SECTION C — CHEMISTRY; METALLURGY

C23 COATING METALLIC MATERIAL; COATING MATERIAL WITH METALLIC MATERIAL; CHEMICAL SURFACE TREATMENT; DIFFUSION TREATMENT OF METALLIC MATERIAL; COATING BY VACUUM EVAPORATION, BY SPUTTERING, BY ION IMPLANTATION OR BY CHEMICAL VAPOUR DEPOSITION, IN GENERAL; INHIBITING CORROSION OF METALLIC MATERIAL OR INCRUSTATION IN GENERAL

C23F **NON-MECHANICAL REMOVAL OF METALLIC MATERIAL FROM SURFACES** (working of metal by electro-erosion B23H; desurfacing by applying flames B23K 7/00; working metal by laser beam B23K 26/00)**; INHIBITING CORROSION OF METALLIC MATERIAL; INHIBITING INCRUSTATION IN GENERAL** (treating metal surfaces or coating of metals by electrolysis or electrophoresis C25D, C25F)**; MULTI-STEP PROCESSES FOR SURFACE TREATMENT OF METALLIC MATERIAL INVOLVING AT LEAST ONE PROCESS PROVIDED FOR IN CLASS C23 AND AT LEAST ONE PROCESS COVERED BY SUBCLASS C21D OR C22F OR CLASS C25 [4]**

Note(s)

1. This subclass covers inhibiting corrosion or incrustation in general, whether of or on metallic or non-metallic surfaces, subject to Note (2) below.
2. This subclass does not cover:
   - protective layers or coating compositions or methods of applying them; these are classified in the appropriate places, e.g. B05, B44, C09D, C10M, C23C;
   - mechanical devices or constructional features of particular articles for inhibiting incrustation; these are classified in the appropriate places, e.g. in pipes or pipe fittings F16L 58/00;
   - articles characterised by being made of materials selected for their properties of resistance to corrosion or incrustation; these are classified in the appropriate places, e.g. turbine blades F01D 5/28.

Subclass index

ETCHING, BRIGHTENING, COMPOSITIONS THEREFOR.....1/00, 3/00
OTHER REMOVING OF METALLIC MATERIAL.....4/00
INHIBITING CORROSION OR INCRUSTATION.....11/00-15/00
MULTI-STEP SURFACE TREATMENTS.....17/00

1/00 Etching metallic material by chemical means [1, 2, 2006.01]
1/02 • Local etching **[1, 2006.01]**
1/04 • • Chemical milling **[1, 2006.01]**
1/06 • Sharpening files **[1, 2006.01]**
1/08 • Apparatus, e.g. for photomechanical printing surfaces **[1, 2006.01]**
1/10 • Etching compositions (C23F 1/44 takes precedence) **[4, 2006.01]**
1/12 • • Gaseous compositions **[4, 2006.01]**
1/14 • • Aqueous compositions **[4, 2006.01]**
1/16 • • • Acidic compositions (C23F 1/42 takes precedence) **[4, 2006.01]**
1/18 • • • • for etching copper or alloys thereof **[4, 2006.01]**
1/20 • • • • for etching aluminium or alloys thereof **[4, 2006.01]**
1/22 • • • • for etching magnesium or alloys thereof **[4, 2006.01]**
1/24 • • • • for etching silicon or germanium **[4, 2006.01]**
1/26 • • • • for etching refractory metals **[4, 2006.01]**
1/28 • • • • for etching iron group metals **[4, 2006.01]**
1/30 • • • • for etching other metallic material **[4, 2006.01]**
1/32 • • • Alkaline compositions (C23F 1/42 takes precedence) **[4, 2006.01]**
1/34 • • • • for etching copper or alloys thereof **[4, 2006.01]**
1/36 • • • • for etching aluminium or alloys thereof **[4, 2006.01]**
1/38 • • • • for etching refractory metals **[4, 2006.01]**
1/40 • • • • for etching other metallic material **[4, 2006.01]**
1/42 • • • containing a dispersed water-immiscible liquid **[4, 2006.01]**
1/44 • Compositions for etching metallic material from a metallic material substrate of different composition **[4, 2006.01]**
1/46 • Regeneration of etching compositions **[4, 2006.01]**

3/00 Brightening metals by chemical means [1, 2, 2006.01]
3/02 • Light metals **[1, 2006.01]**
3/03 • • with acidic solutions **[4, 2006.01]**
3/04 • Heavy metals **[1, 2006.01]**
3/06 • • with acidic solutions **[4, 2006.01]**

4/00 **Processes for removing metallic material from surfaces, not provided for in group C23F 1/00 or C23F 3/00 [4, 2006.01]**

4/02 • by evaporation **[4, 2006.01]**

4/04 • by physical dissolution **[4, 2006.01]**

11/00 **Inhibiting corrosion of metallic material by applying inhibitors to the surface in danger of corrosion or adding them to the corrosive agent [1, 2006.01]**

11/02 • in air or gases by adding vapour phase inhibitors **[1, 2006.01]**

11/04 • in markedly acid liquids **[1, 2006.01]**

11/06 • in markedly alkaline liquids **[1, 2006.01]**

11/08 • in other liquids **[1, 2006.01]**

11/10 • • using organic inhibitors **[1, 2006.01]**

Note(s)

In groups C23F 11/12-C23F 11/173, the last place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, a compound is classified in the last appropriate place.

11/12 • • • Oxygen-containing compounds **[1, 2006.01]**

11/14 • • • Nitrogen-containing compounds **[1, 2006.01]**

11/16 • • • Sulfur-containing compounds **[1, 2006.01]**

11/167 • • • Phosphorus-containing compounds **[4, 2006.01]**

11/173 • • • Macromolecular compounds **[4, 2006.01]**

11/18 • • using inorganic inhibitors **[1, 2006.01]**

13/00 **Inhibiting corrosion of metals by anodic or cathodic protection [1, 2006.01]**

13/02 • cathodic; Selection of conditions, parameters or procedures for cathodic protection, e.g. of electrical conditions **[5, 2006.01]**

13/04 • • Controlling or regulating desired parameters **[5, 2006.01]**

13/06 • • Constructional parts, or assemblies of cathodic-protection apparatus **[5, 2006.01]**

13/08 • • • Electrodes specially adapted for inhibiting corrosion by cathodic protection; Manufacture thereof; Conducting electric current thereto **[5, 2006.01]**

13/10 • • • • Electrodes characterised by the structure (C23F 13/16 takes precedence) **[5, 2006.01]**

13/12 • • • • Electrodes characterised by the material (C23F 13/16 takes precedence) **[5, 2006.01]**

13/14 • • • • • Material for sacrificial anodes **[5, 2006.01]**

13/16 • • • • Electrodes characterised by the combination of the structure and the material **[5, 2006.01]**

13/18 • • • • Means for supporting electrodes **[5, 2006.01]**

13/20 • • • • Conducting electric current to electrodes **[5, 2006.01]**

13/22 • • • • Monitoring arrangements therefor **[5, 2006.01]**

14/00 **Inhibiting incrustation in apparatus for heating liquids for physical or chemical purposes** (adding scale preventives or removers to water C02F 5/00) **[1, 2, 2006.01]**

14/02 • by chemical means **[1, 2006.01]**

15/00 **Other methods of preventing corrosion or incrustation [1, 2006.01]**

17/00 **Multi-step processes for surface treatment of metallic material involving at least one process provided for in class C23 and at least one process covered by subclass C21D or C22F or class C25** (C23C 28/00 takes precedence) **[1, 4, 2006.01]**