CPC COOPERATIVE PATENT CLASSIFICATION

C CHEMISTRY; METALLURGY

(CONES omitted)

CHEMISTRY

C10 PETROLEUM, GAS OR COKE INDUSTRIES; TECHNICAL GASES CONTAINING CARBON MONOXIDE; FUELS; LUBRICANTS; PEAT

C10G CRACKING HYDROCARBON OILS; PRODUCTION OF LIQUID HYDROCARBON MIXTURES, e.g. BY DESTRUCTIVE HYDROGENATION, OLGOMERISATION, POLYMERISATION (cracking to hydrogen or synthesis gas C01B; cracking or pyrolysis of hydrocarbon gases to individual hydrocarbons or mixtures thereof of definite or specific constitution C07C; cracking to cokes C10B; RECOVERY OF HYDROCARBON OILS FROM OIL-SHALE, OIL-SAND, OR INASES; REFINING MIXTURES MAINLY CONSISTING OF HYDROCARBONS; REFORMING OF NAPHTHA; MINERAL WAXES (inhibiting corrosion or incrustation in general C23F)

NOTES

1. In this subclass,
   • groups C10G 9/00 - C10G 49/00 are limited to one-step processes;
   • combined or multi-step processes are covered by groups C10G 51/00 - C10G 69/00;
   • refining or recovery of mineral waxes is covered by group C10G 73/00

2. In this subclass, the following terms or expressions are used with the meanings indicated:
   • “in the presence of hydrogen” or “in the absence of hydrogen” mean treatments in which hydrogen, in free form or as hydrogen generating compounds, is added, or not added, respectively;
   • “hydrotreatment” is used for conversion processes as defined in group C10G 45/00 or group C10G 47/00;
   • “hydrocarbon oils” covers mixtures of hydrocarbons such as tar oils or mineral oils.

3. In this subclass, in the absence of an indication to the contrary, classification is made in the last appropriate place.

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:
   C10G 73/23 covered by C10G 73/06

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.

1/00 Production of liquid hydrocarbon mixtures from oil-shale, oil-sand, or non-melting solid carbonaceous or similar materials, e.g. wood, coal (mechanical winning of oil from oil-shales, oil-sand, or the like B03B)

1/002 . . [in combination with oil conversion- or refining processes]
1/004 . . [Inhibiting of corrosion]
1/006 . . [Combinations of processes provided in groups C10G 1/02 - C10G 1/08]
1/008 . . [Controlling or regulating of liquefaction processes (controlling or regulation in general G05)]
1/02 . . by distillation (destructive distillation of oil-shale C10B 53/06)
1/04 . . by extraction
1/042 . . . [by the use of hydrogen-donor solvents]
1/045 . . . [Separation of insoluble materials]
1/047 . . . [Hot water or cold water extraction processes]
1/06 . . by destructive hydrogenation
1/065 . . . [in the presence of a solvent]
1/08 . . with moving catalysts
1/083 . . . [in the presence of a solvent]
1/086 . . . [Characterised by the catalyst used]
1/10 . . . from rubber or rubber waste
2/00 Production of liquid hydrocarbon mixtures of undefined composition from oxides of carbon

2/30 . . . [from carbon monoxide with hydrogen]
2/31 . . . [thermal, non catalytic conversion]
2/32 . . . [with the use of catalysts]
2/33 . . . [characterised by the catalyst used]
2/331 . . . . [containing group VIII-metals]
2/332 . . . . . [of the iron-group]
2/333 . . . . . [of the platinum-group]
2/334 . . . . . [containing molecular sieve catalysts]
2/34 . . . . [Apparatus, reactors]
2/341 . . . . . [with stationary catalyst bed]
2/342 . . . . . [with moving solid catalysts]
2/343 . . . . . [according to the "moving-bed" method]
Distillation of hydrocarbon oils (distillation in general B01D)

