Chapter 8

Fertiliser Control Order and Fertilisers Specifications

The Fertilizer (Control) Order

The Fertilizer (Control) Order (FCO) is a set of legally enforceable executive orders issued by the Govt. of India under the Essential Commodities Act, 1955 passed by the Parliament. This order came into force in 1957, essentially to regulate the sale, price and quality of fertilizers in India. Amendments are made from time to time as per the exigencies and need of the hour and therefore a large number of amendments were made over a period of time. Consequently, after an overall review of the various provisions of the order, a revised Fertilizer (Control) Order 1985, was issued, which came into effect on September 25, 1985. The FCO consists of five Schedules comprising of different activities as mentioned in **Figure 8.1**, besides forms of registrations and appendices.

Schedule I comprises Part A and B. While Part A contains the specifications of different fertilizers (*e.g.* minimum nutrient content, maximum moisture content, range of physical parameters, maximum levels of impurities/ contaminants, *etc*.), that can be marketed in India (no material not performs the specifications as in the FCO cannot be sold as fertilizer), Part B lists the tolerance limits in plant nutrients and physical parameters for various fertilizers. Schedule II encompasses again two parts, with Part A describing the procedures for drawal of samples of fertilizers, and Part B describing detailed methods of analysis of fertilizers.

Schedule III encompasses four parts namely, Part-A, Part-B, Part-C and Part-D. While Part-A contains specifications of different biofertilizers, Part-B contains tolerance limits of biofertilizers, Part-C describes the procedures for drawal of sample of biofertilizers, Part-D describes the methods of analysis of biofertilizers. Schedule IV also encompasses four parts. Part-A contains specifications of

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organic fertilizers, Part-B contains tolerance limits of organic fertilizers, Part-C describes the procedures for drawal of sample of organic fertilizers, and Part-D describes the methods of analysis of organic fertilizers. Schedule V also contains of four parts. Part-A contains specifications of non-edible de-oiled cake fertilizers, Part-B contains tolerance limits of non-edible de-oiled cake fertilizers, Part-C describes the procedures for drawal of sample of non-edible de-oiled cake fertilizers, and Part-D describes the methods of analysis of non-edible de-oiled cake fertilizers.

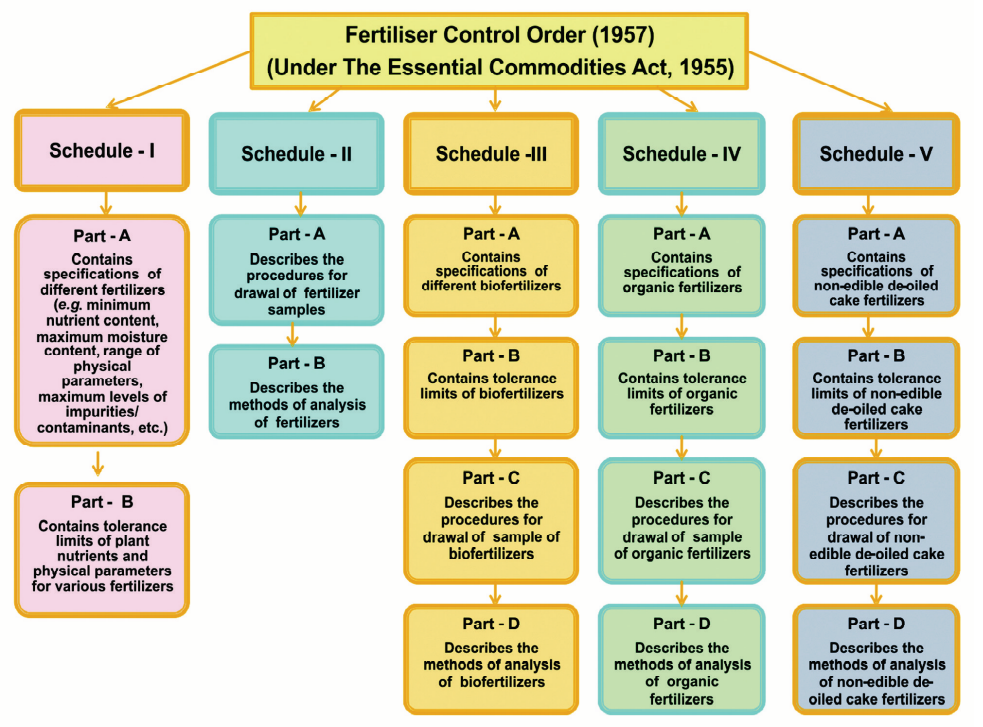


Figure 8.1. Different schedules and activities of FCO
Source: Biswas and Ghosh (2015)

8.1. The Fertiliser Association of India

The Fertiliser Association of India (FAI) is a non-profit, non-trading organization of fertilizer manufacturers, distributors, technologists, plant/ equipment manufacturers, research institutes and others interested in fertilizers. The FAI was set up in 1955 and registered as a company. It is the national representative body of all the fertilizer manufacturers in India, comprising public, private, joint and cooperative sectors. It acts as a bridge between fertilizer

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industry and Government, and maintains close liaison with international bodies. It publishes the "Fertiliser Statistics', which is regarded as a reference book on Indian fertilizer and agriculture, containing detailed information on production, distribution, consumption, prices and related-statistics from India as well as world.

Specifications of Fertilisers

Specifications of fertilizers as specified by "The Fertiliser (Inorganic, Organic or Mixed) (Control) Order, 1985 (As amended up to February 2019)" are given below:

1.(a) Straight Nitrogenous Fertilisers

1.	**Ammonium Sulphate**	
(i)	Moisture per cent by weight, maximum	1.0
(ii)	Ammoniacal nitrogen, per cent by weight, minimum	20.5
(iii)	Sulphate sulphur (as S), per cent by weight, minimum	23.0
(iv)	Free acidity (as H_2SO_4), per cent by weight, maximum (0.04 for material obtained from by-product ammonia and by-product gypsum)	0.025
(v)	Arsenic as (As_2O_3), per cent by weight, maximum	0.01
2.	**Urea (46% N)**	
(i)	Moisture per cent by weight, maximum	1.0
(ii)	Total nitrogen per cent by weight, (on dry basis), minimum	46.0
(iii)	Biuret per cent by weight, maximum	1.5
(iv)	Particle size – Minimum 80 per cent of the material shall be retained between 1 mm and 2.8 mm IS sieve	
3.	**Ammonium Chloride**	
(i)	Moisture per cent by weight, maximum	2.0
(ii)	Ammoniacal nitrogen per cent by weight, minimum	25.0
(iii)	Chloride other than ammonium chloride (as NaCl) per cent by weight, maximum	2.0
4.	**Calcium Ammonium Nitrate (25% N)**	
(i)	Moisture per cent by weight, maximum	1.0
(ii)	Total ammoniacal and nitrate nitrogen per cent by weight, minimum	25.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	12.5
(iv)	Calcium nitrate per cent by weight, maximum	0.5

