

CLASS 149, EXPLOSIVE AND THERMIC COMPOSITIONS OR CHARGES**SECTION I - CLASS DEFINITION**

This class includes:

(A) Compositions which are:

(1) Explosive; explosive compositions for the purpose of this class are those containing both a fuel and sufficient oxygen or an oxidizer so that, upon initiation, they are capable of undergoing a chemical change at a relatively high rate of speed, or a speed approaching instantaneous, resulting in the production of usable force through chemical change in the composition to produce gaseous products and usually heat, and are used for blasting, firearms, jet propulsion of rockets, vehicles, etc., rapidly filling automotive passenger-restraining gas-bags, etc. See Glossary, below.

(2) "Thermite"; "Thermite-type" compositions for the purpose of this class include; (a) a consumable fuel component which is any of metal (alloy and intermetallic compounds), metal-metalloid compounds, metalloids, and hydrides of metals or metalloids; (b) and in combination therewith an oxidant component which is either a metal oxide, inorganic oxygen salts and organic metal salts capable of yielding a metal oxide on decomposition, which components, depending upon the manner reacted, produce quantities of heat and chemical by-products, either solid or fluid which by-products may be recoverable. These compositions, by way of examples, are employed to produce usable heat and light, chemical products and especially metals, in pyrotechnics and incendiary, match compositions and smokes and for explosive priming or as additives for explosive compositions.

Included within this definition are unreacted mixtures of metals with metalloids because, though they contain no oxidant, they nevertheless react similarly to "Thermites" to yield usable heat. Also included are thermite compositions which contain an additive designed to prolong heating effects, reduce the production of gas or other by-products or otherwise moderate the exothermic activity of the composition.

(3) Fuel specialized for jet-rocket engine and intended for reaction with an oxidant therein, excluding air, in order to provide thrust for motive power purposes.

(4) For use in neutralizing the poisonous gases of explosives.

(B) Methods of preparing or treating such compositions not otherwise provided for. The classification of processes is based upon particular components of the explosive or thermic composition.

SECTION II - LINES WITH OTHER CLASSES AND WITHIN THIS CLASS

Compositions are in this class when defined as charges or forms which, in addition to the composition, set out nominal structure or shape of the charge or component thereof, unless the structure and/or size is such that there is imparted to the charge or component the capacity to function, as an individual unit to produce or alter a particular explosive or thermic effect, for which structure or form see Class 102. However, plural components associated as layered charges are in Class 149 if no particular structure and/or size of any of the layers is set forth.

Jet and rocket engine fuels are classified in this class when (a) the fuel component includes an oxidant component in sufficient quantity to provide the major portion of oxygen necessary for its combustion, or (b) when the fuels are specialized for jet and rocket use only and are contemplated to be combined with an oxidant other than air, except that included herein are those fuels which are known to be, or are disclosed as being, hypergolic even with air as the oxidant.

Conventional fuels, including those disclosed as being capable of use in turbo, ram or pulse jet power plants and which include such additives as anti-corrosion substances or ignition promoters, are in Class 44.

Compositions claimed as fuels and disclosed as being capable of functioning either with air or with other oxidants are classified in Class 44; see below with respect to the "Search" references involving Classes 44 and 75.

The rules for determining Class placement of the Original Reference (OR) for claimed chemical compositions are set forth in the Class Definition of Class 252 in the section LINES WITH OTHER CLASSES AND WITHIN THIS CLASS, subsection COMPOSITION CLASS SUPERIORITY, which includes a hierarchical ORDER OF SUPERIORITY FOR COMPOSITION CLASSES.

SECTION III - REFERENCES TO OTHER CLASSES

SEE OR SEARCH CLASS:

- 34, Drying and Gas or Vapor Contact With Solids, appropriate subclasses.
- 44, Fuel and Related Compositions, for fuels, composition for producing heat without flames or glowing, and certain products, e.g. matches, etc., which use the compositions of this class.
- 60, Power Plants, for rocket motors, especially subclasses 205+ for propulsion methods utilizing compositions of this class (149).
- 71, Chemistry: Fertilizers, appropriate subclasses for components of this class (149) used in fertilizer compositions.
- 75, Specialized Metallurgical Processes, Compositions for Use Therein, Consolidated Metal Powder Compositions, and Loose Metal Particulate Mixtures, subclass 27 for processes of producing metals utilizing thermite compositions.
- 102, Ammunition and Explosives, for ammunition and related devices utilizing the compositions of this class.
- 106, Compositions: Coating or Plastic, appropriate subclasses for coating compositions, per se, and particularly subclasses 139.1+, 162.7+, and 169.01+ and indented subclasses for pyroxylin containing compositions for additions to nitrocellulose other than for explosive purposes.
- 126, Stoves and Furnaces, subclasses 263.01+ for heaters utilizing compositions of this class for heat source.
- 131, Tobacco, subclass 185 for tobacco products utilizing composition of this class for igniting purposes.
- 228, Metal Fusion Bonding, subclass 56.3 for a single or plural layer metal article useful as filler material in a metal fusion bonding operation combined with a thermite segment; and, subclasses 227 and 234.3+ for a process of welding using chemical heating compositions.
- 241, Solid Material Comminution or Disintegration, appropriate subclasses, especially subclass 31, for processes and apparatus for comminuting explosive materials.
- 252, Compositions, subclass 70 for a composition which may release heat, due to a readily reversible chemical reaction, subclasses 186.1+ for compositions which contain substances for, or peculiar to, use in bleaching by oxidation, or in other oxidation of extraneous substances, or in generating oxygen, subclasses 188.1+ for compositions which contain substances for use in bleaching by chemical reduction, in deoxygenation, or in other chemical reductions of extraneous substances or in generating hydrogen, but having no disclosed Class 149 Utility.
- 260, Chemistry of Carbon Compounds, for organic explosive compounds and processes of producing or treating them.
- 264, Plastic and Nonmetallic Article Shaping or Treating: Processes, appropriate subclasses for processes within the class definition, for shaping and molding plastic compositions, in particular subclass 3.1 pertaining to shaping of explosives or propellants.
- 280, Land Vehicles, subclasses 728.1+ for airbag type passenger safety guard attachments.
- 327, Miscellaneous Active Electrical Nonlinear Devices, Circuits, and Systems, subclass 525 for a self-destructive composition in combination with a circuit board.
- 366, Agitating, for treating methods limited to agitation, and appropriate apparatus.
- 420, Alloys or Metallic Compositions, appropriate subclasses for alloys or metallic compositions, per se, which may be useful as a fuel in a composition of this class (149).
- 423, Chemistry of Inorganic Compounds, for inorganic compounds, per se, and processes for their production by a chemical reaction.
- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, appropriate subclasses for apparatus to shape or reshape plastic compositions.
- 428, Stock Material or Miscellaneous Articles, appropriate subclasses, for a stock material product in the form of a single or plural layer web or sheet which may be structurally defined, and not specifically provided for elsewhere.
- 431, Combustion, subclasses 357+ for an illuminating flash device burning a charge of thermic or explosive material.
- 516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 1+ for continuous gas or vapor phase colloid system (e.g., smoke, fog, aerosol, cloud, mist) or agents for such systems or making or stabilizing such systems or agents, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art, and when produced by reactions other than by combustion or "Thermite-type".

- 520, Synthetic Resins or Natural Rubbers, appropriate subclasses, particularly Class 523, subclass 180 for a composition containing a synthetic resin or natural rubber having utility as a binder in a solid propellant composition or to processes of preparing said composition.
- 588, Hazardous or Toxic Waste Destruction or Containment, subclass 403 for the destruction of explosives, propellants, and pyrotechnics.

SECTION IV - GLOSSARY

CHARGE

As used herein refers to a mixture of ingredients producing a composition of this class or a definite quantity of shapeless or structureless material forming a composition of this class; or at least two compounds or compositions or any mixtures of these associated together or composited but in an unmixed condition, e.g., a primary explosive associated but not intermixed with a secondary explosive, or those compositions including only nominal structure or form.

EXPLOSIVE OR THERMIC COMPONENT

As used in this class covers (1) explosive or thermic compositions, per se, (2) the oxidant portion, (3) the fuel portion of such compositions. See also (4) Note class definition.

