



Ingredion

NOVATION<sup>®</sup> functional native starches  
non-GMO Project verified



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# NOVATION® functional native starches

- **20+ years** of enabling the market to position foods and beverages as clean-label, natural and organic
- Comprehensive portfolio: **20+ products**
  - Corn, potato, rice, and tapioca
  - **5 Organics**
  - Proprietary hybrid bases
- **10+ years** of 100% documented Non-GMO via proprietary TRUETRACE® Identity Preservation Program



# Because in clean label, non-GMO is a must have

- Ingredion has gained Non-GMO Project verification for NOVATION starches produced at the Indianapolis facility under the TRUETRACE® IP program
- Allows for formulation of clean label products without additional paperwork/certification steps required when formulating with ingredients not approved by the Non-GMO Project





A range of functional native starches



**Functional:**

Thicken & stabilize foods

Processing tolerance & shelf-life

**stability comparable to chemically modified starches**

**No compromise** for the manufacturer



**Native:**

**Clean labelling**, according to base description (e.g., corn starch, potato starch, rice starch, tapioca starch)

Classified as **ingredients** not additives. Carry **no E number** in Europe

Enable clean label front of pack claims such as **“additive-free”, “simple”, “non-GMO” and “organic”**



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# Native versus functional native

## The difference in textural appeal



**Native corn starch**  
Gelled



**Functional native starch**  
DESIRABLE short and smooth



**Native waxy corn starch**  
Cohesive



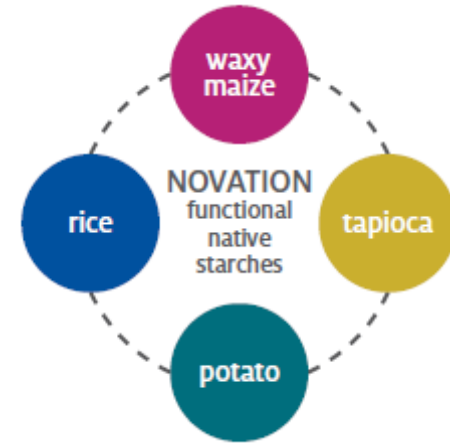
**Traditional modified starch**  
Industry standard



# Key benefits



NOVATION starches **offer the widest range of capabilities available** in a functional native starch, with the same shelf life stability as traditional modified starches



- **All the taste, visual and texture appeal consumers demand**
  - **Clean flavor profile** that doesn't mask delicate flavors
  - **Desirable texture**, that can be maintained through processing and shelf life, comparing favorably with modified-starch performance
  - **Simple “starch” label**, according to base description





# The NOVATION<sup>®</sup> Portfolio in NA

Available in cook-up and instant forms - widest range of process tolerance and stability

Base	Cook up	Instant/CWS	Organic *	Label declaration
Potato	NOVATION 1600 NOVATION 1900 N-HANCE 59	NOVATION 6600		Potato starch
Waxy corn	NOVATION PRIMA 300 NOVATION PRIMA 600 NOVATION Endura 0100	NOVATION 4300 NOVATION 5300  NOVATION 4600 NOVATION5600	NOVATION 9230 + NOVATION 9260 +  NOVATION 9560 + (CWS)	Corn starch  Organic corn starch
Tapioca	NOVATION 3300 NOVATION 3600		NOVATION 9330 NOVATION 9360	Tapioca starch Organic tapioca starch
Waxy Rice	NOVATION 8300 NOVATION 8600			Rice starch

\* Certified organic by QAI

+ Pending non-GMO Project verification







NOVATION Endura™

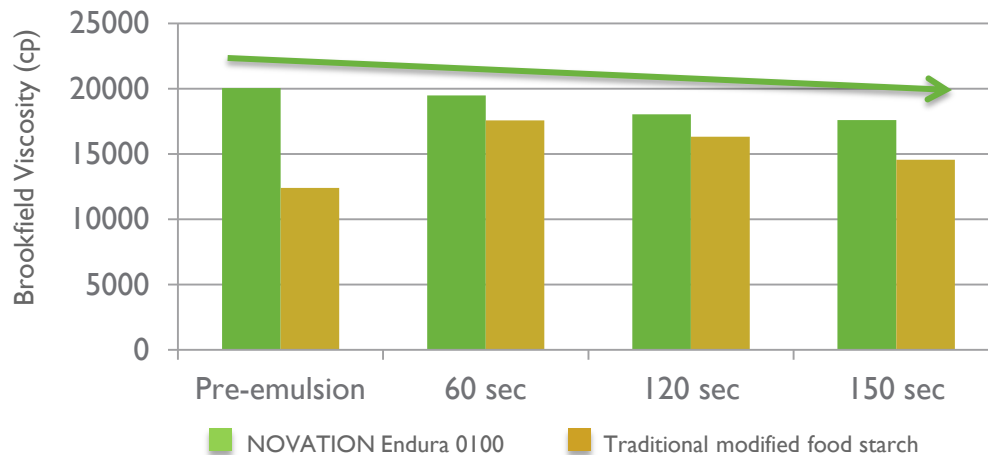
Next-generation process tolerance in challenging applications