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(v)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	
5.	**Urea Super Granulated**	
(i)	Moisture per cent by weight, maximum	1.0
(ii)	Total nitrogen per cent by weight (on dry basis), minimum	46.0
(iii)	Biuret per cent by weight, maximum	1.5
(iv)	Particle size – Minimum 80 per cent of the material shall be retained between 13.2 mm and 9.5 mm IS sieve	
6.	**Urea (Granular)**	
(i)	Moisture per cent by weight, maximum	1.0
(ii)	Total nitrogen per cent by weight (on dry basis), minimum	46.0
(iii)	Biuret per cent by weight, maximum	1.5
(iv)	Particle size – Minimum 90 per cent of the material shall be retained between 4 mm and 2 mm IS sieve	
7.	**Urea Ammonium Nitrate (32%N) (Liquid)**	
(i)	Total nitrogen (urea, ammoniacal and nitrate) per cent by weight, minimum	32.0
(ii)	Urea nitrogen, per cent weight, maximum	16.5
(iii)	Ammoniacal nitrogen per cent by weight, minimum	7.5
(iv)	Nitrate nitrogen per cent by weight, minimum	7.5
(v)	Specific gravity (at 15 °C)	1.30-1.35
8.	**Neem Coated Urea**	
(i)	Moisture per cent by weight, maximum	1.0
(ii)	Total nitrogen per cent by weight, minimum	46.0
(iii)	Biuret per cent by weight, maximum	1.5
(iv)	Neem oil content soluble in Benzene per cent by weight, minimum	0.035
(v)	Particle size – Minimum 80 per cent of the material shall be retained between 1 mm and 2.8 mm IS sieve	

* ***Note***: The Neem oil used for the manufacturing of Neem Coated Urea may be of the following specifications:

• Moisture and insoluble matter per cent by weight, maximum	1.0
• Specific gravity (at 30 °C)	0.85-0.95
• Iodine value	65-95
• Saponification value	160-205
• *Azadirachtin* content, minimum (in ppm)	150

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9.	**Urea Briquettes**	
(i)	Moisture per cent by weight, maximum	1.0
(ii)	Total nitrogen per cent by weight (on dry basis), minimum	46.0
(iii)	Biuret per cent by weight, maximum	1.5
(iv)	Particle size – Minimum 90 per cent of the material shall be retained between 5.7 mm and 3.8 mm IS sieve	
10.	**Sulphur Coated Urea**	
(i)	Moisture per cent by weight, maximum	1.0
(ii)	Total nitrogen per cent by weight (on dry basis), minimum	37.0
(iii)	Elemental sulphur (as S) per cent by weight, minimum	17.0
(iv)	Biuret per cent by weight, maximum	1.5
(v)	Particle size – Minimum 90 per cent of the material shall be retained between 8 mm and 2 mm IS sieve	
11.	**Neem Coated Urea (Granular)**	
(i)	Moisture per cent by weight, maximum	1.0
(ii)	Total nitrogen per cent by weight (on dry basis), minimum	46.0
(iii)	Biuret per cent by weight, maximum	1.5
(iv)	Neem oil content soluble in Benzene per cent by weight, minimum	0.035
(v)	Particle size – Minimum 90 per cent of the material shall be retained between 2 mm and 4 mm IS sieve	
12.	**Calcium Cyanamide**	
(i)	Moisture per cent by weight, maximum	1.0
(ii)	Total nitrogen per cent by weight (on dry basis), minimum	19.5
(iii)	Cyanamide nitrogen per cent by weight, minimum	15.0
(iv)	Nitrate nitrogen per cent by weight, maximum	1.5
(v)	Particle size – Not less than 90 per cent of the material shall pass through 4 mm IS sieve and be retained on 1 mm IS sieve	

1 (b). Straight Phosphatic Fertilisers

1. Single Superphosphate (16% P_2O_5 Powdered)

(i)	Moisture per cent by weight, maximum	12.0
(ii)	Available phosphorus (as P_2O_5) per cent by weight, minimum	16.0
(iii)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	14.5
(iv)	Sulphate sulphur (as S), per cent by weight, minimum	11.0
(v)	Free phosphoric acid (as P_2O_5) per cent by weight, maximum	4.0

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2. Triple Superphosphate

(i)	Moisture per cent by weight, maximum	12.0
(ii)	Total phosphorus (as P_2O_5) per cent by weight, minimum	46.0
(iii)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	42.5
(iv)	Free phosphoric acid (as P_2O_5) per cent by weight, maximum	3.0

3. Rock phosphate

(i)	Total phosphorus (as P_2O_5) per cent by weight, minimum	18.0
(ii)	Particle size – Minimum 90 per cent of the material shall pass through 0.15 mm IS sieve and the balance 10 per cent of material shall pass through 0.25 mm IS sieve	

4. Single Superphosphate (16% P_2O_5 Granulated)

(i)	Moisture per cent by weight, maximum	5.0
(ii)	Available phosphorus (as P_2O_5) per cent by weight, minimum	16.0
(iii)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	14.5
(iv)	Sulphate sulphur (as S) per cent by weight, minimum	11.0
(v)	Free phosphoric acid (as P_2O_5) per cent by weight, maximum	4.0
(vi)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

5. Superphosphoric Acid (70% P_2O_5 Liquid)

(i)	Total phosphorus (as P_2O_5) per cent by weight, minimum	70.0
(ii)	Polyphosphate (as P_2O_5) per cent by weight, minimum	19.0
(iii)	Methanol insoluble matter, per cent weight, maximum	1.0
(iv)	Magnesium as MgO, per cent by weight, maximum	0.5
(v)	Specific gravity (at 24 °C)	1.95-2.00