EXPLOSIVE COMPOSITIONS

Are classified (a) as HIGH EXPLOSIVE, which, for the purpose of this class, is one whose rate of reaction is substantially instantaneous or detonating in character, and is either (1) an extremely sensitive or highly reactive or detonating chemical compound which is known as a PRIMARY EXPLOSIVE and is used to initiate the secondary or other explosive component of the charge; or (2) is a composition of a combination of two or more primary explosives and as such is known as a SECONDARY or other DERIVED EXPLOSIVE. Such an explosive reacts with detonating force or brisance which is sufficient to shatter the surrounding medium; (b) as LOW EXPLOSIVE, which for the purpose of this class, is controlled to some time interval, less than instantaneous, and as compared to that of high explosive, is slow or deflagrating (burning) in character. It has the property or power to displace the surrounding medium. Although it may be used for certain blasting purposes it is used principally as PROPELLANT to set in motion bullets, missiles or similar devices regardless of size.

FUEL COMPONENT:

For the purpose of this class is a material intended for reacting, or to be used in combination, with an oxidant component and includes such finely divided materials as metals (including alloys and intermetallic compounds), metalloids, metal-metalloid compounds, hydrides of metals or metalloids, carbon, sulfur, vegetable material, carbohydrates, hydrocarbons and nitrogen containing organic compounds generally. (Certain substances as gels, paraffins, sulfur, etc., need not be finely divided.)

GRAIN OR POWDER

In the armament arts refers to a charge exhibiting certain definite structural characteristics, but as used in this class the mere reference to "grain" or "powder" without recitation of definite structure, or with reference merely to nominal shape, will be construed as being virtually synonymous with the term "granule" and with finely divided "particulate" or "powdered" material.

MATRIX

As used in this class refers to a shapeless mass resulting by solidifying at least one component from either its liquid or molten state in more or less a continuous phase and wherein there is dispersed throughout at least a second component in particulate form and in substantially a discontinuous phase.

NITRATE V. NITRO

The term "nitrate" is generally used as a suffix in the name of an organic compound, e.g., an ester containing the $-ONO_2$ radical, e.g., guanidine nitrate, while "nitro" is generally used as a prefix to designate an organic compound having the $-NO_2$ radical, e.g. nitro-guanidine. The art, however has not maintained this distinction in all cases and thus compounds having the $-ONO_2$ radical which should be known, more properly, as "nitrates", instead, have been known through the years as "nitro" compounds. No attempt is made in this class to correct this situation and the terms as applied to these compounds in this class are the same as are currently accepted and used in this and related arts. For example, the nitrates of such compounds as cellulose, glycerine and starch, among others, are commonly known as "nitro-cellulose", "nitroglycerine" and "nitro-starch" respectively, and when they so appear in this class, the reference, in spite of the inconsistency, is to a compound of the $-NO_3$ radical or $-ONO_2$.

NITRATED

As used in this class, unless otherwise specified, is intended as a generic expression for compounds or substances both organic and inorganic which contain at least one of the empirical radical (s)-(ONO_x)_y or - (NO_x)_y, wherein “x” and “y” are whole numbers. Predominately, in this class “x” is 2 and “y”, where the compound permits, is 3 or more.

OXIDANT COMPONENT:

As used in this class relates to that portion of a composition which carries sufficient available oxygen to oxidize at least a substantial portion, if not all, of the fuel component of the composition, and includes metal oxides, and organic compounds capable of yielding metal oxide, nitrogen-oxygen or oxygen-halogen salts which are either organic or inorganic, including the oxides and acids of nitrogen-oxygen, liquefied gaseous material, and in the case of “Thermites” only, any inorganic oxygen salt.

THERMIC COMPONENT:

(See explosive component) is similar to an explosive component as defined above except that the component may not react quite with the speed or power of an explosive and includes such compositions or components thereof as “Thermite”, pyrotechnic, incendiary, fuse, match, smoke, or those compositions or components thereof which react or are capable of reacting to yield usable quantities of heat with or without desired chemical products.

SUBCLASSES**1 CONTAINING LIQUEFIED GASEOUS FUEL OR LIQUEFIED OXYGEN SUPPLYING MATERIAL:**

This subclass is indented under the class definition. Compositions or charges in which the oxidant and/or fuel component are in a liquefied state.

- (1) Note. These are materials that are normally gaseous, e.g., oxygen, air, ozone or certain hydrocarbons.
- (2) Note. The liquefied material may be contained as an impregnant of an absorbent substance usually carbonaceous in

nature, e.g., carbon, sawdust or other vegetable matter.

- (3) Note. For definition of “fuel” and “oxidant”, see the class definition Glossary and see Glossary also for definition of “charge”.

SEE OR SEARCH CLASS:

502, Catalyst, Solid Sorbent, or Support Therefor: Product or Process of Making, for a catalyst on a carrier which may include carbon and subclasses 400+ and 526 for a sorbent, per se, for liquified fuel or oxygen.

2 STRUCTURE OR ARRANGEMENT OF COMPONENT OR PRODUCT:

This subclass is indented under the class definition. Compositions or products which define (1) the particular shape or structure of at least one ingredient of the composition or product or the nominal shape and/or physical characteristic of the composition or product or nominal shape of the container therefor; (2) a solid-solid suspension, (a solid dispersed within a solidified matrix material); (3) a compacted or bonded mass of ingredients; (4) products wherein at least one ingredient of the composition or charge is coated; and (5) at least two separate contacting layers or bodies and in which each layer or body is composed of a different ingredient or ingredients each having different properties or different compositions. See Lines With Other Classes and Within This Class in the class definition.

- (1) Note. Designation of an ingredient or composition as granular or particulate is not considered as defining a particular shape or structure for this and indented subclasses. See Glossary under the class definition.
- (2) Note. A particular shape for this and indented subclasses is, for example, globular, needle, spherical, rectangular, sheet, cast body, pellet, etc. A physical characteristic is stating the particle size of an ingredient or the density of a composite. Defining the composite by differences in its internal and external density or defining the composite as “puffed” is considered “nominal” struc-

ture for this and indented subclasses. See Glossary under the class definition.

SEE OR SEARCH CLASS:

- 44, Fuel and Related Compositions, subclasses 506+ for a solid fuel combined with a composition of this class, subclasses 520+ and 530+ for a solid fuel product having a defined shape or structure and subclasses 542+ for a solid fuel composition coated or impregnated for easier ignition.
- 102, Ammunition and Explosives, appropriate subclasses, for the combination of an explosive charge or composition within a container the latter defined either structurally or by dimension; and subclasses 283+ for charges (grains) defined by particular shape or structure or dimension, e.g., grains or charge of a specified size or grains having specified web or perforations. See also “(2) Note”, of this subclass.
- 502, Catalyst, Solid Sorbent, or Support Therefor: Product or Process of Making, subclasses 527.11 through 527.24 for an art collection of sorbents or catalysts having particular shape or structure.
- 520, Synthetic Resins or Natural Rubbers, appropriate subclasses, particularly Class 523, subclass 180 for a composition containing a synthetic resin or natural rubber having utility as a binder in a solid propellant composition or to processes of preparing said composition.

3 Coated component:

This subclass is indented under subclass 2. Compositions or products in which at least two of the components are associated together such that one constitutes a coating and the other a base or support for the coating.

- (1) Note. This and indented subclasses take patents relating to coated explosive or thermic compositions or products and to components thereof under the definition of this class and to coating processes when intended to aid or otherwise beneficially modify the explosive or thermic properties of the material. The coating, per se, of nonexplosive or nonthermic

material or of explosive compounds for such purposes as preservation, or to render the material insensitive, is in the appropriate material class or coating class.

- (2) Note. The term “coating” as used in this and indented subclasses has the same scope as that found in the class definition of Class 427, Coating Processes, except that “impregnation” is not considered to be “coating” for these subclasses unless the patent makes it clear that the characteristics of only the surface of the material is modified. Generally, patents are not considered for this and indented subclasses which involve merely the addition of a liquid portion to an adsorbent portion or to a composition or product that contains or serves as an adsorbent.
- (3) Note. Patents for products or charges which are defined by composition and structure, even though the structure is only nominally recited are classified in Class 102, Ammunition and Explosives, when the overall charge or unit is claimed as being coated.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 17+, for products having a portion in the form of particles which are dispersed throughout a more or less continuous solidified or matrix portion.

