1. Hydrophilic coating aid containing microorganism activator

By Mu, Guangyuan; Du, Yiran; Huang, Chunyan; Wei, Chunjin
From Faming Zhuanli Shenqing (2016), CN 106008093 A 20161012, Language: Chinese, Database: CAPLUS

The title hydrophilic coating aid contg. microorganism activator comprises anhyd. glycerol, org. matter, a microbial agent, a species protection agent, a disintegrating agent, and a dispersant. The mass ratio of anhyd. glycerol, org. matter, microbial agents, species protection agents, disintegrating and dispersing agents is (5-15) : (10-25) : (10-35) : (5-15) : (5-15) : (0.1-10). The present invention also provides a microorganism fertilizer compn. and prepn. method. The microbial fertilizer compn. is used for increasing the effective no. of viable bacteria in soil, improving soil fertility, improving fertilizer rate of disintegration, and/or relieving soil compaction.

~0 Citings

2. Slow-release insecticide granule containing thiamethoxam and preparation method thereof

By Zhou, Yukun; Wang, Hongmei; Li, Jianfang
From Faming Zhuanli Shenqing (2016), CN 105439758 A 20160330, Language: Chinese, Database: CAPLUS

The invention discloses slow-release insecticide granule contg. thiamethoxam and prepn. method thereof. The slow-release insecticide granule comprises (by wt. parts) thiamethoxam 1-20, a carrier 40-80, a binder 0.5-10, a disintegrant 0.5-15, a surfactant 1-20, a preservative 1-10, an org. fertilizer 1-20, and a coating agent 1-20. The present invention is easy to use, can effectively solve the problem of sugarcane drugs are high toxic products, protect the environment, and improve the quality and food safety of sucrose.

~0 Citings

3. A wastewater treatment flocculant

By Sun, Anshun
From Faming Zhuanli Shenqing (2015), CN 104692513 A 20150610, Language: Chinese, Database: CAPLUS

A wastewater treatment flocculant, includes acrylamide 60-120 parts, anionic monomer 5-10 parts, cationic starch 5-10 parts, chitosan 5-10 parts, 5# white oil 300-500 parts, emulsifier 10-15 parts, deionized water 200-400 parts, oxidant 0.01-0.03 part, reducing agent 0.01-0.03 parts, complexing agent 0.01-0.03 part. The flocculant is prepd. by mixing the components. The flocculant product of the present invention is suspension microemulsion copolymer, easily dispersed in water, has faster start effect, degreasing rate ≤95%.

~0 Citings

4. Energetic cocrystals for treatment of a subterranean formation

By Schultheiss, Nathan Carl; Holtsclaw, Jeremy
From PCT Int. Appl. (2015), WO 2015030730 A1 20150305, Language: English, Database: CAPLUS

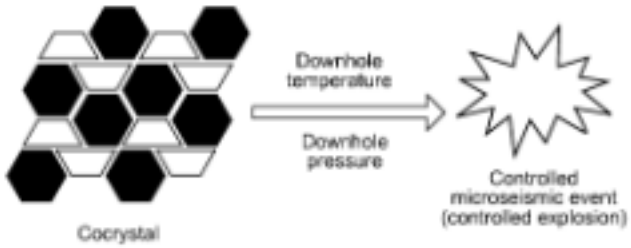


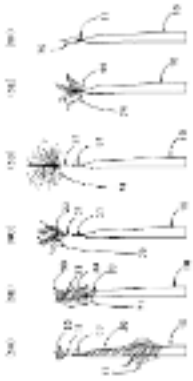
Fig. 2

The present invention relates to energetic cocrystals, and to methods for using the same for treatment of a subterranean formation. In various embodiments, the present invention provides a method of treating a subterranean formation, the method including obtaining or providing a compn. including energetic cocrystals. Each energetic cocrystal independently includes an energetic compd. and a secondary material. The method also includes placing the compn. in a subterranean formation.

~0 Citings

5. Candle with fuse film and candle set containing it

By Hirosawa, Takayoshi
From Jpn. Kokai Tokkyo Koho (2012), JP 2012087180 A 20120510, Language: Japanese, Database: CAPLUS



The candle has a wick to be ignited at the tip and an instantaneously combustible fuse film formed around the candle from the body to the wick tip, wherein the fuse film is lighted at the body so as to carry a flame along its length and to ignite the wick tip. The candle may also have a combustable rod attached to the wick tip and an instantaneously combustible thin piece or fireworks attached to the top of the rod. The candle set, useful for a candle service at a wedding party, consists of the candle and a candle holder.

~0 Citings

6. Microwaveable cake powder composition and method of making cake by using the same

By Liu, Jackie; Wang, Zhi Feng
From Aust. Pat. Appl. (2012), AU 2011203556 A1 20120209, Language: English, Database: CAPLUS

A microwaveable cake powder compn. comprises wheat flour and at least one pregelatinized modified starch. Thus, a base may include 15.5% flour and 2% National Starch 138, 2% Baka Snak, and 2% National Starch H50. A suitable baking powder compn. may include sodium bicarbonate, malic acid, disodium dihydrogen pyrophosphate, monobasic calcium phosphate and tartaric acid. The microwaveable cake mix can be conveniently used by a consumer at home to prep. a cake (such as sponge cake) with a light and soft texture, fine and uniform cell structure, satisfactory voluminous appearance, and a moist and meltaway taste.

~0 Citings

7. Quasi-liquid fuel for internal combustion engine, and conveying and jetting method of the fuel

By Qin, Caidong
From Faming Zhuanli Shenqing (2010), CN 101747962 A 20100623, Language: Chinese, Database: CAPLUS

The title quasi-liq. fuel is the suspension or semi-liq. or emulsified liq. manufd. from high-energy combustible materials and fuel oil through mixing in static state or dynamic state. The high-energy combustible materials are solid microparticles, solid nanoparticles, semisolid, colloid, or fluid of high-energy combustible materials, such as lignin, nitrolignin, nitrocellulose, hemicellulose nitrate, nitrated product of biomass, and coal powder with ash and impurities removed. The fuel oil is gasoline, diesel oil, etc. The quasi-liq. fuel is used for internal combustion engines.

~0 Citings

8. Cosmetic formulation and concentrate with improved properties containing cellulose ethers

By Weyland, Silke; Hoffmann, Nils
From Eur. Pat. Appl. (2008), EP 1923044 A1 20080521, Language: German, Database: CAPLUS

The invention concerns cosmetic prepns. that are O/W emulsions or emulsifier-free hydro-dispersions contg.: (a) one or more cellulose ether; (b) one or more water-sol. starch deriv.; (c) one or more water-insol. starch deriv. Concs. of the prepns. are prepd. by spray drying, freeze drying, tunnel or roller drying. The compns. result in improved drying properties and pleasant skin sensory effects of the final prepns. Thus an O/W body lotion emulsion contained (wt./wt.%): methylparaben 0.3; iso-Pr palmitate 5; water 74.95; sorbitan stearate 0.5; liq. paraffin 5; water plus sodium hydroxide 0.1; aluminum starch octenyl succinate with water 3; hydroxypropylmethylcellulose 3; acrylates/C10-30 alkyl acrylate cross-polymer 0.15; C13-16 isoparaffin 5; maltodextrin (MD12) 3.

~0 Citings

9. Method for preparing sustained-release pesticidal granules

By Zhou, Chunjiang; Li, Songlin; Tian, Xiaoli; Liu, Xili; Yun, Youlan
From Faming Zhuanli Shenqing (2007), CN 1951186 A 20070425, Language: Chinese, Database: CAPLUS

The title sustained-release pesticidal granules are prepd. from active compds., modified starch, powder materials, and auxiliary materials. The title method comprises the steps of: (1) gelatinizing 5-100 vol.% aq. suspension of modified starch at 30-100°, (2) mixing with auxiliary material A and active compds., and stirring at 1000-3000 rpm and 10-100° for 1-15 min, (3) standing at 0-30° for 1-24 h to obtain gel, drying at 40-80°, and pulverizing, and (4) mixing with powder materials and auxiliary material B homogeneously, granulating, drying, and sieving to obtain granules (sizes = 0.3-3.0 mm). The sustained-release pesticidal granules can release active components at a preset speed within a certain time, and thus can be used for killing pests during a certain period and controlling the growth of lawn.

~0 Citings

10. Biodegradable starch-based composition and its foamed molding

By Li, Xiaolu
From Faming Zhuanli Shenqing (2007), CN 1935885 A 20070328, Language: Chinese, Database: CAPLUS

The title compn. contains starch contg. esterified starch or etherified starch with substitution degree 0.1-3, poly(acrylic acid), polyol, and blowing agent. A foamed molding obtained from the compn. has high foaming ratio and compressive strength and good biodegradability and mildew degrdn. degree.

~0 Citings

11. Manufacture of biodegradable composite and its film products

By Li, Xiaolu
From Faming Zhuanli Shenqing Gongkai Shuomingshu (2007), CN 1931906 A 20070321, Language: Chinese, Database: CAPLUS

The title biodegradable composite comprises starch (esterified starch and/or etherified starch with a substitution degree of 0.1-3), poly(lactic acid) (melt flow index < 4 g/10 min at 190 °C) and polyols. The film products manufd. from this biodegradable composite have good biodegradability.

~0 Citings

12. Laser-imageable coating based on exothermic decomposition

By Kasperchik, Vladek; Gore, Makarand P.; Khavarj, Mehrgan
From U.S. Pat. Appl. Publ. (2007), US 20070065623 A1 20070322, Language: English, Database: CAPLUS

An optical recording medium comprises a substrate, an imaging layer comprising a compd. that decomps. exothermically when heated to a predetd. temp., and, optionally, a color layer.

~1 Citing

13. Absorbent structure and product based on raw materials having a high degree of renewability

By Lagerstedt Eidrup, Marie-Louise
From PCT Int. Appl. (1999), WO 9947093 A1 19990923, Language: English, Database: CAPLUS

The invention relates to an absorbent structure and an absorbent product, such as a nappy, an incontinence shield, a sanitary towel or the like, which product includes the absorbent structure. The absorbent structure includes a superabsorbent which has been produced from one or more hydrophilic monomers by free radical copolymn. in the presence of starch and/or chem. modified starch. During prodn. of the superabsorbent, use has been made of a free radical initiator which forms three or more radical sites per mol. The absorbent structure furthermore includes hydrophilic and/or hydrophobic fibers which, together with the superabsorbent, impart a hydrophilic character to the absorbent structure. In the dry state, the superabsorbent constitutes between 10 and 75 % of the dry wt. of the absorbent structure. The absorbent structure and the product are based on raw materials having a high degree of renewability.