Distillation of lubricating oils

[Energy recovery from regenerator effluent gases (using steam turbines, see F01K 23/006d; using gas turbines, see F01K 25/14; the combined use of gas and steam turbines, see F01K 3/185)]

[Energy recovery from regenerator effluent gases (using steam turbines, see F01K 23/006d; using gas turbines, see F01K 25/14; the combined use of gas and steam turbines, see F01K 3/185)]

Cracking in the absence of hydrogen

Thermal non-catalytic cracking, in the absence of hydrogen, of hydrocarbon oils

Cooling of cracked gases

Coking (in order to produce liquid products mainly)

[Visbreaking]

in retorts

Removing incrustation

in pipes or coils with or without auxiliary means, e.g. digesters, soaking drums, expansion means

Preventing or removing incrustation

Apparatus

Tube furnaces

[chemical composition of the tubes]

[controlling or regulating the tube furnaces]

by heating with electrical means

with discontinuously preheated non-moving solid material, e.g. blast and run

with preheated moving solid material

according to the "moving bed" method

according to the "fluidised-bed" technique

by direct contact with inert preheated fluids, e.g. with molten metals or salts

with heated gases or vapours

produced by partial combustion of the material to be cracked or by combustion of another hydrocarbon

by indirect contact with preheated fluid other than hot combustion gases

by passing the material to be cracked in thin streams or as spray on or near continuously heated surfaces

Catalytic cracking, in the absence of hydrogen, of hydrocarbon oils (cracking in direct contact with molten metals or salts C10G 9/24)

characterised by the catalyst used

Oxides

Crystalline alumino-silicates, e.g. molecular sieves

Sulphides

Halides

with stationary catalyst bed

with discontinuously preheated non-moving solid catalysts, e.g. blast and run

with preheated moving solid catalysts

according to the "moving bed" method

according to the "fluidised-bed" technique

[Regeneration]

[Controlling or regulating (controlling or regulating in general G05)]

by direct contact with inert heated gases or vapours

produced by partial combustion of the material to be cracked
### Refining in the absence of hydrogen

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>15/00</td>
<td>Cracking of hydrocarbon oils by electric means, electromagnetic or mechanical vibrations, by particle radiation or with gases superheated in electric arcs</td>
</tr>
<tr>
<td>15/08</td>
<td>by electric means or by electromagnetic or mechanical vibrations</td>
</tr>
<tr>
<td>15/10</td>
<td>by particle radiation</td>
</tr>
<tr>
<td>15/12</td>
<td>with gases superheated in an electric arc, e.g. plasma</td>
</tr>
</tbody>
</table>

### Refining of hydrocarbon oils in the absence of hydrogen

- **17/00** Refining of hydrocarbon oils in the absence of hydrogen, with acids, acid-forming compounds or acid-containing liquids, e.g. acid sludge
  - 17/02 with acids or acid-containing liquids, e.g. acid sludge
  - 17/04 Liquid-liquid treatment forming two immiscible phases
  - 17/07 using halogen acids or oxyacids of halogen (acids generating halogen C10G 27/02)
  - 17/08 with acid-forming oxides (refining with CO₂ or SO₂ as a selective solvent C10G 21/06)
  - 17/085 with oleum
  - 17/09 with acid salts
  - 17/095 with "solid acids", e.g. phosphoric acid deposited on a carrier
  - 17/10 Recovery of used refining agents

- **19/00** Refining hydrocarbon oils in the absence of hydrogen, by alkaline treatment
  - 19/02 with aqueous alkaline solutions
  - 19/04 containing solubilisers, e.g. solutisers
  - 19/06 with plumbites or plumbates
  - 19/067 with molten alkaline material
  - 19/073 with solid alkaline material
  - 19/08 Recovery of used refining agents

