

Tovex

Ingredients

1. Ammonium Nitrate 55%
2. Powdered Aluminium 20% (blend of flaked and atomized).
3. Potassium or Sodium Nitrate 10%
4. Gelatine or Starch 2.5% (kitchen grade)
5. Potassium Dichromate 1% (thickening agent). You may substitute this with Cr,Fe,Sn, sulfates, nitrates or chlorides, i.e. kitchen grade borax.
6. Urea 0.5%, retardant, prevents swelling and gas generation in storage. Optional if material is not stored for long.
7. KH_2PO_4 L/NaOH (in 29/1 mol. ratio), also optional if not stored.
8. Distilled Water

Process:

1. Filter an adequate quantity of each solid material through a sieve.
2. If necessary crush the ammonium nitrate first.
3. Weigh the required quantity of each material.
4. Place the screened and weighed materials in separate containers and close tightly.
5. Place AN into mixing bowl.
6. Add boiling water and stir until all AN is dissolved.(AN solubility is 580 gm per 100 ml's water @ 80 c.
7. Blend the gelling powder and the potassium or sodium nitrate in a separate container.
8. Add the mix from step 7 to the hot AN solution.
9. Stir for 3 minutes.
10. Add aluminium powder.
11. Mix contents of bowl thoroughly.
12. Dissolve thickener/cross linking agent(potassium dichromate), in a little hot water and add to the bowl's contents.
13. Add mixed stabilizer and enhancer to the mix. Ingredients 6 & 7. Optional for storage.
14. Blend thoroughly for 5-10 minutes, or until mix is free of lumps.
15. Pour filler into the grenade body.
16. Insert a spacer into the molten filler for the detonator.
17. Place grenade with filler and spacer into a warm air dryer until filler coagulates into a uniform, tough gelatinous mass.
18. Remove spacer and install detonator at time of use.