~2 Citings

14. Starch nitrates, process for their preparation and their uses

By Nouaillant, Michel
From Eur. Pat. Appl. (1999), EP 931794 A1 19990728, Language: French, Database: CAPLUS

Starch nitrates having N content 6-12.8%, European Std. DIN #53179 viscosity >40, turbidity ≤20, total optical d. ≤40, useful for inks, varnishes, paints, lacquers, adhesives and leather coatings, are manufd. by nitration of starch in a mixt. contg. HNO_3 15-80, H_2SO_4 50-75, and water 5-30% at 0-40° and acid mixt.-starch ratio ≥10.

~1 Citing

15. Method for destroying energetic materials

By Abel, Albert E.; Mouk, Robert W.; Getman, Gerry D.; Hunter, Wood E.
From PCT Int. Appl. (1998), WO 9828045 A2 19980702, Language: English, Database: CAPLUS

Energetic materials, such as nitrocellulose, TNT, RDX, and combinations thereof, optionally in combination with chem. warfare agents, such as mustard gas, Lewisite, Tabun, Sarin, Soman, VX, and combinations thereof, are destroyed when chem. reacted according to the method of the invention. The method comprises reacting the energetic materials and chem. warfare agents, if present, with solvated electrons which are preferably produced by dissolving an active metal such as sodium in a nitrogenous base such as anhyd. liq. ammonia.

~10 Citings

16. Compositions containing anhydrite and/or Plaster of Paris and a blowing agent for lightweight gypsum manufacture, process for the delayed formation of gas, and use of the compositions

By Klauck, Wolfgang; Kluth, Hermann; Huebner, Wilfried; Kolenda, Felicitas
From Ger. Offen. (1997), DE 19651448 A1 19970626, Language: German, Database: CAPLUS

In the compns., gas formation by the blowing agent is delayed from 1 min to 24 h. The blowing agents for the delayed formation of gas are manufd. by contacting either an acid component or a gas-developing component, or both components sep. from each other, with an aq. or non-aq. dispersion or soln. contg. a water-permeable naturally occurring, a synthetically modified naturally occurring, an enzymically degradable, a synthetic substance, or polymer, for a duration sufficient for forming a film, and, optionally, removing excess solvent. In the use of packaged compns. comprising the anhydrite and/or Plaster of Paris, blowing agent(s), additives, and aggregate, the packaging vol. is selected such that a sufficient amt. of water can be added for hydration. The compns. are used for foaming in situ, esp. for manufg. foamed assemblies, e.g., models, for foaming-up caverns and holes, and as external and internal insulation. A soln. of 10 g Me cellulose in 200 mL water was mixed with 50 g dimethylopropionic acid, and the water removed by vacuum distn. to obtain a free-flowing powder. A mixt. consisting of the powder 3, Calcilith 16B (tech.-grade $CaCO_3$) 11.5, and Alfor (Plaster of Paris; d. 2.63; bulk d. 900 g/L) 50 was mixed with 30 mL water and poured into a mold. After foaming and hardening the lightwt. gypsum had d. 0.5 g/mL.

~19 Citings

17. Method for safely disposing of propellant and explosive materials by conversion into fertilizers

By Heaton, Harley L.; Walia, Daman S.; Stashick, Joseph J.
From PCT Int. Appl. (1996), WO 9637265 A2 19961128, Language: English, Database: CAPLUS

A one step process is provided which denitrifies explosives and propellants and reclaims the evolved nitrogen therefrom, while concurrently modifying the remaining carbonaceous materials into humic acid suitable for plant fertilizer applications. Explosives and propellants are hydrolyzed with a soln. of Actosol humic acid ext. The humic acid ext. fixes the free nitrogen evolved, preventing its loss as ammonia or NO_x gases. The Actosol-fixed nitrogen is then available directly to plants as slow-release nitrogen, and can directly replace nitrogen derived from urea or other sources in plant fertilizers. The carbonaceous material remaining from the denitrification process is non-explosive and is taken up in the humic acid matrix. This material is immediately available to plants as a carbon source. The humic acid matrix chelates any metal ions released from the explosive or propellant as a consequence of the denitrification process, and makes these metal ions available to plants as micronutrients.

~0 Citings

18. Shaped explosive by recrystallization from a non-aqueous self-explosive emulsion

By Shepherd, Walter B., Jr.
From U.S. (1996), US 5552000 A 19960903, Language: English, Database: CAPLUS

An explosive compn. is derived from a non-aq. emulsion of a soln. of a self-explosive dispersed as the discontinuous phase throughout a continuous phase which is substantially immiscible with the discontinuous phase. The emulsion is prepd. by adding a soln. of self-explosive into a dispersion of surfactant or emulsifier in fuel at a temp. high enough to prevent pptn. of the self-explosive from soln., cooling and aging the emulsion to form a pourable or pumpable, and destabilization and recrystn. in a cavity to form a shaped a mass of crystals of self-explosive. The shaped explosives have high energy and d.

~4 Citings

19. Rapid dry process for producing acid modified starch

By Liao, Junyun
From Faming Zhuanli Shenqing Gongkai Shuomingshu (1994), CN 1094732 A 19941109, Language: Chinese, Database: CAPLUS

Starch is heated, stirred, sprayed with dild. HCl, HNO_3, or H_2SO_4 at temp. lower than the gelatinization temp., and heated to evap. the acids. Thus, 200 kg corn starch was stirred in a reactor at 108°, sprayed with 31680 mL H_2O contg. 396 mL HCl, and evapd. at 128° for 3.5 h to prep. acid-modified starch.

~0 Citings

20. Phlegmatized explosive composition

By Egeli, Oyvind
From Eur. Pat. Appl. (1995), EP 661251 A1 19950705, Language: English, Database: CAPLUS

Explosives in semi-plastic, paste or slurry form comprise ≥1 high explosive in mol. form, ≥1 one pulverizing agent, a phlegmatizing agent, and solid particles of a material which is softer or deformable than the particles of the pulverizing agent. The explosives have high safety without sacrificing the sensitivity.

~3 Citings

21. Coating of primary and/or secondary explosives with fire-resistant, antistatic and/or lubricating inert materials

By Pabst, Winfried
From Ger. (1992), DE 4117718 C1 19920702, Language: German, Database: CAPLUS

The process comprise mixing the explosives with a nonionic surfactant that is liq. at room temp., and mixing the mixt. with the inert material. This method is esp. suitable for coating security-type explosives that have short detonation flames and do not ignite CH_4- and coal-air mixts. in coal mines. Preferably, the surfactant is selected from ethoxylated compds., e.g., nonylphenol, sorbitan monostearate, -oleate, -palmitate, and -laurate, having hydroxyl no. 65-113 and sapon. no. 40-55. The inert material is selected from ≥1 of alk. earth stearates, carbonates, acetates, and chloride, and cryolite, graphite, carbon black, and talc. Thus, 3 kg Tetryl was mixed with 12 mL ethoxylated sorbitan monolaurate (hydroxyl no. 40) for 40 min, and then with 158 g cryolite and 1.8 g Astradiamond green (color-coding for distinguishing from normal Tetryl) for 60 min.

~3 Citings

22. Scale inhibitors for reactors for manufacture of vinyl polymers

By Shimizu, Toshihide; Sato, Takanori
From Jpn. Kokai Tokkyo Koho (1992), JP 04050201 A 19920219, Language: Japanese, Database: CAPLUS

The title inhibitors comprise proteins and polysaccharides. Thus, in suspension of vinyl chloride in a reactor coated by a 0.5% soln. of 1:1 gelatin-dextrin mixt. in 90:10 H_2O-MeOH, 11 g/m^2 scale was deposited in the reactor, vs. 1300 for reactors without the coatings.

~0 Citings

23. Emulsion explosive containing nitrostarch

By Mullay, John J.; Sohara, Joseph A.; Schulz, Dennis J.
From U.S. (1991), US 5051142 A 19910924, Language: English, Database: CAPLUS

Nitrostarch 5-50% is added to an emulsion explosive compn. comprising a discontinuous aq. oxidizer salt phase and a continuous carbonaceous fuel phase. The emulsion explosive prepd. exhibits increased resistance to precompression or dead pressing while maintaining high detonation velocity.

~1 Citing

24. Aqueous suspension of sucralfate containing starch

By Katayama, Masahide; Yamashita, Harushige; Odaka, Taizo; Morioka, Shigeo
From Eur. Pat. Appl. (1989), EP 331385 A2 19890906, Language: English, Database: CAPLUS

Aq. suspension of sucralfate comprises a starch and/or a deriv. thereof and preferably further with a cellulose deriv., polysaccharide gum, alginic acid, alginate and/or bentonite, thereby the suspension is made stable for a long time and may be redispersed if necessary. The suspension is useful for protecting ulcer area on mucous membranes of stomach and duodenum. An aq. suspension contained sucralfate 3, maize starch 2, tragacanth gum 0.8, sucrose 10, Na benzoate 0.05 g and water up to 100 mL. The suspension was stable after storage for 3 mo at 40°.

~4 Citings

25. Photosensitive compositions

By Rice, John F.; Yundt, Albert P.; Quast, Kenneth J.
From U.S. (1982), US 4312934 A 19820126, Language: English, Database: CAPLUS

A photoimaging compn. useful as a photoresist material comprises a polymer contg. a nitrate ester chain and an arom. amine. Thus, a glass support was coated with a compn. contg. nitrocellulose 1, diphenylamine 1.2, MeCOEt 10, diacetone alc. 1 part to give a 0.001 in. layer, dried, imagewise exposed by a pair of 7.5 W Hg lamps for 15 min, and fixed by heating for 15 min at 130° to give an image with excellent optical d. and contrast .

~4 Citings

26. Aqueous explosive slurries with inorganic peroxide sensitizer

By Griffith, George L.
From U.S. (1978), US 4081299 A 19780328, Language: English, Database: CAPLUS

The title explosives are sensitized by H_2O_2. Thus, a slurry contg. nitrostarch [9056-38-6] 21.6, NH_4NO_3 29.5, $NaNO_3$ 10, $Ca(NO_3)_2$ 4.76, $Mg(NO_3)_2$ 4.29, ZnO 0.8, corn sugar 6, hollow glass microspheres 1, $K_2S_2O_3$ 0.4, Al 5, guar gums 1.15, Zn chromate 0.1, and water 15.37% was detonated by an A-1 blasting cap. An identical slurry, but with no H_2O_2 and 15.4% water, required an A-4 cap.

~4 Citings

27. Aqueous slurry explosives with colloidal hydrous metal oxide

By Barnhard, Phillip, IV; Kieres, Francis John
From U.S. (1977), US 4058420 A 19771115, Language: English, Database: CAPLUS

Nitrate-based slurry explosives are thickened with colloidal hydrous metal oxides which allow the slurries to be mixed or packaged before there is any thickening and slurry densensitization. Thus, a slurry contg. NH_4NO_3 43.2, $NaNO_3$ 10, coal 1, corn sugar 6, nitrostarch [9056-38-6] 20, Al 4, colloidal Al_2O_3 0.8, and water 15 wt.% was thickened, cast into casings, and detonated with conventional blasting caps.