- **21/00** Refining of hydrocarbon oils in the absence of hydrogen, by extraction with selective solvents (C10G 17/00, C10G 19/00 take precedence; dewaxing oils C10G 73/02)
  - 21/003 [Solvent de-asphalting]
  - 21/006 [of waste oils, e.g. PCB's containing oils]
  - 21/02 with two or more solvents, which are introduced or withdrawn separately
  - 21/04 by introducing simultaneously at least two immiscible solvents counter-current to each other
  - 21/06 characterised by the solvent used
  - 21/08 Inorganic compounds only
  - 21/10 Sulfur dioxide
  - 21/12 Organic compounds only
  - 21/14 Hydrocarbons
  - 21/16 Oxygen-containing compounds
  - 21/18 Halogen-containing compounds
  - 21/20 Nitrogen-containing compounds
  - 21/22 Compounds containing sulfur, selenium, or tellurium
  - 21/24 Phosphorus-containing compounds
  - 21/26 Silicon-containing compounds
  - 21/27 Organic compounds not provided for in a single one of groups C10G 21/14 - C10G 21/26
  - 21/28 Recovery of used solvent

### Refining of hydrocarbon oils in the absence of hydrogen, with solid sorbents

**NOTE**

When classifying in this group, classification is also made in group B01D 15/08 insofar as subject matter of general interest relating to chromatography is concerned.

- 25/003 [Specific sorbent material, not covered by C10G 25/02 or C10G 25/03]
- 25/006 [of waste oils, e.g. PCB's containing oils]
- 25/02 with ion-exchange material
- 25/03 with crystalline aluminosilicates, e.g. molecular sieves
- 25/05 Removal of non-hydrocarbon compounds, e.g. sulfur compounds
- 25/06 with moving sorbents or sorbents dispersed in the oil
- 25/08 according to the "moving bed" method
- 25/09 according to the "fluidised bed" technique
- 25/11 Distillation in the presence of moving sorbents
- 25/12 Recovery of used adsorbent

### Refining of hydrocarbon oils in the absence of hydrogen, by oxidation

- 27/02 with halogen or compounds generating halogen; Hypochlorous acid or salts thereof
- 27/04 with oxygen or compounds generating oxygen
- 27/06 in the presence of alkaline solutions
- 27/08 in the presence of copper chloride
- 27/10 in the presence of metal-containing organic complexes, e.g. chelates, or cationic ion-exchange resins
- 27/12 with oxygen-generating compounds, e.g. per-compounds, chronic acid, chromates (plumbites or plumbates C10G 19/06)
- 27/14 with ozone-containing gases

### Refining of hydrocarbon oils in the absence of hydrogen, with other chemicals

- 29/02 Non-metals
- 29/04 Metals, or metals deposited on a carrier
- 29/06 Metal salts, or metal salts deposited on a carrier
- 29/08 containing the metal in the lower valency
- 29/10 Sulfides
- 29/12 Halides
- 29/16 Metal oxides
- 29/20 Organic compounds not containing metal atoms
- 29/205 [by reaction with hydrocarbons added to the hydrocarbon oil]
- 29/22 containing oxygen as the only hetero atom
- 29/24 Aldehydes or ketones
- 29/26 Halogenated hydrocarbons
- 29/28 containing sulfur as the only hetero atom, e.g. mercaptans, or sulfur and oxygen as the only hetero atoms

### Refining of hydrocarbon oils in the absence of hydrogen, by methods not otherwise provided for

- 31/02 by heating, cooling, or pressure treatment
- 31/08 by treating with water
Refining in the absence of hydrogen

31/09 . by filtration
31/10 . with the aid of centrifugal force
31/11 . by dialysis

32/00 Refining of hydrocarbons oils by electric or magnetic means, by irradiation or by using microorganisms
32/02 . by electric or magnetic means
32/04 . by particle radiation

33/00 Dewatering or demulsification of hydrocarbon oils (by distillation C10G 7/04)
33/02 . with electrical or magnetic means
33/04 . with chemical means
33/06 . with mechanical means, e.g. by filtration
33/08 . Controlling or regulating (controlling or regulating in general G05)

35/00 Reforming naphtha

NOTE
By reforming is meant the treatment of naphtha, in order to improve the octane number or its aromatic content.

