HCU™

44-0-0

- **Humic Coated Urea**

GUARANTEED ANALYSIS

Total Nitrogen (N) 44.00%
44.00% Urea Nitrogen

Plant nutrients derived from urea.

Contains Non-Plant Food Ingredient:
Active Ingredients
Humic Acid* 2.00%
*Derived from humic substances
Total Other ingredients 98.00%

Patent Pending

F002091

FLORIDA APPLICATIONS:
We recommend that you follow the Florida Green Industries BMP's at http://www.flaes.org/pdf/BMP_Book_final.pdf

We recommend that you follow the Florida Golf Course BMP's at http://www.flaes.org/pdf/glfbmp07.pdf

WARNING
MAY CAUSE EYE IRRITATION
MAY CAUSE RESPIRATORY IRRITATION

Precautionary Statements

Call a poison center/physician if unwell. If skin irritation occurs, get medical advice. If in eyes, rinse cautiously with water for several minutes, remove contact lenses. If eye irritation persists, get medical advice. Wash hands after handling. Use only outdoors or in well ventilated areas. Avoid breathing dust. If inhaled, remove to fresh air and keep at rest in a position comfortable for breathing. Store container tightly closed. Dispose of contents/container in accordance with national/regional/local regulations.

First Aid

If swallowed: Rinse mouth. DO NOT INDUCE VOMITING unless directed by a medical professional. Call POISON CONTROL and seek medical attention.

If on skin: Wash affected areas with soap and water. Seek medical attention if irritation persists.

If in eyes: Immediately flush with water for 15-20 minutes and seek medical attention.

If inhaled: Move to fresh air and keep comfortable. Seek medical attention if unwell.

PRODUCT INFORMATION: HCU 44-0-0 is a concentrated soluble granule fertilizer for dry broadcast or foliar spray applications for Turf, Nursery or Agriculture.

DIRECTIONS FOR USE: HCU 44-0-0 can be applied to all cool and warm season turfs including golf courses, sports fields, commercial and residential lawns, sod farms, landscape ornamentals, nursery stock, row crops and specialty crops including fruits, nuts, vegetables, trees, shrubs, vines and flowers. Application rates and frequency are dependent upon soil and climate conditions present. See chart below for application rates and dilution rates.

SPRAY APPLICATION:
HCU granules completely solubilize when added to water and can be spray applied at nitrogen rates of 0.10 - 1.00 lb N/1,000 ft^2. HCU can be mixed and added to the spray tank using industry standard practices including:

- pouring into the strainer basket at the top tank opening and running water over the granules to solubilize;
- preparing a bucket slurry mixture;
- adding granules through the spray tank inductor system; or
- prepare a solution in a mix batch tank system.

Using warm or hot water will reduce the time required to solubilize HCU. Fill the spray tank with at least half the desired water volume, engage the agitation and begin adding the HCU granules or solution using one of the methods described previously. Continue agitation until thoroughly mixed.

Spray Application Rates

lbs N/1,000 ft^2	lbs Product/ 1,000 ft^2	lbs Product/ Acre	Suggested Minimum Spray Volume (gal/A)	lbs Humic Acid/Acre
0.10	0.23	10	30	0.2
0.20	0.45	20	40	0.4
0.25	0.57	25	40	0.5
0.33	0.75	33	40	0.7
0.50	1.14	50	40	1.0
0.75	1.70	74	60	1.5
1.00	2.27	99	80	2.0

Use caution when applying more than 0.25 lb N/1,000 ft^2. The suggested water rates in the preceding table are minimum water rates. A greater volume may be required to meet specific site needs.

Compatibility with other chemicals: Check our website for a current list of compatible control products and nutrients. You can also perform a compatibility check by:

- Mixing each product in a clear container in the same proportion to be used in the field
- Agitating for at least 60 seconds
- Visually observing for precipitate

DRY BROADCAST APPLICATION:
Apply to dry turf and irrigate thoroughly if applying at the 1.25 and 1.50 lb N/1,000 ft^2 rates.

Broadcast Application Rates

lbs N/1,000 ft^2	lbs Product/ 1,000 ft^2	lbs Product/Acre	lbs Humic Acid/Acre
0.75	1.70	74	1.50
1.00	2.27	100	2.00
1.25 *	2.84	124	2.50
1.50 *	3.41	149	3.00

* Do not apply in drought conditions.

Do not apply near water, storm drains or drainage ditches. Do not apply if heavy rain is expected. Apply this product only to your lawn and sweep any product that lands on the driveway, sidewalk or street, back onto your lawn.