1(c). Straight Potassic Fertilisers

1. Potassium Chloride (Muriate of Potash)

(i)	Moisture per cent by weight, maximum	0.5
(ii)	Water soluble potassium content (as K_2O) per cent by weight, minimum	60.0
(iii)	Sodium as NaCl per cent by weight (on dry basis), maximum	3.5
(iv)	Particle size – Minimum 65 per cent of the material shall be retained between 0.25 mm and 1.7 mm IS sieve	

2. Potassium Sulphate

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Water soluble potassium (as K_2O) per cent by weight, minimum	50.0

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(iii)	Sulphate sulphur (as S) per cent by weight, minimum	17.5
(iv)	Sodium as NaCl per cent by weight, (on dry basis), maximum	2.0
(v)	Total chlorides (as Cl) per cent by weight, maximum	2.5

3. Potassium Schoenite

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Water soluble potassium (as K_2O) per cent by weight (on dry basis), minimum	23.0
(iii)	Magnesium (as MgO) per cent by weight, maximum	11.0
(iv)	Sodium (as NaCl) per cent by weight, maximum	1.5

4. Potassium Chloride (Muriate of Potash) (Granular)

(i)	Moisture per cent by weight, maximum	0.5
(ii)	Water soluble potassium (as K_2O) per cent by weight, minimum	60.0
(iii)	Sodium (as NaCl) per cent by weight, maximum	3.5
(iv)	Magnesium (as $MgCl_2$) per cent by weight, maximum	1.0
(v)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

5. Potash Derived from Molasses

(i)	Moisture per cent by weight, maximum	5.0
(ii)	Water soluble potassium (as K_2O), per cent by weight, minimum	14.5

1(d). Straight Sulphur Fertilisers

1. Sulphur 90% (Powder)

(i)	Moisture per cent by weight, maximum	1.0
(ii)	Total elemental sulphur (as S) per cent by weight, minimum	90.0

(***Note***: The product may contain any inert filler material such as Bentonite, *etc*. up to the maximum extent of 10 per cent by weight)

2. Sulphur 90% (Granular)

(i)	Moisture per cent by weight, maximum	0.5
(ii)	Total elemental sulphur (as S) per cent by weight, minimum	90.0
(iii)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4.0 mm IS sieve.	

(***Note*** : The product may contain inert filler material as Bentonite *etc*. up to the extent of 10 per cent by weight)

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1(e). N.P. Complex Fertilisers

1. Diammonium Phosphate (18-46-0)

(i)	Moisture per cent by weight, maximum	2.5
(ii)	Total nitrogen (ammoniacal and urea) per cent by weight, minimum	18.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	15.5
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	46.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	39.5
(vi)	Particle size – minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

2. Ammonium Phosphate Sulphate (16-20-0)

(i)	Moisture per cent by weight, maximum	1.0
(ii)	Total ammoniacal nitrogen per cent by weight, minimum	16.0
(iii)	Available phosphorus (as P_2O_5) per cent by weight, minimum	20.0
(iv)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	17.0
(v)	Sulphate sulphur (as S) per cent by weight, minimum	13.0
(vi)	Particle size – minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

3. Ammonium Phosphate Sulphate (20-20-0)

(i)	Moisture per cent by weight, maximum	1.0
(ii)	Total nitrogen (ammoniacal and urea) per cent by weight, minimum	20.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	18.0
	Available phosphorus (as P_2O_5) per cent by weight, minimum	20.0
	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	17.0
(iv)	Sulphate sulphur (as S) per cent by weight, minimum	13.0
(v)	Particle size – minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve.	

4. Ammonium Phosphate Sulphate Nitrate (20-20-0)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal + nitrate) per cent by weight, minimum	20.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	18.0
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	20.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	17.0
(vi)	Sulphate sulphur (as S) per cent by weight, minimum	13.0
(vii)	Particle size – minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

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5. Nitro Phosphate (20-20-0)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and nitrate) per cent by weight, minimum	20.0
(iii)	Nitrogen in ammoniacal form per cent by weight, minimum	10.0
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	20.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	12.0
(vi)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

6. Urea Ammonium Phosphate (28-28-0)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and urea) per cent by weight, minimum	28.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	9.0
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	28.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	24.0
(vi)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

7. Urea Ammonium Phosphate (24-24-0)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and urea) per cent by weight, minimum	24.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	7.5
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	24.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	20.5
(vi)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

8. Urea Ammonium Phosphate (20-20-0)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and urea) per cent by weight, minimum	20.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	6.5
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	20.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	17.0
(vi)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

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9. Mono Ammonium Phosphate (11-52-0)

(i)	Moisture per cent by weight, maximum	1.0
(ii)	Total nitrogen all in ammoniacal form per cent by weight, minimum	11.0
(iii)	Available phosphorus (as P_2O_5) per cent by weight, minimum	52.0
(iv)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	44.5
(v)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

10. Ammonium Nitrate Phosphate (23-23-0)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and nitrate) per cent by weight, minimum	23.0
(iii)	Nitrogen in ammoniacal form per cent by weight, minimum	13.0
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	23.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	20.0
(vi)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve.	

11. Ammonium Poly-phosphate (10-34-0) (Liquid)

(i)	Total nitrogen (all as ammoniacal nitrogen) per cent by weight, minimum	10.0
(ii)	Total phosphorus (as P_2O_5) per cent by weight, minimum	34.0
(iii)	Poly-phosphorus (as P_2O_5) per cent by weight, minimum	22.0
(iv)	Specific gravity (at 27 oC)	1.2-1.6
(v)	pH (5% solution)	5.8-6.2

12. Ammonium Phosphate (14-28-0)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and urea) per cent by weight, minimum	14.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	8.0
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	28.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	24.0
(vi)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

13. N.P.K. 13:33:0:15S

(i)	Moisture per cent by weight, maximum	1.0
(ii)	Ammoniacal nitrogen per cent by weight, minimum	13.0
(iii)	Available phosphorus (as P_2O_5) per cent by weight, minimum	33.0
(iv)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	28.5

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(v)	Total (elemental + sulphate) sulphur (as S), per cent by weight, minimum	15.0
(vi)	Sulphate sulphur (as S), per cent by weight, maximum	7.5
(vii)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

