



**Title** POLYON PCU, Turf Grades,  
Regular Size

**No.** PD-4

**Issued** June 10, 2005 **Supersedes** May 20, 2003

**Product Names:** POLYON<sup>®</sup> Coated Urea;  
Polymer Coated Urea (PCU)

Note: Reactive Layers Coating (RLC™) Process (RLC-Urea); PCU is Association of American Plant Food Control Officials (AAPFCO) Definition (N-32), Official Pub. No. 51, 1998

**Label Guaranteed Analysis** 41-0-0, 42-0-0, 43-0-0, 44-0-0, 44.5-0-0

Total Nitrogen(N).....41%, 42%, 43%, 44%, 44.5%  
41%, 42%, 43%, 44%, 44.3% Urea(N)\*

Source of Nutrient: polymer coated urea

\*41%, 42%, 43%, 44%, 43.5% slowly available urea nitrogen from polymer coated urea as manufactured, per AOAC 970.04 (Katz) method. See reverse for AOAC test method description.

**Controlled Release Profile (CRP):** The CRP is the cumulative percentage of urea (N) released from the polymer coated urea by osmotic diffusion through the polymer membrane coating measured at intervals over a period of time. There is good correlation of release between laboratory static water immersion CRP tests of POLYON coated urea and turfgrass field tests when tested at the similar temperatures. Expected response times, based on laboratory tested CRPs and field tests for POLYON coated urea, -6+10 sieve size granules with mean diameter of 2.6mm, are given in the table below:

%N	Coating %RLC	Turf Response Time** @ Soil Temps- Weeks	
		Cool/Warm	Warm/Hot
44.5	3.2	8 --6	6 -- 4
44	4	10 --8	8 -- 6
43	6	15 --12	12 --9
42	8	20 --16	16 --12
41	10	24 -- 20	20 -- 16

\*\* Higher rates of nitrogen should be applied for the more extended response times. For example, low turf response would be expected if POLYON PCU 42N were

applied at only 1 lb(N) per 1000 ft<sup>2</sup>, since this generally is an insufficient amount of nitrogen to feed turfgrass over a 5-month (20 weeks) period.

POLYON® is a Registered Trademark and RLC™ is a Trademark of RLC Technologies, L.L.C.

**Abrasion/Impact Resistance:** The POLYON polymer coating is tough and durable; and, therefore, its release control quality remains unaltered even after being subjected to most conveying, blending, and application operations. This means label guarantees for controlled release nitrogen can be met consistently when tested by the state fertilizer control chemists.

**Official Test for Coated Slow Release Label Guarantee:** The label guarantee for coated slow release nitrogen, CSRN, is as manufactured and shipped, tested per the Association of Official Analytical Chemists, AOAC 970.04 method, commonly referred to as the Katz test, the method approved by the Association of American Plant Food Control Officials, AAPFCO. The percentage of unreleased nitrogen is determined after a 2-hour water leaching (dynamic flow) test conducted at 70°F. This official test method for the label guarantee does not determine the actual release, e.g. the CRP, of the nitrogen which remains unreleased after the 2-hour test period.

**Moisture Resistance:** During storage POLYON coated urea remains dry and free flowing even in hot, humid conditions. The critical relative humidity (CRH) at 86°F is above 90%. Uncoated urea and sulfur coated urea by comparison have a CRH from 70% to 75%; however, a blend containing both uncoated urea and POLYON coated urea assumes the CRH of the urea.

**Physical Characteristics:**

<u>Size:, U.S. Std. Sieve:</u>	-6+12
<u>SGN:</u>	240-270
<u>Uniformity Index:</u>	55-65
<u>Particle Hardness:</u>	4.5-6.5 lbs to crush per TFI Method IV
<u>Bulk Density:</u>	46-49 lbs per cu. ft.
<u>Angle of Repose:</u>	30-34 degrees