C10L

FUELS NOT OTHERWISE PROVIDED FOR (fuels for generating pressure gas, e.g. for rockets C06D5/00; candles C11C; nuclear fuel G21C3/00); NATURAL GAS; SYNTHETIC NATURAL GAS OBTAINED BY PROCESSES NOT COVERED BY SUBCLASSES C10G, C10K; LIQUEFIED PETROLEUM GAS; ADDING MATERIALS TO FUELS OR FIRES TO REDUCE SMOKE OR UNDESIRABLE DEPOSITS OR TO FACILITATE SOOT REMOVAL; FIRELIGHTERS

Definition statement

This subclass/group covers:

Compositions which react chemically, usually with oxygen in air, to produce heat in controllable amounts or which are dispersed in air for explosive combustion in an engine or which produce light along with heat upon combustion, i.e. liquid carbonaceous fuels, gaseous fuels, natural gas, synthetic natural gas, liquefied petroleum gas, solid fuels and fuels produced by solidifying fuels

Treatment of fuels to improve their combustion

Use of additives to fuels or fires for particular purposes, e.g. for reducing smoke development, for minimising corrosion or incrustation, for facilitating soot removal or for improving the octane number or the low temperature properties of the fuel

Fire-lighters, i.e. easily-combustible compositions or shaped products which are designed to initiate the combustion of a larger body of fuel and methods or apparatus for their manufacture

References relevant to classification in this subclass

This subclass/group does not cover:

Explosives or thermic compositions, e.g. fuels for rocket engines intended for reaction with an oxidant other than air	C06B
Fuels for generating pressure gas, e.g. for airbags or for propulsion of rockets	C06D 5/00
Cracking hydrocarbon oils, production of liquid hydrocarbon mixtures, e.g. by destructive hydrogenation, oligomerisation or polymerisation, recovery of hydrocarbon oils from	C10G

oil-shale, oil-sand, or gases, refining mixtures mainly consisting of hydrocarbons and to reforming of naphta	
Mineral waxes	C10G
Production of producer gas, water-gas, synthesis gas from solid carbonaceous materials, or mixtures containing these gases or carburetting air or other gases	C10J
Purifying or modifying the chemical compositions of combustible gases containing carbon monoxide	C10K

Places in relation to which this subclass is residual:

Fuels for generating pressure gas, e.g. for rockets	C06D 5/00

Informative references

Attention is drawn to the following places, which may be of interest for search:

Synthesis gas produced by decomposition of gaseous or liquid organic compounds, e.g. hydrocarbons	C01B 3/22
Hydrocarbons per se	C07C
Cracking or pyrolysis of hydrocarbon gases to individual hydrocarbons or mixtures thereof of definite or specified constitution	C07C
Destructive distillation of carbonaceous materials for producing of gas, coke, tar, or similar materials	C10B
Lubricating compositions	C10M
Candles	C11C

Arrangements or devices for supplying additives to fuels in combustion engines	F02, F02M 25/00
Vessels for containing or storing compressed, liquefied or solidified gases	F17C
Liquefying gases or gaseous mixtures by pressure and cold treatment	F25J
Nuclear reactor fuels	G21C 3/00

Glossary of terms

In this subclass/group, the following terms (or expressions) are used with the meaning indicated:

Fire-lighter	Easily-combustible composition or shaped product which is designed to initiate the combustion of a larger body of fuel, e.g. briquettes mainly consisting of charcoal

C10L 1/00

Liquid carbonaceous fuels

Informative references

Attention is drawn to the following places, which may be of interest for search:

Preparation of liquid fuel to be fed to combustion apparatus	F23K 5/08

C10L 1/10

Liquid carbonaceous fuels containing additives

Definition statement

This subclass/group covers:

Liquid carbonaceous fuels containing additives, at least one additive being an

inorganic compound and at least one additive being an organic non-macromolecular or macromlecular compound.

Use of at least one inorganic compound and at least one organic non-macromolecular or macromolecular compound as additives in a liquid carbonaceous fuel

Most of the liquid carbonaceous fuels comprising an inorganic additive and an organic additive have been classified in C10L 1/10, the organic additive being macromolecular or not.

Relationship between large subject matter areas

The additive composition per se comprising the compound(s) can be classified in other subclasses, especially if the preparation, the chemical composition, the property, the function or the physical state of the additive composition are important per se independently of the use of the composition as additive in a liquid carbonaceous fuel.

The particular purpose(s) for which the additive is used in the fuel is classified in C10L 10/00.

References relevant to classification in this group

This subclass/group does not cover:

The components of the liquid carbonaceous fuels; Marking or making uninflammable per se	C10L 1/00-C10L 1/08
The fuels consisting of coal-oil suspensions or aqueous emulsions	C10L 1/32
Gaseous fuels and solid fuels	C10L 3/00-C10L 9/12
Fuels for generating pressure gas, e.g. for rockets	C06D 5/00
Candles	C11C
Nuclear fuel	G21C 3/00

Informative references

Attention is drawn to the following places, which may be of interest for search:

Attention is drawn among other to the following places, which may be of interest for search:

Emulsifying, dispersing agents	B01F 17/00
Colloidal materials or their solutions	B01J 13/00
Inorganic elements, compounds	C01
Explosive or thermic compositions	C06B
Means for generating smoke or mist; Gas-attack compositions; Generation of gas for blasting or propulsion	C06D
Acyclic or carbocyclic organic compounds	C07C
Heterocyclic compounds	C07D
Other organic compounds	C07F, C07G, C07H, C07J, C07K
Macromolecular compounds obtained by reactions only involving carbon-to-carbon unsaturated bonds	C08F, C08F 8/30, C08F 8/32
Macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds	C08G
Polysaccharides	C08B
Rubbers	C08C
Derivatives of natural macromolecular compounds	C08H
Use of inorganic or non-macromolecular organic substances as compounding ingredients	C08K
Compositions of macromolecular compounds	C08L
Lubricating compositions; use of chemical substances either alone or as lubricating ingredients in a lubricating composition	C10M

Producing, refining, or preserving fats, fatty substances, fatty oils or waxes	C11B
Fatty acids from fats, oils or waxes; fats, oils or fatty acids by chemical modification of fats, oils, or fatty acids obtained there from	C11C
Treatment of inorganic materials, other than fibrous filler, to enhance their pigmenting or filling properties	C09C
Catalysts	B01J 21/00 - B01J 31/4092
Additive compounds: combination of corresponding Indexing Codes	C10L 1/12- C10L 1/1291, C10L 1/16- C10L 1/308

Special rules of classification within this group

1. In groups C10L 1/12 to C10L 1/1291 and C10L 1/16 to C10L 1/308, in the absence of an indication to the contrary, a compound is always classified in the last appropriate place.

2. A metal salt or an ammonium salt of a compound is classified as that compound, e.g. a chromium sulfonate is classified as a sulfonate in group C10L 1/24 and not in group C10L 1/30. But a salt of a quaternary ammonium compound is classified in C10L 1/22A1.

3. In this group it is mandatory to add the Indexing Codes relating to individual additional components. The Indexing Codes are chosen from groups C10L 1/12 to C10L 1/308.

4. Mixtures of additives are classified in the corresponding main group, individual additives being indexed using the Indexing Code according to point 3.