SEE OR SEARCH CLASS:

- 86, Ammunition and Explosive-Charge Making, appropriate subclasses, for combined processes of explosive charge making which include a coating step.
- 102, Ammunition and Explosives, appropriate subclasses, and particularly subclasses 283+ for coated preshaped explosive charges, grains or units, and see “(3) Note” to this subclass, (of Class 149).
- 260, Chemistry of Carbon Compounds, its daughter Classes 530-570, and Class 585, Chemistry of Hydrocarbon Compounds, appropriate subclasses for organic compounds, including explosive compounds, when treated with a

- preservative unless the “preservative” is disclosed as further aiding the explosive or thermic properties of the compound.
- 423, Chemistry of Inorganic Compounds, subclass 274, for inorganic compounds coated with a preservative.
- 427, Coating Processes, for processes of coating in general.
- 4 Component base contains both organic and inorganic explosive or thermic constituents:**
This subclass is indented under subclass 3. Compositions or products in which the base (or support) contains both organic and inorganic explosive or thermic materials.
- (1) Note. For definition of “explosive or thermic materials”, see the class definition Glossary
- 5 Component base contains an inorganic explosive or inorganic thermic constituent:**
This subclass is indented under subclass 3. Compositions or products in which the base (or support) is an inorganic explosive or inorganic thermic compound or element.
- (1) Note. See “(1) Note” under the definition of subclass 4.
- 6 Coating contains organic compound:**
This subclass is indented under subclass 5. Compositions or products in which the coating is organic material.
- 7 Component base contains an inorganic explosive or inorganic thermic salt:**
This subclass is indented under subclass 6. Compositions or products in which the base (or support) is an inorganic explosive or inorganic thermic salt.
- 8 Coating contains organic explosive or thermic component:**
This subclass is indented under subclass 7. Compositions or products in which the coating is an organic explosive or organic thermic material.
- 9 Component base contains organic explosive or organic thermic constituent:**
This subclass is indented under subclass 3. Compositions or products in which the base or support is an organic explosive or organic thermic compound.
- (1) Note. See “(1) Note” under the definition of subclass 4.
- 10 Component base contains nitrocellulose and nitroglycerine:**
This subclass is indented under subclass 9. Compositions of products in which the base or support is a composition containing both nitrocellulose and nitroglycerine.
- (1) Note. See “(1) Note” under the definition of subclass 47.
- 11 Coating contains organic compound:**
This subclass is indented under subclass 9. Compositions or products in which the coating contains organic matter.
- 12 Coating contains organic explosive or organic thermic component:**
This subclass is indented under subclass 11. Compositions or products in which the coating contains an organic explosive or organic thermic compound.
- 13 Coating contains nitrated toluene:**
This subclass is indented under subclass 12. Compositions or products wherein the coating contains nitrotoluene.
- (1) Note. See “(1) Note” under the definition of subclass 47.
- 14 Contiguous layers or zones:**
This subclass is indented under subclass 2. Products which include at least two separate and distinct superimposed or contiguous layers or forms of different components or of components having different properties; e.g., one layer may constitute the base charge and a second layer the primer charge.
- (1) Note. The layers or forms may be in loose particulate form or in a solid or compacted form.

- (2) Note. The layers or forms must be in direct contact and must not be separated by space or other nonexplosive or non-thermic body.

SEE OR SEARCH CLASS:

- 102, Ammunition and Explosives, appropriate subclasses and particularly subclasses 200+, 320, 338, 352, 360, and 443, among others, for ammunition devices utilizing the subject matter of this and indented subclasses.
- 428, Stock Material or Miscellaneous Articles, appropriate subclasses, for a stock material product of general utility and in the form of a single or plural layer web or sheet.

15 Layer or zone contains an inorganic explosive or inorganic thermic component:

This subclass is indented under subclass 14. Composite charges wherein at least one of the layers of the composite contains an inorganic explosive or inorganic thermic material.

- (1) Note. See “(1) Note” under the definition of subclass 4.

16 Layer or zone contains at least one inorganic component from the group of azide, fulminate, phosphorus and phosphide:

This subclass is indented under subclass 15. Composite charges wherein at least one of the layers of the composite contains an inorganic azide and/or fulminate and/or phosphorus or binary compound of phosphorus (excluding oxides of phosphorus).

17 Solid particles dispersed in solid solution or matrix:

This subclass is indented under subclass 2. Product containing particulate material dispersed substantially entirely within a solidified or matrix medium and which products are characterized by dispersed phase within a continuous phase.

- (1) Note. See part “(2)” of the definition of subclass 2 and see also “(1)” Note”, f. of the class definition.
- (2) Note. The product for this and indented subclasses is usually obtained by (a)

forming a dispersion of particles (and maintaining them as such) in a liquid followed by solidifying the liquid to yield a homogeneous two phase mass or by melting at least one phase of a solid multiphase system followed by solidifying, e.g., freezing, setting, curing, solvent removal, etc., or (b) similarly forming a homogeneous two phase mass by mixing at least two liquids having different solidification temperatures, the first to solidify being formed into granules and dispersed in the last liquid to solidify the latter serving as the matrix and (c) milling or kneading a plastic, stiff paste or dough material containing a particulate material to form a two phase homogeneous mass. Excluded however, are those products or compositions wherein the “particulate material” is a filler, color, dye or similarly nonexplosive material. For the purpose of this and indented subclasses the presence of at least 10% of the matrix-phase material is arbitrarily considered to be a sufficient quantity to inherently form the matrix in continuous phase unless the patent specifically teaches to the contrary.

- (3) Note. Patents are not classified within this and indented subclasses which involve merely the addition of a liquid to particulate material where the latter serves as a carrier or adsorbent for the liquid (even though the liquid is said to be a binder) where such liquid is, for example, either fugitive, remains as liquid or evaporates leaving a solid particulate residue.

SEE OR SEARCH CLASS:

- 516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates) or agents for such systems or making or stabilizing such systems or agents, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

18 Continuous phase contains organic material:

This subclass is indented under subclass 17. Products, wherein the continuous phase contains an organic material.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates) or agents for such systems or making or stabilizing such systems or agents, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

19.1 Organic material contains polysaccharide resin or synthetic resin:

This subclass is indented under subclass 18. Products wherein the organic material is a synthetic resin or a polysaccharide resin or a derivative of a polysaccharide resin.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates) or agents for such systems or making or stabilizing such systems or agents, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

19.2 Including organometallic or organo (silicon/boron) compound:

This subclass is indented under subclass 19.1. Products in which the organic material comprises a metal or a silicon or a boron atom bonded directly to a carbon atom.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes

of Making, Stabilizing, Breaking, or Inhibiting, subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates) or agents for such systems or making or stabilizing such systems or agents, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

19.3 Resin contains fluorine, bromine or iodine:

This subclass is indented under subclass 19.1. Products comprising a resin containing fluorine, bromine, or iodine.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates) or agents for such systems or making or stabilizing such systems or agents, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

19.4 Polyurethane:

This subclass is indented under subclass 19.1. Products wherein the backbone chain of the resin contains a recurring group of the urethane linkage

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates) or agents for such systems or making or stabilizing such systems or agents, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

19.5 Polyester:

This subclass is indented under subclass 19.1. Products wherein the resin is formed by a reaction between a polyhydric alcohol and a polybasic carboxylic acid or anhydride to yield what is commonly known as a polyester.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates) or agents for such systems or making or stabilizing such systems or agents, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

19.6 Resin contains oxirane groups or interunit ether linkages:

This subclass is indented under subclass 19.1. Products wherein either (1) the resin contains more than one oxirane group or (2) the interunit linkages of a recurring group within the backbone chain of the resin is an ether linkage.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates) or agents for such systems or making or stabilizing such systems or agents, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

19.7 Polysaccharide or derivative thereof:

This subclass is indented under subclass 19.6. Products wherein the resin is a polymerized polysaccharide or a derivative thereof.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes

of Making, Stabilizing, Breaking, or Inhibiting, subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates) or agents for such systems or making or stabilizing such systems or agents, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

19.8 Nitrocellulose:

This subclass is indented under subclass 19.7. Products wherein the polysaccharide resin is nitrocellulose.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates) or agents for such systems or making or stabilizing such systems or agents, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

19.9 Polymerized conjugated diene:

This subclass is indented under subclass 19.1. Products wherein the resin is a polymerized conjugated diene.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates) or agents for such systems or making or stabilizing such systems or agents, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

19.91 Polymerized ethylenically unsaturated compound:

This subclass is indented under subclass 19.1. Products wherein the resin is a polymerized vinyl compound.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates) or agents for such systems or making or stabilizing such systems or agents, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

19.92 Process:

This subclass is indented under subclass 19.1. Processes for the preparation of products containing the resin which do not claim a definite resin.

