ureanitrat och nitrourea

Introduction :

Urea nitrate is very easy producible and too brisant demolitions.Scores of time used to be using in amateurish bomb for twitch masonry, twitch tree, without consequence only for happy…, and also for terrorist´s action.
Certainly you are already heard about Oklahoma city feelings in connection with terrorist´s attack, right here was using bomb on base nitrate urea with nitrate ammonium and oil (along trial test has this mixture without compare higher sensitiveness also near using granulated NH4NO3, the same making as in common ANFO demolitions. Rather will not go into details, what if yourself some madman wanted get 200-500kg demolitions and fire :-))

Nitrate urea is near authority of all principle one of safest explosives, which yourself can get (unfortunately) also unschooled dilettante.

Making progress :

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1. Prepare solution from 30g ofurea solution in 40-50ml water, adventitious solution warming-up na 60°C. In other beaker measure out 45-48ml of acid nitric (65 %) and warming her on water bath on 50-60°C.

2. Warm solution urea flight all of a sudden to warming urea. Up short sometime with exclude wan crystal nitrate urea. As soon as begin rise crystal, submersion beaker with whole mixture into watering-place with cold by water, temperatures let down on 5-20°C and product filter off.

3. Filtered product wash 30ml water temperatures 0-5°C. Van must very quickly, because nitrate is in waters very soluble and quickly with so solution yield. Fit is use Buchner funnel. In the end urea nitrate quickly rinse with 15ml toluene, which strike in only dues on product in funnel. Toluene for of his lower density and insolubleness in waters expel dampness from crystal.

4. Up wash spread nitrate in thin strata and under temperatures into 40°C let freely dry up. As far as dry product is apparent feel up acid nitric and near filling on paper keep by up he yellow maculae, must with neutralize left over sourness. Near neutralization HNO3 in product with nitrate urea dissolve near 50°C in minimum quantity 10% of ethanol on replete solution, and join MgO on quantity 10% on general yoke nitrate. Up addition MgO and shuffle with solution under heat filtered and filtrate cool to 0°C. Recrystalized nitrate indent and exsiccation.

Fysical and chemistry properties:

Colourless crystals about temperatures thaw 158,6°C with decomposition.
The good washable near common temperatures ,under cold little soluble.
in comparison with other explosives is less stable and in dampness with begins soon gesticulate. Analysis however used to be always slow and there is no fear of spontaneous combustion. Dry with can warehouse without changes nailed 36 month. Ready along hereof instruction contains always definite per cent sourness ,to ablation acid would was necessary use complex eductive method. That is why him don´t store with metals(corrosion and analysis nitrate).
From nitrate of urea it is possible very easy get nitrourea. This explosive is slightly effective than Trytol (aka TNT). Only disadvantage is big consumption acid sulphuric :

60 ml of conc. sulphuric acid cool down in watering-place from 1 part ice and 1 part NaCl and slowly, in parts addition 20g nitrate urea so quickly, so that

suffice reactionary mixture cool down below 0° C. In the end mixture mixture perhaps half an hour. Content vessel foundry on 300 g ice and exclusion nitrourea detachment, wash icy by water and expression expurgation mother lye. Dry on paper near temp. into 35° C.

Explosive characteristics of nitrate urea and Nitrourea:

Urea nitrate:
explosive power nitrate is straightening 90% TNT
achievement in Truzl´s Pb cylinder : 260-270 cm3 (Trotyl 290 cm3) .

As regards shattering and detonation rate, there're not I know accurate data, nevertheless pursuant testing we're common brisant approx. 70 % of TNT a detonation rate app. 75% TNT near like density.

Because with matter dampness dissociation, find out then exercise in warfare and industry. Short era with used in 1.w.war on filling garnet. Mixture with nitrate amonnium are strong explosives on level military ammatols.
Nitrate of urea it is possible bring to detonation with detonator no.8 only providing to perfection dry product in practice small crystal, which with behindhand must rub. Inside hatch (test in steel pipe) and under mentioned conditions Not detonable from detonator all charge, as a rule with acts only about partial detonation and remainder nitrate is distribution. Explosion is characteristic my orange flash. Contacts with blaze with only hardly spark and quickly burn off.

Nitrourea :
is stronger explosive than Trytol (as also 105% TNT), indeed only, as regards bulge in truzl´s test.
Truzl cylinder = 295-310 cm3. Sensitiveness show in much author anologous trytol.

Create salt, that are sensitive, but have not characteristics initiator. Isn't that is why fit expose nitrourea intercourse with K, Ag, Hg, NH4 salts (washn´t with alkaline solution, only by clear water).
Stability is roughly equal near nitrate. Heating above 60° C with begins slowly decomposited.
Nitrourea is relatively little sensitive to initiation, much under trinitrotoluene. For perfect detonation is necessary use strong closure and average major 30mm.
Using:
Dry nitrate also nitro-urea it is possible in clean state provoke to detonation detonator no.8. Detonation however isn't entire, in particular near nitrate urea.

Combination nitrate urea(or nitrourea) with anhydrous nitrate ammonium is much sensitive and detonate also detonator no.6. Instance can be mixture 40% nitrate urea and 60% NH4NO3, which is equivalent military ammatol 60/40. he will have it crystal nitrate ammonium espressivo escalate sensitiveness to detonation excepting level sensitiveness industrial demolitions type hamite (near us Permonex, Karpatit known in Czech republic).
This explosibility mixture however from comprehensible reason it is impossible use like melt, so that with preparation in dusty state and subsequently press into density 1,35 g/cm3. Industrial with this mixture disuse (several times using at the beginning century to tear-off washing), was only study sensitiveness nitrate and nitrourea and his mixture. This mixture with achievement composition 30-40%-able dynamite.