C-Sets of Indexing Codes may be used:

4.a. For a well-defined polymer: A polymer of ethylene and alkylacrylate is classified in (M10L 1/18P1D1,C10L 1/1641), starting with the Indexing Code corresponding to the polymer last in the classification scheme.

4.b. For a well-defined composition: A composition comprising a polyethylene and a polyalkylacylate is classified in (C10L 1/1641,M10L 1/18P1D1); the Indexing Codes are in the same order as in the classification scheme.

4.c. A composition comprising a polyethylene and a polypropylene is

classified in (C10L 1/1641, C10L 2300/20).

5. When several alternatives for the same individual additive are mentioned, e.g. as a Markush-formula, classification may be done in the corresponding main group only, the alternatives being indexed using codes mentioned in point 3; the very relevant main alternatives may be separately classified in the corresponding groups.

Glossary of terms

In this subclass/group, the following terms (or expressions) are used with the meaning indicated:

In this group the following terms (or expressions) are used with the meaning indicated:

Polyether polymer	Macromolecular compounds obtained by reactions forming an ether link in themain chain of the macromolecule and comprising 4 or more monomers.
Hydrocarbon polymer or macromolecular compound	Hydrocarbyl group containing 30 or more carbon atoms
Additive	Any compound in the composition with a concentration of at most 2%, in volume or weight

C10L 1/103

[N: stabilisation of anti-knock agents]

Definition statement

This subclass/group covers:

Liquid carbonaceous fuels comprising an anti-knock additive stabilised by an other additive or compound; the deterioration with time of the anti-knock agent is prevented; the anti-knock agent may be maintained uniformly dispersed in the fuel.

The anti-knock additive and the other additive or compound can be both organic compounds. The fuel may contain no inorganic additive.

Use of a stabilised anti-knock agent as additive in a liquid carbonaceous fuel.

References relevant to classification in this group

This subclass/group does not cover:

Liquid carbonaceous fuels containing only organic compounds as additives	C10L 1/14, C10L 1/143
Liquid carbo naceous fuels containing additives, at least one being inorganic	C10L 1/10, C10L 1/106

Informative references

Attention is drawn to the following places, which may be of interest for search:

Anti-oxidant composition; Composition inhibiting chemical change	C09K 15/00
Treatment of inorganic materials, other than fibrous filler, to enhance their pigmenting or filling properties	C09C
Emulsifying or dispersing agents	B01F 17/00
Colloidal materials or their solutions	B01J 13/00
Use of pretreated ingredients	C08K 9/00

Glossary of terms

In this subclass/group, the following terms (or expressions) are used with the meaning indicated:

In this group the following terms (or expressions) are used with the meaning indicated:

Anti-knock agent	Octane improver, ignition improver in a gasoline fuel . The meaning of "anti-knock" can be broadened to ignition-improving agent for diesel fuels
Ignition-improving agent for diesel fuels	Cetane improver, ignition improver in diesel fuels
Stabilised	Showing oxidative resistance, maintained dispersed

C10L 1/106

[N: mixtures of inorganic compounds with organic macromolecular compounds]

Definition statement

This subclass/group covers:

- Liquid carbonaceous fuels containing at least one additive which is an inorganic compound and at least one additive which is an organic macromolecular compound.
- Use of at least one inorganic compound and at least one organic macromolecular compound as additives in a liquid carbonaceous fuel.

Relationship between large subject matter areas

Most of the liquid carbonaceous fuels comprising an inorganic additive and an organic additive have been classified in C10L 1/10, the organic additive being macromolecular or not.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Use of inorganic ingredients	C08K 3/00
Compositions of macromolecular compounds	C08L
Treatment of inorganic materials, other than fibrous filler, to enhance their pigmenting or filling properties	C09C

C10L 1/12

inorganic compounds

Definition statement

This subclass/group covers:

- Liquid carbonaceous fuels containing an additive which is an inorganic compound.
- Use of an inorganic compound as additive in a liquid carbonaceous fuel

Informative references

Attention is drawn to the following places, which may be of interest for search:

Catalysts	B01J 21/00 - B01J 29/00
Inorganic elements, compounds	C01
Lime; magnesia; slag; cements; artificial stones; ceramics; treatment of natural stones	C04B
Use of inorganic ingredients	C08K 3/00
Lubricating compositions characterised by the base material being an inorganic material	C10M 103/00
Lubricating compositions characterised by the additive being an inorganic material	C10M 125/00, C10M 173/00
Indexing Codes of the inorganic additives	C10L 1/12 - C10L 1/1291

C10L 1/14

Organic compounds

Definition statement

This subclass/group covers:

- Liquid carbonaceous fuels containing at least two organic non-macromolecular compounds as additives; the fuel does not comprise any specified inorganic additive nor any specified organic macromolecular additive.

- Use of at least two organic non-macromolecular compounds as additives in a liquid carbonaceous fuel; no mention of the use of a specified inorganic compound nor of the use of a specified organic macromolecular compound as additives in the fuel.

References relevant to classification in this group

This subclass/group does not cover:

Liquid carbonaceous fuels containing also an organic macromolecular additive	C10L 1/143

Informative references

Attention is drawn to the following places, which may be of interest for search:

Use of non-macromolecular organic ingredients	C08K 5/00 - C08K 13/00
Lubricating compositions characterised by the additive being a mixture of two or more organic non-macromolecular compounds	C10M 141/00

C10L 1/143

mixtures of organic macromolecular compounds with organic non-macromolecular compounds

Definition statement

This subclass/group covers:

- Liquid carbonaceous fuels comprising at least one organic macromolecular compound and at least one organic non-macromolecular compound as additives; the fuel does not comprise any specified inorganic additive.

- Use of at least one organic macromolecular compound and at least one organic non-macromolecular compound as additives in a liquid carbonaceous fuel; there is no mention of the use of any specified inorganic additive.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Use of non-macromolecular organic ingredients	C08K 5/00 - C08K 13/00
Compositions of macromolecular compounds	C08L
Lubricating compositions	C10M 161/00, C10M 167/00

characterised by the additive being a mixture of a macromolecular compound and a non macromolecular compound	

Special rules of classification within this group

The combination of the additives does not belong to a group lower than C10L 1/143 (special rule of classification 4 within C10L 1/10).

C10L 1/146

Macromolecular compounds according to different macromolecular groups, mixtures thereof

Definition statement

This subclass/group covers:

- Liquid carbonaceous fuels comprising at least two organic macromolecular compounds belonging to different macromolecular groups, as additives, or comprising an organic macromolecular compound according to different macromolecular groups, as additive; The fuel does not comprise any specified inorganic additive nor any specified organic non-macromolecular additive.

- Use of at least two organic macromolecular compounds belonging to different macromolecular groups or of an organic macromolecular compound according to different macromolecular groups, as additives in a liquid carbonaceous fuel; there is no mention of the use of any specified inorganic additive nor of the use of any specified organic non-macromolecular additive.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Compositions of macromolecular compounds	C08L
Lubricating compositions characterised by the additive being a mixture of two or more macromolecular compounds covered by more than one of the main groups	C10M 157/00

Special rules of classification within this group

The combination of the different macromolecular groups does not belong to a group lower than C10L 1/146 (special rule of classification 4 within C10L 1/10).