14. Nitrophosphate (24-24-0)

(i)	Moisture per cent by weight, maximum	1.5
	Total nitrogen (ammoniacal and nitrate) per cent by weight, minimum	24.0
(ii)	Nitrogen in ammoniacal form per cent by weight, minimum	13.5
(iii)	Available phosphorus (as P_2O_5) per cent by weight, minimum	24.0
(iv)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	20.5
(v)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

15. Neem Coated Urea Ammonium Phosphate (28-28-0)

(i)	Moisture percent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and urea) per cent by weight, minimum	28.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	9.0
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	28.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	24.0
(vi)	Neem oil content soluble in Benzene per cent by weight, minimum	0.035
(vii)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

1(f). N.P.K. Complex Fertilisers

1. Nitrophosphate with Potash (15-15-15)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and nitrate) per cent, minimum	15.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	7.5
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	15.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	4.0
(vi)	Water soluble potassium (as K_2O) per cent by weight, minimum	15.0
(vii)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

2. N.P.K. (10-26-26)

(i)	Moisture per cent by weight, maximum	1.0
(ii)	Total nitrogen (ammoniacal and urea) per cent by weight, minimum	10.0

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(iii)	Ammoniacal nitrogen per cent by weight, minimum	7.0
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	26.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	22.5
(vi)	Water soluble potassium (as K_2O) per cent by weight, minimum	26.0
(vii)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

3. N.P.K. (12-32-16)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and urea) per cent by weight, minimum	12.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	9.0
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	32.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	27.5
(vi)	Water soluble potassium (as K_2O) per cent by weight, minimum	16.0
(vii)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

4. N.P.K. (22-22-11)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and urea) per cent by weight, minimum	22.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	7.0
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	22.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	19.0
(vi)	Water soluble potassium (as K_2O) per cent by weight, minimum	11.0
(vii)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

5. N.P.K. (14-35-14)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Nitrogen in ammoniacal form per cent by weight, minimum	14.0
(iii)	Available phosphorus (as P_2O_5) per cent by weight, minimum	35.0
(iv)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	30.0
(v)	Water soluble potassium (as K_2O) per cent by weight, minimum	14.0
(vi)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

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6. N.P.K. (17-17-17)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and urea) per cent by weight, minimum	17.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	5.0
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	17.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	14.5
(vi)	Water soluble potassium (as K_2O) per cent by weight, minimum	17.0
(vii)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

7. N.P.K. (14-28-14)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and urea) per cent by weight, minimum	14.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	8.0
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	28.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	24.0
(vi)	Water soluble potassium (as K_2O) per cent by weight, minimum	14.0
(vii)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

8. N.P.K. (19-19-19)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and urea) per cent by weight, minimum	19.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	5.5
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	19.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	16.5
(vi)	Water soluble potassium (as K_2O) per cent by weight, minimum	19.0
(vii)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

9. N.P.K. (17-17-17)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and nitrate) per cent by weight, minimum	17.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	8.5
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	17.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	17.0
(vi)	Water soluble potassium (as K_2O) per cent by weight, minimum	13.5
(vii)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	17.0

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10. N.P.K. (20-10-10)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and urea) per cent by weight, minimum	20.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	4.0
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	10.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	8.5
(vi)	Water soluble potassium (as K_2O) per cent by weight, minimum	10.0
(vii)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

11. N.P.K. (15:15:15)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and urea) per cent by weight, minimum	15.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	12.0
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	15.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	13.0
(vi)	Water soluble potassium (as K_2O) per cent by weight, minimum	15.0
(vii)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

12. N.P.K. (15:15:15:9(S))

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and urea) per cent by weight, minimum	15.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	12.0
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	15.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	13.0
(vi)	Water soluble potassium (as K_2O) per cent by weight, minimum	15.0
(vii)	Sulphate sulphur (as S) per cent by weight minimum	9.0
(viii)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

13. N.P.K. (12:11:18)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and nitrate) per cent by weight, minimum	12.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	7.0
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	11.0

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(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	8.0
(vi)	Water soluble potassium (as K_2O) per cent by weight, minimum	18.0
(vii)	Magnesium (as Mg) per cent by weight, minimum	1.0
(viii)	Sulphate sulphur (as S) per cent by weight minimum	7.5
(ix)	Total chlorides (as Cl) percent by weight, maximum	1.0
(x)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

14. N.P.K. (16:16:16)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and nitrate) per cent by weight, minimum	16.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	8.0
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	16.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	12.0
(vi)	Water soluble potassium (as K_2O) per cent by weight, minimum	16.0
(vii)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

15. N.P.K. (9:25:25)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and nitrate) per cent by weight, minimum	9.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	6.0
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	25.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	21.5
(vi)	Water soluble potassium (as K_2O) per cent by weight, minimum	25.0
(vii)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	25.0

16. Nitrophosphate with Potash (14-14-21)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and nitrate) per cent by weight, minimum	14.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	8.0
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	14.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	9.0
(vi)	Water soluble potassium (as K_2O) per cent by weight, minimum	21.0
(vii)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

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17. Nitrophosphate with Potash (21-06-13)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and nitrate) per cent by weight, minimum	21.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	10.5
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	6.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	4.0
(vi)	Water soluble potassium (as K_2O) per cent by weight, minimum	13.0
(vii)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

18. Nitrophosphate with Potash Grade II (15-15-15)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and nitrate) per cent by weight, minimum	15.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	8.5
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	15.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	10.0
(vi)	Water soluble potassium (as K_2O) per cent by weight, minimum	15.0
(vii)	Sulphate sulphur (as S) per cent by weight, minimum	3.5
(viii)	Total chloride (as CI) per cent by weight, maximum	3.5
(ix)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

19. Nitrophosphate with Potash Grade (15-9-20)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and nitrate) per cent by weight, minimum	15.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	8.5
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	9.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	6.0
(vi)	Water soluble potassium (as K_2O) per cent by weight, minimum	20.0
(vii)	Sulphate sulphur (as S) per cent by weight, minimum	3.5
(viii)	Magnesium (as Mg) per cent by weight, minimum	0.5
(ix)	Particle size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