- (1) Note. Where only a process is claimed, the product of which is provided for in a product subclass above, and the process is capable of more general application, the original has been placed in appropriate product subclass and a cross reference placed in the process subclass.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates) or agents for such systems or making or stabilizing such systems or agents, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

19.93 Prior treatment of dispersed phase:

This subclass is indented under subclass 19.92. Processes wherein the dispersed particles are treated prior to mixing with the continuous phase.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates) or agents for such systems or making or stabilizing such systems or agents, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

20 Dispersed solid contains inorganic explosive or inorganic thermic component:

This subclass is indented under subclass 18. Products wherein the solid particles dispersed in the matrix contain an inorganic explosive or an inorganic thermic ingredient.

- (1) Note. See "(1) Note" under the definition of subclass 4.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates) or agents for such systems or making or stabilizing such systems or agents, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

21 Particles of diverse size or shape:

This subclass is indented under subclass 2. Compositions or products which are composed of at least two particles differing in size, shape, structure or some physical characteristic, particularly the density, the above difference

- affecting the ultimate properties of the composition or product.
- (1) Note. Patents in this subclass are generally directed to blending of ingredients having the mentioned differences in order to control the burning rate.
- (2) Note. A recitation that a portion of a component is held back or passes a given screen mesh is not a recitation of particles of two or more sizes.
- (3) Note. Search appropriate subclasses, for similar blends or mixtures wherein similar burning rate control results by varying the chemical properties of at least one ingredient.
- 22 CONTAINING FREE BORON OR BINARY COMPOUNDS OF BORON (EXCEPT WITH OXYGEN) OR BORANES:**
This subclass is indented under the class definition. Compositions containing elemental boron, or a binary boron compound (excluding those with oxygen) or organic boranes.
- 23 CONTAINING NITRATED METALLO-ORGANIC COMPOUND:**
This subclass is indented under the class definition. Compositions containing a nitrated metal organic compound.
- (1) Note. For definition of the term "nitrated" see the class definition, Glossary, and see also "(1) Note" under the definition of subclass 47.
- 24 Nitrated organic compound of lead:**
This subclass is indented under subclass 23. Compositions wherein at least one of the nitrated metal organic compounds is a compound of lead.
- 25 With additional nitrated metallo-organic compound:**
This subclass is indented under subclass 24. Compositions containing an additional nitrated metal organic compound.
- 26 With metal azide or metal fulminate compound:**
This subclass is indented under subclass 24. Compositions containing an inorganic metal azide or an inorganic metal fulminate compound.
- 27 With organic explosive or organic thermic component:**
This subclass is indented under subclass 24. Compositions containing an organic explosive or organic thermic component.
- (1) Note. See "(1) Note" under the definition of subclass 4.
- 28 With inorganic explosive or inorganic thermic component:**
This subclass is indented under subclass 27. Compositions containing also an inorganic explosive or inorganic thermic component.
- 29 CONTAINING FREE PHOSPHORUS OR BINARY COMPOUND OF PHOSPHORUS (EXCEPT WITH OXYGEN):**
This subclass is indented under the class definition. Compositions wherein at least one of the explosive or thermic materials is elemental phosphorus or a binary compound of phosphorus, (excluding those with oxygen).
- SEE OR SEARCH CLASS:
516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 1+ for continuous gas or vapor phase colloid system (e.g., smoke, fog, aerosol, cloud, mist) or agents for such systems or making or stabilizing such systems or agents, when produced by reactions other than by combustion or "Thermite-type", subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates) or agents for such systems or making or stabilizing such systems or agents; in each instance, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

30 With free metal, or alloy or metalloid:
This subclass is indented under subclass 29. Compositions containing metal or metal alloy or metalloid.

- (1) Note. Included under the term "metalloid" are the elements: selenium, silicon and tellurium.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 1+ for continuous gas or vapor phase colloid system (e.g., smoke, fog, aerosol, cloud, mist) or agents for such systems or making or stabilizing such systems or agents, when produced by reactions other than by combustion or "Thermite-type", subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates) or agents for such systems or making or stabilizing such systems or agents; in each instance, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

31 With inorganic oxygen-halogen salt:
This subclass is indented under subclass 29. Compositions containing at least one inorganic oxygen-halogen salt.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 1+ for continuous gas or vapor phase colloid system (e.g., smoke, fog, aerosol, cloud, mist) or agents for such systems or making or stabilizing such systems or agents, when produced by reactions other than by combustion or "Thermite-type", subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates) or agents for such systems or making or stabilizing such systems or agents;

in each instance, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

32 Binary compound of phosphorus (except with oxygen):

This subclass is indented under subclass 31. Compositions wherein at least a portion of the phosphorus is in the form of a binary compound, (excluding those with oxygen).

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 1+ for continuous gas or vapor phase colloid system (e.g., smoke, fog, aerosol, cloud, mist) or agents for such systems or making or stabilizing such systems or agents, when produced by reactions other than by combustion or "Thermite-type", subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates) or agents for such systems or making or stabilizing such systems or agents; in each instance, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

33 CONTAINING INORGANIC METAL FULMINATE:

This subclass is indented under the class definition. Compositions wherein at least one of the explosive or thermic materials is an inorganic metal fulminate compound.

- (1) Note. See "(1) Note" under the definition of subclass 4.

34 With nitrated organic compound or inorganic oxygen-halogen salt:

This subclass is indented under subclass 33. Compositions containing at least one inorganic nitrate salt or inorganic oxygen-halogen salt.

35 CONTAINING INORGANIC METAL AZIDE:

This subclass is indented under the class definition. Compositions wherein at least one of the explosive or thermic materials is an inorganic metal azide compound.

- (1) Note. See "(1) Note" under the definition of subclass 4.

36 CONTAINING HYDRAZINE OR HYDRAZINE DERIVATIVE:

This subclass is indented under the class definition. Compositions containing hydrazine or derivative thereof containing a hydrazine radical.

37 METAL OR ALLOY OR METALLOID, EACH IN PARTICULATE FORM, WITH AT LEAST ONE METAL OXIDE, INORGANIC OXYGEN CONTAINING SALT OR ORGANIC METAL-OXYGEN SALT:

This subclass is indented under the class definition. Compositions which contain at least one metal or metalloid and at least one oxygen supplying material which may be a metal oxide, an inorganic metal or ammonium salt, or an oxygen-containing organic salt and the resulting mixture must be capable of reacting to yield heat and reaction by-products.

- (1) Note. This and indented subclasses include patents to compositions which have become known as "Thermite" or "Thermite type" or compositions containing "Thermite" or similar mixtures as constituent material. See Class definition for description and also see the Glossary.
- (2) Note. Included under the term "metalloid" are the elements: selenium, silicon and tellurium.

SEE OR SEARCH CLASS:

- 44, Fuel and Related Compositions, subclasses 3.6+ for water-activated compositions which may be otherwise similar to those contained herein.
- 75, Specialized Metallurgical Processes, Compositions for Use Therein, Consolidated Metal Powder Composi-

tions, and Loose Metal Particulate Mixtures, appropriate subclasses, particularly subclass 27 for processes of producing metals utilizing compositions of this and indented subclasses, subclasses 228+ for a composition having a continuous phase of free metal made by consolidating metal particles, and subclasses 252+ for a loose metal particle composition, mixed with particles of nonmetal.

104, Railways, subclass 15 for track welders using compositions of this and indented subclasses.