~6 Citings

28. Photosensitive composition of polynitrate ester, aromatic amines, and organic esters

By Rice, John F.; Yundt, Albert P.; Quast, Kenneth J.
From U.S. (1977), US 4049457 A 19770920, Language: English, Database: CAPLUS

Photosensitive compns. giving color images consist of nitrocellulose, ≥1 compd. contg. a free basic amine group, preferably a primary amine group, attached to an arom. ring C, and an org. acid. Upon exposure to UV radiation, such compns. will printout an image directly, or with a lesser exposure be developed and fixed to an image by either heat alone, or by solvent selective removal of ingredients from exposed areas. The presence of the org. acid provides increased contrast at lower exposures. Thus, a compn. contg. 1-naphthylamine 6 and nitrocellulose 10 parts in a MeCOEt soln. to give 15% solids was coated on glass, dried, and exposed through a mask for 20 min at close range to a pair of 7.5 W fluorescent lights contg. a UV emitting phosphor to convert the cogenerated shortwave UV to longwave UV light capable of being transmitted through the lamp's glass envelope to a yellow-brown image.

~4 Citings

29. Flexible explosive composition comprising particulate RDX, HMX or PETN and a nitrostarch binder plasticized with TEGDN or TMETN

By Wells, Franklin B.
From U.S. (1977), US 4014719 A 19770329, Language: English, Database: CAPLUS

Trimethylolethane trinitrate (TMETN) [3032-55-1] or triethyleneglycol dinitrate [111-22-8] plasticizers in nitrostarch [9056-38-6]-bonded explosives give high-explosive cap-sensitive compns. which are resistant to impact and shock and which remain flexible, in sheet form, at ≤-40°F. Nitramines and PETN [78-11-5] 60-80 are used with the binder-plasticizer system 20-40 wt.%. The binder:plasticizer ratio is ~0.7-1.4:1 and the nitrostarch contains 12.9-13.1% N. Thus, a formulation consisting of HMX [2691-41-0] 340, nitrostarch 70, diphenylamine 3.5, TMETN 90 g, and EtOAc 75 mL gave smooth, tough, elastic sheets resistant to bending at -10° and sensitive to a 2 kg hammer dropped 15 in.

~3 Citings

30. Pyrotechnic composition formable by extrusion or compression

By Bernardy, Claude
From Fr. Demande (1975), FR 2256906 A1 19750801, Language: French, Database: CAPLUS

Pyrotechnic compns. that are storage stable even when contg. highly reactive material are prepd. from mixts. of an oxidizer; a binder, such as nitrocellulose (I) [9004-70-0]; a plasticizer; such as polyethylene glycol [25322-68-3]; a combustion supporter and stabilizer; such as dicyandiamide (II) [461-58-5] additives for affecting the burning rate, flame intensity and/or color, vol. of gas evolved, etc. Thus, granular I (contg. 18% plasticizer) 2, II 3, an alk. earth or alkali metal nitrate 10, and powd. Al [7429-90-5] 2 parts was mixed with the aid of a solvent, molded, and dried to produce fireworks that produce a brilliant cascade of burning Al articles.

~0 Citings

31. Source-identifiable explosive

By Griffith, George L.; Edwards, Donald W.
From U.S. (1974), US 3835782 A 19740917, Language: English, Database: CAPLUS

The source or manufacturer of an explosive or an explosive item can be identified by addn. to the explosive compn. or deposition on the case, or even the label, of 0.025-2% of 40-2000 μ particles of nonthermally luminescent materials that are decompn.-resistant during explosion. The luminescent material emits electromagnetic radiation, charged particles, etc. on excitation, producing UV, visible, and/or ir light and providing a spectrum useful for identification. Suitable luminescent materials include franklinite, Zn ore, and willemite. Thus, 2% Fe-free <40-mesh franklinite was mixed with a 40% nitrostarch-based ammonium dynamite (40WR and a 1.25 × 8-in. stick of it detonated in a 55-gal steel drum. Under UV excitation, particles of the ore are readily detectable by their light-green color on fragments of the drum. Various phosphors and phosphorescent pigments were mixed with 40WR and examd. after detonation with 1500-2600 and 3600-700 Å light. Coating with a polyurethane resin improved results. Willemite was easily detectable, but limestone was not. Nitrates of Sm and Dy could not be identified.

~5 Citings

32. Explosive slurry having constant detonation velocity over a wide temperature range

By Schwoyer, William L.
From U.S. (1972), US 3676234 A 19720711, Language: English, Database: CAPLUS

An aq. explosive slurry is described that has a const. detonation rate over a wide temp. range and is sensitive enough to be detonated as a film or layer 0.25-0.5 in. thick. The slurry is based on a primary high explosive, such as pentolite, nitrostarch, or PETN; an inorg. oxidizer; an amide that forms a eutectic mixt. with inorganic nitrates, and an H2O-sol. thickener to adjust the viscosity of the slurry. The detonation is initiated by a no. 10 blasting cap and has a const. velocity of 15,000-20,000 ft/sec. An inorg. coolant salt that is insol. in H2O and has a high sp. heat reduces the velocity to the stated range.

~1 Citing

33. Safe aqueous slurries of particulate nitrated explosives and polyacrylamides

By Griffith, George L.; Schwoyer, William L.
From U.S. (1969), US 3457128 A 19690722, Language: English, Database: CAPLUS

Particulate self-explosive nitrated materials, such as nitrostarch, PETN, TNT, and their mixts., can be made relatively safe to handle and transport through formation of a uniform nongelled aq. slurry contg. 10-50% H2O and 0.05-10% partially hydrolyzed polyacrylamide suspending agent having 0.1-50% free acid and ≥50% unhydrolyzed amide groups and a mol. wt. of 1,000,000-25,000,000. Such slurries are esp. useful for transporting explosive sensitizers used in aq. slurry blasting agents. Thus, a mixt. was prepd. by stirring together 66% dry nitrostarch, 39.8% H2O, and 0.2% Polyhall 295 (a com. partially hydrolyzed polyacrylamide of mol. wt. 3,000,000-8,000,000 contg. 15-30% amide groups hydrolyzed to acid groups). This slurry showed no sepn. after 2 months' storage at 50-80°F., after which 50 parts of it was blended with dry NH4NO3 50, flake Al 30, and H2O 11 parts to produce an explosive blasting slurry which, when tested in a bore hole, detonated readily and produced good rock breakage.

~0 Citings

34. Explosive slurries containing an explosive oxidizer salt and particulate fibrous naturally wet pulpy plant matter

By Griffith, George L.
From U.S. (1968), US 3361604 A 19680102, Language: English, Database: CAPLUS

Explosive slurries contg. particulate vegetable and (or) fruit pulp as a major portion of the fuel are provided. Such slurries comprise mixts. of 50-70% of an inorg. oxidizer such as nitrates, perchlorates, or chlorates of NH3 and alkali metals or alk. earth metals, 0-40% (preferably 25-30%) sensitizing explosive, such as nitrostarch (preferred), TNT, PETN, nitrocellulose, pentolite, or compn. B, 0.1-30% of a finely divided pulpy vegetable matter, including waste material, derived from substantially any fruit or vegetable in either the fresh or a fermented or otherwise decompd. condition, and 7-50% suspending medium, such as H2O or oil, including juices present in the pulpy vegetable matter. Metallic and carbonaceous fuels, thickeners, antacids, etc., may also be present. Thus, a mixt. contg. dry nitrostarch 20, NH4NO3 44.6, orange pulp 25, guar gum 0.4, paraffin oil (100 Saybolt Universal sec. viscosity) 5, and H2O 5% provides a good explosive slurry, d. 1.35, ballistic pendulum value 10.00, viscosity 300 cp., sensitivity to initiation (in a 1.5-in. pipe) 50 g. pentolite, rate of detonation >3600 m./sec.

~1 Citing

35. Inorganic oxidizer salt explosive compositions containing paper sheet particles as pouring-density reducers

By Griffith, George L.
From U.S. (1968), US 3361603 A 19680102, Language: English, Database: CAPLUS

Explosive compns. of unusually low d. are provided by incorporation therein, as at least a portion of the fuel, of ground paper (preferably non H2O-absorbent) derived from either natural or synthetic fibers or both. Such compns. comprise mixts. of an oxidizer such as a nitrate, perchlorate, or chlorate of NH3 and alkali metal or alk. earth metals in amts. up to 81% or more, an explosive sensitizer such as nitrostarch (preferred), TNT, PETN, trimethylolethane trinitrate, pentolite, cyclotol, and compn. B 5-30, and ground paper 20 (preferably 4-16%). Up to 30% (preferably 0.5-20%) conventional carbonaceous fuel or 0.5-15% metal (Al and Al alloys, ferrosilicon, and ferrophosphorus) fuels, 0.3-2.0% antacid, 0.5-30% liq. slurrying agent, and small amts. of thickeners such as guar gum, CMC, psyllium seed mucilage, pregelatinized starch, silica aerogels, Al2O3, attapulgite, and bentonite may also be present. Thus, a mixt. contg. granular NH4NO3 81.50, petroleum oil 1.50, celite 1.00, and ground parchment paper 16.00% is a low-d. explosive powder (0.350), ballistic pendulum value 11.9. The d. of a control in which bagasse was substituted for ground paper was 0.420. In another formulation, replacement of a portion of the fuel, specifically 3.5% starch, with 3.5% ground parchment paper resulted in a decrease in d. from 1.44 to 1.32, a ballistic pendulum value increase from 11.05 to 11.35, and an increase in cap sensitivity from No. 10 to No. 2.

