

# CPC COOPERATIVE PATENT CLASSIFICATION

## C CHEMISTRY; METALLURGY

(NOTES omitted)

### CHEMISTRY

#### C06 EXPLOSIVES; MATCHES

#### C06B EXPLOSIVES OR THERMIC COMPOSITIONS (blasting [F42D](#)); MANUFACTURE THEREOF; USE OF SINGLE SUBSTANCES AS EXPLOSIVES (compounds in general [C01](#), [C07](#) or [C08](#); {demolition agents based on cementitious or like materials [C04B 41/0009](#)})

##### NOTES

- This subclass covers:
  - compositions which are:
    - explosive: compositions included are those containing both a fuel and sufficient oxidiser so that, upon initiation, they are capable of undergoing a chemical change of a relatively high rate of speed, resulting in the production of usable force for blasting, firearms, propelling missiles, or the like;
    - thermic: compositions included have
      - a consumable fuel component which consists of any element which is a metal, B, Si, Se or Te, or mixtures, intercompounds, or hydrides thereof; and
      - in combination an oxidant component which is either a metal oxide or a salt (organic or inorganic) capable of yielding a metal oxide on decomposition;
    - fuels for rocket engines and intended for reaction with an oxidant, excluding air, in order to provide thrust for motive power purposes;
    - for use in affecting the explosion environment, e.g. for neutralising the poisonous gases of explosives, for cooling the explosion gases, or the like;
  - methods or apparatus for preparing or treating such compositions not otherwise provided for;
  - methods of using single substances as explosives.
- In this subclass, the following term is used with the meaning indicated:
  - "nitrated" covers compounds having a nitro group or a nitrate ester group.
- Methods or apparatus for preparing or treating such compositions are classified according to the particular components of the compositions.
- In this subclass, the words "based on", with reference to explosive compositions, refer to the explosive ingredient present in the largest proportion by weight
- In the absence of an indication to the contrary a composition is classified in the last place that provides for an ingredient

**21/00 Apparatus or methods for working-up explosives, e.g. forming, cutting, drying**

##### NOTE

In the absence of an indication to the contrary a process is classified in the last appropriate place, e.g. granulation by extrusion and chopping [C06B 21/0075](#)]

- 21/0008 . {Compounding the ingredient}
- 21/0016 . . {the ingredient being nitrocellulose or oranitro cellulose based propellant; Working up; gelatinising; stabilising (stabilising of explosives in general [C06B 21/0091](#))}
- 21/0025 . . {the ingredient being a polymer bonded explosive or thermic component}
- 21/0033 . {Shaping the mixture}
- 21/0041 . . {by compression}
- 21/005 . . {By a process involving melting at least part of the ingredients}
- 21/0058 . . {by casting a curable composition, e.g. of the plastisol type}
- 21/0066 . . {by granulation, e.g. flaking}

- 21/0075 . . {by extrusion}
- 21/0083 . {Treatment of solid structures, e.g. for coating or impregnating with a modifier (compositions therefor [C06B 23/00](#))}

- 21/0091 . {Elimination of undesirable or temporary components of an intermediate or finished product, e.g. making porous or low density products, purifying, stabilising, drying; Deactivating; Reclaiming; (porous inert particles or chemicals compounded for these purposes [C06B 23/00](#))}

**23/00 Compositions characterised by non-explosive or non-thermic constituents {(in combination with specific explosives [C06B 25/20](#), [C06B 25/26](#), [C06B 29/04](#), [C06B 29/08](#), [C06B 31/06](#), [C06B 31/40](#), [C06B 33/02](#))}**

- 23/001 . {Fillers, gelling and thickening agents (e.g. fibres), absorbents for nitroglycerine (binders, plasticisers for propellants [C06B 45/10](#); crosslinking or curing agents [C06B 45/10](#))}
- 23/002 . {Sensitisers or density reducing agents, foam stabilisers, crystal habit modifiers}