Spreader Settings

Suggested Spreader Settings
These suggested spreader settings are not intended to replace calibration.
Please calibrate your spreader before applying product.
50 lbs. feeds 29,400 sq. ft. (0.67 acre) at 1.70 lbs/1,000 sq. ft.
50 lbs. feeds 22,000 sq. ft. (0.51 acre) at 2.27 lbs/1,000 sq. ft.
50 lbs. feeds 17,600 sq. ft. (0.40 acre) at 2.84 lbs/1,000 sq. ft.
50 lbs. feeds 14,600 sq. ft. (0.34 acre) at 3.41 lbs/1,000 sq. ft.

SPREADER	GROUND SPEED	WIDTH OF COVERAGE	SPREADER SETTINGS			
			1.70 lbs/1,000 sq. ft.	2.27 lbs/1,000 sq. ft.	2.84 lbs/1,000 sq. ft.	3.41 lbs/1,000 sq. ft.
Andersons Model 2000 (cone 4); Andersons 2000 SR (cone 4)	3 mph	10 feet	J 3/4	K 1/4	K 3/4	L 1/2
Scotts R-8, R-8A (cone 4)	3 mph	10 feet	I 1/4	I 3/4	J 3/4	K 1/2
Lesco 020093 (pattern 0.25)	3 mph	7 feet	D 1/4	D 1/2	D 3/4	E
Lesco 705698 (pattern 0.25)	3 mph	7 feet	10 1/2	11	11 1/2	12
Lely Models WTR, WFR, HR, 1250 (PTO at 450 rpm) Pattern II-C	4.5 mph	38 feet	4 1/2	4 3/4	5 1/4	5 3/4
Vicon (03 Series)	4.5 mph	30 feet	19	22	25	28

IMPORTANT: READ BEFORE USE:
Read the entire Directions for Use and the Warranty Disclaimer and Limitation of Liability before using this product. If terms are not acceptable, return the unopened product container at once. By using this product, user or Buyer accepts the following Warranty Disclaimer and Limitation of Liability:

WARRANTY DISCLAIMER and LIMITATION of LIABILITY:
Manufacturer warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions. Manufacturer makes NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. To the extent consistent with applicable law, it is Manufacturer's intent to LIMIT ANY LIABILITY FOR SPECIAL, CONSEQUENTIAL OR INCIDENTAL ECONOMIC DAMAGES to refund of purchase price or replacement of product, at Buyer's choice. To the extent consistent with applicable law, Manufacturer DISCLAIMS ANY LIABILITY FOR COMPENSATORY OR OTHER DAMAGES ARISING OUT OF ANY USE CONTRARY TO LABEL DIRECTIONS.

LEGAL RIGHTS:
THIS LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS; YOU MAY HAVE OTHER RIGHTS THAT VARY FROM STATE/JURISDICTION TO STATE/JURISDICTION.

Product of U.S.A.

Manufactured by:
The Andersons, Inc.
P. O. Box 119
Maumee, Ohio 43537
www.andersonsplantnutrient.com

Net Wt. 50 Lbs (22.68 kg)

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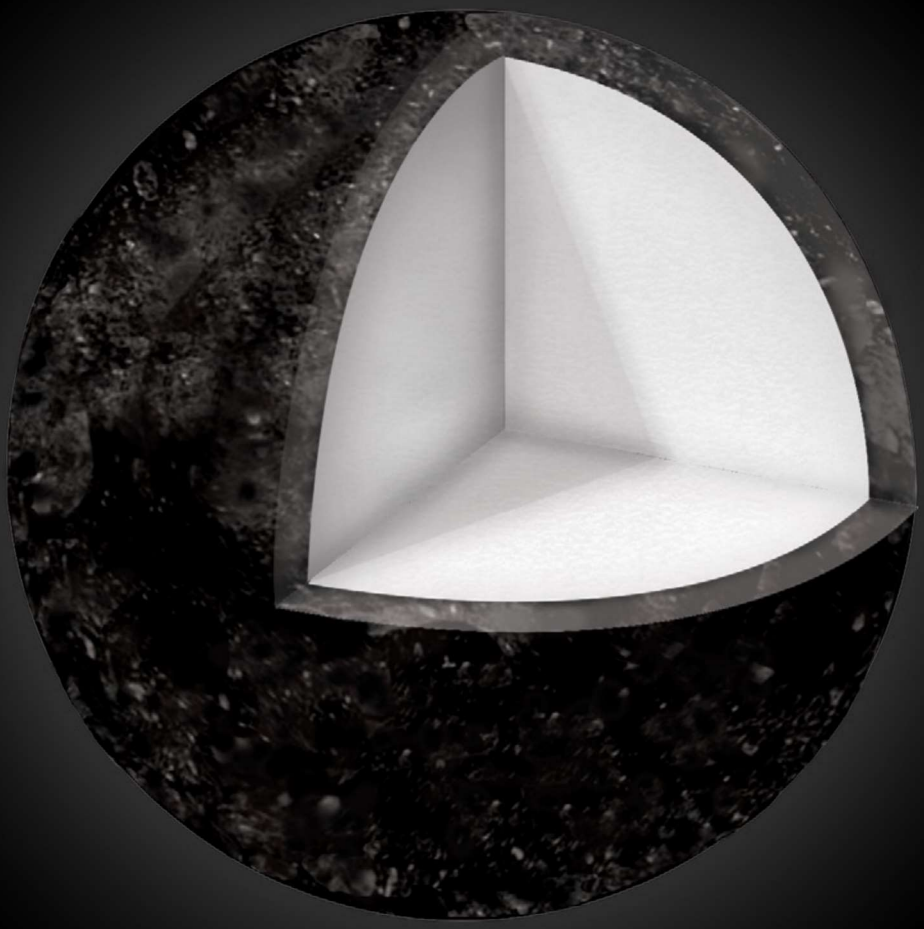
C17