~2 Citings

36. Dry-appearing explosive compositions containing a porous material capable of releasing absorbed liquid at extrusion pressures

By Griffith, George L.
From U.S. (1967), US 3345224 19671003, Language: English, Database: CAPLUS

Solid particulate explosives of generally conventional compn. that can be extruded continuously at a safe pressure of ≤50 psi. into plastic tubes are provided by incorporation into the explosive of liquid-contg. porous particles, preferably <6 mesh, of expanded vermiculite, silica aerogels, Al2O3, SiO2 flour, and bentonite and org. compds., which also serve as fuels, which are preferred for use with oil as they release H2O in the mixer, such as polyurethane, nylon, cellulose, poly(vinyl chloride), and rubber sponges in a sufficient amt. to contain 0.5-20% expressible liquid. At extrusion pressures, such particles yield their absorbed liquid to transform the mixt. into a semisolid or thixotropic compn. which extrudes readily and then reabsorb the liquid to give a solid self-supporting column. Thus, a mixt. contg. wet nitrostarch (23% H2O) 17.0, NH4NO3 (ground prills) 53.0, granular NaNO3 15.0, ZnO 0.6, flake Al 1.75, Na2S2O3 0.3, no. 5 oil 0.25, pecan meal 3.0, CM-cellulose 1.3, guar gum 0.3, and no. 2 vermiculite (contg. <2.25 times its wt. of H2O) 7.0% were blended in a paddle mixer, passed through a no. 4 screen, and extruded easily into 1.25 × 14-ft. plastic tubes at 15-30 psi. to give dry-appearing self-supporting columns, detonator sensitivity no. 16 cap, ballistic pendulum value 10.1, d. 1.41 g./ml., and H2O content 8.24%. Sep. addn. of the vermiculite and H2O in this type of material cause immediate balling in the mixer.

~1 Citing

37. Explosive slurries from ammonium nitrate solutions and process for preparing the same

By Griffith, George L.
From U.S. (1967), US 3337380 19670822, Language: English, Database: CAPLUS

Inorg. nitrate-based nitrostarch (I)-sensitized slurries contg. ~10-50% H2O, which are impact resistant but far more sensitive to detonating agents than are corresponding conventionally prepd. slurries are provided by cooling a satd. aq. NH4NO3 soln. held at at least 210°F. (preferably 225-50°F.) and contg. >80% dissolved NH4NO3 to <125°F. (preferably <100°F.) with rapid agitation to obtain a fine grained NH4NO3 slurry to which is then added 2-30% I and other ingredients as desired, the porous nature of the I apparently allowing it to become satd. with NH4NO3 soln. with improvement in its sensitivity to detonating agents. Other inorg. nitrates conventionally used in explosive mixts. may be mixed with the NH4NO3 and other conventional sensitizers may be mixed with I if desired. Desirably, 0-10% conventional thickening and gelling agents, 0.5-30% conventional fuels, including metals, and up to ~5% conventional antacids are also added. Thus, a satd. soln. contg. 498 lb. NH4NO3 and 102 lb. H2O at 214°F. was passed to a Holo-Flite processor and a fine-grained slurry contg. 16.19% H2O at 104°F. obtained. To 64 parts of this was added a mixt. contg. wet I 22.4, milled NaNO3 10, ZnO 0.8, bituminous coal 1.5, oil no. 5 0.5, and guar gum 0.8 part. The explosive slurry obtained after mixing had the following characteristics: d. 1.44, ballistic pendulum value 10.10, sensitivity (in a 1.5-in. pipe) 10 g. Pentolite, detonation rate 4987 m./sec. A similar slurry prepd. by using 53.1 parts NH4NO3 prills and 10.9 parts H2O to replace 64 parts NH4NO3 slurry from the Holo-Flite processor had a d. of 1.41, ballistic pendulum value 10.35, a sensitivity (in a 1.5-in. pipe) 30 g. Pentolite.

~0 Citings

38. Nitrostarch explosives containing slowly hydratable guar gum

By Griffith, George L.
From U.S. (1967), US 3330706 19670711, Language: English, Database: CAPLUS

Explosive compns. contg. 50-75% of a preferably fine-grained conventional oxidizer, such as a nitrate, chlorate, or perchlorate, and esp. a mixt. of 80-90% NH4NO3 and 10-20% NaNO3, 15-30% sensitizing explosive, such a moist nitrostarch, alone or in combination with other conventional sensitizing explosives, as latent moist-nitrostarch sensitizer, a slowly hydratable guar gum modified to have a rate of hydration such that in the presence of sufficient H2O at 25° to form a 1% soln., ≥1 hr. is required for the soln. to reach a viscosity of 2000 cp. in such amt. as to be present to the extent of 5-50% of the H2O present. Suitably slowly hydratable guar gums are prepd. by known means, such as by dialdehyde treatment, or partial boration, etherification, or esterification. Carbonaceous and (or) metal fuels and antacids may also be present. Thus, mill NH4NO3 61.8, NaNO3 9.1, ZnO 0.3, flake Al 2.3, and oil no. 0.5 were mixed for 2 min., nitrostarch (contg. 23% H2O) 26 and guar gum (Jaguar 537-Z-8 which hydrates at a rate such as to form a soln. having a viscosity of 5-8 cp. in 5 min. and 265 cp. in 120 min.) 20 parts added, mixing continued for 2 min., and the mixt. screened and packed in 1.25 × 8-in. cartridges. After only 1 day, this material fired with a No. 6 cap: a control contg. no guar gum failed to fire with 3 g. PETN after 3 days.

~0 Citings

39. Explosive conitrates and process for preparing the same

By Griffith, George L.
From U.S. (1967), US 3300348 19670124, Language: English, Database: CAPLUS

Nonsegregating explosive conitrates having relatively low impact sensitivities and higher rates of detonation and higher initiation sensitivities than mech. mixts. of the individual nitrates which are particularly useful as sensitizing explosives are provided by nitration, preferably with a mixt. of HNO3 and sufficient H2SO4 to inhibit soln. of the nitric esters in the nitration medium, of a mixt. of a com. starch, preferably corn starch, and a polyol or polyol deriv. such as pentaerythritol (I), (preferred), its hydroxy esters, dipentaerythritol and higher pentaerythritols, mannitol, sorbitol, erythritol, trimethylolpropane, and neopentyl glycol. The materials may be nitrated consecutively or simultaneously. Thus, about 1 lb. of fine I is added incrementally to 10 gal. of a stirred mixt. of 38% HNO3 and 62% H2SO4 held at 35°F., the temp. raised to 40°F. and about 4 lb. cornstarch added incrementally over 5 hrs., the nitration mixt. transferred to 100 gal. cold H2O to give a nonsegregating conitrate (II) contg. ~80% nitrostarch and 20% I tetranitrate. With a 10-kg. hammer impact, sensitivity of II is 60 cm. the value for an 80:20 mech. mixt. of the two individual nitrates is 35 cm. A conventional blasting slurry contg. 13.1% II in a confined 1.5-in. diam. column is sensitive to initiation with 2 g. PETN: an identical slurry contg. 13.1% nitrostarch instead of II requires 10 g. Pentolite for initiation under identical test conditions.

~1 Citing

40. Extrudable explosive compositions of semisolid or thixotropic consistency

By Griffith, George L.; Knotts, George F.; Schwoyer, William L.
From No Corporate Source data available (1966), US 3238074 19660301, Language: Unavailable, Database: CAPLUS

Compns. suitable for loading into explosive containers by extrusion are described. Semisolidity or thixotropicity of the explosive compn. is obtained by inclusion of ≤10% flake Al, supplemented by other lubricants, such as finely divided graphite, mica, talc, Al stearate, or Zn stearate. Liquids such as H_2O, oil or other inert liquid may be included to impart sufficient fluidity to permit extrusion at <30 psi. Gelling agents described in U.S. 2,655,476 (CA 48, 1670f) and 2,711,393 (CA 49, 13641a), and waterproofing agents described in U.S. 2,554,222 may be included. Sensitizing explosives, such as TNT, PETN, DNT, or RDX promote ease of detonation. In spite of the inclusion of sensitizing explosives, a booster is used. For example, an explosive mixt. of semisolid consistency was prepd. by using dry milled nitrostarch 27.00, fine-grained NH_4NO_3 47.25, fine-grained $NaNO_3$ 10.75, flake Al 2.50, guar gum 2.50, oil no. 5 1.00, H_2O 8.00, and ZnO 1.00%. The nitrostarch and mixed nitrates were thoroughly blended, and the ZnO, Al, guar gum, and the oil and H_2O were then added. This compn. was quite stiff and non-fluid at room temp., but it was extrudable at 20 psi. through 1.25-in.-diam. extrusion nozzles into cartridges 2 ft. long and 2 in. in diam., made of heavy carboard 0.082 in. thick, to ~2.5 in. from the top. A booster charge with a well for a detonator was placed in the unfilled 2.5 in. The detonation rate of the cartridge was 5.5 km./sec.

~0 Citings

41. Water-resistant explosive compositions

By Wells, Franklin B.; Rinkenbach, William H.
From No Corporate Source data available (1965), US 3180773 19650427, Language: Unavailable, Database: CAPLUS

Com. fertilizer-grade ground bone meal is the waterproofing component of nitrate salt-based explosive compns. in order to give longer detonable life to borchole-loaded explosives. Thus, an explosive mixt. of dry nitrostarch 25.0, grained NH_4NO_3 51.6, grained $NaNO_3$ 20.8, ZnO 0.3, mineral oil 0.3, and bone meal 2.0% was prepd. The bone-meal particle size (U.S. Standard screens) was: +20-mesh 0, -20 + 40 1, -40 + 60 3.5, -60 + 80 10.5, -80 + 100 39.0, -100 + 120 5.5, -120 + 230 24.0, and -230 16.5%. An immersion test of perforated 1.25 × 8-in.-diam. compn.-loaded cartridges in 24 in. of H_2O showed detonability after 144, but not after 168 hrs. A control compn. with no bone meal was tested and found to be useless after several hrs. immersion.

~0 Citings

42. Aqueous nitrostarch explosive slurries

By Griffith, George L.; Wells, Franklin B.
From No Corporate Source data available (1963), US 3083127 19630326, Language: Unavailable, Database: CAPLUS

Improved aq. explosive slurries having high power, brisance, and sensitivity to initiation and low sensitivity to impact are provided by mixts. contg. 10-30 (preferably 15-25)% nitrostarch, 35-75 (preferably 50-75)% inorg. nitrate, such as NH_4NO_3, alone or mixed with ≤75 parts alkali metal nitrate to 25 parts NH_4NO_3, the nitrate:nitrostarch ratio being 5-2:1, 10-40% H_2O, and conventional fuels and (or) powd. metals, thickeners, and neutralizers. Superiority of such slurries over conventional, coarse-grained TNT slurries is illustrated by a mixt. contg. nitrostarch 30, NH_4NO_3 50, flake Al 30, and H_2O 31 parts having d. 1.24, ballistic pendulum value 12.5, sensitivity (in 2-in. pipe) 3 g. PETN, rate of detonation (r.o.d.) (in 2-in. diam. pipe) 5010 m./sec., and crater value 9.6 (cu. ft. of earth moved/lb.). A mixt. contg. nitrostarch 20, NH_4NO_3 37, $NaNO_3$ 24.2, bagasse 1, Hydroseal 3B 3, 200 Saybolt viscosity mineral oil 1, sea coal 1.5, ZnO 0.3, and H_2O 16 parts had resp. values of 1.44, 8.8, 3, 5545, and 10.4. An increased $NaNO_3$ content makes all values except d. less desirable, while a decreased $NaNO_3$ content lowers the d. and crater value somewhat, improves the ballistic pendulum value, and has little effect on the other values. As $NaNO_3$ increases, the ballistic pendulum values drop as expected; hence this detn., unlike the crater value, is not reliable for power rating of explosives contg. metal nitrates.