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1 (g) Micronutrients

1. Zinc Sulphate Heptahydrate ($ZnSO_4.7H_2O$)

(i)	Matter insoluble in water per cent by weight, maximum	1.0
(ii)	Zinc (as Zn) per cent by weight, minimum	21.0
(iii)	Sulphate sulphur (as S) per cent by weight, minimum	10.0
(iv)	pH (5% solution) not less than	4.0
(v)	Lead (as Pb) per cent by weight, maximum	0.003
(vi)	Cadmium (as Cd) per cent by weight, maximum	0.0025
(vii)	Arsenic (as As) per cent by weight, maximum	0.01

2. Manganese Sulphate

(i)	Manganese (as Mn) content per cent by weight, minimum	30.5
(ii)	Sulphate sulphur (as S) per cent by weight, minimum	17.0
(iii)	Matter insoluble in water per cent by weight, maximum	1.0
(iv)	pH (5% solution) not less than	4.0
(v)	Lead (as Pb) per cent by weight, maximum	0.003
(vi)	Cadmium (as Cd) per cent by weight, maximum	0.0025
(vii)	Arsenic (as As) per cent by weight, maximum	0.01

3. Borax (Sodium Tetraborate) ($Na_2B_4O_7.10H_2O$) for Soil Application

(i)	Content of boron as (B) per cent by weight, minimum	10.5
(ii)	Matter insoluble in water per cent by weight, maximum	1.0
(iii)	pH (3.8% solution)	9.0 - 9.5
(iv)	Lead (as Pb) per cent by weight, maximum	0.003
(v)	Cadmium (as Cd) per cent by weight, maximum	0.0025
(vi)	Arsenic (as As) per cent by weight, maximum	0.01

4. Copper Sulphate ($CuSO_4.5H_2O$)

(i)	Copper (as Cu) per cent by weight, minimum	24.0
(ii)	Sulphate sulphur (as S) per cent by weight, minimum	12.0
(iii)	Matter insoluble in water per cent by weight, maximum	1.0
(iv)	pH (5% solution)	3.0
(v)	Lead (as Pb) per cent by weight, maximum	0.003
(vi)	Cadmium (as Cd) per cent by weight, maximum	0.0025
(vii)	Arsenic (as As) per cent by weight, maximum	0.01

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5. Ferrous Sulphate ($FeSO_4.7H_2O$)

(i)	Ferrous iron (as Fe) per cent by weight, minimum	19.0
(ii)	Sulphate sulphur (as S) per cent by weight, minimum	10.5
(iii)	Free acid (as H_2SO_4) per cent by weight, maximum	1.0
(iv)	Matter insoluble in water, per cent by weight, maximum	1.0
(v)	pH (5% solution)	3.5
(vi)	Lead (as Pb) per cent by weight, maximum	0.003
(vii)	Cadmium (as Cd) per cent by weight, maximum	0.0025
(viii)	Arsenic (as As) per cent by weight, maximum	0.01

6. Ammonium Molybdate ($(NH_4)_6Mo7O_{24}.4H_2O$)

(i)	Molybdenum (as Mo) per cent by weight, minimum	52.0
(ii)	Matter insoluble in water per cent by weight, maximum	1.0
(iii)	Lead (as Pb) per cent by weight, maximum	0.003
(iv)	Cadmium (as Cd) per cent by weight, maximum	0.0025
(v)	Arsenic (as As) per cent by weight, maximum	0.01

7. Chelated Zinc as Zn-EDTA

(i)	Appearance – Free flowing crystalline or powder or Tablet	
(ii)	Zinc content (expressed as Zn), per cent by weight minimum in the form of Zn-EDTA	12.0
(iii)	pH (5% solution)	6.0-6.5
(iv)	Lead (as Pb) per cent by weight maximum	0.003
(v)	Cadmium (as Cd) per cent by weight, maximum	0.0025
(vi)	Arsenic (as As) per cent by weight, maximum	0.01

8. Chelated Iron as Fe-EDTA

(i)	Appearance – Free flowing crystalline / powder	
(ii)	Iron content (expressed as Fe), per cent by weight minimum in the form of Fe-EDTA	12.0
(iii)	pH (5% solution)	5.5-6.5
(iv)	Lead (as Pb) per cent by weight, maximum	0.003
(v)	Cadmium (as Cd) per cent by weight, maximum	0.0025
(vii)	Arsenic (as As) per cent by weight, maximum	0.01

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9. Zinc Sulphate Mono-hydrate ($ZnSO_4.H_2O$)

(i)	Appearance – Free flowing powder form	
(ii)	Zinc (as Zn) per cent by weight. minimum	33.0
(iii)	Sulphate sulphur (as S) per cent by weight, minimum	15.0
(iv)	Matter-insoluble in water per cent by weight, maximum	1.0
(v)	pH (5% solution) not less than	4.0
(vi)	Iron (as Fe) per cent by weight, maximum	1.0
(vii)	Lead (as Pb) per cent by weight, maximum	0.003
(viii)	Cadmium (as Cd) per cent by weight, maximum	0.0025
(ix)	Arsenic (as As) per cent by weight, maximum	0.01

10. Magnesium Sulphate

(i)	Magnesium (as Mg) per cent by weight, minimum	9.5
(ii)	Sulphate sulphur (as S) per cent by weight, minimum	12.0
(iii)	Matter insoluble in water per cent by weight, maximum	1.0
(iv)	Lead (as Pb) per cent by weight, maximum	0.003
(v)	pH (5% solution)	5.0 - 8.0
(vi)	Lead (as Pb) per cent by weight, maximum	0.003
(vii)	Cadmium (as Cd) per cent by weight, maximum	0.0025
(viii)	Arsenic (as As) per cent by weight, maximum	0.01

11. Boric Acid (H_3BO_3)

(i)	Boron (as B) per cent weight, minimum	17.0
(ii)	Matter insoluble in water per cent by weight, maximum	1.0
(iii)	Lead (as Pb) per cent by weight, maximum	0.003
(iv)	Cadmium (as Cd) per cent by weight, maximum	0.0025
(v)	Arsenic (as As) per cent by weight, maximum	0.01

12. Di-Sodium Octa Borate Tetra Hydrate ($Na_2B_8O_{13}.4H_2O$)

(i)	Boron (as B) per cent weight, minimum	20.0
(ii)	Matter insoluble in water per cent by weight, maximum	1.0
(iii)	Lead (as Pb) per cent by weight, maximum	0.003
(iv)	Cadmium (as Cd) per cent by weight, maximum	0.0025
(v)	Arsenic (as As) per cent by weight, maximum	0.01