35/02 . Thermal reforming
35/04 . Catalytic reforming
35/06 . . characterised by the catalyst used
35/065 . . . [containing crystalline zeolitic molecular sieves, other than aluminosilicates]
35/085 . . . containing platinum group metals or compounds thereof
35/09 . . . Bimetallic catalysts in which at least one of the metals is a platinum group metal
35/095 . . . containing crystalline alumino-silicates, e.g. molecular sieves (C10G 35/065 takes precedence)
35/10 . . with moving catalysts
35/12 . . . according to the "moving-bed" method
35/14 . . . according to the "fluidised-bed" technique
35/16 . . with electric, electromagnetic, or mechanical vibrations; by particle radiation
35/22 . Starting-up reforming operations
35/24 . Controlling or regulating of reforming operations (controlling or regulating in general G05)

Hydrotreatment processes (reforming of naphtha C10G 35/00)

45/00 Refining of hydrocarbon oils using hydrogen or hydrogen-generating compounds

NOTE
Treatment of hydrocarbon oils in the presence of hydrogen-generating compounds not provided for in a single one of groups C10G 45/02, C10G 45/32, C10G 45/44 or C10G 45/58 is provided for in group C10G 49/00.

45/02 . to eliminate hetero atoms without changing the skeleton of the hydrocarbon involved and without cracking into lower boiling hydrocarbons; Hydrofinishing
45/04 . . characterised by the catalyst used
45/06 . . . containing nickel or cobalt metal, or compounds thereof
45/08 . . . in combination with chromium, molybdenum, or tungsten metals, or compounds thereof
45/10 . . . containing platinum group metals or compounds thereof
45/12 . . . containing crystalline alumino-silicates, e.g. molecular sieves
45/14 . . . with moving solid particles
45/16 . . . suspended in the oil, e.g. slurries
45/18 . . . according to the "moving-bed" technique
45/20 . . . according to the "fluidised-bed" technique
45/22 . . . with hydrogen dissolved or suspended in the oil
45/24 . . . with hydrogen-generating compounds
45/26 . . . Steam or water
45/28 . . Organic compounds; Autofining
45/30 . . . characterised by the catalyst used
45/32 . . Selective hydrogenation of the diolefin or acetylene compounds
45/34 . . characterised by the catalyst used
45/36 . . . containing nickel or cobalt metal, or compounds thereof
45/38 . . . in combination with chromium, molybdenum or tungsten metals, or compounds thereof
45/40 . . . containing platinum group metals or compounds thereof
45/42 . . . with moving solid particles
45/44 . . Hydrogenation of the aromatic hydrocarbons
45/46 . . . characterised by the catalyst used
45/48 . . . containing nickel or cobalt metal, or compounds thereof
45/50 . . . in combination with chromium, molybdenum or tungsten metal, or compounds thereof
45/52 . . . containing platinum group metals or compounds thereof
45/54 . . . containing crystalline alumino-silicates, e.g. molecular sieves
45/56 . . . with moving solid particles
45/58 . . . to change the structural skeleton of some of the hydrocarbon content without cracking the other hydrocarbons present, e.g. lowering pour point; Selective hydrocracking of normal paraffins (C10G 32/00 takes precedence; improving or increasing the octane number or aromatic content of naphtha C10G 35/00)
45/60 . . . characterised by the catalyst used
45/62 . . . containing platinum group metals or compounds thereof
45/64 . . . containing crystalline alumino-silicates, e.g. molecular sieves
45/66 . . . with moving solid particles
45/68 . . . Aromatisation of hydrocarbon oil fractions (of naphtha C10G 35/00)
45/70 . . . with catalysts containing platinum group metals or compounds thereof
45/72 . . Controlling or regulating (controlling or regulating in general G05)