~1 Citing

43. Nitrostarch

By Zimmermann, Werner; Sieper, Gustav A.; Reinhardt, Lothar
From No Corporate Source data available (1961), US 2995549 19610808, Language: Unavailable, Database: CAPLUS

A process for the prepn. of starch nitrate (I) having better stability than the I prepd. from mixed HNO_3 and H_2SO_4 is provided by nitration through soln. of the starch in strong (at least 90%) HNO_3, followed by pptn., and washing with successively more dil. HNO_3, which wash solns. are recycled. Such washing prevents acid occlusion and permits the final acid removal by H_2O to produce a stable I. Thus, 500 g. cornstarch (<2% H_2O) is added with agitation during 30 min. to 1.7 l. of 98% HNO_3 in a 4-l. autoclave while the temp. rises to 35°. The mixt. is stirred at that temp. for 30 min. The clear soln. is blown by air at 1 atm. excess pressure through nozzles having a bore of 0.5 mm. into 45% aq. HNO_3. The acid is removed by suction, and the filter cake of grains, 0.1 mm. in diam., successively treated with 2 l. of 30% HNO_3, 1.8 l. of 15% HNO_3, and 1.6 l. of 5% HNO_3, and finally with H_2O to remove all acid. The cake is dried to give 790 g. (98%) of I contg. 11.8% N and having a viscosity of K = 27 (2 g. I in 100 cc. acetone). A similar treatment of 5 kg. potato starch with 1000 kg. 98% HNO_3 gives 80 kg. (99.2%) I contg. 13.3% N and having a viscosity of K = 35 (2 g. I in 100 cc. acetone). The I produced by this process can be completely stabilized conventionally.

~0 Citings

44. Nondusting nitrostarch composition

By Wilt, Paul E., III; Nelson, Richard G.
From No Corporate Source data available (1961), US 2968541 19610117, Language: Unavailable, Database: CAPLUS

A nondusty nitrostarch (I) is provided by adding to I 0.5-5.0% (preferably 0.75-1.25%) of a tacky polybutene within the viscosity range in Saybolt Universal sec. of 180(100°F.) to 2700(210°F.)and preferably 135-620(210°F.) or by adding a tacky soln. of a rubbery polybutene, natural rubber, or synthetic rubber in a liquid polybutene. Preferably, the tacky material is added as an emulsion, and the mixt. is then dried. Emulsifiers, such as certain polyoxyethylene tallow amines or polyoxyethylene ethers of higher fatty alcs.; stabilizers, such as 0.5-1.0% urea, Ph_2NH, or NH_4 phosphate; and desensitizers, such as 0.25-100% mineral oil, are included. Thus, an emulsion was prepd. from urea 1.4, polyoxyethylene (20) tallow amine 0.2, H_2O 5, kerosine 0.8, and polybutene (400 Saybolt Universal sec. at 210°F.) 1.65 g. and applied by medicine dropper to 165 g. wet I on a centrifugal filter. The I was air-dried to 1% H_2O to give a nondusty powder which showed no measurable static build-up. Untreated I dried to the same extent was dusty and gave a static build-up of 360 v.

~0 Citings

45. Stabilization and purification of starch nitrates

By Zimmermann, Werner; Sieper, Gustav A.; Reinhardt, Lothar
From No Corporate Source data available (1958), DE 1031300 19580604, Language: Unavailable, Database: CAPLUS

Nitrated starch is stabilized and purified by washing with boiling aq. MeOH. Thus, nitrated starch contg. 12.7% N was washed with cold 45-50% MeOH and then heated twice with addnl. 45-50% MeOH for 5 hrs. After filtering and drying, a sample of the starch nitrate did not evolve red fumes on heating for 2 hrs. in the Bergman-Junk test, and the amt. of split-off NO was only 2.3 cc. Another sample of the product washed only with H_2O was unstable.

~0 Citings

46. Nitrostarch

By Zimmermann, Werner; Sieper, Gustav A.; Reinhardt, Lothar
From No Corporate Source data available (1959), GB 815280 19590624, Language: Unavailable, Database: CAPLUS

A soln. of starch in concd. HNO_3 is introduced in finely dispersed form into aq. HNO_3 of concn. <40% and free of H_2SO_4. Pptn. is aided by use of fine nozzles of the "Schlick" type to generate vibrations in the soln. The pptd. starch nitrates may be subjected to a final wash in stages with aq. HNO_3 of progressively dimishing concn. and finishing with pure H_2O. The product is useful as a substitute for collodion cotton of very low viscosity.

~1 Citing

47. Globular propellant

By Cook, Ralph L.; Andrew, Eugene A.
From No Corporate Source data available (1959), US 2888713 19590602, Language: Unavailable, Database: CAPLUS

A continuous process for the rapid, simple, and economical prepn. of globular or near-globular gelatinized propellant-base particles from droplets of lacquer contg. the base is provided by suspension of the lacquer particles in a nonsolvent medium, mixing with an excess of the same medium at an elevated temp. such that the entire mixt. is above the b.p. of the solvent which is then driven off rapidly to produce the desired propellant grains. Thus, a lacquer is prepd. by mixing 1.5 parts nitrocellulose (I) of which 0.5 part H_2O with 4 parts AcOEt contg. about 1% 2-nitrodiphenylamine and 0.25% chalk at 65° for 0.5 hr. to give a soln. of I. At the same time, a suspending mixt. is prepd. by heating together H_2O 100, Na_2SO_4 3.4, animal glue 17, AcOEt 0.5 part at 65° with agitation to give complete soln. Two parts of the latter and 1 of the former mixt. are then mixed in a grainer to form granules about 0.010 in. in diam. Five parts suspending mixt. at 128° was added at 40 lb./sq. in. to 1 part of the original suspension. The mixt. was removed to a flash chamber under slight vacuum, the residual AcOEt and water removed by centrifuging, and the solid matter washed and dried to give a propellant having particles 0.002-0.004 in. in diam. and a d. of 1.54. Propellant grains up to 0.035 in. in diam. can be prepd. by this process. Nitrostarch and poly(vinyl nitrate) can be used instead of I.

~0 Citings

48. Nitrostarch

By Grageroff, Ignace A.
From No Corporate Source data available (1959), US 2883376 19590421, Language: Unavailable, Database: CAPLUS

A process for the prepn. of nitrostarch with improved stability is provided by completely dissolving the starch (corn starch preferred) in a 55% aq. HNO_3 soln. at -5° and then, in the same container, nitrating the clear soln. thus produced by adding thereto mixed nitrating acids and recovering the nitrostarch by the customary methods. Thus, 10.72 g. dry cornstarch powder is added with agitation to 224 g. of 55% HNO_3 while the temp. is held at -5°. When soln. is complete, 556 g. of a mixed acid contg. H_2SO_4 79.91, HNO_3 19.73, NO_2 0.32, and H_2O 0.04% is added slowly with continued agitation and cooling to -5°. The nitrostarch is recovered from the spent acid by filtration, washed with 1% NH_4OH, ground to a fine consistency, washed with water at 70°, and dried at about 70°. If the product fails to pass a 45-min. Abel test, it is rewashed.

~0 Citings

49. Blasting explosives

By Griffith, Geo. L., Jr.; Samuel, David G., Jr.
From No Corporate Source data available (1958), US 2860041 19581111, Language: Unavailable, Database: CAPLUS

A process is provided for prepg. blasting explosives that are relatively nonsensitive and nonhazardous in handling and manuf. but which acquire full sensitiveness by the time the explosive is to be used through incorporation into a mixt. contg. a damp, nitrated hydrocarbon, such as nitrostarch (I) and the other normal ingredients of blasting dynamites up to about 5% of an org. hydrophylic but not hygroscopic latent sensitizer (water absorber), such as locust-bean ext., gum karaya, or Na carboxymethylcellulose (II) which absorbs the water from the damp I to sensitize the mixt. and in so doing forms a gelatinous layer on the particles which aids in preventing penetration of external water. The sensitizer is of such fineness that at least 80% passes a standard 30-mesh screen. Thus, NH_4NO_3 51.8, $NaNO_3$ 16.1, Al powder 2.7, II 1.0, pecan meal 1.0, petroleum oil 0.4, ZnO 0.3, and moist I (contg. 20% water) 33.4 parts are thoroughly mixed to produce a dynamite of high strength and a standard d. of 1.30 which is sensitive to a no. 16 cap 1 hr. after mixing and to a no. 1 1/2 cap 16 hrs. thereafter. The use of I contg. 25% water and 5 parts II gives a dynamite of standard d. 1.38 which is sensitive to no. 16, no. 8, and no. 1 1/2 caps 1, 16, and 40 hrs., resp., after mixing. Locust-bean ext. and gum karaya give substantially identical results.

~1 Citing

50. Nitrate explosives

By Russell, Edward J.
From No Corporate Source data available (1958), US 2821466 19580128, Language: Unavailable, Database: CAPLUS

Water-resistant blasting dynamite mixts. of 5-49% nitrostarch (I) gelatinized with 0.5-30% 1,1,1-tris(hydroxymethyl)ethane trinitrate (II) are prepd. by mixing at room temp. 5 or more parts by wt. of I (contg. up to 13% N) with up to 100 parts by wt. II which dissolves to the extent of about 1.5 parts while the remaining granules become soft and jellylike. This adhesive material serves to moistureproof explosive compns. contg. water-sol. nitrates of such particle size that 100% passes a 10-mesh and <50% passes a 120-mesh screen. Thus, water resistant semigel-type explosive compns. contg. 0-84.5% NH_4NO_3, 0-54.5% $NaNO_3$, 0.5-40% I, 5-30% II, 1.5-5% carbonaceous matter, and 0.5% $CaCO_3$ are prepd. A specific compn. contains 72% NH_4NO_3, 3.5% $NaNO_3$, 20% I, 1% II, 3% carbonaceous matter, and 0.5% chalk.