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13. Di-Sodium Tetra Borate Penta Hydrate (Granular)

(i)	Boron (as B) per cent weight, minimum	14.5
(ii)	Matter insoluble in water per cent by weight, maximum	1.0
(iii)	Lead (as Pb) per cent by weight, maximum	0.003
	Cadmium (as Cd) per cent by weight, maximum	0.0025
(iv)	Arsenic (as As) per cent by weight, maximum	0.01
(v)	Particle size – Minimum 90 per cent of the material shall be retained between 1.4 mm and 5 mm IS sieve	

14. Zinc Sulphate Monohydrate (Granular)

(i)	Zinc (as Zn) per cent by weight, minimum	33.0
(ii)	Sulphate sulphur (as S) per cent by weight, minimum	15.0
(iii)	Iron (as Fe) per cent by weight, maximum	1.0
(iv)	Matter-insoluble in water per cent by weight, maximum	1.0
(v)	pH (5% solution) not less than	4.0
(vi)	Lead (as Pb) per cent by weight, maximum	0.003
(vii)	Cadmium (as Cd) per cent by weight, maximum	0.0025
(viii)	Arsenic (as As) per cent by weight, maximum	0.01
(ix)	Particle size – Minimum 90 per cent of the material shall be retained between 4 mm and 2 mm IS sieve	

15. Zinc Oxide Suspension Concentrate (39.5% Zn)

(i)	Dense suspension concentrate of liquid Zinc	
(ii)	Zinc (as Zn) per cent by weight, minimum	39.5
(iii)	pH (5% solution)	9.0±1
(iv)	Arsenic (as As) per cent by weight, maximum	0.001
(v)	Lead (as Pb) per cent by weight, maximum	0.003
(vi)	Cadmium (as Cd) per cent by weight, maximum	0.0025
(vii)	Specific gravity (at 15 °C)	1.71-1.75

16. Di-Sodium Tetra Borate Penta Hydrate

(i)	Appearance – Free flowing crystalline	
	Boron (as B) per cent weight, minimum	14.5
(ii)	Matter insoluble in water per cent by weight, maximum	1.0
	Arsenic (as As) per cent by weight, maximum	0.001
(iii)	Lead (as Pb) per cent by weight, maximum	0.001
	Cadmium (as Cd) per cent by weight, maximum	0.0025

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17. Anhydrous Borax ($Na_2B_4O_7$)

(i)	Appearance – Free flowing crystalline	
(ii)	Boron (as B) per cent weight, minimum	20.5
(iii)	Matter insoluble in water per cent by weight, maximum	0.1
(iv)	Arsenic (as As) per cent by weight, maximum	0.001
(v)	Lead (as Pb) per cent by weight, maximum	0.001
(vi)	Cadmium (as Cd) per cent by weight, maximum	0.0025

18. Concentrated Liquid Calcium 11%

(i)	Calcium (as Ca) per cent by weight, minimum	11.0
(ii)	pH	9.5±1.0
(iii)	Specific gravity (kg L^{-1})	1.3-1.4

19. Zinc Polyphosphate

(i)	Appearance – Free flowing	
(ii)	Zinc (as Zn) per cent by weight, minimum	16.0
(iii)	DTPA soluble zinc (as Zn) per cent by weight, minimum	15.0
(iv)	Water soluble zinc (as Zn) per cent by weight, maximum	1.0
(v)	Magnesium (as Mg) per cent by weight, maximum	3.0
(vi)	Lead (as Pb) per cent by weight, maximum	0.003
(vii)	Arsenic (as As) per cent by weight, maximum	0.01
(viii)	Cadmium (as Cd) per cent by weight, maximum	0.0025

20. Chelated Zinc as Zn-HEDP

(i)	Appearance – Free flowing crystalline	
(ii)	Zinc (as Zn) per cent by weight, minimum in the form of Zn-HEDP	17.0
(iii)	Lead (as Pb) per cent by weight, maximum	0.003
(iv)	Arsenic (as As) per cent by weight, maximum	0.01
(v)	Cadmium (as Cd) per cent by weight, maximum	0.0025

21. Chelated Iron as Fe-HEDP

(i)	Appearance – Free flowing crystalline	
(ii)	Iron (as Fe) per cent by weight, minimum in the form of Fe-HEDP	17.0
(iii)	Lead (as Pb) per cent by weight, maximum	0.003
(iv)	Arsenic (as As) per cent by weight, maximum	0.01
(v)	Cadmium (as Cd) per cent by weight, maximum	0.0025

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22. Colemanite

(i)	Boron (as B) per cent by weight, minimum	11.0
(ii)	Sodium (as NaCl) per cent by weight, maximum	0.5
(iii)	Moisture per cent by weight, maximum	6.5
(iv)	Lead (as Pb) per cent by weight, maximum	0.003
(v)	Arsenic (as As) per cent by weight, maximum	0.01
(vi)	Cadmium (as Cd) per cent by weight, maximum	0.0025

23. Boron Ethanolamine

(i)	Boron (as B) per cent by weight, minimum	10.0
(ii)	pH	8.5±1
(iii)	Specific gravity	1.3-1.4
(iv)	Lead (as Pb) per cent by weight, maximum	0.003
(v)	Arsenic (as As) per cent by weight, maximum	0.01
(vi)	Cadmium (as Cd) per cent by weight, maximum	0.0025

1(h) Fortified Fertilisers

1. Boronated Single Superphosphate (16% P_2O_5 Powdered)

(i)	Moisture per cent by weight, maximum	12.0
(ii)	Available phosphorus (as P_2O_5) per cent by weight, minimum	16.0
(iii)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	14.5
(iv)	Sulphate sulphur (as S) per cent by weight, minimum	11.0
(v)	Boron (as B) per cent by weight	0.2-0.3
(vi)	Free phosphoric acid (as P_2O_5) per cent by weight, maximum	4.0

2. Zincated Urea

(i)	Moisture per cent by weight, maximum	1.0
(ii)	Total nitrogen (in urea form) per cent by weight, (on dry basis), minimum	43.0
(iii)	Zinc (as Zn) per cent by weight, minimum	2.0
(iv)	Biuret, per cent by weight, maximum	1.5
(v)	Particle Size – Minimum 80 per cent of the material shall be retained between 1 mm and 2.8 mm IS sieve	