47/00 Cracking of hydrocarbon oils in the presence of hydrogen or hydrogen generating compounds, to obtain lower boiling fractions, (C10G 15/00 takes precedence; destructive hydrogenation of non-melting solid carbonateous or similar materials C10G 1/06)
47/02 . characterised by the catalyst used
47/04 . . Oxides
Hydrotreatment processes

**Multi-step processes**

**NOTE**

Groups C10G 51/00 - C10G 69/00 cover only those combined treating operations where the interest is directed to the relationship between the steps.

51/00  
Treatment of hydrocarbon oils in the absence of hydrogen, by two or more cracking processes only

51/02  
. plural serial stages only

51/023  
. [only thermal cracking steps]

51/026  
. [only catalytic cracking steps]

51/04  
. including only thermal and catalytic cracking steps

51/06  
. plural parallel stages only

53/00  
Treatment of hydrocarbon oils in the absence of hydrogen, by two or more refining processes

53/02  
. plural serial stages only

53/04  
. including at least one extraction step

53/06  
. including only extraction steps, e.g. deasphalting by solvent treatment followed by extraction of aromatics (refining in one step with two or more solvents which are introduced or withdrawn separately C10G 21/02)

53/08  
. including at least one sorption step

53/10  
. including at least one acid-treatment step

53/12  
. including at least one alkaline treatment step

53/14  
. including at least one oxidation step

53/16  
. plural parallel stages only

55/00  
Treatment of hydrocarbon oils in the absence of hydrogen, by at least one refining process and at least one cracking process

55/02  
. plural serial stages only

55/04  
. including at least one thermal cracking step

55/06  
. including at least one catalytic cracking step

55/08  
. plural parallel stages only

57/00  
Treatment of hydrocarbon oils in the absence of the hydrogen, by at least one cracking process or refining process and at least one other conversion process

57/005  
. [with alkylation]

57/002  
. with polymerisation

59/00  
Treatment of naphtha by two or more reforming processes only or by at least one reforming process and at least one process which does not substantially change the boiling range of the naphtha

59/02  
. plural serial stages only

59/04  
. including at least one catalytic and at least one non-catalytic reforming step

59/06  
. plural parallel stages only

61/00  
Treatment of naphtha by at least one reforming process and at least one process of refining in the absence of hydrogen

61/02  
. plural serial stages only

61/04  
. the refining step being an extraction

61/06  
. the refining step being a sorption process

61/08  
. plural parallel stages only

61/10  
. processes also including other conversion steps
Multi-step processes

63/00 Treatment of naphtha by at least one reforming process and at least one other conversion process (C10G 59/00, C10G 61/00 take precedence)
   63/02 . plural serial stages only
   63/04 . including at least one cracking step
   63/06 . plural parallel stages only
   63/08 . including at least one cracking step

65/00 Treatment of hydrocarbon oils by two or more hydrotreatment processes only
   65/02 . plural serial stages only
   65/04 . including only refining steps
   65/06 . at least one step being a selective hydrogenation of the diolefins
   65/08 . at least one step being a hydrogenation of the aromatic hydrocarbons
   65/10 . including only cracking steps
   65/12 . including cracking steps and other hydrotreatment steps
   65/14 . plural parallel stages only
   65/16 . including only refining steps
   65/18 . including only cracking steps

67/00 Treatment of hydrocarbon oils by at least one hydrotreatment process and at least one process for refining in the absence of hydrogen only
   67/02 . plural serial stages only
   67/04 . including solvent extraction as the refining step in the absence of hydrogen
   67/06 . Extraction of unsaturated hydrocarbons
   67/08 . at least one step being a selective hydrogenation of the diolefins or acetylenes
   67/10 . including only cracking steps
   67/12 . including cracking steps and other hydrotreatment steps
   67/14 . plural parallel stages only
   67/16 . including only refining steps

