



NOVATION® 4600 34381102

NOVATION® 4600 functional native starch is cold water swelling (CWS) waxy corn starch which provides the properties of premium instant starches. It possesses superior sheen, clarity and smoothness when compared to traditional pregelatinized starch dispersions. NOVATION® 4600 functional native starch is made by a revolutionary technology that results in properties similar to modified CWS starches while meeting clean labeling criteria. This product is produced under Ingredion Incorporated's TRUETRACE® Identity Preserved Program for non-GM products.

Chemical and Physical Properties

| | Min. | Max. |
|-----------------------|------|------|
| Moisture, % | - | 10.0 |
| pH (10% w/w slurry) | 4.8 | 7.0 |
| Viscosity (CML-M504H) | | |
| 15 min, MVU | 350 | 675 |
| End, MVU | 480 | 700 |

Physical Appearance

| | Typical |
|-------|--------------------|
| Color | Off-White to Cream |
| Form | Fine Powder |

Screen Test

| | Typical |
|--------------------|---------|
| % thru U.S.S. #100 | >75 |
| % thru U.S.S. #200 | >50 |

Microbiological Limits

Initial testing is done on a single composite sample against a limit of m. If result is above m, the three class sampling and acceptance below is used.

| | n | c | m | M |
|---------------------|---|---|-------|--------|
| Total Plate Count/g | 5 | 3 | 1,000 | 10,000 |
| Yeast/g | 5 | 3 | 200 | 1,000 |
| Mold/g | 5 | 3 | 200 | 1,000 |
| Enterobacteriaceae | 5 | 3 | 10 | 100 |

Where n = # of samples tested; c = maximum allowable number of results between m and M; m = upper target limit; M = maximum acceptable value.

| | |
|-------------------|----------|
| <i>E. coli</i> | Negative |
| <i>Salmonella</i> | Negative |

Nutritional Data/100 g

| | Typical |
|-----------------------|---------|
| Calories | 365 |
| Calories from fat | 0 |
| Total Fat, g | <0.1* |
| Cholesterol, mg | 0 |
| Sodium, mg | 34 |
| Total Carbohydrate, g | 91.1 |
| Dietary Fiber, g | 0 |
| Total Sugars, g | 0 |
| Added Sugars, g | 0 |
| Other Carbohydrate, g | 91.1 |
| Protein, g | 0.1 |
| Vitamin D, mcg | 0 |
| Calcium mg | 12 |
| Iron, mg | <0.2* |
| Potassium, mg | <10* |
| Ash, g | <0.1* |

* Not present at level of quantification.

Certification

Kosher pareve
Halal

Packaging and Storage

NOVATION® 4600 functional native starch is packaged in multi ply kraft paper bags with a net weight of 55 lbs. NOVATION® 4600 functional native starch should be stored in a clean, dry area at ambient temperature and away from heavily aromatic material.

Shelf Life

The best before date for NOVATION® 4600 functional native starch is 24 months from the date of manufacture.

Regulatory Data

| | |
|---------|----------------------------|
| Source | Waxy Maize (TRUETRACE® IP) |
| CAS No. | 9037-22-3 |

United States

Meets FCC (Food Chemical Codex) requirements.
Labeling: Corn Starch

Canada

| | |
|----------------------|-------------|
| Standard of Identity | B.13.011 |
| Labeling | Corn Starch |

Features and Benefits

Dispersions of NOVATION® 4600 functional native starch have exceptional clarity, sheen and smoothness when compared to dispersions of modified CWS thickeners. Surface grain is essentially eliminated using this high performance cold water swelling starch. NOVATION® 4600 functional native starch is short-textured and will not set to a gel upon cooling. This product also has moderate resistance to the effects of heat, acid and shear. This improved resistance over native pre-gelatinized starches contributes superior textural and shelf-life stability. NOVATION® 4600 functional native starch provides a unique flavor release in some food systems. The flavors of the food systems formulated with NOVATION® 4600 functional native starch are brighter and have greater intensity when compared to the same systems formulated with some other modified starches. This product is produced under Ingredion Incorporated's TRUETRACE® Identity Preserved Program for non-GM products.

Effective Date: May 3, 2017

Next Review Date: May 3, 2020

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