C10L 1/16

hydrocarbons

Definition statement

This subclass/group covers:

- Liquid carbonaceous fuels characterised by comprising an additive being an organic compound containing only C and H in its molecule.
- Use of an organic compound containing only C and H in its molecule as additive in a liquid carbonaceous fuel.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Hydrocarbons	C07C
Rubbers	C08C
Polymers of unsaturated hydrocarbons	C08F 10/00, C08F 12/00, C08F 36/00, C08F 38/00, C08F 110/00, C08F 112/00, C08F 136/00, C08F 138/00, C08F 210/00, C08F 212/00, C08F 236/00, C08F 238/00, C08F 240/00
Macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds	C08G
Use of organic ingredients	C08K 5/00
Hydrocarbon oils, mixtures obtained by different processes; mineral waxes	C10G
Liquid carbonaceous fuels essentially based on blends of hydrocarbons	C10L 1/04 - C10L 1/08
Lubricating compositions	C10M 101/00, C10M 105/00, C10M

characterised by the base material	107/00
Lubricating compositions characterised by the additive being a hydrocarbon,	C10M 127/00, C10M 143/00, C10M 159/00
Indexing Codes of the additives	C10L 1/16 - C10L 1/1691

C10L 1/18

Containing oxygen

Definition statement

This subclass/group covers:

- Liquid carbonaceous fuels characterised by comprising an additive being an organic compound containing only C, H and O in its molecule.
- Use of an organic compound containing only C, H and O in its molecule as additive in a liquid carbonaceous fuel.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Acyclic or carbocyclic compounds containing carbon and oxygen	C07C
Heterocyclic organic compounds having oxygen as hetero atoms	C07D 301/00 - C07D 325/00
Heterocyclic organic compounds	C07D
Sugars, steroids	C07H, C07J
Use of organic ingredients	C08K 5/00 - C08K 13/00
Macromolecular compounds	C08B, C08F, C08G
Animal or vegetable oils, fats, fatty substances, waxes, fatty acids	C11B, C11C
Liquid carbonaceous fuels essentially based on components consisting of carbon, hydrogen and oxygen only	C10L 1/02 - C10L 1/026

Lubricating compositions characterised by the base material	C10M 101/00, C10M 105/00, C10M 107/00
Lubricating composition characterised by the additive being an organic compound containing oxygen	C10M 129/00, C10M 143/00, C10M 145/00, C10M 159/00
Indexing Codes of the additives	C10L 1/18 - C10L 1/1817

C10L 1/20

containing halogen

Definition statement

This subclass/group covers:

- Liquid carbonaceous fuels characterised by comprising an additive being an organic compound containing an halogen in its molecule.
- Use of an organic compound containing an halogen in its molecule as additive in a liquid carbonaceous fuel.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Acyclic or carbocyclic organic compounds	C07C
Sugars, steroids	C07H, C07J
Heterocyclic organic compounds	C07D
Use of organic ingredients	C08K 5/00
Macromolecular compounds	C08F, C08G
Lubricating compositions characterised by the additive being an organic compound containing halogen	C10M 131/00, C10M 147/00
Lubricating compositions characterised by the base material	C10M 105/00, C10M 107/00

Indexing Codes of the additives	C10L 1/20 - C10L 1/209

C10L 1/22

containing nitrogen

Definition statement

This subclass/group covers:

- Liquid carbonaceous fuels characterised by comprising an additive being an organic compound containing nitrogen in its molecule.
- Use of an organic compound containing nitrogen in its molecule as additive in a liquid carbonaceous fuel.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Acyclic or carbocyclic organic compounds	C07C
Heterocyclic organic compounds	C07D
Sugars, steroids	C07H, C07J
Peptides	C07K
Use of organic ingredients	C08K 5/00
Macromolecular compounds	C08F, C08G
Glue, gelatine	C09H
Lubricating compositions characterised by the additive being an organic compound containing nitrogen	C10M 133/00, C10M 149/00, C10M 159/00
Lubricating compositions characterised by the base material	C10M 105/00, C10M 107/00
Indexing Codes of the additives	C10L 1/22 - C10L 1/221

Special rules of classification within this group

A salt of a quaternary ammonium compound is classified as the quaternary ammonium compound.

C10L 1/24

containing sulfur, selenium and/or tellurium

Definition statement

This subclass/group covers:

- Liquid carbonaceous fuels characterised by comprising an additive being an organic compound containing sulphur, selenium and/or tellurium in its molecule.
- Use of an organic compound containing sulphur, selenium and/or tellurium in its molecule as additive in a liquid carbonaceous fuel.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Acyclic or carbocyclic organic compounds	C07C
Heterocyclic organic compounds	C07D
Sugars, steroids	C07H, C07J
Use of organic ingredients	C08K 5/00
Macromolecular compounds	C08F, C08G
Lubricating compositions characterised by the additive being an organic compound containing sulphur, selenium and/or tellurium	C10M 135/00, C10M 151/00, C10M 159/00
Lubricating compositions characterised by the base material	C10M 105/00, C10M 107/00
Indexing Codes of the additives	C10L 1/24 - C10L 1/2493

C10L 1/26

containing phosphorus

Definition statement

This subclass/group covers:

- Liquid carbonaceous fuels characterised by comprising an additive being an organic compound containing phosphorus in its molecule.
- Use of an organic compound containing phosphorus in its molecule as additive in a liquid carbonaceous fuel.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Organic compounds containing phosphorus	C07F 9/00
Sugars	C07H
Use of organic ingredients	C08K 5/00
Macromolecular compounds	C08F, C08G
Lubricating compositions characterised by the additive being an organic compound containing phosphorus	C10M 137/00, C10M 153/00
Lubricating compositions characterised by the base material	C10M 105/00, C10M 107/00
Indexing Codes of the additives	C10L 1/26 - C10L 1/2691

Special rules of classification within this group

Amine salts of certain phosphorus-containing compounds are classified in C10L 1/2625 or C10L 1/2658.

C10L 1/28

containing silicon

Definition statement

This subclass/group covers:

- Liquid carbonaceous fuels characterised by comprising an additive being an organic compound containing silicon in its molecule.
- Use of an organic compound containing silicon in its molecule as additive in a liquid carbonaceous fuel.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Organic compounds containing silicon	C07F 7/00
Use of organic ingredients	C08K 5/00
Macromolecular compounds	C08F, C08G
Lubricating compositions characterised by the additive being an organic compound containing silicon	C10M 139/00, C10M 155/00
Lubricating compositions characterised by the base material	C10M 105/00, C10M 107/00
Indexing Codes of the additives	C10L 1/28, C10L 1/285

C10L 1/30

Compounds not mentioned before (complexes)

Definition statement

This subclass/group covers:

- Liquid carbonaceous fuels characterised by comprising an additive being an organic compound not mentioned before.
- Use of an organic compound not mentioned before as additive in a liquid carbonaceous fuel.

