, e.g. in different baths **[2, 2006.01]**
11/14 • • • Producing integrally coloured layers **[2, 2006.01]**
11/16 • • • Pretreatment **[2, 2006.01]**
11/18 • • • After-treatment, e.g. pore-sealing **[2, 2006.01]**
11/20 • • • • Electrolytic after-treatment **[2, 2006.01]**
11/22 • • • • • for colouring layers **[2, 2006.01]**
11/24 • • • • Chemical after-treatment **[2, 2006.01]**
11/26 • • of refractory metals or alloys based thereon **[2, 2006.01]**
11/28 • • of actinides or alloys based thereon **[2, 2006.01]**
11/30 • • of magnesium or alloys based thereon **[2, 2006.01]**
11/32 • • of semiconducting materials **[2, 2006.01]**
11/34 • • of metals or alloys not provided for in groups C25D 11/04-C25D 11/32 **[2, 2006.01]**
11/36 • Phosphatising **[2, 2006.01]**
11/38 • Chromatising **[2, 2006.01]**

**13/00 Electrophoretic coating characterised by the process** (C25D 15/00 takes precedence; compositions for electrophoretic coating C09D 5/44) **[2, 2006.01]**
13/02 • with inorganic material **[2, 2006.01]**
13/04 • with organic material **[2, 2006.01]**
13/06 • • polymers **[2, 2006.01]**
13/08 • • • by polymerisation <u>in situ</u> of monomeric materials **[2, 2006.01]**
13/10 • characterised by the additives used **[2, 2006.01]**
13/12 • characterised by the article coated **[2, 2006.01]**
13/14 • • Tubes; Rings; Hollow bodies **[2, 2006.01]**
13/16 • • Wires; Strips; Foils **[2, 2006.01]**
13/18 • using modulated, pulsed or reversing current **[2, 2006.01]**
13/20 • Pretreatment **[2, 2006.01]**
13/22 • Servicing or operating **[2, 2006.01]**
13/24 • • Regeneration of process liquids **[2, 2006.01]**

**15/00 Electrolytic or electrophoretic production of coatings containing embedded materials, e.g. particles, whiskers, wires [2, 2006.01]**
15/02 • Combined electrolytic and electrophoretic processes **[2, 2006.01]**

**17/00 Constructional parts, or assemblies thereof, of cells for electrolytic coating [2, 2006.01]**
17/02 • Tanks; Installations therefor **[2, 2006.01]**
17/04 • • External supporting frames or structures **[2, 2006.01]**
17/06 • Suspending or supporting devices for articles to be coated **[2, 2006.01]**
17/08 • • Racks **[2, 2006.01]**
17/10 • Electrodes **[2, 2006.01]**
17/12 • • Shape or form (C25D 17/14 takes precedence) **[2, 2006.01]**
17/14 • • for pad-plating **[2, 2006.01]**
17/16 • Apparatus for electrolytic coating of small objects in bulk **[2, 2006.01]**
17/18 • • having closed containers **[2, 2006.01]**
17/20 • • • Horizontal barrels **[2, 2006.01]**
17/22 • • having open containers **[2, 2006.01]**
17/24 • • • Oblique barrels **[2, 2006.01]**
17/26 • • • Oscillating baskets **[2, 2006.01]**
17/28 • • with means for moving the objects individually through the apparatus during the treatment **[2, 2006.01]**

**19/00 Electrolytic coating plants [2, 2006.01]**

**21/00 Processes for servicing or operating cells for electrolytic coating [2, 2006.01]**
21/02 • Heating or cooling **[2, 2006.01]**
21/04 • Removal of gases or vapours **[2, 2006.01]**
21/06 • Filtering **[2, 2006.01]**
21/08 • Rinsing **[2, 2006.01]**
21/10 • Agitating of electrolytes; Moving of racks **[2, 2006.01]**
21/11 • Use of protective surface layers on electrolytic baths **[3, 2006.01]**
21/12 • Process control or regulation **[2, 2006.01]**
21/14 • • Controlled addition of electrolyte components **[2, 2006.01]**
21/16 • Regeneration of process solutions **[2, 2006.01]**
21/18 • • of electrolytes (C25D 21/22 takes precedence) **[2, 2006.01]**
21/20 • • of rinse-solutions (C25D 21/22 takes precedence) **[2, 2006.01]**
21/22 • • by ion-exchange **[2, 2006.01]**

**C25D**

**C25F PROCESSES FOR THE ELECTROLYTIC REMOVAL OF MATERIALS FROM OBJECTS; APPARATUS THEREFOR** (treatment of water, waste water or sewage by electrochemical methods C02F 1/46; anodic or cathodic protection C23F 13/00) **[2]**

**Note(s) [2]**

In this subclass, the last place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, classification is made in the last appropriate place.

**1/00 Electrolytic cleaning, degreasing, pickling, or descaling [2, 2006.01]**
1/02 • Pickling; Descaling **[2, 2006.01]**
1/04 • • in solution **[2, 2006.01]**
1/06 • • • of iron or steel **[2, 2006.01]**
1/08 • • • of refractory metals **[2, 2006.01]**
1/10 • • • of actinides **[2, 2006.01]**
1/12 • • in melts **[2, 2006.01]**
1/14 • • • of iron or steel **[2, 2006.01]**
1/16 • • • of refractory metals **[2, 2006.01]**
1/18 • • • of actinides **[2, 2006.01]**

**3/00 Electrolytic etching or polishing [2, 2006.01]**
3/02 • Etching **[2, 2006.01]**
3/04 • • of light metals **[2, 2006.01]**
3/06 • • of iron or steel **[2, 2006.01]**
3/08 • • of refractory metals **[2, 2006.01]**
3/10 • • of actinides **[2, 2006.01]**
3/12 • • of semiconducting materials **[2, 2006.01]**
3/14 • • locally **[2, 2006.01]**
3/16 • Polishing **[2, 2006.01]**
3/18 • • of light metals **[2, 2006.01]**
3/20 • • • of aluminium **[2, 2006.01]**
3/22 • • of heavy metals **[2, 2006.01]**
3/24 • • • of iron or steel **[2, 2006.01]**
3/26 • • • of refractory metals **[2, 2006.01]**
3/28 • • • of actinides **[2, 2006.01]**
3/30 • • of semiconducting materials **[2, 2006.01]**

**5/00 Electrolytic stripping of metallic layers or coatings [2, 2006.01]**

**7/00 Constructional parts, or assemblies thereof, of cells for electrolytic removal of material from objects** (for both electrolytic coating and removal C25D 17/00)**; Servicing or operating [2, 2006.01]**
7/02 • Regeneration of process liquids **[2, 2006.01]**