~0 Citings

51. Cast explosive

By Rinkenbach, Wm. H.; Carroll, Wm. J., Jr.
From No Corporate Source data available (1957), US 2817581 19571224, Language: Unavailable, Database: CAPLUS

A powerful and relatively dense cast explosive which is safe to handle and transport and which is dependably detonatable under confinement is provided by mixing together 74-85 parts NH_4NO_3 of such particle size that it passes 10 mesh and less than 50% passes 200 mesh, 14-20 parts urea, and 1-6 parts of a sensitizing component contg. one or more sensitizers such as cyclonite, TNT, pentaerythritol tetranitrate, and powd. metals and alloys, such as Al, Mg, and ferrosilicon, mixing, screening several times through a 10-mesh screen, warming to 50-100° to form a relatively thick slurry, and casting into cylinders or blocks. Thus, 771 g. cryst. NH_4NO_3, 179 g. urea, and 50 g. cyclonite are mixed thoroughly and passed several times through a 10- mesh screen. The mixt. is heated to 50° with stirring to form a mushy viscous slurry which is then cast. The solidified material does not detonate unconfined when boostered with 100 g. 60% dynamite but does so completely when confined in steel pipe. The bulk d. is 1.41 g./ml. Examples of the use of different proportions and of ferrosilicon, nitrostarch, and powd. Al are included.

~0 Citings

52. Ignition delay composition

By Toshima, Tadashi; Honma, Kunio; Nakai, Kashichi; Yoshitomi, Hirohiko
From No Corporate Source data available (1955), JP 30008498 19551121, Language: Unavailable, Database: CAPLUS

A delay compn. contg. BaO_2 83.0, p-nitrophenylazo-2-naphthol 1.5, nitrostarch 1.5, and Fe oxide 14.0% ignites at 350° and burns below 600° after a 4-sec. delay. The combustion residue dies out within 3 millisec.

~0 Citings

53. Ignition composition

By Trevorrow, Wm. D.
From No Corporate Source data available (1949), US 2487906 19491115, Language: Unavailable, Database: CAPLUS

Ignition compns. comprising Pb styphnate and nitrostarch in a solvent are prevented from jelling by the inclusion of 1-20% of acetone in the solvent-resin formula. Cf. C.A. 44, 2247a.

~1 Citing

54. Treating antimony drosses

By Jones, Thomas R.
From No Corporate Source data available (1946), US 2401001 19460528, Language: Unavailable, Database: CAPLUS

The dross is mixed with a halide, e.g., NH_4Cl, sufficient to convert all metals present to chlorides plus 25% excess, and the mixt. retorted at 500°. The fume, which contains some NH_3, is scrubbed with H_2O whereupon the Sb, together with the other heavy metals present, ppt. as oxides and are recovered by filtration. At this temp. As accompanies the Sb, Sn and Bi oxide, and Zn, Ag, Cu, Fe, Pb, etc., remain in the retort. Two flow-sheets are presented, in which provision is made for recovery and reuse of the NH_4Cl.

~0 Citings

55. Nitration

By Caesar, Geo. V.
From No Corporate Source data available (1946), US 2400287 19460514, Language: Unavailable, Database: CAPLUS

In nitration, water is formed, which dilutes the nitrating mixt. and hinders nitration. If N_2O_5 be used, HNO_3, instead of water, is formed. By nitrating with N_2O_5 in the presence of P_2O_5, the latter reconverts the formed HNO_3 to N_2O_5; $2HONO_2 + P_2O_5 \rightarrow N_2O_5 + 2HPO_3$. A nonaq., inert solvent, such as $CHCl_3$, CCl_4, $PrCl_2$, is used. P_2O_5 and HPO_3 are insol. in such solvents. Since water is not present, there is no degradation of the mol. of the substance to be nitrated and no reduction in viscosity. No sulfates, difficult to remove from the nitrated product, are formed. Examples of the nitration of starch, cotton linters, pentaerythritol, toluene, and dimethyloxamide are given.

~3 Citings

56. Continuous production and stabilization of nitrates of cellulose or nitrates of other alcohols like starch

By Berl, Ernst
From No Corporate Source data available (1945), US 2384415 19450904, Language: Unavailable, Database: CAPLUS

Cellulose can be nitrated in a few sec. or min. to a compd. with 13.95% N by means of HNO_3, HPO_3, and P_2O_5. The HNO_3, 50-60% of the mixt., is reduced to a few tenths of a % during the nitration. Treatment with alc. or with alc.-C_6H_6 rapidly and efficiently stabilizes the nitrate. Mixed acid contg. AcOH and Ac_2O instead of HPO_3 and P_2O_5 may be used with equally good results; mixed acids composed of HNO_3, HPO_3, AcOH, and P_2O_5 are also suitable. A continuous sheet of cellulose is led through a bath where it is nitrated, washed, and stabilized at a rate more than 100 times as rapid as with the usual HNO_3-H_2SO_4 method. Equipment for the production of cellophane may be used for this purpose with only slight modification. The nitrated and stabilized cellulose tissues are particularly suitable as acid-resisting filter cloth and for certain military purposes. Sugar, starch, glycerol, glycol, pentaerythrite, etc., may also be nitrated by this process.

~1 Citing

57. Solvents, gelatinizers, and plasticizers for cellulose derivatives

By Endres, Rudolf
From No Corporate Source data available (1943), DE 740700 19430909, Language: Unavailable, Database: CAPLUS

See Fr. 842,780 (C.A. 34, 5971.9).

~0 Citings

58. Explosive composition insensitive to blasting cap

By Snelling, Walter O.
From No Corporate Source data available (1945), US 2371000 19450306, Language: Unavailable, Database: CAPLUS

Insensitive NH_4NO_3 explosives of the type described in U.S. 1,992,217 (C.A. 29, 2744.9) sometimes fail to detonate completely with the usual booster charge of 1,000 g. of TNT, when used in blasting soft rock formations, such as shale, where the degree of confinement is less than in hard rock. Complete detonation results when the granules of explosive are coated with 0.5 to 3.0% of starch nitrate in the form of powder having dimensions from 0.0005 to 0.002". The explosive so treated is still insensitive to a No. 6 cap. A binding material, such as lacquer, resin, or corn sirup, may be used on the surface of the granules to adhere the starch nitrate.

~0 Citings

59. Stabilizing nitrated carbohydrates such as nitrated starch, sugar or cellulose

By Wyler, Joseph A.; Boyd, Richard N.
From No Corporate Source data available (1942), US 2297734 19421006, Language: Unavailable, Database: CAPLUS

The nitrated carbohydrate is simultaneously brought into contact with an aq. soln. of $NaHCO_3$ having a pH of 7.1-8.2 and a 0.2% soln. of dicyanodiamide in water, at a temp. of 10-30°.

~2 Citings

60. Compositions containing nitrostarch and synthetic resins

By Bowlby, Walter D.
From No Corporate Source data available (1942), US 2279438 19420414, Language: Unavailable, Database: CAPLUS

A compn. which is suitable for use as a lacquer and which is hardenable by heating in air at a temp. below 120° is formed contg. nitrostarch 10-50 parts together with 90-50 parts of an alkyd resin having an iodine no. of approx. 65 to 135, together with an ester of a polyhydric alc. and a drying oil fat acid, in which the drying oil fat acid represented is in the proportion of about 1-7 equiv. proportions for 3 of the polycarboxylic acid.

~1 Citing

61. Fractionating starch nitrate

By Snelling, Walter O.; Rees, Geo. E.
From No Corporate Source data available (1942), US 2271877 19420203, Language: Unavailable, Database: CAPLUS

Starch nitrate is dissolved in part in a solvent mixt. consisting largely of a hydrocarbon diluent such as benzene or toluene and substantially anhyd. MeOH, and the resulting soln. is sepd. from the undissolved material at a temp. of about 50°. By this treatment, a product for making clear lacquers is obtained.

~1 Citing

62. Lacquers containing nitrostarch

By Bowlby, Walter D.
From No Corporate Source data available (1941), US 2261642 19411104, Language: Unavailable, Database: CAPLUS

Nitrostarch is used with a substantially nonpolymerizing blown drying oil such as blown perilla oil, the proportion of the nitrostarch being 10-60% of the combined wt. of the nitrostarch and blown oil. Such lacquers dry rapidly to hard, tough films.

~1 Citing

63. Stabilizing nitrated starch

By Kunz, Alfons
From No Corporate Source data available (1940), DE 691154 19400425, Language: Unavailable, Database: CAPLUS

~1 Citing

64. Drying starch

By Horesi, Anthony C.
From No Corporate Source data available (1941), US 2235683 19410318, Language: Unavailable, Database: CAPLUS

App. is described, and a process of drying starch in a moist but non-fluent state without substantial gelatinization, which involves subjecting the starch cake to a milling operation and simultaneously subjecting the finely divided starch to contact with a stream of drying gas such as air from a source outside the process which is heated to a temp. above the gelatinizing temp. of the starch instantaneously to remove the major portion of the moisture.

~0 Citings

65. Nitration of powdered starch

By Kunz, Alfons; Helle, Johann
From No Corporate Source data available (1940), DE 690704 19400411, Language: Unavailable, Database: CAPLUS

The powd. starch is mixed with a nitrating mixt. contg. 70-90% HNO_3 at a temp. of 5°. Best results are obtained with a nitrating mixt. consisting of 75-85% HNO_3 and 25-15% H_2SO_4 at a temp. of -5°. A starch acid ratio of 1:4 or 5 will filter easily.

~1 Citing

66. Combustible composition containing magnesium or an alloy of magnesium

By Takasaki, Yosihiko
From No Corporate Source data available (1939), JP 133222 19391114, Language: Unavailable, Database: CAPLUS

A mixt. of Mg or Mg alloy and inorg. salts or org. matter contg. water or moisture, or 1 or more salts contg. water of crystn., is specified. Combustion is accelerated by the O and H from the decompn. of water.

~0 Citings

67. Apparatus for operations such as washing out acid from nitrated starch

By Helle, Johann; Kunz, Alfons
From No Corporate Source data available (1940), US 2222664 19401126, Language: Unavailable, Database: CAPLUS

Various structural and operative details for treating successive batches of material upon a continuous belt system.

~1 Citing

68. Circulation of liquids of chemical baths such as photographic film-developing baths

By Geyer, Walter
From No Corporate Source data available (1940), US 2222224 19401119, Language: Unavailable, Database: CAPLUS

Various details of app. and operation.

~0 Citings

69. Stabilization of nitrated starch

By Stacho, Oliver
From No Corporate Source data available (1940), HU 123989 19400701, Language: Unavailable, Database: CAPLUS

Nitrostarch is treated with capillary-active aliphatic or aromatic org. compds. that contain polybasic mineral acid groups fixed on their carbon chains either directly or through N, O or S atoms. The medium used in the reaction must not dissolve or gelatinize the nitrated starch.

~1 Citing

70. Stabilization of nitrated starch

No Inventor data available
From No Corporate Source data available (1939), HU 121180 19390801, Language: Unavailable, Database: CAPLUS

Nitrostarch is sepd. of the nitrating acid mixt. and treated in an aq. soln. with 50-90% EtOH, washed with alc. and dried cautiously.