The additive is an organic compound which contains at least one element different from carbon, hydrogen, oxygen, halogens, nitrogen, sulphur, selenium, tellurium, phosphorus or silicon; the additive is for example an organic metal complex.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Organic compounds containing elements other than carbon, hydrogen, halogen, oxygen, nitrogen, sulfur, selenium, or tellurium	C07F
Use of organic ingredients	C08K 5/00
Macromolecular compounds	C08F, C08G
Lubricating compositions characterised by the additive being an organic compound containing atoms of elements not provided for before	C10M 139/00, C10M 155/00
Lubricating compositions characterised by the base material	C10M 105/00, C10M 107/00
Indexing Codes of the additives	C10L 1/30 - C10L 1/308

C10L 1/32

consisting of coal-oil suspensions or aqueous emulsions [N: or oil emulsions]

Definition statement

This subclass/group covers:

Fuel compositions which are a mixture of solid coal or biomass particles with a hydrophobic and/or hydrophilic phase.

References relevant to classification in this group

This subclass/group does not cover:

Emulsifying process	B01F 3/00
Emulsifying agents	B01F 17/00

C10L 1/322

[N: Coal-oil suspensions]

Definition statement

This subclass/group covers:

Solid coal particles in an oil phase to form an oily slurry.

C10L 1/324

[N: Dispersions containing coal, oil and water]

Definition statement

This subclass/group covers:

Slurries comprising solid coal and water (or another hydrophilic phase) and oil.

C10L 1/326

[N: Coal-water suspensions]

Definition statement

This subclass/group covers:

Solid coal particles in a water phase to form a slurry.

C10L 1/328

[N: Oil emulsions containing water or any other hydrophilic phase]

Definition statement

This subclass/group covers:

Fuel emulsion compositions and/or preparations therefore (clearly indicating fuel composition though) comprising a hydrophobic phase and a hydrophilic phase, usually comprising water but also including and/or a (short-chained) alcohol.

References relevant to classification in this group

This subclass/group does not cover:

Emulsifying process in general	B01F 3/00
Emulsifying agents	B01F 17/00

Special rules of classification within this group

The type of emulsion, if indicated, should be classified (w/o or o/w or w/o/w or bicontinuous) using the Indexing Code: C10L 2250/08 or subgroups.

C10L 3/00

Gaseous fuels; Natural gas; Synthetic natural gas obtained by processes not covered by subclass C10G, C10K; Liquefied petroleum gas

Definition statement

This subclass/group covers:

This main group covers:

Any gaseous hydrocarbonaceous fuel, which is not covered by a subgroup or has too little detail or too much of a deviating detail from the titles of subgroups to be included therein.

References relevant to classification in this group

This subclass/group does not cover:

Hydrogen	C01B 3/00
Rocket fuels (inorganic compounds mostly)	C06B
Production of rocket fuel	F02K

C10L 3/003

[N: Additives for gaseous fuels]

Definition statement

This subclass/group covers:

Gaseous fuel compositions comprising additives such as a marker, non detectable by senses, which could be to increase heat value or storage stability.

C10L 3/006

[N: detectable by the senses]

Definition statement

This subclass/group covers:

Adding colour or smell to a gas for recognition, or aesthetic reasons.

C10L 3/02

Compositions containing acetylene

Definition statement

This subclass/group covers:

Acetylene comprising gas fuel compositions which could be used e.g. for welding tools, mixed with other compounds to e.g. increase heat value or improve storage.

C10L 3/04

Absorbing composition, e.g. solvents

Definition statement

This subclass/group covers:

Additives used to improve storage of acetylene, e.g. as an absorbing mass in a container

Informative references

Attention is drawn to the following places, which may be of interest for search:

Storage containers for solvent containing fuels	F17C 11/00

C10L 3/06

Natural gas; Synthetic natural gas obtained by processes not covered by C10G, C10K3/02 or C10K3/04

Definition statement

This subclass/group covers:

Details of natural gas (NG), e.g. transport, storage, or alteration which is not considered working-up according to C10L 3/10 or production according to C10L 3/08, e.g. pipeline transport or hydrate formation or prevention.

References relevant to classification in this group

This subclass/group does not cover:

Cryogenic processes to separate or otherwise treat a gas, i.e. the gas to be treated is in (cold) liquid state	F25J

Informative references

Attention is drawn to the following places, which may be of interest for search:

Gas hydrates in well drilling compositions	C09K 8/00

C10L 3/08

Production of synthetic natural gas

Definition statement

This subclass/group covers:

Processes of synthetic gas, e.g. production of biogas through e.g. anaerobic digestion or by methanation from syngas.

References relevant to classification in this group

This subclass/group does not cover:

Methanation when the goal is not methane production, but purification of hydrogen	C01B 3/586
Gasification processes where methane may be a byproduct, or goes on to further use other than as a fuel	C10J

Informative references

Attention is drawn to the following places, which may be of interest for search:

Methane as such	C07C 1/00
Biological treatment of water	C02F 3/00

C10L 3/10

Working-up natural gas or synthetic natural gas

Definition statement

This subclass/group covers:

Further treatment of natural gas (no matter what the origin of the gas stream), not exhaust gases.

Relationship between large subject matter areas

With regard to overlap with F25J it is noted that when the NG treatment is done upstream of the liquefaction (LNG production) and whereby NG is treated still as a gas (or partly gas), it should be classified in this group.

References relevant to classification in this group

This subclass/group does not cover:

Cryogenic processes to separate or otherwise treat a gas, i.e. the gas to be treated is in (cold) liquid state	F25J

Informative references

Attention is drawn to the following places, which may be of interest for search:

Gas separation by adsorption/absorption	B01D 53/00

C10L 3/101

[N: Removal of contaminants]

Definition statement

This subclass/group covers:

removal of contaminants , e.g. unwanted heavy hydrocarbons.

C10L 3/102

[N: of acid contaminants]

Definition statement

This subclass/group covers:

Removal of acid compounds in general, other than S or CO2 or when no detail is given at all.

C10L 3/103

[N: Sulfur containing contaminants]

Definition statement

This subclass/group covers:

Removal of S-containing compounds in particular.

Special rules of classification within this group

When both S compounds and CO2 are removed from the gas stream, both symbols C10L 3/103 and C10L 3/104 should be given.

C10L 3/104

[N: Carbon dioxide]

Definition statement

This subclass/group covers:

Removal of CO2-containing compounds in particular.

Special rules of classification within this group

When both S compounds and CO2 are removed from the gas stream, both symbols C10L 3/103 and C10L 3/104 should be given.

C10L 3/105

[N: of nitrogen]

Definition statement

This subclass/group covers:

Denitrification of natural gas.

C10L 3/106

[N: of water]

Definition statement

This subclass/group covers:

Dehydration of natural gas.

Synonyms and Keywords

In patent documents the following words “desiccation “ and “dewatering” are often used as synonyms.

C10L 3/107

[N: Limiting or prohibiting hydrate formation]

Definition statement

This subclass/group covers:

Methods for removal or inhibition of gas hydrate formation.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Well drilling compositions	C09K 8/00

C10L 3/108

[N: Production of gas hydrates]

Definition statement

This subclass/group covers:

Methods to produce gas hydrates, e.g. for transport.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Well drilling compositions	C09K 8/00

C10L 3/12

Liquefied petroleum gas [N: (liquefying by pressure and cold treatment F25J)]

Definition statement

This subclass/group covers:

LPG compositions (mainly a composition comprising propane and butane), characteristics, production and/or upgrading.

