Organic Waxy Corn Starch Powder

What's organic waxy corn starch powder?

Organic Waxy Corn Starch Powder — produced from certified organic non-GMO waxy corn (*Zea mays* ceratina) — is a premium, clean-label functional ingredient designed for food manufacturers and formulators who need superior thickening, stabilization, and texture control without chemical modification or modified starch claims.

The Science of Amylopectin vs. Amylose:

Starch consists of two glucose polymers: **amylose** (linear alpha-1,4 linked chains) and **amylopectin** (branched alpha-1,4 with alpha-1,6 branching points). Regular corn starch contains approximately 25–30% amylose and 70–75% amylopectin. ORGANICWAY Organic Waxy Corn Starch contains ≥99% amylopectin — making it essentially amylopectin-only. This structural difference is the source of its unique functional properties:

- **Superior transparency**: Amylopectin's branched structure produces clear, non-opaque gels — ideal for fruit fillings, glazes, and transparent sauce applications
- **Freeze-thaw stability**: Unlike amylose-rich starches that retrograde (re-crystallize) and harden during freezing, waxy corn starch resists retrogradation, preventing the formation of a firm "pudding skin" and maintaining smooth, spreadable texture through multiple freeze-thaw cycles

- **Creamier texture**: Produces a smooth, creamy mouthfeel without the slight graininess associated with regular starch gels
- **High peak viscosity**: Outperforms standard corn starch in viscosity development during gelatinization

Processing and Gelatinization:

ORGANICWAY Organic Waxy Corn Starch is produced through standard corn milling and purification processes from certified organic waxy corn, with no chemical modification. For optimal performance: always disperse the starch in cold liquid (water, juice, or milk) before heating to ensure a lump-free suspension. Gelatinization occurs at 63–72°C; to complete gelatinization and stabilize the gel network, heat the mixture to at least 85–90°C. The starch is relatively acid-tolerant, though slightly higher usage levels may be required in highly acidic formulations (pH below 4) to maintain target consistency.

Clean-Label Advantage:

As a natural, organic-compliant ingredient with no chemical modification, Organic Waxy Corn Starch serves as a direct replacement for chemically modified food starches in formulations targeting clean-label or "free-from" positioning. Brands can achieve equivalent or superior freeze-thaw stability, transparency, and viscosity performance while eliminating modified starch from the ingredient declaration.

Applications:

- Frozen foods and gravies: prevents syneresis (water weeping) during thaw and reheating
- Fruit fillings and toppings: delivers high clarity and glossy finish for enhanced visual appeal
- Dairy and cream sauces: provides smooth, creamy texture in yogurt, pudding, and cheese sauce without starch aftertaste
- Canned and retort foods: maintains viscosity and stability through high-temperature processing
- Snack food binder: excellent adhesion for seasoned coatings on roasted nuts, seeds, and extruded snacks
- Neutral flavor: does not mask delicate flavors — ideal for premium organic sauces and light fruit glazes

Certified USDA/EU Organic, Non-GMO Project Verified, Vegan, Gluten-Free, and ISO 22000/HACCP compliant. Sample (1 kg) to bulk (25 kg+) available. Lead time: 10–20 days.

Physical & Chemical Specifications

Product Specifications

Parameter	Specification
Common Name	Organic Waxy Corn Starch / Organic Waxy Maize Starch
Scientific Name	*Zea mays* ceratina
Source	100% certified organic non-GMO waxy corn
Amylopectin Content	≥99%
Appearance	Fine, bright white powder
Moisture	≤14%
pH (10% solution)	5.0–7.0
Gelatinization Temperature	63–72°C (145–162°F)
Peak Viscosity	High (outperforms standard corn starch)
Transparency	High (clear gels, non-opaque)
Retrogradation Resistance	Excellent (stable through freeze-thaw cycles)
Acid Tolerance	Moderate to high (adjust usage in pH <4 applications)
Flavor Profile	Very neutral — does not mask delicate flavors
Particle Size	Fine powder (typical food-grade starch)
Shelf Life	24 months from production date
Recommended Storage	Cool, dry, sealed packaging

Comparison: Waxy Corn Starch vs. Regular Corn Starch

Property	Organic Waxy Corn Starch (≥99% Amylopectin)	Regular Corn Starch (~27% Amylose)
Amylopectin	≥99%	~73%
Amylose	≤1%	~27%
Transparency	High, clear gels	Opaque, cloudy gels
Freeze-Thaw Stability	Excellent (resists retrogradation)	Poor (retrogrades, hardens)
Texture	Smooth, creamy, spreadable	Slightly grainy, firm gel
Peak Viscosity	High	Moderate
Gelatinization Temp	63–72°C	64–72°C
Modified Starch Replacement	Yes (natural alternative)	N/A
Clean Label	Yes (no chemical modification)	Yes (if organic)

