### CPC - COOPERATIVE PATENT CLASSIFICATION

**C** CHEMISTRY; METALLURGY

*(NOTES omitted)*

#### 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

*(NOTES omitted)*

**C23F** NON-MECHANICAL REMOVAL OF METALLIC MATERIAL FROM SURFACE (working metal by laser beams B23K 26/00; desurfacing by applying flames B23K 7/00; working of metal by electro-erosion B23H; producing decorative effects by removing surface material, e.g. by engraving, by etching, B44C 1/22; electrolytic etching or polishing C25F); INHIBITING CORROSION OF METALLIC MATERIAL OR INCRUSTATION IN GENERAL; 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

**NOTES**

1. protective layers or coating compositions or methods of applying them; these are classified in the appropriate places, e.g. B05, B44, C09D, C23C.
2. 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.
3. 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.

**WARNINGS**

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups; C23F 1/24 covered by
2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

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Processes for removing metallic material from surfaces, not provided for in group C23F 1/00 or C23F 3/00

Inhibiting corrosion of metallic material by applying inhibitors to the surface in danger of corrosion or adding them to the corrosive agent (adding inhibitors to mineral oil, fuels, or lubricants C10; adding inhibitors to pickling solutions C23G)

Inhibiting corrosion of metallic material by anodic or cathodic protection

Oxygen-containing compounds

[Alcohols; Aldehydes; Ketones]
[Carboxylic acids]
[Aliphatic acids]
[Esters of carboxylic acids]
[Nitrogen-containing compounds]
[Amines; Quaternary ammonium compounds]
[Hydroxy amines]
[Salts of amines]
[Aminocarboxylic acids]
[Amides; N-substituted amides]
[containing a multiple nitrogen-to-carbon bond]
[containing a nitrogen-to-oxygen bond]
[containing a nitrogen-to-nitrogen bond]
[Heterocyclic compounds containing nitrogen as hetero atom]
[Sulfur-containing compounds]
[Mercaptans]
[Thioaldehydes; Thioketones]
[Sulfonic acids]
[containing a -SO₂- N group]
[Heterocyclic compounds containing sulfur as hetero atom]
[Phosphorus-containing compounds]
[Esters of phosphoric or thiophosphoric acids]
[Phosphonic acids]
[Macromolecular compounds]
[Macromolecular compounds]
[Nitrogen containing compounds]
[Phosphorous-containing compounds]

[Phosphorous, arsenic, antimony or bismuth containing compounds]
[Refactory metal-containing compounds]
[Mixtures of inorganic inhibitors]
[containing phosphates]

Inhibiting corrosion of metals by anodic or cathodic protection

Oxidizing and reducing conditions

Other methods of preventing corrosion or incrustation

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)

Type of materials to be protected by cathodic protection

Concrete, e.g. reinforced

Aspects of inhibiting corrosion of metals by anodic or cathodic protection

Controlling or regulating parameters

for structures subject to stray currents

Constructional parts or assemblies of the anodic or cathodic protection apparatus

combining at least two types of anodic or cathodic protection

characterized by the ionic conductor, e.g. humectant, hydratant or backfill

Anodic or cathodic protection specially adapted for a specific object

Immersed structures, e.g. submarine structures

Pipes