|              |  |              |   |
|--------------|--|--------------|---|
| 23/003       | . . {Porous or hollow inert particles (preparation C06B 21/0091)}  | 29/10        | . . . the component being a dye or a colouring agent  |
| 23/004       | . . {Chemical sensitisers}   | 29/12        | . . with carbon or sulfur   |
| 23/005       | . {Desensitisers, phlegmatisers (coolants for mining explosives C06B 23/04; deactivating C06B 21/0091)}  | 29/14        | . . with iodine or an iodide  |
| 23/006       | . {Stabilisers (e.g. thermal stabilisers) (processes C06B 21/0091; foam stabilisers C06B 23/002)}  | 29/16        | . . with a nitrated organic compound  |
| 23/007       | . {Ballistic modifiers, burning rate catalysts, burning rate depressing agents, e.g. for gas generating}   | 29/18        | . . . the compound being nitrated toluene or a nitrated phenol  |
| 23/008       | . {Tagging additives}  | 29/20        | . . . the compound being nitrocellulose   |
| 23/009       | . {Wetting agents, hydrophobing agents, dehydrating agents, antistatic additives, viscosity improvers, antiagglomerating agents, grinding agents and other additives for working up} | 29/22        | . the salt being ammonium perchlorate   |
| 23/02        | . for neutralising poisonous gases from explosives produced during blasting  | <b>31/00</b> | <b>Compositions containing an inorganic nitrogen-oxygen salt</b>  |
| 23/04        | . for cooling the explosion gases {including antifouling and flash suppressing agents}   | 31/02        | . the salt being an alkali metal or an alkaline earth metal nitrate   |
| <b>25/00</b> | <b>Compositions containing a nitrated organic compound</b>   | 31/04        | . . with carbon or sulfur   |
| 25/02        | . the nitrated compound being starch or sugar  | 31/06        | . . . with an organic non-explosive or an organic non-thermic component   |
| 25/04        | . the nitrated compound being an aromatic  | 31/08        | . . with a metal oxygen-halogen salt, e.g. inorganic chlorate, inorganic perchlorate  |
| 25/06        | . . with two or more nitrated aromatic compounds present   | 31/10        | . . . with carbon or sulfur   |
| 25/08        | . . . at least one of which is nitrated toluene  | 31/12        | . . with a nitrated organic compound  |
| 25/10        | . the compound being nitroglycerine  | 31/14        | . . . the compound being an aromatic  |
| 25/12        | . . with other nitrated organic compounds  | 31/16        | . . . . the compound being a nitrated toluene   |
| 25/14        | . . . the other compound being a nitrated aliphatic diol   | 31/18        | . . . . the compound being a nitrated phenol, e.g. picric acid  |
| 25/16        | . . . the other compound being a nitrated aromatic   | 31/20        | . . . the compound being nitroglycerine   |
| 25/18        | . the compound being nitrocellulose present as 10% or more by weight of the total composition  | 31/22        | . . . the compound being nitrocellulose   |
| 25/20        | . . with a non-explosive or a non-explosive or a non-thermic component   | 31/24        | . . . . with other explosive or thermic component   |
| 25/22        | . . with a nitrated aromatic compound  | 31/26        | . . . . the other component being nitroglycerine  |
| 25/24        | . . with nitroglycerine  | 31/28        | . the salt being ammonium nitrate   |
| 25/26        | . . . with an organic non-explosive or an organic non-thermic component  | 31/285       | . . {with fuel oil, e.g. ANFO-compositions}   |
| 25/28        | . the compound being nitrocellulose present as less than 10% by weight of the total composition  | 31/30        | . . with vegetable matter; with resin; with rubber  |
| 25/30        | . . with nitroglycerine  | 31/32        | . . with a nitrated organic compound  |
| 25/32        | . the compound being nitrated pentaerythritol  | 31/34        | . . . the nitrated compound being starch or sugar   |
| 25/34        | . the compound being a nitrated acyclic, alicyclic or heterocyclic amine   | 31/36        | . . . . with other explosive or thermic component   |
| 25/36        | . the compound being a nitroparaffin   | 31/38        | . . . the nitrated compound being an aromatic   |
| 25/38        | . . with other nitrated organic compound   | 31/40        | . . . . with an organic non-explosive or an organic non-thermic component   |
| 25/40        | . . with two or more nitroparaffins present  | 31/42        | . . . . with other explosive or thermic component   |
| <b>27/00</b> | <b>Compositions containing a metal, boron, silicon, selenium or tellurium or mixtures, intercompounds or hydrides thereof, and hydrocarbons or halogenated hydrocarbons</b>          | 31/44        | . . . the compound being nitroglycerine   |
| <b>29/00</b> | <b>Compositions containing an inorganic oxygen-halogen salt, e.g. chlorate, perchlorate</b>  | 31/46        | . . . . with a vegetable matter component, e.g. wood pulp, sawdust  |
| 29/02        | . of an alkali metal   | 31/48        | . . . . with other explosive or thermic component   |
| 29/04        | . . with an inorganic non-explosive or an inorganic non-thermic component  | 31/50        | . . . . the other component being a nitrated organic compound   |
| 29/06        | . . . the component being a cyanide; the component being an oxide of iron, chromium or manganese   | 31/52        | . . . the compound being nitrocellulose present as 10% or more by weight of the total composition   |
| 29/08        | . . with an organic non-explosive or an organic non-thermic component  | 31/54        | . . . . with other nitrated organic compound  |
|              |  | 31/56        | . . . the compound being nitrocellulose present as less than 10% by weight of the total composition   |
|              |  | <b>33/00</b> | <b>Compositions containing particulate metal, alloy, boron, silicon, selenium or tellurium with at least one oxygen supplying material which is either a metal oxide or a salt, organic or inorganic, capable of yielding a metal oxide</b> |
|              |  | 33/02        | . with an organic non-explosive or an organic non-thermic component   |
|              |  | 33/04        | . the material being an inorganic nitrogen-oxygen salt  |
|              |  | 33/06        | . the material being an inorganic oxygen-halogen salt   |
|              |  | 33/08        | . with a nitrated organic compound  |
|              |  | 33/10        | . . the compound being an aromatic  |