69/00 Treatment of hydrocarbon oils by at least one hydrotreatment process and at least one other conversion process (C10G 67/00 takes precedence)
   69/02 . plural serial stages only
   69/04 . including at least one step of catalytic cracking in the absence of hydrogen
   69/06 . including at least one step of thermal cracking in the absence of hydrogen
   69/08 . including at least one reforming naphtha
   69/10 . hydrocracking of higher boiling fractions into naphtha and reforming the naphtha obtained
   69/12 . including at least one polymerisation or alkylation step
   69/13 . [alkylation]
   69/14 . [polymerisation, e.g. oligomerisation]
   69/16 . plural parallel stages only

70/00 Working-up undefined normally gaseous mixtures obtained by processes covered by groups C10G 9/00, C10G 11/00, C10G 15/00, C10G 47/00, C10G 51/00
   70/02 . by forming adducts or complexes
   70/04 . with solutions of copper salts
   70/06 . with the use of acids or sulfur oxides
   70/08 . with the use of organometallic compounds
   70/09 . by hydrogenation
   70/10 . by physical processes
   70/11 . by distillation
   70/12 . [with the use of auxiliary compounds]
   70/14 . [fracrational condensation]
   70/15 . [cryocrystallisation]
   70/16 . [using membranes, e.g. selective permeation]
   70/17 . [by adsorption, i.e. with the use of solids]
   70/18 . [by molecular sieve technique]
   70/19 . [by liquid-liquid extraction]
   70/20 . by gas-liquid contact

71/00 Treatment by methods not otherwise provided for of hydrocarbon oils or fatty oils for lubricating purposes (by Fischer-Tropsch C07C 1/00, lubricating compositions C10M)
   71/02 . Thickening by volatolising (chemical modification of drying oils by volatolising C09F 7/04)

73/00 Recovery or refining of mineral waxes, e.g. montan wax (compositions essentially based on waxes C08L 91/00)
   73/02 . Recovery of petroleum waxes from hydrocarbon oils; Dewaxing of hydrocarbon oils
   73/04 . with the use of filter aids
   73/06 . with the use of solvents
   73/08 . Organic compounds
   73/10 . Hydrocarbons
   73/12 . Oxygen-containing compounds
   73/14 . Halogen-containing compounds
   73/16 . Nitrogen-containing compounds
   73/10 . containing sulfur, selenium or tellurium
   73/14 . containing phosphorus
   73/16 . Mixtures or organic compounds
   73/20 . by formation of adducts
   73/22 . . by flotation
   73/24 . . by centrifugal force
   73/26 . . with electric means
   73/30 . . Methods of cooling during dewaxing
   73/32 . . Controlling or regulating (controlling or regulating in general C05)
Multi-step processes

73/36 . Recovery of petroleum waxes from other compositions containing oil in minor proportions, from concentrates or from residues; De-oiling, sweating

73/38 . Chemical modification of petroleum
73/40 . Physical treatment of waxes or modified waxes, e.g. granulation, dispersion, emulsion, irradiation
73/42 . Refining of petroleum waxes
73/44 . in the presence of hydrogen or hydrogen-generating compounds

75/00 Inhibiting corrosion or fouling in apparatus for treatment or conversion of hydrocarbon oils, in general (C10G 7/10, C10G 9/16 take precedence; protection of pipes against corrosion or incrustation F16L 58/00)

75/02 . by addition of corrosion inhibitors
75/04 . by addition of antifouling agents