3. Zincated Phosphate (Suspension) – for Seed Treatment

(i)	Total phosphorus (as P_2O_5) per cent by weight, minimum	14.0
(ii)	Available phosphorus (as P_2O_5) per cent by weight, minimum	3.0

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(iii)	Total zinc (Zn) per cent by weight, minimum	17.5
(iv)	Lead (as Pb) per cent by weight, maximum	0.003
(v)	pH (5% solution)	8±1

4. Boronated NPK Complex (10:26:26)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and urea) per cent by weight, minimum	10.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	7.0
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	26.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	22.5
(vi)	Water soluble potassium (as K_2O) per cent by weight, minimum	26.0
(vii)	Boron (as B) per cent by weight	0.2-0.3
(viii)	Particle Size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

5. Boronated NPK Complex (12:32:16)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and urea) per cent by weight, minimum	12.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	9.0
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	32.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	27.5
(vi)	Water soluble potassium (as K_2O) per cent by weight, minimum	16.0
(vii)	Boron (as B) per cent by weight	0.2-0.3
(viii)	Particle Size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

6. Boronated Diammonium Phosphate (18:46:0)

(i)	Moisture per cent by weight, maximum	2.5
(ii)	Total nitrogen (ammoniacal and urea) per cent by weight, minimum	18.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	15.5
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	46.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	41.0
(vi)	Boron (as B) per cent by weight	0.2-0.3
(vii)	Particle Size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

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7. Zincated NPK Complex (10:26:26)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and urea) per cent by weight, minimum	10.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	7.0
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	26.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	22.5
(vi)	Water soluble potassium (as K_2O) per cent by weight, minimum	26.0
(vii)	Zinc (as Zn) per cent by weight	0.5
(viii)	Particle Size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

8. Zincated NPK Complex (12:32:16)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and urea) per cent by weight, minimum	12.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	9.0
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	32.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	27.5
(vi)	Water soluble potassium (as K_2O) per cent by weight, minimum	16.0
(vii)	Zinc (as Zn) per cent by weight	0.5
(viii)	Particle Size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

9. Boronated Calcium Nitrate

(i)	Total nitrogen (ammoniacal and nitrate) per cent by weight, minimum	14.5
(ii)	Nitrate nitrogen as N per cent by weight, minimum	13.5
(iii)	Water soluble calcium as per cent by weight, minimum	17.0
(iv)	Boron (as B) per cent by weight, minimum	0.2-0.3

10. Boronated Nitrophosphate with Potash (15:15:15)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and nitrate) per cent by weight, minimum	15.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	7.5
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	15.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	4.0
(vi)	Water soluble potassium (as K_2O) per cent by weight, minimum	15.0
(vii)	Boron (as B) per cent by weight, minimum	0.2-0.3
(viii)	Particle Size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

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11. Zincated DAP (18:46:0)

(i)	Moisture per cent by weight, maximum	2.5
(ii)	Total nitrogen (ammoniacal and urea) per cent by weight, minimum	18.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	15.5
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	46.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	39.5
(vi)	Zinc (as Zn) per cent by weight, minimum	0.5
(vii)	Particle Size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

12. Zincated SSP (16% P_2O_5)

(i)	Moisture per cent by weight, maximum	12.0
(ii)	Available phosphorus (as P_2O_5) per cent by weight, minimum	16.0
(iii)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	14.5
(iv)	Sulphate sulphur (as S) per cent by weight, maximum	11.0
(v)	Zinc (as Zn) per cent by weight, minimum	0.5
(vi)	Free phosphoric acid (as P_2O_5) per cent by weight, minimum	4.0
(vii)	Particle Size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

13. Boronated NPK Complex (24:24:0)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and nitrate) per cent by weight, minimum	24.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	13.5
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	24.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	20.5
(vi)	Boron (as B) per cent by weight, minimum	0.2-0.3
(vii)	Particle Size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

14. Boronated Single Superphosphate (16% P_2O_5) Granular

(i)	Moisture per cent by weight, maximum	5.0
(ii)	Available phosphorus (as P_2O_5) per cent by weight, minimum	16.0
(iii)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	14.5
(iv)	Sulphate sulphur (as S) per cent by weight, minimum	11.0
(v)	Boron (as B) per cent by weight, minimum	0.2-0.3
(vi)	Free phosphoric acid (as P_2O_5) per cent by weight, minimum	4.0
(vii)	Particle Size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

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15. Zincated Bentonite Sulphur

(i)	Moisture per cent by weight, maximum	1.0
(ii)	Elemental sulphur (as S) per cent by weight, minimum	65.0
(iii)	Zinc (as Zn) per cent by weight, minimum	18.0
(iv)	Particle Size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

16. Zincated Urea Ammonium Phosphate (18:28:0)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen per cent by weight, minimum	28.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	9.0
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	28.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	25.2
(vi)	Zinc (as Zn) per cent by weight, minimum	0.5
(vii)	Particle Size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

17. Zincated NPK (14-35-14)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Ammoniacal nitrogen per cent by weight, minimum	14.0
(iii)	Available phosphorus (as P_2O_5) per cent by weight, minimum	35.0
(iv)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	29.0
(v)	Water soluble potassium (as K_2O) per cent by weight, minimum	14.0
(vi)	Zinc (as Zn) per cent by weight, minimum	0.5
(vii)	Particle Size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

18. Zincated Ammonium Phosphate Sulphate (20-20-0-13)

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen per cent by weight, minimum	20.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	18.0
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	20.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	17.0
(vi)	Sulphate sulphur (as S) per cent by weight, minimum	13.0
(vii)	Zinc (as Zn) per cent by weight, minimum	0.5
(viii)	Particle Size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

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19. NP 24-24-0 Fortified with Sulphur

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and urea) per cent by weight, minimum	24.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	7.5
(iv)	Nitrogen in the form of urea, maximum	16.5
(v)	Available phosphorus (as P_2O_5) per cent by weight, minimum	24.0
(vi)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	20.0
(vii)	Total sulphur (as S) per cent by weight, minimum	8.0
(viii)	Elemental sulphur (as S) per cent by weight, minimum	4.0
(ix)	Sulphate sulphur (as S) per cent by weight, minimum	4.0
(x)	Particle Size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