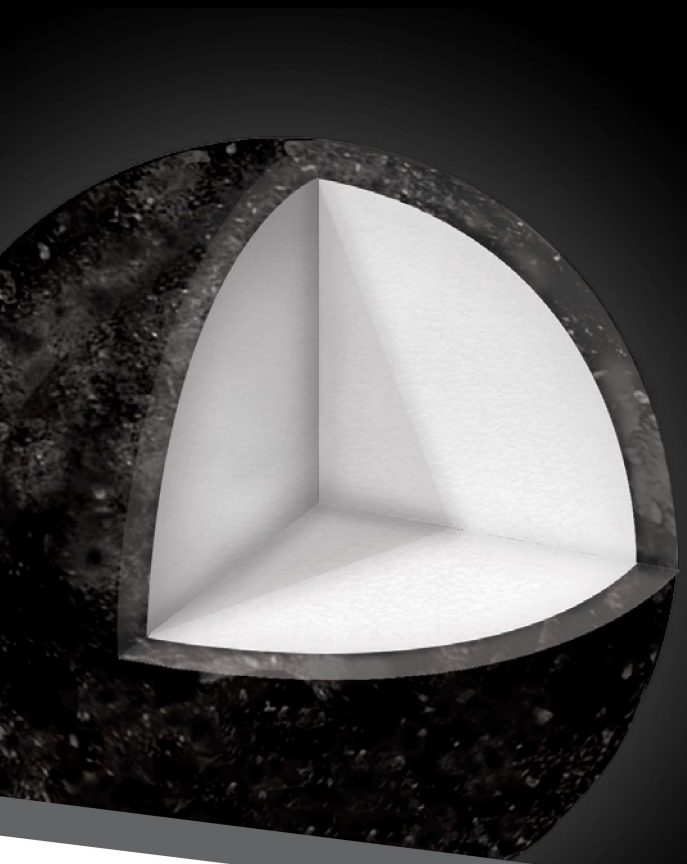
HCU™

HUMIC COATED UREA



BLACK IS THE NEW GREEN™

The Andersons®



HCU™

HUMIC COATED UREA

HCU (Humic Coated Urea) granules are an innovative nitrogen source featuring urea-humate fusion. This proprietary technology from The Andersons produces a cost effective 44-0-0 nitrogen granule that is bonded with potassium humate. Clean, spherical, free flowing granules are 100% soluble for use in both liquid and dry applications. HCU granules can be applied to all types of cool and warm season turf, landscape and nursery ornamentals, and specialty crops.

HCU granules offer a practical, sensible and sustainable approach to applying nitrogen with important soil and plant health benefits that traditional nitrogen sources cannot provide.

SENSIBLE

There are many types of controlled-release or enhanced efficiency nitrogen products available that provide the single benefit of potentially improving the utilization of applied nitrogen. Some nitrogen products use physical coatings such as polymers and/or sulfur to slow the release of nitrogen, while enhanced efficiency nitrogen products use chemical additives to suppress beneficial soil biology.

HCU granules are different by design. They utilize urea-humate fusion technology which bonds a uniform coating of potassium humate over a urea granule. This coating does not act as a physical barrier to slow nitrogen release, but works synergistically with urea to promote and enhance soil biology.