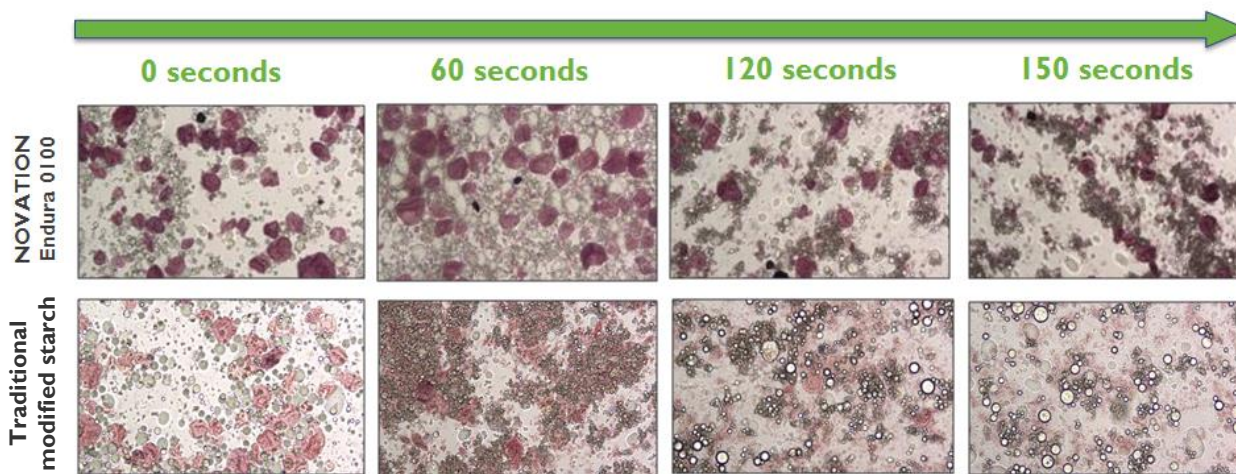
## Example: Dressing



### High shear tolerance – viscosity



### High shear tolerance – microscopy



NOVATION Endura 0100 starch retains granular integrity similar to highly cross-linked MFS





# Flavor and texture stability over multiple freeze-thaw cycles

## Example: Fruit preparation

40–42° Brix

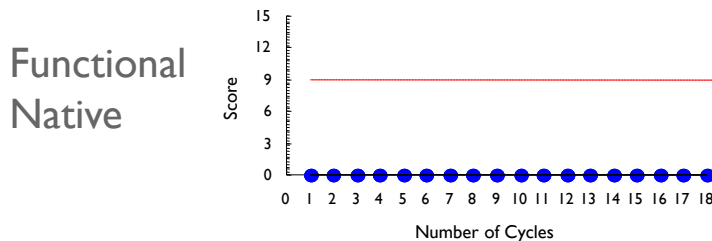
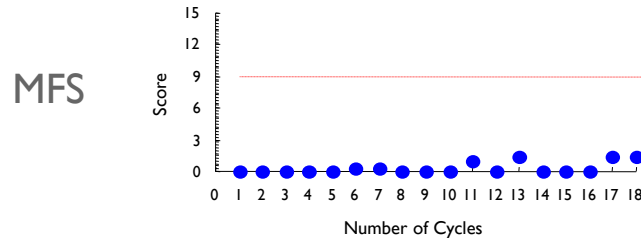


Modified food starch (MFS)