References relevant to classification in this group

This subclass/group does not cover:

Cryogenic processes to separate or otherwise treat a gas, i.e. the gas to be treated is in (cold) liquid state	F25J

C10L 5/00

Solid fuels (produced by solidifying fluid fuels C10L7/00)

Definition statement

This subclass/group covers:

A solid matter which is of mineral origin, e.g. coal or non-mineral origin, e.g. wood and which is clearly usable as a fuel.

References relevant to classification in this group

This subclass/group does not cover:

Candles	C11C 5/00
Drying or working up peat	C10F 5/00
Solid fuels produced by solidifying fluid fuels, gel fuels	C10L 7/00

Informative references

Attention is drawn to the following places, which may be of interest for search:

Mixing solids	B29B
Briquetting presses	B30B 11/00
Preparation of lump or pulverant fuel	F23K 1/00

Fuel delivery or fuel directly delivered, to combustion apparatus	F02M 21/00

Special rules of classification within this group

In this group, in the absence of an indication to the contrary, a compound is classified in the last appropriate place.

C10L 5/02

[N: Solid fuels such as] briquettes consisting mainly of carbonaceous materials of mineral [N: or non-mineral] origin (peat briquettes C10F)

Definition statement

This subclass/group covers:

Briquettes or other solid shapes of carbonaceous material.

References relevant to classification in this group

This subclass/group does not cover:

Peat briquettes	C10F

C10L 5/04

Raw material [N: of mineral origin] to be used; Pretreatment thereof [N: (pretreatment of fuels of non-mineral origin C10L5/40)]

Definition statement

This subclass/group covers:

The type of mineral feed material is an object of the invention.

References relevant to classification in this group

This subclass/group does not cover:

Pretreatment of raw materials of non-mineral origin	C10L 5/40

Special rules of classification within this group

When a briquette comprises both mineral and non-mineral origin matter, it should be classified in both subgroups of mineral and non-mineral origin, i.e. C10L 5/04 and C10L 5/40 or lower, depending on the origin.

C10L 5/06

Methods of [N: shaping, e.g. pelletizing or] briquetting (mechanical part of pressing briquettes B30B11/00)

Definition statement

This subclass/group covers:

The method of forming the solid fuel, e.g. briquettes, pellets or logs, independently of the origin of the fuel.

References relevant to classification in this group

This subclass/group does not cover:

Moulding of materials in general, not for use as fuel	B27N
Mechanical part of pressing briquettes per se	B30B 11/00

Special rules of classification within this group

This group should be allocated in addition to the origin of the fuel, i.e. the material used, which has to be classified separately in C10L 5/02 or C10L 5/40 or subgroups.

C10L 5/08

without the aid of extraneous binders

Definition statement

This subclass/group covers:

Briquettes are formed and bound e.g. by the action of pressing itself or heat, but without addition of a binding agent.

References relevant to classification in this group

This subclass/group does not cover:

Peat briquettes	C10F

C10L 5/10

with the aid of binders, e.g. pretreated binders

Definition statement

This subclass/group covers:

Methods where the solid fuel composition includes a composition which functions to keep the briquette in shape. This is valid for compositions both of mineral origin or non-mineral origin, which feature is to be classified separately in C10L 5/02 or C10L 5/40, or subgroups.

C10L 5/105

[N: with a mixture of organic and inorganic binders]

Definition statement

This subclass/group covers:

Organic binders. mixed with inorganic binders

Glossary of terms

In this subclass/group, the following terms (or expressions) are used with the meaning indicated:

In this group, the following terms or expressions are used with the meaning indicated:

Organic binders	(Hydro)carbonaceous binders, i.e. comprising a hydrocarbon chain

C10L 5/12

with inorganic binders

Definition statement

This subclass/group covers:

An inorganic compound usually being an ionic compound added to the solid fuel to serve as a binder.

C10L 5/14

with organic binders

Definition statement

This subclass/group covers:

An organic compound could be any compound comprising at least partly a hydrocarbon structure, which is added to the solid fuel to serve as a binder. Either naturally occurring or a (side) product.

C10L 5/143

[N: with lignin-containing products]

Definition statement

This subclass/group covers:

Lignin binders mainly used in biomass fuels as it is itself derived from biomass (mainly wood).

C10L 5/146

[N: with wax, e.g. paraffin wax]

Definition statement

This subclass/group covers:

Binders comprising longer chain alkanes (paraffins) which are solid at room temperature, e.g. waxes.

C10L 5/16

with bituminous binders, e.g. tar, pitch

Definition statement

This subclass/group covers:

Binders with bituminous binders, e.g. tar, pitch or other heavy hydrocarbonaceous fractions used to bind the briquettes.

C10L 5/18

with naphthalene

Definition statement

This subclass/group covers:

binders comprising naphthalene,(molecular formula C10H8).

Synonyms and Keywords

In patent documents the following expressions/words are often used as synonyms:

Tar Camphor, White Tar, Moth Flakes, albocarbon, naphthaline, naphthalin or anti-moth

C10L 5/20

with sulfite lye

Definition statement

This subclass/group covers:

Organic binders comprising hydrogen sulfite.

C10L 5/22

Methods of applying the binder to the other compounding ingredients; Apparatus therefor

Definition statement

This subclass/group covers:

Details of the specific application of the binder to the fuel, either method or apparatus

C10L 5/24

Combating dust during [N: shaping or] briquetting; Safety devices against explosion

Definition statement

This subclass/group covers:

Dust combating either by a process step or alteration of briquetting process or by addition of a compound which reduces dust formation

C10L 5/26

After-treatment of the [N: shaped fuels, e.g.] briquettes

Definition statement

This subclass/group covers:

Any process steps applied after the briquetting to serve a particular purpose such as improving storage or transport stability.

C10L 5/28

Heating the [N: shaped fuels, e.g.] briquettes; Coking the binders

Definition statement

This subclass/group covers:

When heating is done after briquettes are formed in order to coke them and stabilize their structure.

C10L 5/30

Cooling the [N: shaped fuels, e.g.] briquettes

Definition statement

This subclass/group covers:

When cooling is done in a particular way which is an object of the invention, e.g. after a briquetting process from which the briquettes emerge at too high a temperature.

C10L 5/32

Coating

Definition statement

This subclass/group covers:

Cating of briquettes either superficially or including also impregnation with a certain compound.

C10L 5/34

Other details of the [N: shaped fuels, e.g.] briquettes

Definition statement

This subclass/group covers:

Any detail other than the shape or size of the briquette.

C10L 5/36

Shape

Definition statement

This subclass/group covers:

Shape or also including specific dimensions being part of the object of the invention.

Special rules of classification within this group

When size is merely mentioned as additional information in the application, Indexing Code should be assigned for size: C10L 2250/06.

C10L 5/361

[N: Briquettes]

Definition statement

This subclass/group covers:

Briquettes, e.g. such as used for barbecues.

C10L 5/363

[N: Pellets or granulates]

Definition statement

This subclass/group covers:

Pellets as produced by pelletizer.

C10L 5/365

[N: Logs]

Definition statement

This subclass/group covers:

Log-shaped fuel, e.g. to imitate actual wood logs.

