COMPOSITION C-4

Composition C-4 was standardized as the premier military plastic explosive in 1957. It was developed because C-3 was not powerful enough and lost 1.2% of it's mass. C-4 is still in use today. C-4 can be made by mixing 90% RDX with 10% polyisobutylen. It has the highest detonation velocity of the C family explosives.

D.D.N.P. (Diazodinitrophenol)

DETONATION VELOCITY *4400 M/sec. @ 0.9 G/cc*
6600 M/sec. @ 1.5 G/cc
6900 M/sec. @ 1.6 G/cc

FRICTION SENSITIVITY - Less sensitive than mercury fulminate and the same as lead azide.

D.D.N.P. is one of the highest in performance of nearly all the homemade primary explosive. It is stable and compatible with other explosives, but, lead azide. This is a good choice for manufacture as the precursor to this DDNP primary explosive is picric acid. Picric acid is more powerful than T.N.T.. with a detonation rate of 7200 M/sec. it becomes the base charge for your homemade caps. It is prepared by a diazotization reaction on picric acid. This is produced from picric acid, sodium hydroxide (lye) and sulfur.

In a pint glass jar place 90 ml warm water and 1.5 grams of lye (sodium hydroxide). Mix these with a "teflon" stirrer until all the lye had dissolved. Dissolve 9 grams of picric acid crystals in the lye-water solution by stirring. Label this jar solution #1. In a 500 ml beaker 3 ml of water is placed. Dissolve 7.5 grams of sulfur and 7.5 grams of lye (sodium hydroxide) by stirring the solution. Boil this solution over a heat source. When the solution turns dark red remove and allow the liquid to cool. Label this solution #2. Add this cooled solution #2 in three portions, to solution #1. Stir with a teflon rod while the liquid is being added. Again allow the solution mixture cool. Filter this mixture through filter papers (coffee filter, paper towels). Small red particles will gather on the paper. Discard the liquid. Dissolve these red particle in 180 ml of boiling water. Remove and filter this hot liquid through a filter paper (coffee filter, paper towels). Discard the particles left on the paper and label the liquid left #3. To Solution t#3 with an eyedropper slowly add sulfuric acid (Janitor supply, boiled battery acid) to the filtered solution until it turns orange brown. Add an additional 7.5 grams of acid to the liquid. In a separate pint jar, dissolve 5.4 grams of potassium or sodium nitrite in 240 ml of water. Label this solution #4. In one portion solution #4 is added with stirring to solution #3. Allow the solution to stand for 10 minutes. The mixture will turn light brown. CAUTION: At this point the brown color is the DDNP that has formed. Keep away from flame, avoid friction and keep from shock. Filter the light brown solution through a filter paper (paper towel, coffee filter). Wash the particles left on the paper with 60 ml of water. Allow to completely dry for 24 hours. Drying time can be reduced to 2 hours if crystals are placed in a shallow pyrex dish and this placed in a hot (not boiling) water bath. CAUTION: DDNP is sensitive to shock, friction and flame. Expose to any of these will very likely detonate the compound prematurely. This powder should be stored in small quantities in stoppered glass containers. More safety in storage leave 25% water in the powder and dry immediately prior to use.

DOUBLE SALTS

DETONATION VELOCITY *3600 M/sec. @ 3.96 G/cc*

FRICTION SENSITIVITY This primary explosive is on the same order of sensitivity as is lead azide.

These double salts are a basic acetylide group primary explosive. This explosive has good

sensitivity, powder and performance. It is readily made from silver (coin), nitric acid and calcium carbide / water or acetylene. This is an easy compound to make. What I found interesting is the fact that this primary is not photo active. Most silver salts are light sensitive. This would be a good choice due to the wide availability to the main ingredients. DDNP, HMTD and mercury fulminate, are better primary explosives but this one has many possibilities. With this primary explosive suitable caps could be made and would be very usable and storage stable as some others in this publication could not.

Dilute 10.1 ml of nitric acid (red fuming) with 6.75 ml of water. If reagent or technical grade acid is available (70% strength) this will not need any water mixed with it to reduce the strength. Simply use 17.5 ml of this 70% nitric acid. Place a silver dime or equivalent amount of silver metal in the acid. It will dissolve leaving a green solution. CAUTION: Avoid the brown gas (nitrogen dioxide) produced when dissolving the silver metal in the acid. This gas is a deadly poison and the immediate exposure to the gas and its subsequent damage will not show up for hours or even days! This should be done with good ventilation! It may be necessary to heat the liquid to get the coin or metal to completely dissolve. Pour this green solution into a tall slender glass jar such as an olive jar. Place this jar with the green solution in it in a hot water bath and heat. Crystals will form. The heating is continued until these crystals dissolve again. In another flask or even a "Coke" bottle, place ten teaspoons of calcium carbide into this flask with a cork with a hose passing through a hole in the cork. Place the other end of the hose in the tall jar with the solution in it. Remove the stopper from the flask or bottle and add one teaspoon of water. CAUTION: Acetylene gas is highly flammable and an explosion hazard. Keep away from heat and flame as much as possible. The gas should begin generating. Add one more teaspoon and place the stopper back into the container. The acetylene gas generated by the calcium carbide and water should be going through the hose and bubbling through the solution in the tall glass. Bubble this gas through the solution for 5-8 minutes. Brown vapor will be given off by the liquid as is absorbs acetylene and white flakes will begin to be formed in the silver solution. Remove the solution from the heat source and allow it to cool. Filter the liquid through a filter paper (paper towel, coffee filter) into a glass container. Green crystals will be caught on the filter paper. These green crystals would then be washed with 45 ml alcohol. The crystals will change from green to white in color and the methanol wash will turn green. Place these white crystals on a paper towel and allow to air dry. CAUTION: Handle this dry explosive with great care. Do not scrape or handle roughly. Keep away from flame or spark source or heat and store in a cool dry place. These salts will perform well and are easy to make. Their stability is good, which is very important. A good choice of primary explosives.