99/00 Subject matter not provided for in other groups of this subclass

2300/00 Aspects relating to hydrocarbon processing covered by groups C10G 1000 - C10G 99/00
2300/10 . Feedstock materials
2300/1003 . Waste materials
2300/1007 . Used oils
2300/1011 . Biomass
2300/1014 . of vegetal origin
2300/1018 . of animal origin
2300/1022 . Fischer-Tropsch products
2300/1025 . Natural gas
2300/1029 . Gas hydrates
2300/1033 . Oil well production fluids
2300/1037 . Hydrocarbon fractions
2300/104 . Light gasoline having a boiling range of about 20 - 100 °C
2300/1044 . Heavy gasoline or naphtha having a boiling range of about 100 - 180 °C
2300/1048 . Middle distillates
2300/1051 . Kerosene having a boiling range of about 180 - 230 °C
2300/1055 . Diesel having a boiling range of about 230 - 330 °C
2300/1059 . Gasoil having a boiling range of about 330 - 427 °C
2300/1062 . Lubricating oils
2300/1066 . Special oils
2300/107 . Atmospheric residues having a boiling point of at least about 538 °C
2300/1074 . Vacuum distillates
2300/1077 . Vacuum residues
2300/1081 . Alkanes
2300/1085 . Solid paraffins
2300/1088 . Olefins
2300/1092 . C2-C4 olefins
2300/1096 . Aromatics or polyaromatics
2300/20 . Characteristics of the feedstock or the products
2300/201 . Impurities
2300/202 . Heteroatoms content, i.e. S, N, O, P
2300/203 . Naphthenic acids, TAN
2300/205 . Metal content

2300/206 . . . Asphaltenes
2300/207 . . . Acid gases, e.g. H₂S, COS, SO₂, HCN
2300/208 . . . Sediments, e.g. bottom sediment and water or BSW
2300/30 . . . Physical properties of feedstocks or products
2300/301 . . . Boiling range
2300/302 . . . Viscosity
2300/304 . . . Pour point, cloud point, cold flow properties
2300/305 . . . Octane number, e.g. motor octane number [MON], research octane number [RON]
2300/307 . . . Cetane number, cetane index
2300/308 . . . Gravity, density, e.g. API
2300/40 . . . Characteristics of the process deviating from typical ways of processing
2300/4006 . . . Temperature
2300/4012 . . . Pressure
2300/4018 . . . Spatial velocity, e.g. LHSV, WHSV
2300/4025 . . . Yield
2300/4031 . . . Start up or shut down operations
2300/4037 . . . In-situ processes
2300/4043 . . . Limiting CO₂ emissions
2300/405 . . . Limiting CO, NOx or SOx emissions
2300/4056 . . . Retrofitting operations
2300/4062 . . . Geographical aspects, e.g. different process units form a combination process at different geographical locations
2300/4068 . . . Moveable devices or units, e.g. on trucks, barges
2300/4075 . . . Limiting deterioration of equipment
2300/4081 . . . Recycling aspects
2300/4087 . . . Catalytic distillation
2300/4093 . . . Catalyst stripping
2300/42 . . . Hydrogen of special source or of special composition
2300/44 . . . Solvents
2300/70 . . . Catalyst aspects
2300/701 . . . Use of spent catalysts
2300/703 . . . Activation
2300/705 . . . Passivation
2300/706 . . . Catalytic metal recovery
2300/708 . . . Coking aspect, coke content and composition of deposits
2300/80 . . . Additives
2300/802 . . . Diluents
2300/805 . . . Water
2300/807 . . . Steam

2400/00 Products obtained by processes covered by groups C10G 9/00 - C10G 69/14
2400/02 . . . Gasoline
2400/04 . . . Diesel oil
2400/06 . . . Gasoil
2400/08 . . . Jet fuel
2400/10 . . . Lubricating oil
2400/12 . . . Electrical isolation oil
2400/14 . . . White oil, eating oil
2400/16 . . . Residues
2400/18 . . . Solvents
2400/20 . . . C2-C4 olefins
2400/22 . . . Higher olefins
2400/24 . . . Acetylene and homologues
2400/26 . . . Fuel gas
2400/28 . . . Propane and butane
2400/30 . Aromatics