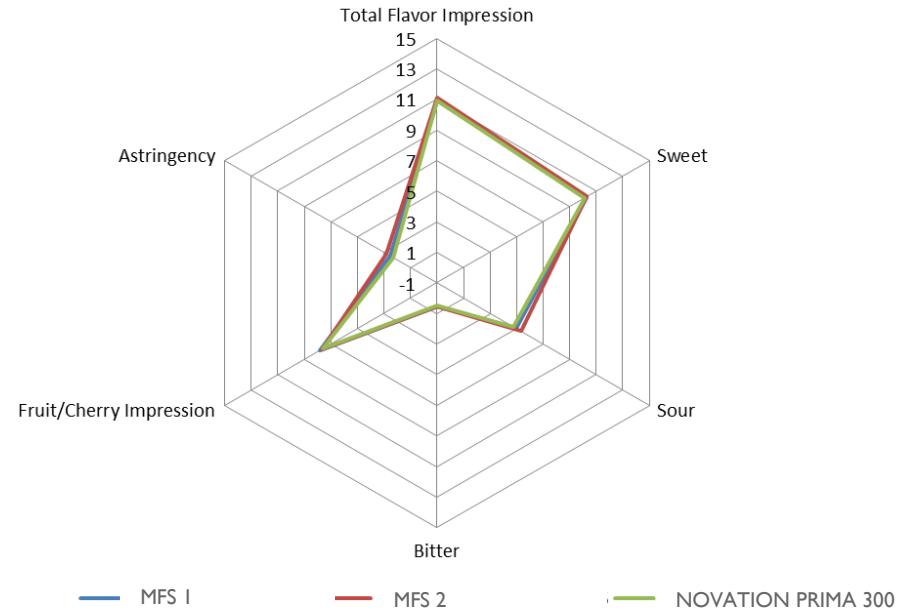
Functional native starch

### Freeze/thaw stability evaluation for 18 cycles



- Scores below 9 are acceptable; 0 is best

### Sensory evaluation by highly trained descriptive panel



**NOVATION PRIMA 300 starch provides similar performance to industry standard MFS, with no compromise in flavor or textural attributes**

# NOVATION starches approved by The Non-GMO Project



## FIND NON-GMO

### VERIFIED PRODUCTS

Verified Brands Not Currently in Search

- Aberdeen Farms
- Immaculate Baking
- Red Sun Farms
- Forbes Brand
- Jade Monk
- SuperSoy
- Liz Lovely
- Amêndoas do Brasil
- American Homestead Natural Pork
- Annie's
- Hiland Meats
- Ebars
- Simply Nature
- Natural
- O'Organics
- NutraBake
- Wild Selections
- America's Choice
- Windset Farms
- Green Garden by Litehouse
- GreenBoy
- NutraSun Foods
- Simply Balanced

## PRODUCT SEARCH RESULTS

### All Products for Ingredion



This brand has products in the process of becoming Non-GMO Project V

- Hi-Maize 260
- Homecraft Create 860
- Homecraft Create GF 10
- Homecraft Create GF 20
- Hylon VII
- Melojel
- Novation 1600
- Novation 1900
- Novation 2300
- Novation 2600
- Novation 2700
- Novation 3300
- Novation 3600
- Novation 4300
- Novation 4600 Corn Starch
- Novation 5300
- Novation 5600
- Novation 6600
- Novation 9330
- Novation 9360
- Novation Endura 0100
- Novation Prima 300
- Novation Prima 600
- Ultra-Crisp CS Corn Starch

### Enrolled Products

- Novation 9230
- Novation 9260
- Novation 9560



## CERTIFICATE OF COMPLIANCE

<b>Company Name</b>	Ingredion Incorporated
<b>ID Number</b>	33259
<b>Brand Name(s)</b>	Ingredion
<b>Type of Operation</b>	Ingredient Supplier / Wholesaler
<b>Required Renewal Date</b>	7/8/15
<b>Products Included</b>	For a list of currently verified products, see <a href="http://www.nongmoproject.org">www.nongmoproject.org</a>

The above-name Participant has achieved Non-GMO Project verified status for at least one of its products. Compliance of this Participant's products with the Non-GMO Project Standard is determined through a document-based evaluation and, when required, on site inspection of production facilities. The holder of this certificate warrants that its verified products will remain in full compliance with the terms and conditions of the Non-GMO Project Product Verification Program and the Non-GMO Project Standard.

Verification is subject to annual renewal and valid until surrendered, suspended or revoked.



For questions regarding this certificate, please contact:  
 FoodChain ID, Inc  
 504 North Fourth Street, Fairfield, IA 52556  
 Phone: 641-469-6181  
 Email: [inquiries@foodchainid.com](mailto:inquiries@foodchainid.com)

# Regulatory

- Generally Recognized As Safe (GRAS) food starch
- Meet Food Chemicals Codex (FCC) description for Food Starch, Unmodified
- Meet FDA definition for Gluten Free
- Kosher
- Halal



# Ingredion expertise

- The expertise you need to get your reformulated or new products to market faster
  - Our deep **application, formulation, sensory and culinary** expertise helps you quickly create new food concepts and address formulation and processing challenges
  - We work across **all application areas** through our Ingredion Idea Labs™ innovation centers around the world... all supported by our global center in Bridgewater, New Jersey, **collaborating with you** to achieve your goals
  - We help from **start to finish**, from consumer insights and concept ideation to sensory testing and formulation by our chef-scientists to manufacturing scale-up and label claims



CONSUMER INSIGHTS



APPLICATIONS KNOWHOW



APPLIED RESEARCH



PROCESS TECHNOLOGY



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For a complete list of clean label non-GMO  
ingredients, please visit:

[ingredion.us](http://ingredion.us)