HCU granules contain beneficial fulvic and humic acids that provide a rich carbon source for maintaining and improving soil biology. Fulvic and humic acids have numerous proven benefits for soil and plant health which include: enhanced nutrient efficiency, micronutrient uptake, soil nutrient holding capacity, biological activity, and water holding capacity.

Both fulvic and humic acids have unique physical and chemical properties that contribute to their effectiveness and the way they complement fertilizer programs.

FULVIC ACIDS are very soluble and can be readily absorbed by leaves and roots, making them well suited for foliar application. Fulvic acids enhance the absorption of nutrients and aid in the efficiency of plant metabolic reactions.

HUMIC ACIDS are moderately soluble. They have a high cation exchange capacity (CEC), which helps enhance the nutrient holding capacity of the soil after application. Humic acid molecules chelate many essential nutrients and help stimulate soil microbiology.

SOLUBLE & SPREADABLE

HCU granules are multipurpose soluble granules that can be solubilized for spray application or dry applied through typical dry spreading equipment. HCU 44-0-0 granules are a cost effective nitrogen source, and are well suited for use on large turf applications such as golf course tees, aprons, fairways and roughs, sports fields, commercial and residential lawns, ornamentals, and specialty crops.

SPRAY APPLICATION RATES

NITROGEN RATE	PRODUCT	PRODUCT	HUMIC ACID*	SUGGESTED MIN. SPRAY VOLUME
N/1000 FT²	LBS./1000 FT²	LBS./ACRE	LBS./ACRE	GAL./ACRE
0.10	0.23	10	0.20	30
0.25	0.57	25	0.50	40
0.33	0.75	33	0.70	40
0.50	1.14	50	1.00	40
0.75	1.70	74	1.50	60
1.00	2.27	99	2.00	80

BROADCAST APPLICATION RATES

NITROGEN RATE	PRODUCT	PRODUCT	HUMIC ACID*
N/1000 FT²	LBS./1000 FT²	LBS./ACRE	LBS./ACRE
0.75	1.70	74	1.50
1.00	2.27	99	2.00
1.25	2.84	124	2.50
1.50	3.41	149	3.00

**Equivalent to gallons/acre rate of 12% liquid humic acid.*

SPRAY APPLICATION

HCU granules completely solubilize when added to water and can be spray applied at nitrogen rates of 0.10 - 1.00 lbs. N/1,000 ft². To mix HCU granules for spray application, refer to the label for application rates, water volume, dilution, and mixing instructions. HCU granules can be mixed and added to the spray tank using industry standard practices including: pouring into the strainer basket at the top tank opening and running water over the granules to solubilize, preparing a bucket slurry mixture, adding granules through the spray tank inductor system, or preparing a solution in a mix batch tank system. The time required to solubilize HCU granules is reduced by using warm or hot water. HCU granules are compatible with the most widely used control products for finely maintained cool and warm season turf. For more details, visit DiscoverHCU.com.

DRY SPREAD APPLICATION

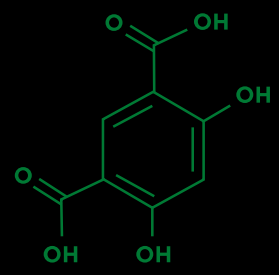
Urea-humate fusion technology produces a clean, dry, dust-free, spherical HCU granule that is ideal for dry spread application. HCU granules can be applied through all types of granular spreading equipment including The Andersons Professional rotary spreaders, and larger scale broadcast spreaders such as Lely and Vicon models. Typical application rates range from 0.75 – 1.50 lbs N/1000 ft².

SUSTAINABLE

"Humic substances are recognized by most soil scientists and agronomists as the most important component of a healthy, fertile soil."[1]

Humic acid provides a carbon food source which stimulates soil microbiology. Carbon is an essential plant nutrient that provides soil microbes with a food source and habitat. Microbes support soil and overall plant health by making nutrients available to plants in the inorganic form. Humic acid is a primary food source to grow populations of beneficial soil fungi, including mycorrhizal fungi.

The complex structure of humic acids enables many opportunities for interactions with nutrients. These interactions keep nutrients accessible to the growing plants and prevent leaching or tie up. Humic acids also increase the availability of micronutrients to the plant. Larger molecules of humic acids physically modify soil structure which increases soil aggregate stability, improves water infiltration, nutrient holding capacity, aeration, soil tilth, and workability.