126, Stoves and Furnaces, subclasses 263.01+ for heaters or stoves utilizing the compositions of this class as the means for producing heat. Patents including the composition in combination are also classified in this subclass (of Class 126).

164, Metal Founding, subclasses 53+ for metal casting utilizing a reactive heating composition.

228, Metal Fusion Bonding, subclasses 101+, especially subclasses 234.3+ for soldering, welding or brazing wherein bonding heat results from the reaction of a composition of this or the indented subclasses.

428, Stock Material or Miscellaneous Articles, subclasses 546+ for stock material manufactured from particulate metal or a mixture of metal and non-metal particles.

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 1+ for continuous gas or vapor phase colloid system (e.g., smoke, fog, aerosol, cloud, mist) or agents for such systems or making or stabilizing such systems or agents, when produced by reactions other than by combustion or "Thermite-type", subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates) or agents for such systems or making or stabilizing such systems or agents; in each instance, when generically claimed or when there is no hierarchi-

cally superior provision in the USPC for the specifically claimed art.

38 With nitrated organic compound:

This subclass is indented under subclass 37. Compositions containing, as an additional ingredient, a nitrated organic compound.

- (1) Note. See "(1)" and "(2) Note" under the definition of subclass 47.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 1+ for continuous gas or vapor phase colloid system (e.g., smoke, fog, aerosol, cloud, mist) or agents for such systems or making or stabilizing such systems or agents, when produced by reactions other than by combustion or "Thermite-type", subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates) or agents for such systems or making or stabilizing such systems or agents; in each instance, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

39 Nitrated aromatic compound:

This subclass is indented under subclass 38. Compositions wherein at least one of the nitrated organic compounds is aromatic.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 1+ for continuous gas or vapor phase colloid system (e.g., smoke, fog, aerosol, cloud, mist) or agents for such systems or making or stabilizing such systems or agents, when produced by reactions other than by combustion or "Thermite-type", subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates) or agents for such systems or making

or stabilizing such systems or agents; in each instance, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

40 Plural oxygen yielding compounds:

This subclass is indented under subclass 37. Compositions which contains at least two oxygen yielding compounds.

- (1) Note. For the purpose of this and related subclasses a mixture of like compounds which differ in say, degree of oxidation, is not considered as being different oxygen supplying compounds under the definition of this subclass (e.g., a mixture of Fe_2O_3 and Fe_3O_4 is regarded as one compound).

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 1+ for continuous gas or vapor phase colloid system (e.g., smoke, fog, aerosol, cloud, mist) or agents for such systems or making or stabilizing such systems or agents, when produced by reactions other than by combustion or "Thermite-type", subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates) or agents for such systems or making or stabilizing such systems or agents; in each instance, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

41 Inorganic nitrogen-oxygen salt:

This subclass is indented under subclass 40. Compositions wherein at least one of the oxygen yielding compounds is an inorganic salt containing nitrogen and available oxygen.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 1+ for continuous gas or vapor phase colloid system

(e.g., smoke, fog, aerosol, cloud, mist) or agents for such systems or making or stabilizing such systems or agents, when produced by reactions other than by combustion or "Thermite-type", subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates) or agents for such systems or making or stabilizing such systems or agents; in each instance, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

42 Inorganic oxygen-halogen salt:

This subclass is indented under subclass 37. Compositions which contain an inorganic oxygen-halogen salt. This compound serves as the only oxygen supplying material.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 1+ for continuous gas or vapor phase colloid system (e.g., smoke, fog, aerosol, cloud, mist) or agents for such systems or making or stabilizing such systems or agents, when produced by reactions other than by combustion or "Thermite-type", subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates) or agents for such systems or making or stabilizing such systems or agents; in each instance, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

43 Inorganic nitrogen-oxygen salt:

This subclass is indented under subclass 37. Compositions which contain an inorganic salt having nitrogen and available oxygen in its molecule. This compound serves as the only oxygen supplying material.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes

of Making, Stabilizing, Breaking, or Inhibiting, subclasses 1+ for continuous gas or vapor phase colloid system (e.g., smoke, fog, aerosol, cloud, mist) or agents for such systems or making or stabilizing such systems or agents, when produced by reactions other than by combustion or "Thermite-type", subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates) or agents for such systems or making or stabilizing such systems or agents; in each instance, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

44 With an organic nonexplosive or organic nonthermic component:

This subclass is indented under subclass 37. Compositions which contain at least one organic substance which, of itself, is not regarded as explosive or thermic substance under the class definition, even though the substance may be combustible (fuel-like) or in some way aid, or modify the ballistic or other property of the composition.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 1+ for continuous gas or vapor phase colloid system (e.g., smoke, fog, aerosol, cloud, mist) or agents for such systems or making or stabilizing such systems or agents, when produced by reactions other than by combustion or "Thermite-type", subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates) or agents for such systems or making or stabilizing such systems or agents; in each instance, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

- 45 CONTAINING INORGANIC NITROGEN-OXYGEN SALT:**
This subclass is indented under the class definition. Compositions containing a metal nitrogen-oxygen salt including ammonium.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
74, for compositions containing (1) nitrogen oxides which are usually liquid under normal conditions or (2) acids of oxygen and nitrogen.
- 46 Ammonium nitrate:**
This subclass is indented under subclass 45. Compositions in which the inorganic nitrogen-oxygen salt is ammonium nitrate.
- 47 With nitrated organic compound:**
This subclass is indented under subclass 46. Compositions containing at least one nitrated organic compound.
- (1) Note. As generally occurs in the nitration of polyhydroxy compounds, the resulting product may be a mixture of compounds of varying degrees of nitration. Accordingly, where appropriate in this class such terms as nitrocellulose, nitroglycerine, nitrotoluene, etc., include not only such mixtures, but also where specified, compounds of a particular degree of nitration, e.g., trinitroglycerine, dinitroglycerine, trinitrotoluene, 12.6% nitrocellulose, etc.
- (2) Note. For definition of the term "nitrated" see the class definition, Glossary.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
88+, for compositions containing nitrated organic compounds in the absence of an inorganic explosive or thermic salt.
- 48 Nitrocellulose, under 10 percent:**
This subclass is indented under subclass 47. Compositions wherein at least one of the nitrated organic compounds is nitrocellulose included in amounts under 10% of the total composition.
- 49 Nitrocellulose, 10 percent or over:**
This subclass is indented under subclass 47. Compositions wherein at least one of the nitrated organic compounds is nitrocellulose, and it is present in amounts of 10% or more of the total composition.
- 50 With other nitrated organic compound:**
This subclass is indented under subclass 49. Compositions which contain at least one additional nitrated organic compound.
- 51 Nitroglycerine:**
This subclass is indented under subclass 47. Compositions wherein at least one of the nitrated organic compounds is nitroglycerine.
- 52 With other explosive or thermic compound:**
This subclass is indented under subclass 51. Compositions containing at least one additional explosive or thermic substance.
- (1) Note. See "(1) Note" under the definition of subclass 4.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
38, for patents containing a metal or metalloid as the "additional explosive or thermic substance".
- 53 Nitrated organic compound:**
This subclass is indented under subclass 52. Compositions which contain, as an additional explosive or thermic material, at least one other nitrated organic compound.
- 54 With vegetable matter component:**
This subclass is indented under subclass 51. Compositions containing vegetable matter in some form e.g., wood pulp, sawdust, grain, fiber, etc., or their by-products but not including by-products in the form of chemical compounds or extracts such as oils, juices, etc.
- (1) Note. The vegetable matter is generally used in these compositions to serve as the adsorbent for the liquid portion of the explosive e.g., nitroglycerine.