C10L 5/366

[N: Powders]

Definition statement

This subclass/group covers:

Powdered fuel as the end product, which could be pulverised pellets or briquettes, to be used e.g. in powdered coal fuelled combustor.

C10L 5/368

[N: Shaped fuels bundled or contained in a bag or other container]

Definition statement

This subclass/group covers:

The bundling or collecting of individual pieces of fuel, e.g. logs or briquettes, by e.g. a rope around them or putting them in bags or any other type of container.

C10L 5/38

Briquettes consisting of different layers

Definition statement

This subclass/group covers:

The composition of the briquettes comprises several components and each of them is applied in a separate layer, e.g.details on layer thickness.

C10L 5/40

essentially based on materials of non-mineral origin

Definition statement

This subclass/group covers:

Any solid fuel which includes material of non-mineral origin.

References relevant to classification in this group

This subclass/group does not cover:

Candles	C11C 5/00

Special rules of classification within this group

When a briquette comprises both mineral and non-mineral origin matter, it should be classified in both subgroups of mineral and non-mineral origin, i.e. C10L 5/04 and C10L 5/40 or below, depending on the origin.

C10L 5/403

[N: on paper and paper waste]

Definition statement

This subclass/group covers:
Fuel produced from paper waste, e.g. pulp or black liquor.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Paper production	D21

C10L 5/406

[N: on plastic]

Definition statement

This subclass/group covers:
Solid fuel based at least partly on plastic (waste) material.

C10L 5/42

on animal substances or products obtained therefrom, [N: e.g. manure]

Definition statement

This subclass/group covers:
Meat or bone waste from a slaughterhouse.

Excrement or manure waste.

C10L 5/44

on vegetable substances

Definition statement

This subclass/group covers:
Biomass, as broadly defined as possible, but not including animal substances, usable as a fuel.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Fertilizers	C05F 5/00
Water treatment	C02F

Special rules of classification within this group

In case of combination of biomass and sewage/municipal waste covered by C10L 5/46, both symbols should be allocated.

If animal substances such as manure or bone waste are claimed as biomass, they should be classified in C10L 5/42.

C10L 5/442

[N: Wood or forestry waste]

Definition statement

This subclass/group covers:

Solid fuel based explicitly on wood or wood waste, i.e. a further limitation over biomass.

C10L 5/445

[N: Agricultural waste, e.g. corn crops, grass clippings, nut shells or oil pressing residues]

Definition statement

This subclass/group covers:

Solid fuel based on biomass comprising different agricultural waste other than wood.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Incinerators for field or garden waste	F23G 7/10

C10L 5/447

[N: Carbonized vegetable substances, e.g. charcoal, or produced by hydrothermal carbonization of biomass]

Definition statement

This subclass/group covers:

Solid fuels based on e.g. charcoal or other biomass which has been carbonised before treatment to solid fuel.

C10L 5/46

on sewage, house, or town refuse [N: (C10L5/403, C10L5/406 take precedence)]

Definition statement

This subclass/group covers:

House or town refuse, i.e. residential mixed wastes. Also includes pretreated house or townrefuse, which fraction is known as RDF (refuse derived fuel) or SRF (solid recovered fuel).

Relationship between large subject matter areas

Informative references

Attention is drawn to the following places, which may be of interest for search:

Fertilizers	C05F 5/00
Water treatment	C02F

C10L 5/48

on industrial residues and waste materials [N: (C10L5/403, C10L5/406 take precedence)]

Definition statement

This subclass/group covers:

Waste on industrial level.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Incinerators for field or garden waste	F23G 7/10

C10L 7/00

Fuels produced by solidifying fluid fuels

Definition statement

This subclass/group covers:
Gel or gellified fuels. Compositions or process of manufacture thereof.

References relevant to classification in this group

This subclass/group does not cover:

Candles	C11C 5/00

C10L 7/02

liquid fuels

Definition statement

This subclass/group covers:
Fuels when the fuel is solidified from a liquid fuel not based on an alcohol.

References relevant to classification in this main group

This subclass/group does not cover:

Lubricating compositions	C10M

C10L 7/04

alcohol

Definition statement

This subclass/group covers:
Fuels when the fuel is solidified from a liquid fuel based on an alcohol (of any chain).

C10L 8/00

Fuels not provided for in other groups of this subclass

Definition statement

This subclass/group covers:

Residual group for special applications which really cannot possibly be classified anywhere else.

C10L 9/00

Treating solid fuels to improve their combustion

Definition statement

This subclass/group covers:

Treatments of solid fuels after they have been formed, specifically to improve combustion in some way, e.g. heat value or contaminants in flue gas.

C10L 9/02

by chemical means

Definition statement

This subclass/group covers:

Means when chemicals are added and/or a chemical reaction is required to treat the solid fuel in order to improve combustion characteristics.

C10L 9/04

by hydrogenating

Definition statement

This subclass/group covers:

Methods of treating solid fuels by addition of hydrogenating compounds.

C10L 9/06

by oxidation

Definition statement

This subclass/group covers:

Methods of treating solid fuels by addition oxidising compounds.

C10L 9/08

by heat treatments, e.g. calcining

Definition statement

This subclass/group covers:

Treatments which consist mainly of heating the solid in order to improve its combustion characteristics.

C10L 9/083

[N: Torrefaction]

Definition statement

This subclass/group covers:

Torrefaction or bertinisation whereby the solid (waste) feed is treated around 150-350°C under low oxygen atmosphere to produce a more dense and valuable solid fuel product, e.g. low temperature- or pre-pyrolysis.

C10L 9/086

[N: Hydrothermal carbonization]

Definition statement

This subclass/group covers:

Hydrothermal carbonization, which can be defined as combined dehydration and decarboxylation of a fuel to raise its carbon content with the aim of achieving a higher calorific value. It is realized by applying elevated temperatures (180–220°C) to biomass in a suspension with water under saturated pressure for several hours.

C10L 9/10

by using additives

Definition statement

This subclass/group covers:

Treating solid fuels when any kind of additive is mixed with the solid to improve its combustion.

References relevant to classification in this group

This subclass/group does not cover:

Addition of additive during combustion or at entry of combustion/gasification/or other chamber	F02D 19/00, C10J

C10L 9/12

oxidation means, e.g. oxygen-generating compounds

Definition statement

This subclass/group covers:

Compounds that facilitate oxidation or generate oxygen at combustion.

C10L 10/00

Use of additives to fuels or fires for particular purposes (additives for liquid carbonaceous fuels characterised by their chemical nature C10L1/10 ; using binders for briquetting solid fuels C10L5/10 ; using additives to improve the combustion of solid fuels C10L9/10)

Definition statement

This subclass/group covers:

- Particular purposes for which additives or additive compositions to liquid, solid or gaseous fuels, mentioned in C10L 1/10, C10L 1/32, C10L 3/00, C10L 5/00, C10L 7/00, C10L 8/00, C10L 9/00 and their subgroups are used .

- Particular purposes for which additives or additive compositions are used in fires and inside the combustion processes.

Use of the additive for a specific purpose which is not one mentioned in one of the groups C10L 10/02 to C10L 10/18.

Use of the additive which is not a detergent or dispersant (C10L 10/18) to prevent, decrease or clean deposits (keep-clean, clean-up), antifouling additive.

