

C25 ELECTROLYTIC OR ELECTROPHORETIC PROCESSES; APPARATUS THEREFOR (electrodialysis, electro-osmosis, separation of liquids by electricity B01D; working of metal by the action of a high concentration of electric current B23H; treatment of water, waste water or sewage by electrochemical methods C02F 1/46; surface treatment of metallic material or coating involving at least one process provided for in class C23 and at least one process covered by this class C23C 28/00, C23F 17/00; anodic or cathodic protection C23F; single-crystal growth C30B; metallising textiles D06M 11/83; decorating textiles by locally metallising D06Q 1/04; electrochemical methods of analysis G01N; electrochemical measuring, indicating or recording devices G01R; electrolytic circuit elements, e.g. capacitors, H01G; electrochemical current or voltage generators H01M) [4]

C25D PROCESSES FOR THE ELECTROLYTIC OR ELECTROPHORETIC PRODUCTION OF COATINGS; ELECTROFORMING (decorating textiles by metallising D06Q 1/04; manufacturing printed circuits by metal deposition H05K 3/18); **JOINING WORKPIECES BY ELECTROLYSIS; APPARATUS THEREFOR** [2,6]

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| 1/00 Electroforming [2] | 3/52 . . . characterised by the organic bath constituents used [2] |
| 1/02 . Tubes; Rings; Hollow bodies [2] | 3/54 . . of metals not provided for in groups C25D 3/04 C25D 3/50 [2] |
| 1/04 . Wires; Strips; Foils [2] | 3/56 . . of alloys [2] |
| 1/06 . Wholly-metallic mirrors [2] | 3/58 . . . containing more than 50% by weight of copper [2] |
| 1/08 . Perforated or foraminous objects, e.g. sieves (C25D 1/10 takes precedence) [2] | 3/60 . . . containing more than 50% by weight of tin [2] |
| 1/10 . Moulds; Masks; Masterforms [2] | 3/62 . . . containing more than 50% by weight of gold [2] |
| 1/12 . by electrophoresis [2] | 3/64 . . . containing more than 50% by weight of silver [2] |
| 1/14 . . of inorganic material [2] | 3/66 . from melts [2] |
| 1/16 . . . Metals [2] | |
| 1/18 . . of organic material [2] | 5/00 Electroplating characterised by the process; Pretreatment or after-treatment of workpieces [2] |
| 1/20 . Separation of the formed objects from the electrodes [2] | 5/02 . Electroplating of selected surface areas [2] |
| 1/22 . . Separating compounds [2] | 5/04 . Electroplating with moving electrodes [2] |
| 2/00 Joining workpieces by electrolysis [6] | 5/06 . . Brush or pad plating [2] |
| 3/00 Electroplating; Baths therefor [2] | 5/08 . Electroplating with moving electrolyte, e.g. jet electroplating [2] |
| 3/02 . from solutions (C25D 5/24 C25D 5/32 take precedence) [2] | 5/10 . Electroplating with more than one layer of the same or of different metals (for bearings C25D 7/10) [2] |
| 3/04 . . of chromium [2] | 5/12 . . at least one layer being of nickel or chromium [2] |
| 3/06 . . . from solutions of trivalent chromium [2] | 5/14 . . . two or more layers being of nickel or chromium, e.g. duplex or triplex layers [2] |
| 3/08 . . . Deposition of black chromium [2] | 5/16 . Electroplating with layers of varying thickness [2] |
| 3/10 . . . characterised by the organic bath constituents used [2] | 5/18 . Electroplating using modulated, pulsed or reversing current [2] |
| 3/12 . . of nickel or cobalt [2] | 5/20 . Electroplating using ultrasonics [2] |
| 3/14 . . . from baths containing acetylenic or heterocyclic compounds [2] | 5/22 . Electroplating combined with mechanical treatment during the deposition [2] |
| 3/16 Acetylenic compounds [2] | 5/24 . Electroplating of metal surfaces to which a coating cannot readily be applied (C25D 5/34 takes precedence) [2] |
| 3/18 Heterocyclic compounds [2] | 5/26 . . of iron or steel surfaces [2] |
| 3/20 . . of iron [2] | 5/28 . . of surfaces of refractory metals [2] |
| 3/22 . . of zinc [2] | 5/30 . . of surfaces of light metals [2] |
| 3/24 . . . from cyanide baths [2] | 5/32 . . of surfaces of actinides [2] |
| 3/26 . . of cadmium [2] | 5/34 . Pretreatment of metallic surfaces to be electroplated [2] |
| 3/28 . . . from cyanide baths [2] | 5/36 . . of iron or steel [2] |
| 3/30 . . of tin [2] | 5/38 . . of refractory metals or nickel [2] |
| 3/32 . . . characterised by the organic bath constituents used [2] | 5/40 . . . Nickel; Chromium [2] |
| 3/34 . . of lead [2] | 5/42 . . of light metals [2] |
| 3/36 . . . characterised by the organic bath constituents used [2] | 5/44 . . . Aluminium [2] |
| 3/38 . . of copper [2] | 5/46 . . of actinides [2] |
| 3/40 . . . from cyanide baths [2] | 5/48 . After-treatment of electroplated surfaces [2] |
| 3/42 . . of light metals [2] | |
| 3/44 . . . Aluminium [2] | |
| 3/46 . . of silver [2] | |
| 3/48 . . of gold [2] | |
| 3/50 . . of platinum group metals [2] | |