- 55 Nitrated aromatic compound:**
This subclass is indented under subclass 47. Compositions wherein at least one of the nitrated organic compounds is aromatic.
- 56 With other explosive or thermic component:**
This subclass is indented under subclass 55. Compositions containing at least one additional explosive or thermic substance.
- (1) Note. See “(1) Note” under the definition of subclass 4.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
39, for patents containing a metal or metalloid as the “additional explosive or thermic substance”.
- 57 With an organic nonexplosive or organic nonthermic component:**
This subclass is indented under subclass 55. Compositions which contain at least one organic substance which is of itself not regarded as an explosive or thermic component for the purpose of this subclass even though the substance may be combustible (fuel-like) or in some way aid, effect, or modify the ballistic or other property of the composition.
- 58 Nitrated starch or nitrated sugar:**
This subclass is indented under subclass 47. Compositions wherein at least one of the nitrated organic compounds is either a nitrated starch or nitrated sugar.
- 59 With other explosive or thermic component:**
This subclass is indented under subclass 58. Compositions containing at least one additional explosive or thermic substance.
- (1) Note. See “(1) Note” under the definition of subclass 4.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
37, for patents containing a metal or metalloid as the additional explosive or thermic substance.
- 60 With vegetable matter or resin or rubber:**
This subclass is indented under subclass 46. Compositions containing at least one substance from the following groups: resin, either natural or synthetic, rubber and vegetable matter, the latter in some form e.g., wood pulp, sawdust, grain, fiber, etc., or their by-products not including by-products in the form of chemical compounds or extracts such as oils, juices, etc.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
18+, for compositions containing ammonium nitrate dispersed within a resin or rubber matrix.
- 61 Alkali metal or alkaline earth metal nitrate salt:**
This subclass is indented under subclass 45. Compositions in which the inorganic nitrogen-oxygen salt is an alkali metal nitrate or alkaline earth metal nitrate.
- 62 With nitrated organic compound:**
This subclass is indented under subclass 61. Compositions containing a nitrated organic compound.
- (1) Note. See “(1)” and “(2) Note” under the definition of subclass 47.
- 63 Nitrocellulose:**
This subclass is indented under subclass 62. Compositions wherein at least one of the nitrated organic compounds is nitrocellulose.
- (1) Note. For the scope of the term “nitrocellulose” see “(1) Note” under the definition of subclass 47.
- 64 With other explosive or thermic component:**
This subclass is indented under subclass 63. Compositions containing at least one additional explosive or thermic component.
- (1) Note. See “(1) Note” under the definition of subclass 4.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
38, for patents containing a metal or metalloid as the additional explosive or thermic substance.

- 65 Nitroglycerine:**
This subclass is indented under subclass 64. Compositions wherein at least one of the additional explosive or thermic components is nitroglycerine.
- (1) Note. See “(1) Note” under the definition of subclass 4.
- 66 Nitroglycerine:**
This subclass is indented under subclass 62. Compositions wherein at least one of the nitrated organic compounds is nitroglycerine.
- 67 Nitrated aromatic compound:**
This subclass is indented under subclass 62. Compositions wherein at least one of the nitrated organic compounds is aromatic.
- 68 Nitrated phenol:**
This subclass is indented under subclass 67. Compositions wherein the nitrated aromatic compound is a nitrated phenol, e.g., picric acid.
- 69 Nitrated toluene:**
This subclass is indented under subclass 67. Compositions wherein the nitrated aromatic compound is nitrotoluene.
- (1) Note. For the scope of the term “nitrotoluene” see “(1) Note” under the definition of subclass 47.
- 70 With metal oxygen-halogen salt:**
This subclass is indented under subclass 61. Compositions which include also a metal oxygen-halogen salt, e.g., an inorganic chlorate or perchlorate.
- 71 With carbon or sulfur:**
This subclass is indented under subclass 70. Compositions containing carbon or sulfur. The carbon used is in one of its oxidizable forms, e.g., blacks, graphite, charcoal and coal.
- 72 With carbon and sulfur:**
This subclass is indented under subclass 61. Compositions containing carbon and sulfur. The carbon used is in one of its oxidizable forms, e.g., blacks, graphite, charcoal and coal.
- 73 With an organic nonexplosive or organic nonthermic component:**
This subclass is indented under subclass 72. Compositions which contain at least one organic substance which, of itself, is not regarded as explosive or thermic substance under the class definition, even though the substance may be combustible (fuel-like) or in some way aid or modify the ballistic or other property of the composition.
- 74 CONTAINING NITROGEN OXIDE OR ACID THEREOF:**
This subclass is indented under the class definition. Compositions containing as an oxygen supplying compound an oxide of nitrogen or an acid thereof.
- 75 CONTAINING INORGANIC OXYGEN-HALOGEN SALT:**
This subclass is indented under the class definition. Compositions containing at least one inorganic salt containing both oxygen and halogen atoms within a radical, e.g., a chlorate or perchlorate compound.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
42, for “Thermite type” compositions containing an inorganic oxygen-halogen salt as defined in this subclass.
70+, for compositions containing an alkali metal or an alkaline earth metal nitrate salt and an inorganic oxygen-halogen salt of this subclass.
- 76 Ammonium perchlorate:**
This subclass is indented under subclass 75. Compositions wherein at least one of the inorganic oxygen-halogen salts is ammonium perchlorate.
- 77 Alkali metal oxygen-halogen salt:**
This subclass is indented under subclass 75. Compositions wherein at least one of the inorganic oxygen-halogen salts is a salt of an alkali metal.
- 78 With nitrated organic compound:**
This subclass is indented under subclass 77. Compositions which contain at least one nitrated organic compound.

- (1) Note. See "(1) Note" and "(2) Note" under the definition of subclass 47.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 1+ for continuous gas or vapor phase colloid system (e.g., smoke, fog, aerosol, cloud, mist) or agents for such systems or making or stabilizing such systems or agents, when produced by reactions other than by combustion or "Thermite-type", subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates) or agents for such systems or making or stabilizing such systems or agents; in each instance, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

79 Nitrocellulose:

This subclass is indented under subclass 78. Compositions wherein at least one of the nitrated organic compounds is nitrocellulose.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 1+ for continuous gas or vapor phase colloid system (e.g., smoke, fog, aerosol, cloud, mist) or agents for such systems or making or stabilizing such systems or agents, when produced by reactions other than by combustion or "Thermite-type", subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates) or agents for such systems or making or stabilizing such systems or agents; in each instance, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

80 Nitrated toluene or nitrated phenol:

This subclass is indented under subclass 78. Compositions wherein at least one of the nitrated organic compounds is a nitrotoluene or a nitrophenol.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 1+ for continuous gas or vapor phase colloid system (e.g., smoke, fog, aerosol, cloud, mist) or agents for such systems or making or stabilizing such systems or agents, when produced by reactions other than by combustion or "Thermite-type", subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates) or agents for such systems or making or stabilizing such systems or agents; in each instance, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

81 With iodine or iodide:

This subclass is indented under subclass 77. Compositions containing iodine either free or in the form of an iodide.

82 With carbon or sulfur:

This subclass is indented under subclass 77. Compositions containing carbon or sulfur. The carbon used is in one of its oxidizable forms, e.g., blacks, graphite, charcoal and coal.

83 With an organic nonexplosive or organic nonthermic component:

This subclass is indented under subclass 77. Compositions containing at least one added organic substance which, of itself, is not regarded as explosive or thermic substance under the class definition, even though the substance may be combustible (fuel-like) or in some way aid or modify the ballistic or other property of the composition.