Relationship between large subject matter areas

The mechanical aspects of the combustion conditions, places, apparatuses where the fire or combustion take place are classified, when relevant, in section F of the CPC; the mechanical aspects of cleaning combustion emissions, residues, deposits in the combustion apparatus, exhaust,

chimneys, are also classified, when relevant, in section F.

A combustion improver which decreases deposits from the combustion of a fuel containing it relatively to the deposits from the combustion of the same fuel but without the combustion improver, is classified in this group.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Anti-oxidant compositions; compositions inhibiting chemical change	C09K 15/00- C09K 15/34
Inhibiting fouling in apparatus for treatment or conversion of hydrocarbon oils by addition of antifouling agents	C10G 75/04
In lubricating oils, inhibition of oxidation, anti-oxidants, metal deactivation, antiseptic, biocidal, anti-foaming property	C10N 30/10 - C10N 30/18
Controlling engines characterised by use of non-fuel substances added to the combustible mixtures	F02D 19/00, F02D 41/0025
Engine-pertinent apparatus for adding non-fuel substances or small quantities of secondary fuel to combustion-air, main fuel, or fuel-air mixture	F02M 25/00
Cleaning of fuel-injection apparatus	F02M 65/007, F02M 65/008
Removal or treatment of combustion products or combustion residues; Flues	F23J 1/00, F23J 3/00, F23J 9/00, F23J 15/00
Compositions for treating boreholes or wells, compositions for preventing, limiting or eliminating depositions, e.g. for cleaning	C09K 8/52 - C09K 8/536
Purification; separation; stabilisation; use of additives	C07B 63/04
Cleaning of, preventing corrosion or	F02B 77/04

erosion in, or preventing unwanted deposits in, combustion engines	
Preserving fats, fatty substances, fatty oils by using additives, e.g. anti-oxidants	C11B 5/00- C11B 5/0092
Arrangement of devices for supplying chemicals to fire	F23J 7/00
Fuel containing the additive	C10L 1/10-C10L 1/308 and C10L 1/12-C10L 1/308, C10L 1/32, C10L 3/00 to C10L 9/00
Anti-static materials	C09K 3/16
Foam dispersion or prevention in liquids, by addition of chemical substances	B01D 19/04 - B01D 19/0495
Purification; Separation; Use of additives, e.g. for stabilisation	C07C 7/20

Special rules of classification within this group

When an additive or an additive composition are used for several purposes of interest, each purpose is classified in the corresponding group.

If the additive is added to the fuel, the fuel composition is classified in C10L 1/10-C10L 1/308, and/or eventually in C10L 1/32-C10L 1/328, C10L 3/00 to C10L 9/00.

Glossary of terms

In this subclass/group, the following terms (or expressions) are used with the meaning indicated:

Deposits	Sediments or sludges coming from deterioration of liquid fuels in a storage vessel, pipes or apparatuses; Also solid carbonaceous residues from fuel combustion, on the walls of the combustion enclosure or apparatuses.

Synonyms and Keywords

In patent documents the following expressions/words are often used as synonyms:

Deposits, slag, tar, soot, ash or clinker.

C10L 10/02

for reducing smoke development

Definition statement

This subclass/group covers:

- The use of the additive for reducing smoke development, reducing the emissions of pollutants from fuels, and pollutants from their combustion like nitrogen oxides (NOx), carbon monoxide (CO), carbon dioxide (CO2), sulfur oxides (SO2), hydrocarbons, soot, particulate, particles, other pollutants like dioxins.

- Also use of additive to reduce emissions of dust from coal, emissions of volatile organic hydrocarbons (VOC) from liquid fuels.

- Use of an additive to decrease the vapour tension, volatility of a fuel.

A combustion improver which decreases emissions from the combustion of a fuel containing it relatively to the emissions from the combustion of the same fuel but without the combustion improver, is classified in this group.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Chemical or biological purification of combustion gases, engine exhaust gases, smoke, fumes or flue gases	B01D 53/00
Arrangements or devices for treating smoke or fumes	F23J 15/00

C10L 10/04

for minimising corrosion or incrustation

Definition statement

This subclass/group covers:

- The use of the additive for reducing corrosion of, or incrustation on, walls in contact with the fuels, with fuel vapours, with the combustion process, or with combustion emissions; also corrosion inhibitor, rust inhibitor.

- Use of the additive to decrease the corrosive nature of a fuel, of deposits, emissions coming from a fuel or its combustion.

- Use of the additive to protect the walls in contact with a fuel, its vapours, its deposits, or its combustion products, against corrosion coming from these chemical entities.

References relevant to classification in this group

This subclass/group does not cover:

Use of the additive to prevent or clean deposits	C10L 10/00
Use of the additive to facilitate soot removal	C10L 10/06

Informative references

Attention is drawn to the following places, which may be of interest for search:

Compositions for in situ inhibition of corrosion in boreholes or wells	C09K 8/54
Inhibiting corrosion during distillation of hydrocarbon oils	C10G 7/10
Inhibiting corrosion in apparatus for treatment or conversion of hydrocarbon oils by addition of corrosion inhibitors	C10G 75/02
Thermal non-catalytic cracking, in the absence of hydrogen, of hydrocarbon oils: preventing or removing incrustation	C10G 9/12, C09G 16/00
In lubricating oils, inhibition of corrosion, e.g. anti-rust agents or anti-corrosives	C10N 30/12
Inhibiting corrosion of metallic	C23F 11/00

material	
Inhibiting incrustation in apparatus for heating liquid	C23F 14/00
Cleaning of, preventing corrosion or erosion in, or preventing unwanted deposits in, combustion engines	F02B 77/04

C10L 10/06

for facilitating soot removal

Definition statement

This subclass/group covers:

- The use of the additive for facilitating soot removal, for modifying the consistence, the state, the nature of the combustion deposits in such a way that this deposit is easier removed; the deposit can be on the walls of the combustion enclosure, on the walls of the emission exhaust, of the chimney.

- The use of an additive, of a catalytic additive, which is combined, when the fuel combustion takes place, with the combustion products and decreases the ignition temperature of the combustion deposits formed, thus these deposits can be easier burnt in an exhaust apparatus; or the catalytic fuel or combustion additive is used to replenish the catalyst of a catalytic exhaust apparatus burning soot, deposits formed in the exhaust apparatus.

References relevant to classification in this group

This subclass/group does not cover:

Use of the additive to prevent or clean deposits	C10L 10/00
Use of detergents or dispersants for decreasing, removing or preventing deposits	C10L 10/18

Informative references

Attention is drawn to the following places, which may be of interest for search:

Exhaust apparatus having means for treating exhaust, adding substances to exhaust	F01N 3/029, F01N 3/206, F01N 3/2066
Removing ash, clinker, or slag from combustion chambers; Removing solid residues from passages or chambers beyond the fire; preventing premature solidification of molten combustion residues	F23J 1/00, F23J 3/00, F23J 9/00

C10L 10/08

for improving lubricity; for reducing wear

Definition statement

This subclass/group covers:

- The use of the additive for improving the lubricity of the fuel, the lubricating power, the oily consistence of the fuel, for decreasing the wear, the friction of the fuel against the walls in its contact.
- Lubricity agent, anti-wear, friction inhibitor, lubricating agent or lubricant.

