

# 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)

#### C23G CLEANING OR DEGREASING OF METALLIC MATERIAL BY CHEMICAL METHODS OTHER THAN ELECTROLYSIS ([polishing compositions C09G](#); [detergents in general C11D](#))

##### WARNING

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.

**1/00** Cleaning or pickling metallic material with solutions or molten salts ([with organic solvents C23G 5/02](#))

- 1/02 . with acid solutions
- 1/025 . . {acidic pickling pastes}
- 1/04 . . using inhibitors
- 1/06 . . . organic inhibitors

##### NOTE

In groups [C23G 1/061](#) - [C23G 1/068](#) an invention is classified in the last appropriate place

- 1/061 . . . . {nitrogen-containing compounds}
- 1/063 . . . . {heterocyclic compounds}
- 1/065 . . . . {sulfur-containing compounds}
- 1/066 . . . . {phosphorus-containing compounds}
- 1/068 . . . . {compounds containing a C=C bond}
- 1/08 . . Iron or steel

##### NOTE

In groups [C23G 1/081](#) - [C23G 1/088](#) an invention is classified in the last appropriate place

- 1/081 . . . {solutions containing H<sub>2</sub>SO<sub>4</sub>}
- 1/083 . . . {solutions containing H<sub>3</sub>PO<sub>4</sub>}
- 1/085 . . . {solutions containing HNO<sub>3</sub>}
- 1/086 . . . {solutions containing HF}
- 1/088 . . . {solutions containing organic acids}
- 1/10 . . Other heavy metals
- 1/103 . . . {copper or alloys of copper}
- 1/106 . . . {refractory metals}
- 1/12 . . Light metals
- 1/125 . . . {aluminium}
- 1/14 . with alkaline solutions

- 1/16 . . using inhibitors
- 1/18 . . . Organic inhibitors
- 1/19 . . Iron or steel
- 1/20 . . Other heavy metals
- 1/205 . . . {refractory metals}
- 1/22 . . Light metals
- 1/24 . with neutral solutions
- 1/26 . . using inhibitors
- 1/28 . with molten salts
- 1/30 . . using inhibitors
- 1/32 . . Heavy metals
- 1/34 . . Light metals
- 1/36 . Regeneration of waste pickling liquors

**3/00** Apparatus for cleaning or pickling metallic material ([with organic solvents C23G 5/04](#) ; [apparatus for continuously conveying articles into baths B65G](#))

- 3/02 . for cleaning wires, strips, filaments continuously
- 3/021 . . {by dipping}
- 3/022 . . . {the objects following a helicoidal path}
- 3/023 . . {by spraying}
- 3/024 . . {by a combination of dipping and spraying}
- 3/025 . . {Details of the apparatus, e.g. linings or sealing means}
- 3/026 . . . {for guiding the objects}
- 3/027 . . {Associated apparatus, e.g. for pretreating or after-treating}
- 3/028 . . . {for thermal or mechanical pretreatment}
- 3/029 . . . {for removing the pickling fluid from the objects}
- 3/04 . for cleaning pipes

**5/00     Cleaning or de-greasing metallic material by other methods; Apparatus for cleaning or de-greasing metallic material with organic solvents**

**NOTE**

Mixtures of organic solvents are classified according to the major component

- 5/02     . using organic solvents
- 5/024    . . containing hydrocarbons
- 5/028    . . containing halogenated hydrocarbons
- 5/02803 . . . {containing fluorine}
- 5/02806 . . . {containing only chlorine as halogen atom}
- 5/02809 . . . {containing chlorine and fluorine}
- 5/02812 . . . . {Perhalogenated hydrocarbons}
- 5/02816 . . . . . {Ethanes}
- 5/02819 . . . . . {C<sub>2</sub>Cl<sub>3</sub>F<sub>3</sub>}
- 5/02822 . . . . . {C<sub>2</sub>Cl<sub>4</sub>F<sub>2</sub>}
- 5/02825 . . . . {containing hydrogen}
- 5/02829 . . . . . {Ethanes}
- 5/02832 . . . . . {C<sub>2</sub>H<sub>3</sub>Cl<sub>2</sub>F}
- 5/02835 . . . . . {C<sub>2</sub>H<sub>2</sub>Cl<sub>2</sub>F<sub>2</sub>}
- 5/02838 . . . . . {C<sub>2</sub>HCl<sub>2</sub>F<sub>3</sub>}
- 5/02841 . . . . . {Propanes}
- 5/02845 . . . . . {C<sub>3</sub>H<sub>3</sub>ClF<sub>4</sub>}
- 5/02848 . . . . . {C<sub>2</sub>H<sub>2</sub>Cl<sub>2</sub>F<sub>4</sub>}
- 5/02851 . . . . . {C<sub>2</sub>HCl<sub>2</sub>F<sub>5</sub>}
- 5/02854 . . . {characterised by the stabilising or corrosion inhibiting additives}
- 5/02858 . . . . {Hydrocarbons}
- 5/02861 . . . . {Oxygen-containing compounds}
- 5/02864 . . . . . {Alcohols}
- 5/02867 . . . . . {aliphatic}
- 5/0287    . . . . . {aromatic}
- 5/02874 . . . . . {Aldehydes or ketones}
- 5/02877 . . . . . {Ethers}
- 5/0288    . . . . . {Epoxy compounds}
- 5/02883 . . . . {Nitrogen-containing compounds}
- 5/02887 . . . . . {Nitro-compounds}
- 5/0289    . . . . . {N-heterocyclics}
- 5/02893 . . . . {Sulfur-containing compounds}
- 5/02896 . . . . {Phosphorus-containing compounds}
- 5/032    . . containing oxygen-containing compounds
- 5/036    . . . having also nitrogen
- 5/04     . . Apparatus
- 5/06     . using emulsions