

# 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

1. This subclass covers:
  - compositions which are:
    - a. 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;
    - b. thermic: compositions included have
      - i. 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
      - ii. 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;
    - c. fuels for rocket engines and intended for reaction with an oxidant, excluding air, in order to provide thrust for motive power purposes;
    - d. 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.
2. In this subclass, the following term is used with the meaning indicated:
  - "nitrated" covers compounds having a nitro group or a nitrate ester group.
3. Methods or apparatus for preparing or treating such compositions are classified according to the particular components of the compositions.
4. In this subclass, the words "based on", with reference to explosive compositions, refer to the explosive ingredient present in the largest proportion by weight
5. In the absence of an indication to the contrary a composition is classified in the last place that provides for an ingredient

##### WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

21/00	<b>Apparatus or methods for working-up explosives, e.g. forming, cutting, drying</b>	21/005	. . {By a process involving melting at least part of the ingredients}
	<b>NOTE</b>	21/0058	. . {by casting a curable composition, e.g. of the plastisol type}
	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 <a href="#">C06B 21/0075</a> ]	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 <a href="#">C06B 23/00</a> )}
			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 <a href="#">C06B 23/00</a> )}
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 <a href="#">C06B 21/0091</a> )}		
21/0025	. . {the ingredient being a polymer bonded explosive or thermic component}		
21/0033	. {Shaping the mixture}		
21/0041	. . {by compression}		

<b>23/00</b>	<b>Compositions characterised by non-explosive or non-thermic constituents {(in combination with specific explosives <a href="#">C06B 25/20</a>, <a href="#">C06B 25/26</a>, <a href="#">C06B 29/04</a>, <a href="#">C06B 29/08</a>, <a href="#">C06B 31/06</a>, <a href="#">C06B 31/40</a>, <a href="#">C06B 33/02</a>)}</b>	<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>
23/001	• {Fillers, gelling and thickening agents (e.g. fibres) , absorbents for nitroglycerine (binders, plasticisers for propellants <a href="#">C06B 45/10</a> ; crosslinking or curing agents <a href="#">C06B 45/10</a> )}	<b>29/00</b>	<b>Compositions containing an inorganic oxygen-halogen salt, e.g. chlorate, perchlorate</b>
23/002	• {Sensitisers or density reducing agents, foam stabilisers, crystal habit modifiers}	29/02	• of an alkali metal
23/003	• . {Porous or hollow inert particles (preparation <a href="#">C06B 21/0091</a> )}	29/04	• . with an inorganic non-explosive or an inorganic non-thermic component
23/004	• . {Chemical sensitisers}	29/06	• . . the component being a cyanide; the component being an oxide of iron, chromium or manganese
23/005	• {Desensitisers, phlegmatisers (coolants for mining explosives <a href="#">C06B 23/04</a> ; deactivating <a href="#">C06B 21/0091</a> )}	29/08	• . with an organic non-explosive or an organic non-thermic component
23/006	• {Stabilisers (e.g. thermal stabilisers) (processes <a href="#">C06B 21/0091</a> ; foam stabilisers <a href="#">C06B 23/002</a> )}	29/10	• . . the component being a dye or a colouring agent
23/007	• {Ballistic modifiers, burning rate catalysts, burning rate depressing agents, e.g. for gas generating}	29/12	• . with carbon or sulfur
23/008	• {Tagging additives}	29/14	• . with iodine or an iodide
23/009	• {Wetting agents, hydrophobing agents, dehydrating agents, antistatic additives, viscosity improvers, antiagglomerating agents, grinding agents and other additives for working up}	29/16	• . with a nitrated organic compound
23/02	• for neutralising poisonous gases from explosives produced during blasting	29/18	• . . the compound being nitrated toluene or a nitrated phenol
23/04	• for cooling the explosion gases {including antifouling and flash suppressing agents}	29/20	• . . the compound being nitrocellulose
		29/22	• the salt being ammonium perchlorate
<b>25/00</b>	<b>Compositions containing a nitrated organic compound</b>	<b>31/00</b>	<b>Compositions containing an inorganic nitrogen-oxygen salt</b>
25/02	• the nitrated compound being starch or sugar	31/02	• the salt being an alkali metal or an alkaline earth metal nitrate
25/04	• the nitrated compound being an aromatic	31/04	• . with carbon or sulfur
25/06	• . with two or more nitrated aromatic compounds present	31/06	• . . with an organic non-explosive or an organic non-thermic component
25/08	• . . at least one of which is nitrated toluene	31/08	• . with a metal oxygen-halogen salt, e.g. inorganic chlorate, inorganic perchlorate
25/10	• the compound being nitroglycerine	31/10	• . . with carbon or sulfur
25/12	• . with other nitrated organic compounds	31/12	• . with a nitrated organic compound
25/14	• . . the other compound being a nitrated aliphatic diol	31/14	• . . the compound being an aromatic
25/16	• . . the other compound being a nitrated aromatic	31/16	• . . . the compound being a nitrated toluene
25/18	• the compound being nitrocellulose present as 10% or more by weight of the total composition	31/18	• . . . the compound being a nitrated phenol, e.g. picric acid
25/20	• . with a non-explosive or a non-explosive or a non-thermic component	31/20	• . . the compound being nitroglycerine
25/22	• . with a nitrated aromatic compound	31/22	• . . the compound being nitrocellulose
25/24	• . with nitroglycerine	31/24	• . . . with other explosive or thermic component
25/26	• . . with an organic non-explosive or an organic non-thermic component	31/26	• . . . . the other component being nitroglycerine
25/28	• the compound being nitrocellulose present as less than 10% by weight of the total composition	31/28	• the salt being ammonium nitrate
25/30	• . with nitroglycerine	31/285	• . {with fuel oil, e.g. ANFO-compositions}
25/32	• the compound being nitrated pentaerythritol	31/30	• . with vegetable matter; with resin; with rubber
25/34	• the compound being a nitrated acyclic, alicyclic or heterocyclic amine	31/32	• . with a nitrated organic compound
25/36	• the compound being a nitroparaffin	31/34	• . . the nitrated compound being starch or sugar
25/38	• . with other nitrated organic compound	31/36	• . . . with other explosive or thermic component
25/40	• . with two or more nitroparaffins present	31/38	• . . the nitrated compound being an aromatic
		31/40	• . . . with an organic non-explosive or an organic non-thermic component
		31/42	• . . . . with other explosive or thermic component
		31/44	• . . the compound being nitroglycerine
		31/46	• . . . with a vegetable matter component, e.g. wood pulp, sawdust
		31/48	• . . . . with other explosive or thermic component
		31/50	• . . . . the other component being a nitrated organic compound
		31/52	• . . the compound being nitrocellulose present as 10% or more by weight of the total composition
		31/54	• . . . . with other nitrated organic compound