- 5/50 . . by heat-treatment [2]
- 5/52 . . by brightening or burnishing [2]
- 5/54 . Electroplating of non-metallic surfaces (C25D 7/12 takes precedence) [2]
- 5/56 . . of plastics [2]
- 7/00 Electroplating characterised by the article coated [2]**
- 7/02 . Slide fasteners [2]
- 7/04 . Tubes; Rings; Hollow bodies [2]
- 7/06 . Wires; Strips; Foils [2]
- 7/08 . Mirrors; Reflectors [2]
- 7/10 . Bearings [2]
- 7/12 . Semiconductors [2]
- 9/00 Electrolytic coating other than with metals**
(C25D 11/00, C25D 15/00 take precedence;
electrophoretic coating C25D 13/00) [2]
- 9/02 . with organic materials [2]
- 9/04 . with inorganic materials [2]
- 9/06 . . by anodic processes [2]
- 9/08 . . by cathodic processes [2]
- 9/10 . . . on iron or steel [2]
- 9/12 . . . on light metals [2]
- 11/00 Electrolytic coating by surface reaction, i.e. forming conversion layers [2]**
- 11/02 . Anodisation [2]
- 11/04 . . of aluminium or alloys based thereon [2]
- 11/06 . . . characterised by the electrolytes used [2]
- 11/08 containing inorganic acids [2]
- 11/10 containing organic acids [2]
- 11/12 Anodising more than once, e.g. in different baths [2]
- 11/14 . . . Producing integrally coloured layers [2]
- 11/16 . . . Pretreatment [2]
- 11/18 . . . After-treatment, e.g. pore-sealing (lacquering B44D) [2]
- 11/20 Electrolytic after-treatment [2]
- 11/22 for colouring layers [2]
- 11/24 Chemical after-treatment [2]
- 11/26 . . of refractory metals or alloys based thereon [2]
- 11/28 . . of actinides or alloys based thereon [2]
- 11/30 . . of magnesium or alloys based thereon [2]
- 11/32 . . of semiconducting materials [2]
- 11/34 . . of metals or alloys not provided for in groups C25D 11/04 C25D 11/32 [2]
- 11/36 . Phosphatising [2]
- 11/38 . Chromatising [2]
- 13/00 Electrophoretic coating** (C25D 15/00 takes precedence; apparatus for continuously conveying articles into baths B65G, e.g. B65G 49/00; compositions for electrophoretic coating C09D 5/44) [2]
- 13/02 . with inorganic material [2]
- 13/04 . with organic material [2]
- 13/06 . . polymers [2]
- 13/08 . . . by polymerisation in situ of monomeric materials [2]
- 13/10 . characterised by the additives used [2]
- 13/12 . characterised by the article coated [2]
- 13/14 . . Tubes; Rings; Hollow bodies [2]
- 13/16 . . Wires; Strips; Foils [2]
- 13/18 . using modulated, pulsed or reversing current [2]
- 13/20 . Pretreatment [2]
- 13/22 . Servicing or operating [2]
- 13/24 . . Regeneration of process liquids [2]
- 15/00 Electrolytic or electrophoretic production of coatings containing embedded materials, e.g. particles, whiskers, wires [2]**
- 15/02 . Combined electrolytic and electrophoretic processes [2]
- 17/00 Constructional parts, or assemblies thereof, of cells for electrolytic coating** (apparatus for continuously conveying articles into baths B65G, e.g. B65G 49/00; electric devices, see the relevant places, e.g. H01B, H02G) [2]
- 17/02 . Tanks; Installations therefor [2]
- 17/04 . . External supporting frames or structures [2]
- 17/06 . Suspending or supporting devices for articles to be coated [2]
- 17/08 . . Racks [2]
- 17/10 . Electrodes [2]
- 17/12 . . Shape or form (C25D 17/14 takes precedence) [2]
- 17/14 . . for pad-plating [2]
- 17/16 . Apparatus for electrolytic coating of small objects in bulk [2]
- 17/18 . . having closed containers [2]
- 17/20 . . . Horizontal barrels [2]
- 17/22 . . having open containers [2]
- 17/24 . . . Oblique barrels [2]
- 17/26 . . . Oscillating baskets [2]
- 17/28 . . with means for moving the objects individually through the apparatus during the treatment [2]
- 19/00 Electrolytic coating plants [2]**
- 21/00 Processes for servicing or operating cells for electrolytic coating [2]**
- 21/02 . Heating or cooling [2]
- 21/04 . Removal of gases or vapours [2]
- 21/06 . Filtering [2]
- 21/08 . Rinsing [2]
- 21/10 . Agitating of electrolytes; Moving of racks [2]
- 21/11 . Use of protective surface layers on electrolytic baths [3]
- 21/12 . Process control or regulation (controlling or regulating in general G05) [2]
- 21/14 . . Controlled addition of electrolyte components [2]
- 21/16 . Regeneration of process solutions [2]
- 21/18 . . of electrolytes (C25D 21/22 takes precedence) [2]
- 21/20 . . of rinse-solutions (C25D 21/22 takes precedence) [2]
- 21/22 . . by ion-exchange [2]