- 84 Organic dye or coloring agent:**
This subclass is indented under subclass 83. Compositions wherein the organic substance is a dye or coloring agent.
- 85 With an inorganic nonexplosive or inorganic nonthermic component:**
This subclass is indented under subclass 83. Compositions containing at least one inorganic substance which, of itself, is not regarded as explosive or thermic under the class definition, even though the substance may be combustible (fuel-like) or in some way aid or modify the ballistic or other property of the composition.
- 86 Cyanide compound or oxide of iron, chromium or manganese:**
This subclass is indented under subclass 85. Compositions wherein at least one inorganic substance is a cyanide compound, or one of the oxides of iron, chromium and manganese.
- 87 CONTAINING FREE METAL OR METAL HYDRIDE WITH HYDROCARBON OR HALOGENATED HYDROCARBON:**
This subclass is indented under the class definition. Compositions wherein the fuel component contains metal or metalloid or a hydride of metal or metalloid with a hydrocarbon or a halogenated hydrocarbon.
- (1) Note. Included under the term "metalloid" are the elements: selenium, silicon and tellurium.
- (2) Note. For definition of "fuel component" see the class definition Glossary.
- SEE OR SEARCH CLASS:
75, Specialized Metallurgical Processes, Compositions for Use Therein, Consolidated Metal Powder Compositions, and Loose Metal Particulate Mixtures, subclasses 252+ for a loose metal particle composition containing nonmetal particles.
- 88 CONTAINING NITRATED ORGANIC COMPOUND:**
This subclass is indented under the class definition. Compositions including at least one nitrated organic compound.
- (1) Note. For definition and scope of "nitrated" see "(1) Note" and "(2) Note" under the definition of subclass 47.
- 89 Nitroparaffin:**
This subclass is indented under subclass 88. Compositions wherein at least one of the nitrated organic compounds is a nitroparaffin, e.g., a paraffin having at least one -NO₂ radical.
- 90 Plural nitroparaffins:**
This subclass is indented under subclass 89. Compositions containing at least two nitroparaffin compounds.
- 91 With additional nitrated organic compound:**
This subclass is indented under subclass 89. Compositions containing at least one additional nitrated organic compound.
- 92 Nitrated acyclic, alicyclic or heterocyclic amine:**
This subclass is indented under subclass 88. Compositions which contain nitrated amines which by chemical structure are limited to those which are straight chain, branched chain, contain a non-aromatic ring, or a heterocyclic ring.
- (1) Note. An amine containing any aromatic group in the molecule is excluded from this subclass.
- (2) Note. For the definitions of "acyclic", "alicyclic", "aromatic" and "heterocyclic", see under "Definition of Terms Employed in This Class" in the class definitions of Class 260.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
105+, for compositions containing nitrated aromatic amines.
- 93 Nitrated pentaerythritol:**
This subclass is indented under subclass 88. Compositions wherein at least one of the nitrated organic compounds is pentaerythritol.

- 94 Nitrocellulose, under 10 percent:**
This subclass is indented under subclass 88. Compositions wherein at least one of the nitrated organic compounds is nitrocellulose in amounts under 10% of the total composition.
- 95 With nitroglycerine:**
This subclass is indented under subclass 94. Compositions containing nitroglycerine.
- 96 Nitrocellulose, 10 percent or over:**
This subclass is indented under subclass 88. Compositions wherein at least one of the nitrated organic compounds is nitrocellulose in amounts of at least 10% of the total composition.
- 97 With nitroglycerine:**
This subclass is indented under subclass 96. Compositions containing nitroglycerine.
- 98 With organic nonexplosive or organic non-thermic component:**
This subclass is indented under subclass 97. Compositions containing at least one organic substance which, of itself, is not regarded as an explosive or thermic substance under the class definition, even though the substance may be combustible (fuel-like) or in some way aid or modify the ballistic or other property of the composition.
- 99 With nitrated aromatic compound:**
This subclass is indented under subclass 96. Compositions containing a nitrated aromatic compound.
- 100 With nonexplosive or nonthermic component:**
This subclass is indented under subclass 96. Compositions containing a substance which, of itself, is not regarded as explosive or thermic under the class definition even though the substance may be combustible (fuel-like) or in some way aid or modify the ballistic or other property of the composition.
- 101 Nitroglycerine:**
This subclass is indented under subclass 88. Compositions wherein at least one of the nitrated organic compounds is nitroglycerine.
- 102 With additional nitrated organic compound:**
This subclass is indented under subclass 101. Compositions containing at least one additional nitrated organic compound.
- 103 Nitrated aromatic compound:**
This subclass is indented under subclass 102. Compositions wherein at least one of the additional nitrated organic compounds is aromatic.
- 104 Nitrated glycol compound:**
This subclass is indented under subclass 102. Compositions in which the additional nitrated organic compound is a glycol.
- 105 Nitrated aromatic compound:**
This subclass is indented under subclass 88. Compositions wherein at least one of the nitrated organic compounds is aromatic.
- 106 Plural nitrated aromatic compounds:**
This subclass is indented under subclass 105. Compositions containing at least two nitrated aromatic compounds.
- 107 One a nitrotoluene:**
This subclass is indented under subclass 106. Compositions wherein at least one of the nitrated aromatic compounds is nitrotoluene.
- 108 Nitrated starch or nitrated sugar:**
This subclass is indented under subclass 88. Compositions wherein at least one of the nitrated organic compounds is a nitrated starch or a nitrated sugar.
- 108.2 CONTAINING FREE METAL OR FREE CARBON:**
This subclass is indented under the class definition. Subject matter in which the composition contains free (elemental) metal or free (elemental) carbon.
- (1) Note. See section A, 2 (b) of the class definition.
- (2) Note. Patents classified in this class, subclasses 30, 37+ or 87 as originals or cross-references are not cross-referenced here except for claims or disclosure which go beyond subject matter proper for those subclasses.

SEE OR SEARCH CLASS:

- 75, Specialized Metallurgical Processes, Compositions for Use Therein, Consolidated Metal Powder Compositions, and Loose Metal Particulate Mixtures, subclasses 252+ for a loose mixture of metal and nonmetal particles.
- 428, Stock Material or Miscellaneous Articles, subclasses 546+ for stock material manufactured from particulate metal or a mixture of metal and non-metal particles.

108.4 FUME OR WASTE AFFECTING:

This subclass is indented under the class definition. Subject matter drawn to control of the smoke or gas (including coloring, minimizing, etc.) produced by the use of an explosive or thermic composition or charge or to the control of liquid or solid wastes produced in such use. The subject matter includes compositions as well as processes not elsewhere classifiable.

SEE OR SEARCH CLASS:

- 102, Ammunition and Explosives, subclasses 301+, for blasting methods which include procedures for fume or waste control which are not dependent upon the composition of the explosive.
- 134, Cleaning and Liquid Contact With Solids, appropriate subclasses, for procedures for removing explosive residues from containers therefor.
- 431, Combustion, subclass 126, for apparatus of that class having a flame-coloring additive.

108.6 IGNITING COMPOSITIONS:

This subclass is indented under the class definition. Subject matter specialized for use in initiating an explosive or thermic reaction, such as frictionally or electrically activated blasting agents, fuses, etc.

108.8 STABILITY OR VISCOSITY AFFECTING:

This subclass is indented under the class definition. Subject matter containing a gelling, thickening, thinning, liquifying, etc., agent, a stabilizer or unstabilizer (activator), a burning rate modifier, etc.

SEE OR SEARCH CLASS:

- 44, Fuel and Related Compositions, subclasses 265+, for solidified liquid fuels.
- 516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates) or agents for such systems or making or stabilizing such systems or agents, subclasses 113 for processes of or compositions for or subcombination compositions for the breaking of or inhibiting of continuous or semicontinuous solid phase colloid systems (e.g., gels, pastes); in each case, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

109.2 CONTAINING PARTICULAR FUEL AND PARTICULAR OXIDIZER:

This subclass is indented under the class definition. Subject matter comprising compositions having a particular fuel component and a particle oxidizer component, neither of which is provided for above.

- (1) Note. This subclass also serves as a collection place for gas generation methods and propulsion methods drawn to the use of a particular fuel with a particular oxidizer, neither of which is provided for above.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 109.4, for fuel compositions of this class not provided for above, and also for monopropellant compounds.
- 119, for a collection of compounds usable as oxidizers with a plurality of fuels, and not provided for above.
- 120+, for a collection of high energy fuel compounds usable with a plurality of oxidizers, and not provided for above.

SEE OR SEARCH CLASS:

252, Compositions, subclasses 186.1+, for oxidizer compositions.

109.4 MISCELLANEOUS COMPOSITIONS:

This subclass is indented under the class definition. Compositions not provided for above. This subclass also serves as a collection place for monopropellant compounds, that is, compounds which, in themselves, have explosive, gas-generating or propulsion properties without admixture with another fuel or oxidizing agent component.

SEE OR SEARCH CLASS:

260, Chemistry of Carbon Compounds, its daughter Classes 530-570, and Class 585, Chemistry of Hydrocarbon Compounds, appropriate subclasses, for organic compounds, per se, and admixtures of such compounds with agents designed to improve the stability or other properties of said compounds, said admixture not being restricted to an improvement in the explosive or related properties of the compound.

423, Chemistry of Inorganic Compounds, subclasses 265+ for an inorganic compound admixed with an agent designed to improve the stability or other properties of said compound, said admixture not being restricted to an improvement in the explosive or related properties of the compound.