Relationship between large subject matter areas

A lubricating additive composition well described can be also classified in C10M.

References relevant to classification in this group

This subclass/group does not cover:

Lubricants used in combination with gasoline, for two cycle engines	C10M

Informative references

Attention is drawn to the following places, which may be of interest for search:

Animal or vegetable oils, fats, fatty substances or fatty acids	C11B, C11C
In lubricating oils, use of the additive	C10N 30/06

to improve oiliness, film-strength or anti-wear	

C10L 10/10

for improving the octane number

Definition statement

This subclass/group covers:

- The use of the additive for improving the octane number of a gasoline, of a fuel for a spark ignition internal combustion engine. Anti-knock agent.
- The use of the additive for improving the ignition properties of a gasoline, of a fuel for a spark ignition internal combustion engine.
- Use of an additive for improving the octane index of a gasoline.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Explosives, thermic compositions, detonating or priming devices, fuses, chemical lighters, pyrophoric compositions	C06B, C06C
Manufacture of firelighters	C10L 11/00
Engine-pertinent apparatus for adding anti-knock agents to combustion-air, main fuel or fuel-air mixture	F02M 25/14

Synonyms and Keywords

In patent documents the following abbreviations are often used:

RON	Research octane number
MON	Motor octane number

C10L 10/12

for improving the cetane number

Definition statement

This subclass/group covers:

- The use of the additive for improving the cetane number of a diesel fuel, of a fuel for a compression ignition internal combustion engine.
- The use of the additive for improving the ignition properties of a diesel fuel, of a fuel for a compression ignition internal combustion engine.
- Use of additive for improving the cetane index of a diesel fuel.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Explosives, thermic compositions, detonating or priming devices, fuses, chemical lighters or pyrophoric compositions	C06B, C06C
Manufacture of firelighters	C10L 11/00

Glossary of terms

In this subclass/group, the following terms (or expressions) are used with the meaning indicated:

CN	Cetane number

C10L 10/14

for improving low-temperature properties

Definition statement

This subclass/group covers:

- The use of the additive for improving low-temperature properties of fuels; cold flow improver; the use of the additive to improve the ability of the fuel to flow at low temperature, to decrease the temperature at which the fuel can flow, the temperature at which the fuel can pass through a filtration device, or the temperature at which wax can form a

cloudy appearance.

- The use of the additive to modify the wax crystals formed when the fuel temperature is decreased, decrease their sizes, change their shapes, to keep the crystals dispersed, to improve the filterability at low temperatures of the fuel; the use of the additive to prevent precipitation and sedimentation of the wax crystals at low temperatures in the fuel.

- The use of the additive to decrease the cloud point, the wax appearance temperature, and/or the cold filter plugging point of the fuel.

References relevant to classification in this group

This subclass/group does not cover:

Additives which are only pour-point depressants	C10L 10/16

Informative references

Attention is drawn to the following places, which may be of interest for search:

Compositions for treating boreholes or wells, compositions for preventing, limiting or eliminating organic depositions, e.g. paraffins or asphaltenes	C09K 8/524
Inhibiting fouling in apparatus for treatment or conversion of hydrocarbon oils by addition of antifouling agents	C10G 75/04
In lubricating oils, use of the additive to improve the pour-point, the viscosity index	C10N 30/02

Special rules of classification within this group

The use of an additive for improving several low-temperature properties of a fuel, among which properties is decreasing the pour-point of the fuel, is classified in C10L 10/14 and in C10L 10/16.

Synonyms and Keywords

In patent documents the following abbreviations are often used:

CFPP	Cold filter plugging point
CP	Cloud point
PP	Pour-point
WAT	Wax-appearance temperature

C10L 10/16

Pour-point depressants

Definition statement

This subclass/group covers:

- The use of the additive to decrease the pour-point of the fuel, to decrease the temperature at which the fuel flows.

Informative references

Attention is drawn to the following places, which may be of interest for search:

In lubricating oils, use of the additive to improve the pour-point	C10N 30/02

Special rules of classification within this group

When the use of the additive to decrease the pour-point of the fuel is mentioned in it, the document is classified in C10L 10/16; If the improvement of an other low-temperature property is mentioned in the document, it is also classified in C10L 10/14.

Synonyms and Keywords

In patent documents the following abbreviations are often used:

PP	Pour-point

C10L 10/18

use of detergents or dispersants for purposes not provided

for in groups C10L10/02-C10L10/16

Definition statement

This subclass/group covers:

- The use of the additive which is a detergent or a dispersant for purposes not provided for in groups C10L 10/00-16, for example for cleaning parts of the combustion apparatus or flues, exhaust pipes, for cleaning walls of vessels, pipes in contact with fuels.

Relationship between large subject matter areas

The detergent compositions per se, if relevant, can be classified in C11D.

References relevant to classification in this group

This subclass/group does not cover:

Use of additives for facilitating soot removal	C10L 10/06
Use of the additive to prevent or clean deposits	C10L 10/00

Informative references

Attention is drawn to the following places, which may be of interest for search:

Cleaning of, preventing corrosion or erosion in, or preventing unwanted deposits in, combustion engines	F02B 77/04
Methods for using cleaning compositions; special cleaning and washing methods for industrial or commercial equipment, e.g. engines	C11D 11/0041
In lubricating oils, use of detergent or dispersant additive	C10N 30/04
Inhibiting fouling in apparatus for treatment or conversion of hydrocarbon oils by addition of antifouling agents	C10G 75/04
Cleaning of fuel-injection apparatus	F02M 65/007, F02M 65/008

Compositions for treating boreholes or wells, compositions for preventing, limiting or eliminating depositions, e.g. for cleaning	C09K 8/52 - C09K 8/536
Removing ash, clinker, or slag from combustion chambers; Removing solid residues from passages or chambers beyond the fire	F23J 1/00, F23J 3/00

C10L 11/00

Manufacture of firelighters

Definition statement

This subclass/group covers:

Firelighter compositions, usually solid or gel/liquid.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Matches	C06F
Firelighters containing fuel, e.g. cigarette lighters	F23Q 2/00

C10L 11/02

based on refractory porous bodies

Definition statement

This subclass/group covers:

Firelighter which is fire resistant itself and does not or hardly burn along.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Firelighters containing fuel, e.g. cigarette lighters	F23Q 2/00

Matches	C06F

C10L 11/04

consisting of combustible material (matches C06F)

Definition statement

This subclass/group covers:

Compositions meant to start a fire and to burn along with it, e.g. barbecue lighters.

References relevant to classification in this group

This subclass/group does not cover:

Matches	C06F

Informative references

Attention is drawn to the following places, which may be of interest for search:

Firelighters containing fuel, e.g. cigarette lighters	F23Q 2/00
Matches	C06F

C10L 11/06

of a special shape

Definition statement

This subclass/group covers:

Firelighters when the shape of the firelighter is special, i.e. not common and one of the main objects of the invention.

Special rules of classification within this group

if shape or dimension is not the main object, but just additionally mentioned, this feature should not be classified here, but the Indexing Code should be used: C10L 2250/06.

C10L 11/08

Apparatus therefor

Definition statement

This subclass/group covers:
Apparatus for the production of firelighters and details thereof.