31/56	. . . the compound being nitrocellulose present as less than 10% by weight of the total composition	45/14	. . . a layer or zone containing an inorganic explosive or an inorganic explosive or an inorganic thermic component
<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>	45/16	. . . the layer or zone containing at least one inorganic component from the group of azide, fulminate, phosphorus and phosphide
33/02	. with an organic non-explosive or an organic non-thermic component	45/18	. comprising a coated component ( <a href="#">particles dispersed in a matrix C06B 45/04; coated explosive charges F42B</a> )
33/04	. the material being an inorganic nitrogen-oxygen salt	45/20	. . the component base containing an organic explosive or an organic thermic component
33/06	. the material being an inorganic oxygen-halogen salt	45/22	. . . the coating containing an organic compound
33/08	. with a nitrated organic compound	45/24	. . . . the compound being an organic explosive or an organic thermic component
33/10	. . the compound being an aromatic	45/26	. . . . . the compound being a nitrated toluene
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		
41/04	. . with an organic explosive or an organic thermic component	47/02	. the components comprising a binary propellant
41/06	. . . with an inorganic explosive or an inorganic thermic component	47/04	. . a component containing a nitrogen oxide or acid thereof
41/08	. . with a metal azide or a metal fulminate	47/06	. . a component being a liquefied normally gaseous material supplying oxygen ( <a href="#">C06B 47/04 takes precedence</a> )
41/10	. . with other nitrated metallo-organic compound	47/08	. . a component containing hydrazine or a hydrazine derivative
<b>43/00</b>	<b>Compositions characterised by explosive or thermic constituents not provided for in groups <a href="#">C06B 25/00</a> - <a href="#">C06B 41/00</a></b>	47/10	. . a component containing free boron, an organic borane or a binary compound of boron, except with oxygen
<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 <a href="#">F42B 1/00</a>, <a href="#">F42B 3/00</a>)</b>	47/12	. . a component being a liquefied normally gaseous fuel
45/02	. comprising particles of diverse size or shape	47/14	. comprising a solid component and an aqueous 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}	47/145	. . {Water in oil emulsion type explosives in which a carbonaceous fuel forms the continuous phase}
45/06	. . the solid solution or matrix containing an organic component	<b>49/00</b>	<b>Use of single substances as explosives</b>
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		