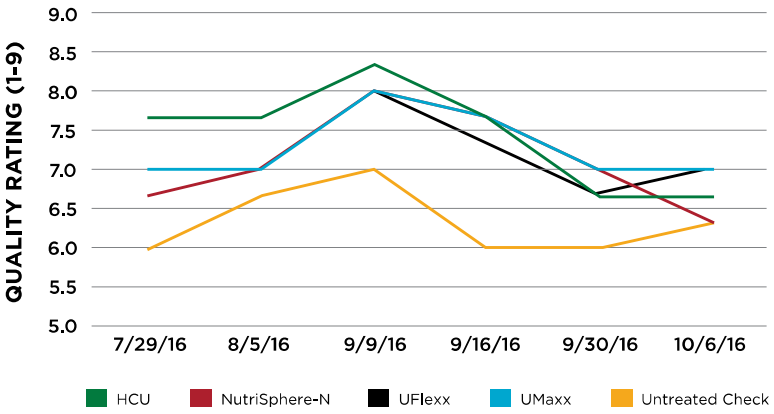
ENHANCE SOIL BIOLOGY

With the power of humic acid, HCU granules will enhance soil biology and chemistry, which in turn will enhance nutrient availability. This is in contrast to many competitive products, which keep nutrients available by suppressing biological processes.

[1] Pettit, R.E. 2004. Organic Matter, Humus, Humate, Humic Acid, Fulvic Acid and Humin: Their Importance in Soil Fertility and Plant Health.

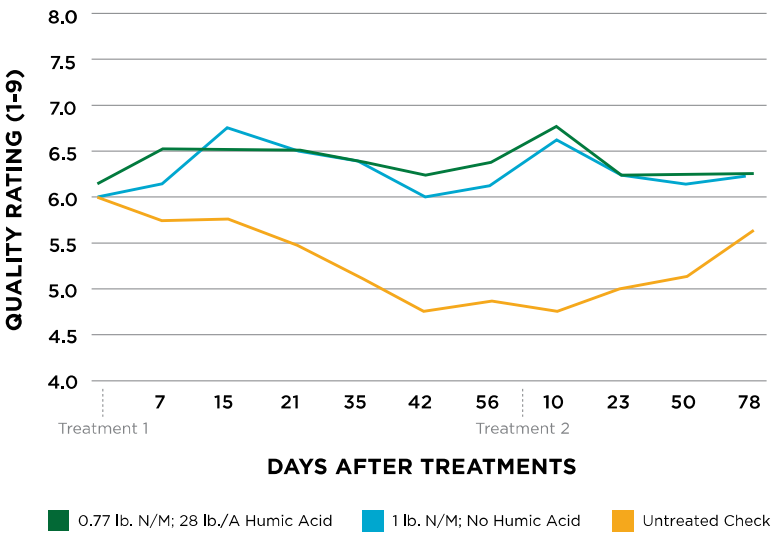
PROVEN PERFORMANCE

UNIVERSITY OF ARKANSAS | TURF QUALITY & COLOR | 2016



HCU granules provide turf quality and color that is comparable to current industry leading products. In a study conducted on Bermudagrass at the University of Arkansas, HCU granules were applied at a rate of 1.00 lb N/1000 ft^2 and compared to NutriSphere-N, UMaxx, and UFlexx applied at the same rate. The Bermudagrass plots treated with HCU granules had turf quality and color statistically similar or greater than industry leading products for the 11 week duration of the study. Similar results were observed on Kentucky bluegrass at Penn State University.

PENN STATE UNIVERSITY | TURF QUALITY & COLOR | 2016



Numerous research studies conducted by The Andersons and universities around the world have observed the positive impact of humic acid on nutrient efficiency. In studies conducted at Penn State University in 2015 and 2016, The Andersons humic acid was applied with reduced nitrogen fertility to Kentucky bluegrass at a 3" cut. These humic acid treatments with reduced nitrogen fertility were compared to a treatment that received the full rate of nitrogen fertility but no humic acid. For two years in a row, the same turf quality and color were observed throughout the study in plots treated with the full rate of nitrogen (1.00 lb N/1000 ft^2) and plots treated with humic acid (28 lb humic acid/acre) and a reduced rate of nitrogen (0.77 lb N/1000 ft^2).

PRODUCT SPECIFICATIONS

Analysis:	44-0-0
Coating:	2% potassium humate
SGN:	215
UI:	40
Bulk Density:	46 lbs. / ft^3
Packaging:	50 lb. bag

The Andersons® PLANT NUTRIENT

DiscoverHCU.com