~1 Citing

71. Removing acid from nitrated starch

By Helle, Johann; Kunz, Alfons
From No Corporate Source data available (1938), US 2127360 19380816, Language: Unavailable, Database: CAPLUS

A process is described for the removal of nitrating acid from nitrated starch by displacement of the acid with water, which consists in drawing the water successively through a series of batches of the nitrated starch on filters wherein the liquid drawn through the last filter of the series is passed into the next preceding filter and so on, until the acid removed from the successively filtered batches of the series is drawn through a filter containing fresh nitrated starch, the water-washed nitrated starch being withdrawn from that end of the series where the fresh water enters while the filter thus cleared before being charged again with nitrated starch is freed from water. App. is described.

~2 Citings

72. Drying nitrostarch

No Inventor data available
From No Corporate Source data available (1938), HU 118215 19380615, Language: Unavailable, Database: CAPLUS

Water-contg. nitrostarch is pressed in vacuo to remove most of the water, then disintegrated and dried by an air current.

~0 Citings

73. Removing acid from nitrated starch

No Inventor data available
From No Corporate Source data available (1938), HU 118103 19380516, Language: Unavailable, Database: CAPLUS

Starch nitrated according to the preceding abstr. is washed with water in countercurrent. Technical details are given.

~1 Citing

74. Nitration of starch

No Inventor data available
From No Corporate Source data available (1938), HU 118102 19380516, Language: Unavailable, Database: CAPLUS

Starch powder is treated with 4-6 parts by wt. of an acid mixt. contg. 75-85% HNO_3 and 25-15% H_2SO_4 at a temp. below 5° with continuous mixing. The product is continuously led off and a subsequent nitration takes place in a cooled space. Cf. C. A. 32, 3964.4.

~1 Citing

75. Fusee

By Sherman, Louie A.
From No Corporate Source data available (1938), US 2120580 19380614, Language: Unavailable, Database: CAPLUS

A shell contains a plurality of preformed combustible units each constructed to burn approx. throughout a predetd. period of time.

~0 Citings

76. Blasting explosive

By Nice, Milo A.
From No Corporate Source data available (1938), US 2120503 19380614, Language: Unavailable, Database: CAPLUS

A nongelatinous explosive contg. an explosive liquid nitric ester such as nitroglycerin together with nitrocellulose, NH_4NO_3 and a nondetonating absorbent such as wood pulp, flour, etc., has a d. corresponding to about 90 to 100 1.25-in. by 8-in. cartridges per 50 lb. (the NH_4NO_3 constituting about 26-46% and the liquid nitric ester about 22-28% of the explosive).

~0 Citings

77. Nitrating starch

By Helle, Johann; Kunz, Alfons
From No Corporate Source data available (1938), US 2112989 19380405, Language: Unavailable, Database: CAPLUS

Dry powd. starch is mixed with a nitrating acid contg. 70-90% HNO_3, and during the mixing and subsequent reaction the temp. of the materials is maintained below 5°. App. is described. Such regulation of the process serves to produce a product easily sepd. from spent acid and easily stabilized.

~1 Citing

78. Composition containing nitrostarch and nitrated sucrose

By Wyler, Joseph A.
From No Corporate Source data available (1938), US 2105389 19380111, Language: Unavailable, Database: CAPLUS

A light, fluffy, pulverulent compn. suitable for use as an explosive comprises a solid soln. of nitrostarch at least 8.4% in a predominating amount of nitrated sucrose.

~1 Citing

79. Nitrostarch

By Norman, Geo. M.
From No Corporate Source data available (1933), US 1908857 19330516, Language: Unavailable, Database: CAPLUS

Porous starch flakes are subjected to the action of a mixt. of HNO_3 and H_2SO_4 for producing explosive nitrated porous flakes.

~1 Citing

80. Stabilizing nitrostarch

By Snelling, Walter O.; Wyler, Joseph A.
From No Corporate Source data available (1931), US 1835911 19311208, Language: Unavailable, Database: CAPLUS

Nitrostarch is treated with pyridine of low concn. (suitably in a 0.1% aq. soln.) simultaneously with another neutralizing agent such as NH_3 and $MeNH_2$.

~0 Citings

81. Nitrostarch

By Pickett, Oscar A.
From No Corporate Source data available (1930), US 1779825 19301028, Language: Unavailable, Database: CAPLUS

A nitrated starch of relatively low viscosity and a high degree of soly. and stabilization is prepd. by the simultaneous swelling and nitration of starch of normal d.

~1 Citing

82. Nitrating of starch or other materials

By Skoglund, Jean V.
From No Corporate Source data available (1930), US 1751367 19300318, Language: Unavailable, Database: CAPLUS

In order to free the nitrate products from mixed acids, substantially all the free mixed acid is displaced by a mineral acid, such as H_2SO_4, of substantially the same sp. gr. recoverable in concd. form after diln. by evapn. of the water content; the material is drowned with water. An app, is described.

~0 Citings

83. Explosives containing nitrated sugar

By Wrightsman, Philip G.
From No Corporate Source data available (1930), US 1751377 19300318, Language: Unavailable, Database: CAPLUS

A suspension of 25-50% of sugar in a chlorohydrin-contg. mixt. (which also may contain glycol or glycerol, etc.) or less viscosity than glycerol is nitrated to obtain a product which is suitable for making explosives of the dynamite type.

~0 Citings

84. Transporting and handling nitrostarch or other pulverulent materials

By Snelling, W. O.; Rupp, G. A.
From No Corporate Source data available (1927), US 1652960 19271213, Language: Unavailable, Database: CAPLUS

Nitrostarch or other pulverulent material in the form of a slurry is introduced into a tank, permitted to settle and subjected to vibration to promote settling; supernatant liquid is removed, the remaining material is transported in the tank, and, when it is desired to remove it from the tank, liquid is added again to form a fluent slurry which flows from the tank.

~2 Citings

85. Drying nitrostarch

By Bronstein, J. B.
From No Corporate Source data available (1926), US 1573673 19260216, Language: Unavailable, Database: CAPLUS

A slurry of nitrostarch is placed in long narrow tubular fabric bags and these are exposed to a drying atm.

~0 Citings

86. Ammonium nitrate explosive

By Bryan, L. O.
From No Corporate Source data available (1924), US 1509393 19240923, Language: Unavailable, Database: CAPLUS

A blasting explosive is formed with NH_4NO_3 and finely ground propellent explosive powder such as ground smokeless powder and auxiliary ingredients, e. g., nitroglycerin, NaCl, $NaNO_3$ and $CaCO_3$.

~0 Citings

87. High explosive

By Marshall, J.
From No Corporate Source data available (1924), US 1509362 19240923, Language: Unavailable, Database: CAPLUS

A finely comminuted propellent explosive, e. g., ground smokeless powder, is used in the proportion of 25% or more together with about 1-10% of dinitrotoluene or other aromatic nitro compd., completely gelatinized with the propellent explosive, and with $NaNO_3$, $CaCO_3$, Al or other ingredients to form a composite explosive for blasting.

~0 Citings

88. Treating nitro-starch or similar substances

By Snelling, W. O.
From No Corporate Source data available (1924), US 1504986 19240812, Language: Unavailable, Database: CAPLUS

A weak soln. of a reducing agent, e. g., a 2% soln. of $Na_2S_2O_3$ and H_2SO_4 in H_2O, at a temp. above 60° (preferably about 100°) is used to effect stabilization.

~1 Citing

89. Explosive containing nitrated glycerol and starch derivatives

By Klinger, H. W.
From No Corporate Source data available (1924), US 1503956 19240805, Language: Unavailable, Database: CAPLUS

A mixt. of glycerol 70-90 with starch 30-10 parts is treated to convert the starch into a deriv. sol. in the glycerol (which may be effected by heating with a small proportion of HCl or H_2SO_4) and the soln. thus obtained is nitrated with a mixt. of HNO_3 and H_2SO_4. The nitrated mixt. thus formed is washed with H_2O and an alk. soln.

~0 Citings

90. Nitrostarch explosive

By Snelling, W. O.
From No Corporate Source data available (1923), US 1472691 19231030, Language: Unavailable, Database: CAPLUS

Nitrostarch 40 and $Pb(NO_3)_2$ 57 are used together with oil 3% for filling shells. For other purposes the proportions may be varied somewhat and other ingredients added.

~0 Citings

91. Fertilizer

By Snelling, W. O.
From No Corporate Source data available (1922), US 1410037 19220321, Language: Unavailable, Database: CAPLUS

Nitrated starch or cellulose is used as a fertilizer together with NH_4NO_3.

~1 Citing

92. Nitrostarch explosives

By Bronstein, J. B.
From No Corporate Source data available (1921), US 1398931 19211129, Language: Unavailable, Database: CAPLUS

Voids of nitrostarch explosives are filled with glucose or glucose mixts. to obtain a solid or plastic mixt. of increased velocity of detonation. A mixt. formed of starch, H_2O and glucose may be added to explosives contg. nitrostarch and inorg, nitrates.

~0 Citings

93. Removing water from nitrostarch, etc.

By Snelling, W. O.
From No Corporate Source data available (1921), US 1395776 19211101, Language: Unavailable, Database: CAPLUS

The H_2O content of wet nitrostarch or similar substances is reduced by mixing the material with a concd. soln. of NH_4NO_8 or similar compd. having a high soly. in H_2O and then removing the excess soln. by centrifuging. $NaNO_3$, NH_4ClO_4 or other oxidizing salts may be added.

~0 Citings

94. Nitrostarch explosives

By Snelling, W. O.
From No Corporate Source data available (1921), US 1386440 19210802, Language: Unavailable, Database: CAPLUS

An oil such as lard oil, cottonseed oil or mineral oil is added to nitrostarch explosives, to the amt. of 2-17%, as a desensitizing agent.

~0 Citings

95. Preparing explosives from undried organic nitrates

By Snelling, W. O.
From No Corporate Source data available (1921), US 1386439 19210802, Language: Unavailable, Database: CAPLUS

H_2O present in undried org. nitrates such as nitrostarch is displaced by a concd. soln. of NH_4NO_3 or other inorg. nitrate, which forms an explosive directly without evaporative drying.

~0 Citings

96. Explosives

By Snelling, W. O.
From No Corporate Source data available (1921), US 1386438 19210802, Language: Unavailable, Database: CAPLUS

H_2O in excess of 3% together with CdO, $Cd(OH)_2$, ZnO or $Zn(OH)_2$ 3-4% is present in explosives mainly formed of nitrostarch and NH_4NO_3. The H_2O and hydroxide serve to reduce sensitivity to blows or friction. The proportions of the ingredients of the explosive may be nitrostarch 20-60, NH_4NO_3 60-20, H_2O 3-15 and ZnO 1-5%

~0 Citings

97. Nitrostarch explosive

By Snelling, W. O.
From No Corporate Source data available (1921), US 1386437 19210802, Language: Unavailable, Database: CAPLUS

Deliquescent salts such as NH_4NO_3 are used in nitrostarch explosives together with sufficient H_2O to hold a substantial portion of the salt in soln., in order to reduce the sensitivity to shock or friction.