20. Boronated Ammonium Phosphate Sulphate

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and urea) per cent by weight, minimum	20.0
(iii)	Ammoniacal nitrogen per cent by weight, minimum	18.0
(iv)	Available phosphorus (as P_2O_5) per cent by weight, minimum	20.0
(v)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	17.0
(vi)	Sulphate sulphur (as S) per cent by weight, minimum	13.0
(vii)	Boron (as B) per cent by weight, minimum	0.2-0.3
(viii)	Particle Size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

21. NPK 14-35-14 Fortified with Zinc and Boron

(i)	Moisture per cent by weight, maximum	1.0
(ii)	Nitrogen in ammoniacal form per cent by weight, minimum	14.0
(iii)	Available phosphorus (as P_2O_5) per cent by weight, minimum	35.0
(iv)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	29.0
(v)	Water soluble potassium (as K_2O) per cent by weight, minimum	14.0
(v)	Zinc (as Zn) per cent by weight, minimum	0.5
(vi)	Boron (as B) per cent by weight, minimum	0.3
(vii)	Particle Size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve. Not more than 5 per cent shall be below 1 mm IS sieve	

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22. SSP Fortified with Zinc and Boron (Granular)

(i)	Moisture per cent by weight, maximum	5.0
(ii)	Available phosphorus (as P_2O_5) per cent by weight, minimum	16.0
(iii)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	14.5
(iv)	Zinc (as Zn) per cent by weight, minimum	0.5
(v)	Boron (as B) per cent by weight, minimum	0.2
(vi)	Free phosphoric acid (as P_2O_5) per cent by weight, minimum	4.0
(vii)	Particle Size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve.	

23. Boronated Sulphur (Granular)

(i)	Moisture per cent by weight, maximum	0.5
(ii)	Total elemental sulphur (as S) per cent by weight, minimum	80.0
(iii)	Boron (as B) per cent by weight, minimum	1.2
(iv)	Particle Size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve.	
	Note: The product may contain inert filler material as Bentonite *etc*. up to the extent of 14 per cent by weight, maximum	

24. Urea Ammonium Phosphate 20-20-0 fortified with 13% Sulphur

(i)	Moisture per cent by weight, maximum	1.5
(ii)	Total nitrogen (ammoniacal and urea) per cent by weight, minimum	20.0
(iii)	Available phosphorus (as P_2O_5) per cent by weight, minimum	20.0
(iv)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	17.0
(v)	Elemental sulphur (as S) per cent by weight, minimum	6.5
(vi)	Sulphate sulphur (as S) per cent by weight, minimum	6.5
(vii)	Particle Size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

25. Zincated SSP (Granular)

(i)	Moisture per cent by weight, maximum	5.0
(ii)	Available phosphorus (as P_2O_5) per cent by weight, minimum	16.0
(iii)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	14.5
(iv)	Free phosphoric acid (as P_2O_5) per cent by weight, minimum	4.0
(v)	Sulphate sulphur (as S) per cent by weight, minimum	11.0
(vi)	Zinc (as Zn) per cent by weight, minimum	0.5
(vii)	Particle Size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

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26. Elemental Sulphur fortified with Zinc Oxide in microgranule form

(i)	Elemental sulphur (as S) per cent by weight, minimum	67.0
(ii)	Zinc (as Zn) per cent by weight, minimum	14.0
(iii)	Moisture per cent by weight, maximum	2.0
(iv)	Particle Size – Minimum 90 per cent of the material shall be retained between 1 mm and 4 mm IS sieve	

1(i) 100% Water Soluble Complex Fertilisers

1. Potassium Nitrate (13-0-45)

(i)	Moisture per cent by weight maximum	0.5
(ii)	Total nitrogen (all in Nitrate form) per cent by weight, minimum	13.0
(iii)	Water soluble potassium (as K_2O) per cent by weight, minimum	45.0
(iv)	Sodium (as Na) per cent by weight, maximum	1.0
(v)	Total chloride(as Cl) (On dry basis) per cent by weight, maximum	1.5
(vi)	Matter insoluble in water, per cent by weight, maximum	0.5

2. Mono-Potassium Phosphate (0-52-34) (100% Water Soluble)

(i)	Moisture per cent by weight, maximum	0.5
(ii)	Water soluble phosphates (as P_2O_5) per cent by weight, minimum	52.0
(iii)	Water soluble potassium (as K_2O) per cent by weight, minimum	34.0
(iv)	Sodium (as NaCl) per cent by weight (on dry basis), maximum	0.5

3. Calcium Nitrate

(i)	Total nitrogen (ammonium and nitrate) per cent by weight, minimum	15.5
(ii)	Nitrate nitrogen as N per cent by weight, minimum	14.5
(iii)	Water soluble calcium (as Ca) per cent by weight, minimum	18.5
(iv)	Matter insoluble in water per cent by weight, maximum	1.5

4. Potassium Magnesium Sulphate

(i)	Moisture per cent by weight, maximum	0.5
(ii)	Water soluble potassium (as Ca) per cent by weight, minimum	22.0
(iii)	Magnesium as MgO per cent by weight, minimum	18.0
(iv)	Sulphate sulphur (as S) per cent by weight, minimum	20.0
(v)	Total chloride (as Cl) per cent by weight (on dry basis), maximum	2.5
(vi)	Sodium (as NaCl) per cent by weight (on dry basis), maximum	2.0

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5. Mono-Ammonium Phosphate (12-61-0) (100% Water Soluble)

(i)	Moisture per cent by weight, maximum	0.5
(ii)	Ammoniacal nitrogen per cent by weight, minimum	12.0
(iii)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	61.0
(iv)	Sodium (as NaCl) per cent by weight, maximum	0.5
(v)	Matter insoluble in water per cent by weight, maximum	0.5

6. Urea Phosphate 17:44:0 (100% Water Soluble)

(i)	Moisture per cent by weight, maximum	0.5
(ii)	Total nitrogen (all in urea form) per cent by weight, minimum	17.0
(iii)	Water soluble phosphorus (as P_2O_5) per cent by weight, minimum	44.0
(iv)	Matter insoluble in water per cent by weight, maximum	0.5

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