|              |   |              |   |
|--------------|---|--------------|---|
| 33/12        | the material being two or more oxygen-yielding compounds  | 45/28        | the component base containing nitrocellulose and nitroglycerine   |
| 33/14        | at least one being an inorganic nitrogen-oxygen salt  | 45/30        | the component base containing an inorganic explosive or an inorganic thermic component  |
| <b>35/00</b> | <b>Compositions containing a metal azide</b>  | 45/32        | the coating containing an organic compound  |
| <b>37/00</b> | <b>Compositions containing a metal fulminate</b>  | 45/34        | the compound being an organic explosive or an organic thermic component   |
| 37/02        | with a nitrated organic compound or an inorganic oxygen-halogen salt  | 45/36        | the component base containing both an organic explosive or thermic component and an inorganic explosive or thermic component  |
| <b>39/00</b> | <b>Compositions containing free phosphorus or a binary compound of phosphorus, except with oxygen</b>   | <b>47/00</b> | <b>Compositions in which the components are separately stored until the moment of burning or explosion, e.g. "Sprengel"-type explosives; Suspensions of solid component in a normally non-explosive liquid phase, including a thickened aqueous phase</b> |
| 39/02        | with an inorganic oxygen-halogen salt   |              | <b>NOTE</b>   |
| 39/04        | with a binary compound of phosphorus, except with oxygen  |              | {This group also covers emulsion type explosives in which a solid component is not compulsory}  |
| 39/06        | with free metal, alloy, boron, silicon, selenium or tellurium   |              |   |
| <b>41/00</b> | <b>Compositions containing a nitrated metallo-organic compound</b>  |              |   |
| 41/02        | the compound containing lead  | 47/02        | the components comprising a binary propellant   |
| 41/04        | with an organic explosive or an organic thermic component   | 47/04        | a component containing a nitrogen oxide or acid thereof   |
| 41/06        | with an inorganic explosive or an inorganic thermic component   | 47/06        | a component being a liquefied normally gaseous material supplying oxygen (C06B 47/04 takes precedence)  |
| 41/08        | with a metal azide or a metal fulminate   | 47/08        | a component containing hydrazine or a hydrazine derivative  |
| 41/10        | with other nitrated metallo-organic compound  | 47/10        | a component containing free boron, an organic borane or a binary compound of boron, except with oxygen  |
| <b>43/00</b> | <b>Compositions characterised by explosive or thermic constituents not provided for in groups C06B 25/00 - C06B 41/00</b>   | 47/12        | a component being a liquefied normally gaseous fuel   |
| <b>45/00</b> | <b>Compositions or products which are defined by structure or arrangement of component of product (explosive charges of particular form or shape F42B 1/00, F42B 3/00)</b>                      | 47/14        | comprising a solid component and an aqueous phase   |
| 45/02        | comprising particles of diverse size or shape   | 47/145       | {Water in oil emulsion type explosives in which a carbonaceous fuel forms the continuous phase}   |
| 45/04        | comprising solid particles dispersed in solid solution or matrix {not used for explosives where the matrix consists essentially of nitrated carbohydrates or a low molecular organic explosive} | <b>49/00</b> | <b>Use of single substances as explosives</b>   |
| 45/06        | the solid solution or matrix containing an organic component  |              |   |
| 45/08        | the dispersed solid containing an inorganic explosive or an inorganic thermic component   |              |   |
| 45/10        | the organic component containing a resin  |              |   |
| 45/105       | {The resin being a polymer bearing energetic groups or containing a soluble organic explosive}  |              |   |
| 45/12        | having contiguous layers or zones   |              |   |
| 45/14        | a layer or zone containing an inorganic explosive or an inorganic explosive or an inorganic thermic component   |              |   |
| 45/16        | the layer or zone containing at least one inorganic component from the group of azide, fulminate, phosphorus and phosphide  |              |   |
| 45/18        | comprising a coated component (particles dispersed in a matrix C06B 45/04; coated explosive charges F42B)   |              |   |
| 45/20        | the component base containing an organic explosive or an organic thermic component  |              |   |
| 45/22        | the coating containing an organic compound  |              |   |
| 45/24        | the compound being an organic explosive or an organic thermic component   |              |   |
| 45/26        | the compound being a nitrated toluene   |              |   |