

# STANDARD SPECIFICATION OF GRANULAR UREA

## A. Guaranteed Specification – Granular

COMPOSITION		SPECIFICATION
Urea Assay (wt %)		98.0 min
Mass portion of nitrogen (N) on a dry basis, % min		46.2
Mass portion of Biuret, %, max		0.71
Ferrum %		0.0007
Apparent Density (Kg/m <sup>3</sup> )		770–809 Kg/m <sup>3</sup>
Free Ammonia		160 PXT PPM maximum
Sulphates %		0.0079
Alkalinity %		0.022
Arsenic %		10ppm
Cadmium		3ppm
Mercury		0%
Selenium		0.4ppm
Chromium		430ppm
Insoluble (ppm)		20
Granulation		0.85–3.35 mm not less than 90%
Physical State		Solid at 20 °C, 101 KPA White Granules
Physical Presentation		White Granular
Specific Gravity		– 1.335t/m
Molecular Weight		60.065
Critical/relative Humidity (30 °C)		73 %
Solubility in water at 20 °C		100gm/100ml of water
Anti–Caking Agent		Free Floating Treated Against Anti–Caking Treatment
Additive		None
PH (10 wt% solution)		7.5–10.0 Units
Moisture (determined by Fischer method), % max:		0.5 % max by method of drying
Dimension		Less than 1 mm: Absence
Melting Point		132 °C
Color		Standard White or Pure White
Quality		Free Flowing, Non Clotted, Free From Harmful Substances
Salinity Index		75.4
	2 to 5 mm	95%
	1 to 4 mm	–

# STANDARD SPECIFICATION OF PRILLED UREA

## B. Guaranteed Specification – Prilled

COMPOSITION	SPECIFICATION
Urea Assay (wt %)	98.0 min
Mass portion of nitrogen (N) on a dry basis, % min	46.2
Mass portion of Biuret, %, max	0.71
Ferrum %	0.0007
Apparent Density (Kg/m <sup>3</sup> )	770–809 Kg/m <sup>3</sup>
Free Ammonia	160 PXT PPM maximum
Granulation	0.85–3.35 mm not less than 90 %
Sulphates %	0.0079
Alkalinity %	0.022
Arsenic %	10ppm
Cadmium	3ppm
Mercury	0 %
Selenium	0.4ppm
Chromium	430ppm
Insoluble (ppm)	20
Granulation	0.85 – 3.35 mm not less than 90%
Physical State	Solid at 20 °C, 101 KPA White Granules
Physical Presentation	Spherical & Uniform in Size
Specific Gravity	Solid at 20 °C, – 1.335 t/m
Molecular Weight	60.065
Critical/relative Humidity (30 °C)	73 %
Solubility in water at 20 °C	100g/100 ml of water
Anti–Caking Agent	Free Floating Treated Against Anti–Caking Treatment
Additive	None
PH (10 wt% solution)	7.5–10.0 units
Moisture (determined by Fischer method), % max:	0.5 % max by method of drying
Dimension	Less than 1 mm: Absence
Melting Point	132 °C
Color	Standard White or Pure White
Salinity Index	75.4
Crumbliness	100%
Quality	Free Flowing, Non Clotted, Free From Harmful Substances

- Odor threshold Odorless or Slight Ammonia.
- Boiling point decomposes before boiling.
- Hazardous Ingredients none according to controlled product regulations.

**Physical Specification:**

- White, Free Flowing, Non-clotted 100% free from harmful substances.
- Internationally accepted standard for Urea N46%.
- Free from Impurities, Sand, Dust and Certified Non Radioactive.
- Vapor density not applicable.
- Floatability/Water sinks and mixes.
- PH Value 8.0–8.5.

**Usage:**

More than 90% of world industrial production of Urea is destined for use as Nitrogen-release fertilizer. Urea has the highest Nitrogen (N) content of all solid nitrogen content of all solid nitrogenous fertilizers in common use. Therefore, it has the lowest transportation costs per units of nitrogen nutrient. The standard crop-nutrient rating of urea is 46–0–0. The most common impurity of synthetic urea is Biuret, which impairs plant growth.

Urea is usually spread at rates of between 40 and 300 Kg./HA but rates vary. Smaller applications incur lower losses due to leaching. During summer season, Urea is often spread just before or during rain to minimize losses from volatilization (A process wherein Nitrogen (N) is lost to the atmosphere as Ammonia Gas). Due to the high Nitrogen concentration in Urea, it is very important to achieve an even spread. The application equipment must be correctly calibrated and properly used.