

NPK Complex Fertilizers

N P K complexes are the fertilizers which are granular containing three major plant nutrients .Different grades of these fertilizers are being manufactures in India viz., 17-17 -17; 14-35-14; 14-28-14; 10-26 -26; 12-32-16 etc.,

Manufacturing process:

Raw material: 1) Ammonia. 2) Phosphoric acid. 3) Potassium chloride. 4) Urea.

Ammonia and phosphoric acid are mixed in a specified proportion in the pre neutralizer and the resultant slurry is pumped to a granulator [Rotating drum] where nitrogen content of the product is enriched by adding more ammonia and feeding in urea. Potassium chloride is also added to make up the required formulation .Filler like sand or dolomite is also added to improve the handling property of the fertilizer product.

Physical properties:

1. NPK complexes are grey or cream coloured granules. They are free flowing with good storage properly.
2. Exposure to high humidity however can cake hence to be packed in polyethylene lined gunny bags.

Chemical properties:

N P K complex grade - 17 : 17 : 17

- It contains 5% ammonical and 12 % amide N
- 15% water soluble and 2 % citrate soluble P_2O_5
- 17% water soluble K_2O

Grade- 14:35:14

- All N in ammonical form 14%
- 29% water soluble and 6% citrate soluble P_2O_5
- 14 % water soluble K_2O

Salient feature of complex fertilizer: If we analyze any granule from particular grade, it should contain the same ratio with respect to N, P and K.