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ROCKSOFT™NCE-EA

Product #154

U.S. Patent #5,811,381

(FOR FORMULATION PURPOSES ONLY.)

I. INTRODUCTION:

ROCKSOFT™NCE-EA is an encapsulated powdered neutral cellulase for use in blended formulations.

ROCKSOFT™NCE-EA is a neutral form of cellulase and is best run at a pH of 6.5 and temperature of 55°C - 60°C (131°F - 140°F).

II. PHYSICAL PROPERTIES:

Appearance: Amber Powder (Note that color does not affect or reflect activity.)

Odor: Slight fermentation odor

pH (1% soln): 6.5±0.5

Activity > 2,400 AzoCMCase/g

III. PRODUCT CAPABILITIES:

When run as directed in this bulletin, **ROCKSOFT™NCE-EA** can be utilized to accomplish the following:

1. Significantly soften 100% cotton fabrics, both woven and knits.
2. Appreciably remove the fuzz and cotton pill balls from garments, sweaters, socks and others and others as a result of long wet processing or garment dyeing cycles.
3. Increases the "stone wash" effect on rotary washed garments when using a significant amount of pumice stones and/or other abrasives.
4. Can desize TMKP sized fabrics alone and aids in desizing other sized fabrics when used in conjunction with a nonionic detergent or amylase.
5. May be used in pre-washing to further increase softening.

IV. PROCESSING CONDITIONS: GENERAL

ROCKSOFT™NCE-EA will function from a pH of 5.5 to 7.0. We recommend an operating pH of 6.2 to 6.7.

ROCKSOFT™NCE-EA will function from 45°C - 60°C (113°F - 140°F). We recommend an operating temperature of 55°C - 60°C (131°F - 140°F).

If **ROCKSOFT™NCE-EA** is used as an ingredient in compositions that are used in STONEWASHING applications, these compositions should be used in combination with a significant amount of pumice stones.

The closer the operating parameters are kept to above recommendations, stone wash applications and 7:1 to 8:1 for softening and fuzz removal.

V. RECOMMENDATIONS FOR FORMULATION:

All formulations should buffer to a pH of 6.5. All Percentages are on the total weight of the blended product. Formulated products contain the following components:

| | |
|---------------|---|
| NCE-EA | 4.0%, 8.0%, or 12.0% |
| MSP:DSP(11:1) | 50.0-80.0% (monosodium phosphate, disodium phosphate) |
| Abrasive* | balance to 10% (bone dry pumice or other abrasive like popped perlite) |
| Detergent | 5.0 – 10.0% (granulated C12-14 linear nonionic alcohol with EO mole 35 and up.) |

Example formula #1 (products should be added in this order)

| | |
|--|-------|
| MSP | 55.0% |
| DSP | 5.0% |
| Sodium Sulfate | 25.0% |
| Perlite | 5.0% |
| Detergent | 5.0% |
| Up to 1.0% of a liquid nonionic wetter (10% solids like Union Carbide 15-S-9) can be added to control dusting. | |
| NCE-EA | 4.0% |

Example formula #2 (products should be added in this order)

| | |
|--|-------|
| MSP | 55.0% |
| DSP | 5.0% |
| Sodium Sulfate | 21.0% |
| Perlite | 5.0% |
| Detergent | 5.0% |
| Up to 1.0% of a liquid nonionic wetter (10% solids like Union Carbide 15-S-9) can be added to control dusting. | |
| NCE-EA | 8.0% |

Example formula #3 (products should be added in this order)

| | |
|--|-------|
| MSP | 55.0% |
| DSP | 5.0% |
| Sodium Sulfate | 17.0% |
| Perlite | 5.0% |
| Detergent** | 5.0% |
| Up to 1.0% of a liquid nonionic wetter (10% solids like Union Carbide 15-S-9) can be added to control dusting. | |
| NCE-EA | 12.0% |

For extra protection against moisture regain add desiccant bag in packaging.

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*Pumice should be bone dry to prevent adding extra moisture to the product. Perlite should be the popped variety.

**The detergent is available from major nonionic detergent manufacturers like BASF, Clariant, or Henkel.

VI. STORAGE CONDITIONS:

ROCKSOFT™NCE-EA retains more than 90% activity after four months when stored at 25°C (77°F) out of direct sunlight and in the original, closed container. **ROCKSOFT™NCE-EA** also retains more than 90% activity after 1 month when stored at 38°C (100 °F).

VII. INACTIVATION:

ROCKSOFT™NCE-EA can be inactivated by raising the pH above 11 or use **DAD** at 2.0% OWG or temperature above 71°C (160°F) or a combination of the two. After the desired effect has been achieved, we recommend inactivating **ROCKSOFT™NCE-EA** within the next operating bath.

VIII. PACKAGING:

ROCKSOFT™NCE-EA is packaged in 75 kg fiber drums.

IX. TECHNICAL SERVICE:

Information covering specific applications for this product is available from your Dyadic International, Inc. sales/technical representative. We will work with you to enhance processes and solve problems, in addition to assisting you in achieving the end result/look desired. Call your sales/technical representative for any questions, comments, or help that you need!

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