109.6 PROCESSES OF MAKING:

This subclass is indented under the class definition. Processes which are generic to the preparation of compositions of this class, that is, are suitable for the manufacture of compositions classifiable in more than one subclass of this class, and not otherwise provided for.

SEE OR SEARCH THIS CLASS, SUBCLASS:

19.92+, for processes, e.g., polymerization, for making compositions of this class (149) which involve synthetic resins.

SEE OR SEARCH CLASS:

264, Plastic and Nonmetallic Article Shaping or Treating: Processes, subclass 3 for methods of shaping explosive articles.

427, Coating Processes, appropriate subclasses, for coating processes, whether applied to explosive or other materials.

CROSS-REFERENCE ART COLLECTIONS

The following subclasses represent at least a substantial collection of patents found elsewhere in the classification of this class but merit isolation for search aid purposes.

110 PARTICLE SIZE OF A COMPONENT:

Compositions or processes as provided for in this class wherein there is either recited or disclosed a reference to a particular size or dimension of the particles of at least one of the ingredients or the size or dimension of all or part of the composition in particulate form.

SEE OR SEARCH CLASS:

428, Stock Material or Miscellaneous Articles, subclasses 323+ for a plural layer web or sheet in which one component embodies structurally defined particles (e.g., size, shape, arrangement), and subclasses 402+ for a structurally defined particle, or mass thereof.

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 9+ for colloid systems of continuous liquid phase (e.g., suspensions, emulsions, dispersions), subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates), or agents for such systems or making or stabilizing such systems or agents; in each case, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

111 Nitrated organic compound:

This subclass is indented under subclass 110. Compositions or processes in which the component defined as having particular particle size is a nitrated organic compound.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 9+ for colloid systems of continuous liquid phase (e.g., suspensions, emulsions, dispersions), subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates); or agents for such systems or making or stabilizing such systems or agents; in each case, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

112 Inorganic nitrogen-oxygen salt:

This subclass is indented under subclass 110. Compositions or processes in which the component defined as having a particular particle size is an inorganic nitrogen-oxygen salt.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 9+ for colloid systems of continuous liquid phase (e.g., suspensions, emulsions, dispersions), subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates); or agents for such systems or making or stabilizing such systems or agents; in each case, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

113 Inorganic oxygen-halogen salt:

This subclass is indented under subclass 110. Compositions or processes in which the component defined as having a particular particle size is an inorganic oxygen-halogen salt.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 9+ for colloid systems of continuous liquid phase (e.g., suspensions, emulsions, dispersions), subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates); or agents for such systems or making or stabilizing such systems or agents; in each case, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

114 Inorganic fuel:

This subclass is indented under subclass 110. Compositions or processes in which the ingredient which is of a specific particle size is an inorganic fuel.

- (1) Note. For definition of “fuel” as generally contemplated for this subclass see the class definition Glossary.

SEE OR SEARCH CLASS:

75, Specialized Metallurgical Processes, Compositions for Use Therein, Consolidated Metal Powder Compositions, and Loose Metal Particulate Mixtures, subclass .5 for the production of metals in particulate form.

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 9+ for colloid systems of continuous liquid phase (e.g., suspensions, emulsions, dispersions), subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates), or agents for such systems or making or stabilizing such systems or agents; in each case, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

115 Organic fuel:

This subclass is indented under subclass 110. Compositions or processes in which the ingredient which is of a specific particle size is an organic fuel.

- (1) Note. For definition of “fuel” as generally contemplated for this subclass see the class definition Glossary.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 9+ for colloid systems of continuous liquid phase (e.g., suspensions, emulsions, dispersions), subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates); or agents for such systems or making or stabilizing such systems or agents; in each case, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

116 FLARE CONTAINS RESIN:

This subclass is indented under the class definition. Subject matter disclosing a flare composition containing a resin.

117 SMOKE OR WEATHER COMPOSITION CONTAINS RESIN:

This subclass is indented under the class definition. Subject matter disclosing a smoke generating or weather modifying composition containing a resin.

SEE OR SEARCH CLASS:

239, Fluid Sprinkling, Spraying, and Diffusing, subclass 2 for a process causing changes in atmospheric conditions.

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 1+ for continuous gas or vapor phase colloid system (e.g., smoke, fog, aerosol, cloud, mist) or agents for such systems or making or stabilizing such systems or agents,

when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

118 GEL CONTAINS RESIN:

This subclass is indented under the class definition. Subject matter disclosing a composition containing a resin wherein the resin is dissolved in the continuous phase to form a gel.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates) or agents for such systems or making or stabilizing such systems or agents, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

119 OXIDIZER COMPOUNDS:

This subclass is indented under the class definition. Cross-reference collection drawn to compounds of use as oxidizing agents in compositions of this class.

- (1) Note. Where a patent is placed in a subclass of this class which provides for a liquified or named oxidizing agent, it is not cross-referenced here except for a disclosure of other oxidizers not provided for in the subclasses above.

SEE OR SEARCH CLASS:

252, Compositions, subclasses 186.1+, for mixtures which constitute an oxidizing agent.

260, Chemistry of Carbon Compounds, its daughter Classes 530-570, and Class 585, Chemistry of Hydrocarbon Compounds, appropriate subclasses, for organic compounds, per se, and admixtures of such compounds with agents designed to improve the stability or other properties of said compounds, said admixture not being restricted to an improvement in the

explosive or related properties of the compound.

- 423, Chemistry of Inorganic Compounds, subclasses 265+, for an inorganic compound admixed with an agent designed to improve the stability or other properties of said compound, said admixture not being restricted to an improvement in the explosive or related properties of the compound.

120 HIGH ENERGY FUEL COMPOUNDS:

This subclass is indented under the class definition. Cross-reference collection drawn to compounds of use as a high energy fuel component in a composition of this class.

SEE OR SEARCH CLASS:

- 260, Chemistry of Carbon Compounds, its daughter Classes 530-570, and Class 585, Chemistry of Hydrocarbon Compounds, appropriate subclasses for organic compounds, per se, and admixtures of such compounds with agents designed to improve the stability or other properties of said compounds, said admixture not being restricted to an improvement in the explosive or related properties of the compound.
- 423, Chemistry of Inorganic Compounds, subclasses 265+ for an inorganic compound admixed with an agent designed to improve the stability or other properties of said compound, said admixture not being restricted to an improvement in the explosive or related properties of the compound.

121 Containing B, P or S:

This subclass is indented under subclass 120. Compounds which contain boron, phosphorus or sulfur.

122 Containing N, without B, P or S:

This subclass is indented under subclass 121. Compounds which contain nitrogen, without boron, phosphorus or sulfur.

123 TAGGED COMPOSITIONS FOR IDENTIFYING PURPOSES:

This subclass is indented under the class definition. Subject matter wherein the composition contains a material whose presence permits the

detection of the composition prior to, or after use or the source of supply or manufacturing.

SEE OR SEARCH CLASS:

- 516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 9+ for colloid systems of continuous liquid phase (e.g., suspensions, emulsions, dispersions), subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates); or agents for such systems or making or stabilizing such systems or agents; in each case, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

124 METHODS FOR RECLAIMING OR DISPOSING OF ONE OR MORE MATERIALS IN A COMPOSITION:

This subclass is indented under the class definition. Subject matter wherein methods are disclosed for reclaiming or modifying one or more components for reuse, or methods for disposing in a safe and/or nonpolluting manner, e.g., compositions have aged, degraded, or otherwise proved hazardous to the environment.

- (1) Note. The disposing of or destroying of explosive hazardous or toxic waste is provided for elsewhere. See the Search Note below.

SEE OR SEARCH CLASS:

- 516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 9+ for colloid systems of continuous liquid phase (e.g., suspensions, emulsions, dispersions), subclasses 98+ for colloid systems of continuous or semicontinuous solid phase with discontinuous liquid phase (gels, pastes, flocs, coagulates); or agents for such systems or making or stabilizing such systems or agents; in each case, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

- 588, Hazardous or Toxic Waste Destruction or Containment, subclasses 300 through 321 for processes to make chemical substances harmless by effecting a chemical change in the substance, and subclass 403 for the destruction of explosives, propellants, and pyrotechnics.

END