~0 Citings

98. Nitrostarch explosive

By Waller, C. E.
From No Corporate Source data available (1921), US 1386478 19210802, Language: Unavailable, Database: CAPLUS

An explosive of high brisance is formed of nitrostarch 60-70, NH_4NO_3 19-9, $Ca(NO_3)_2$ 4-8 and H_2O 17-13%.

~0 Citings

99. Nitrostarch

By Anchors, G. R.
From No Corporate Source data available (1921), US 1376598 19210503, Language: Unavailable, Database: CAPLUS

Starch or a puffed cereal to be nitrated is placed in a nitrating vessel and the nitrating acids are then introduced from the bottom of the vessel in order to displace air from the material. Cf. C. A. 14, 1045.

~1 Citing

100. Explosive

By Olsen, F.
From No Corporate Source data available (1921), US 1376030 19210426, Language: Unavailable, Database: CAPLUS

An explosive containing nitrostarch. e. g., "Trojan" grenade or mortar shell powder, is mixed with a propellent powder such as ordinary smokeless powder in order to form an explosive suitable for ordinary blasting.

~0 Citings

101. Stabilizing nitrostarch

By Flurscheim, B. J.
From No Corporate Source data available (1920), US 1343317 19200615, Language: Unavailable, Database: CAPLUS

Nitrostarch is stabilized by treatment with a boiling soln. of cyanamide or $CaCN_2$.

~1 Citing

102. Nitrating starch

By Anchors, G. R.
From No Corporate Source data available (1920), US 1329353 19200203, Language: Unavailable, Database: CAPLUS

Cereals such as wheat or corn or rice are baked until they puff or swell and are then treated with a mixt. of HNO_3 30%, H_2SO_4 64% and H_2O 6 %, at a temp. of about 5° to effect nitration of the starch contained in the material. The acid mixt. is supplied to the bottom of the receptacle containing the cereal which tends to force out the air occluded in the material and to prevent local heating. The porous condition of the material due to the puffing facilitates rapid and uniform nitration. The puffed material is sufficiently buoyant that it floats on the spent acids and washing water. The washed nitro product is boiled repeatedly for 12 hrs. in a 0.5 % soln. of H_2SO_4 and is stabilized by the addition of a small amt. of Na soap or other fatty acid salt, followed by repeated washing with H_2O and centrifuging.

~0 Citings

103. Nitro-starch explosives

By Snelling, W. O.; Lams, W. R.
From No Corporate Source data available (1920), US 1329212 19200127, Language: Unavailable, Database: CAPLUS

Nitro-starch particles are coated with a thin film of a heavy mineral oil and the coated particles are then treated with an org. stabilizing agent such as diphenylamine which is sol. in the oil. The oil prevents colloiding by the stabilizer. An explosive may be made up of nitro-starch 25, NH_4NO_3 33, $NaNO_3$ 38, charcoal 2, $NaHCO_3$ 0.5, diphenylamine 0.3 and oil 1 part.

~0 Citings

104. Nitro-starch explosives

By Snelling, W. O.; Lams, W. R.
From No Corporate Source data available (1920), US 1329211 19200127, Language: Unavailable, Database: CAPLUS

Nitro-starch particles are coated with a thin film of a heavy mineral oil and the coated particles are then treated with an org. stabilizing agent such as diphenylamine which is sol. in the oil. The oil prevents colloiding by the stabilizer. An explosive may be made up of nitro-starch 25, NH_4NO_3 33, $NaNO_3$ 38, charcoal 2, $NaHCO_3$ 0.5, diphenylamine 0.3 and oil 1 part.

~0 Citings

105. Explosive

By Hudson, W. G.
From No Corporate Source data available (1920), US 1329525 19200203, Language: Unavailable, Database: CAPLUS

An explosive suitable for use as a detonating charge is formed of colloided nitrocellulose 10-20 and Pb azide 90-80%. The "colloided nitrocellulose" may be formed of nitroglycerin 93-70% and nitrocellulose 7-30%.

~0 Citings

106. Nitrostarch explosive

By Snelling, W. O.
From No Corporate Source data available (1919), US 1310969 19190722, Language: Unavailable, Database: CAPLUS

A smokeless powder is formed of granules of nitrostarch uncolloided in their interior and superficially colloided by treatment with a solvent such as "liquid TNT" to secure adhesion of the granules.

~0 Citings

107. Nitrostarch explosive

By Waller, C. E.
From No Corporate Source data available (1919), US 1305846 19190603, Language: Unavailable, Database: CAPLUS

Mononitro-naphthalene is added to nitrostarch explosives to reduce their inflammability. Explosives of this type may, e. g., be formed of nitrostarch 20, $NaNO_3$ 51, NH^4NO_3 20, mononitronaphthalene 7, paraffin oil 1, and $CaCO_3$ 1 part; or nitrostarch 25, $NaNO_3$, 60, mononitronaphthalene 8, S 5, paraffin oil 1, and $CaCO_3$ 1 part. In the manuf. of the explosive, the mononitronaphthalene is melted and incorporated with the oxidizing salts and when the mass has cooled the nitrostarch and other ingredients are added.

~0 Citings

108. Nitrostarch explosive

By Waller, C. E.
From No Corporate Source data available (1919), US 1305845 19190603, Language: Unavailable, Database: CAPLUS

A granular uncompressed explosive suitable for use in blasting and having good water-resisting properties is formed of nitrostarch 10%, $NaNO_3$, 73%, S 7.5%, charcoal 7.5%, $CaCO_3$ 1% and dried starch paste 1%.

~0 Citings

109. Nitrostarch explosive

By Snelling, W. O.
From No Corporate Source data available (1919), US 1305946 19190603, Language: Unavailable, Database: CAPLUS

Nitro-starch (containing 12.8% N) 85 parts is mixed with cold "liquid trinitrotoluene" 15 parts. Only slight gelatinization is effected, the "liquid trinitrotoluene" being merely spread over the surfaces of the nitrostarch granules. The mixt. is then heated for about 15 min. to a temp. of about 80° and is thus converted into a tough colloidal mass which is suitable for use as smokeless powder as it burns with great uniformity and is sufficiently tough to withstand the high pressures in guns without breaking up or producing erratic ballistic results.

~0 Citings

110. Nitrostarch

By Sadtler, S. S.
From No Corporate Source data available (1916), CA 170773 19160711, Language: Unavailable, Database: CAPLUS

The impurities are removed from the starch by oxidation; the product is nitrated and washed.

~0 Citings

111. Nitrostarch

By Sadtler, S. S.
From No Corporate Source data available (1917), US 1211761 19170109, Language: Unavailable, Database: CAPLUS

Stable nitrostarch for use in explosives is formed by treating starch for 2-4 hrs. with a cold 1.5% soln. of NaOH equal to 2% the wt. of the starch, to remove oil and proteins and swell the starch granules, rinsing with several changes of H_2O, agitating with a 2% soln. of bleaching powder (calculated on the wt. of the starch), washing with H_2O slightly acidulated with HCl, drying and then nitrating the purified starch with a bath containing H_2SO_4 65%, HNO_3 25% and H_2O 10%, boiling the nitrated product with H_2O and Na_2CO_3 soln. and finally subjecting to prolonged washing with H_2O.

~0 Citings

112. Colloidal material.

By Arnold, George E.; Fox, Albert S.; Scott, Alexander C.; Roberts, Henry E. U.
From No Corporate Source data available (1906), GB 0603450 19060212, Language: Unavailable, Database: CAPLUS

A colloidal material produced by dissolving nitrostarch, with or without the addition of nitrocellulose, in a solvent such as wood spirit, and denitrating.

~0 Citings

113. Nitrostarch, consisting.

By Arnold, George E.; Scott, Alexander C.; Roberts, Henry E. U.
From No Corporate Source data available (1906), GB 0603449 19060210, Language: Unavailable, Database: CAPLUS

Process of manufacturing nitrostarch, consisting in adding a preparation of starch and nitric acid to sulphuric acid or waste acid from the nitrocellulose manufacture, so as to obtain the precipitate of nitrostarch in the form of a flaky mass, which is freed from acid by the action of water.

~0 Citings

114. EXPLOSIVE COMPOUND

By Volney, Carl Walter
From U.S. (1887), US 366281 A 18870712, Language: English, Database: CAPLUS

To all whom it may concern: Be it known that I, Carl Walter Volney, a citizen of the United States, residing at Toms River, in the county of Ocean and State of New Jersey, have invented certain new and useful Improvements in Explosive Compounds; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same. The main feature of my invention consists in the use of a gelatinous mass obtained by dissolving nitro-starch. in nitro-glycerine. The nitro-starch I prepare in the following manner: Starch is pulverized and dried, aud then gradually stirred into a mixture of strong nitric and sulphuric acids, which is kept cool during the operation. Nitro starch separates in granulated masses, which are removed from the acid, well washed, so as to remove all traces of adhering acid, dried, and pulverized. The nitro-starch thus prepared is gradually dissolved in nitro-glycerine, which is kept at a temperature of 35 degrees centigrade, and, according to the quantities used of each, gelatinous substances of different degrees of consistence can be obtained.

~0 Citings

115. IMPROVEMENT IN EXPLOSIVE COMPOUNDS

By Miller, Wesley
From U.S. (1879), US 212726 A 18790225, Language: English, Database: CAPLUS

To all whom it may concern: Be it known that I, WESLEY MILLER, of Cambridge, in the county of Washington and State of New York, have invented certain new and useful Improvements in Blasting-Powder, of which the following is a specification. My invention may be said to consist of an improved blasting-powder composed of nitrate of soda, nitrate of potash, bichromate of potash, sulphur, charcoal, and starch, formed preferably in two complementary divisions or parts, composed, respectively, of nitrate of soda, nitrate of potash, and starch, and bichromate of potash, sulphur, and charcoal, which are harmless when separated and explosive when mixed, as hereinafter set forth. In the manufacture of this improved explosive compound I take nitrate of soda, thirty-five parts nitrate of potash, (crude), twenty-five parts; nitrate of potash, (refined), ten parts; bichromate of potash, three parts; sulphur, thirteen parts; charcoal, twelve parts; starch, two parts. These ingredients are separately ground to a fine powder, and are afterward mixed in the following manner: The nitrate of soda, nitrate of potash, and starch are mixed together, and form compound No. 1. The bichromate of potash, sulphur, and charcoal are mixed, and form compound No. 2.

~0 Citings