Usage Reference

Application	Typical Usage Level	Notes
Frozen foods / gravies	3–8% (w/w)	Prevents syneresis; maintain 85–90°C for full gelatinization
Fruit fillings / toppings	3–6% (w/w)	High clarity; glossy finish
Dairy / cream sauces	2–5% (w/w)	Smooth, no aftertaste

Application	Typical Usage Level	Notes
Yogurt / pudding	1–3% (w/w)	Creamy texture
Canned / retort products	3–8% (w/w)	Stable at high temperature
Snack coating binder	5–10% (w/w)	Adhesion for seasoning
Fruit glazes	2–5% (w/w)	Neutral flavor; high shine

Microbiological & Contaminant Standards

Test	Standard	Method
Total Plate Count (TPC)	<10,000 CFU/g	ISO 4833
Yeast & Mold	<100 CFU/g	ISO 21527
Salmonella	Not detected / 25g	ISO 6579
E. coli	Not detected / 25g	ISO 16649
Lead (Pb)	<0.1 ppm	ICP-MS
Cadmium (Cd)	<0.05 ppm	ICP-MS
Arsenic (As)	<0.5 ppm	ICP-MS
Mercury (Hg)	<0.1 ppm	ICP-MS
Pesticide Residues	Not detected (organic compliance)	GC-MS / LC-MS
Aflatoxin	<4 ppb (total)	ELISA / HPLC

All batches tested at accredited third-party laboratories. Certificate of Analysis (COA) available upon request.

Certifications

Certification	Status
USDA Organic	Certified
EU Organic (EC 834/2007)	Certified
Non-GMO Project Verified	Verified
Vegan	Certified
Gluten-Free	Certified
Allergen-Free	Corn is not a major EU allergen; processed in allergen-controlled facility
Kosher	Available on request
Halal	Available on request
ISO 22000 / HACCP	Compliant

Natural ingredient — no chemical modification. Suitable for clean-label, organic, and non-GMO verified finished product formulations.

Applications

Application Matrix

Application	Suitability	Usage Level	Key Benefit
Frozen foods / sauces / gravies	Primary	3–8% w/w	Prevents syneresis on thaw
Fruit fillings / toppings / glazes	Primary	3–6% w/w	High transparency; glossy finish
Dairy products (yogurt, pudding, cream sauces)	Primary	2–5% w/w	Smooth, creamy; no starch aftertaste
Canned / retort / shelf-stable foods	Primary	3–8% w/w	Stable at high processing temperatures
Snack coatings / nut/seed binders	Primary	5–10% w/w	Excellent adhesion for seasonings
Fruit preserves / jams	Secondary	2–4% w/w	Clarity maintained
Baby food / infant nutrition	Secondary	Per formulation	Clean label; neutral flavor
Meat alternatives / plant-based sauces	Primary	2–6% w/w	Clean texture without graininess
Bakery fillings	Primary	3–6% w/w	Freeze-thaw stable in cream fillings

Key Functional Properties

Property	Mechanism	Application Advantage
High transparency	Branched amylopectin structure produces clear, non-scattering gels	Fruit fillings, glazes, transparent sauces

Property	Mechanism	Application Advantage
Freeze-thaw stability	Resists amylose retrogradation (re-crystallization) during freezing	Frozen foods maintain texture
No pudding skin	Waxy structure stays fluid and spreadable after cooling	Superior consumer texture experience
High peak viscosity	Superior thickening vs. standard corn starch	Lower usage levels possible
Acid tolerance	Relatively stable in acidic formulations	Yogurt, fruit preparations
Neutral flavor	Does not contribute starch aftertaste	Premium sauces and delicate applications
Clean label	No chemical modification — natural organic ingredient	Clean-label and "free-from" positioning

Formulation Tips

Scenario	Recommendation
Dispersing in cold liquid first	Always pre-disperse in cold water, juice, or milk before heating — prevents lump formation
Gelatinization completion	Heat to at least 85–90°C to fully gelatinize and stabilize the gel network
Acidic formulations (pH <4)	May require slightly higher usage to maintain target consistency
Retort / high-temperature processing	Waxy corn starch maintains viscosity through high-temperature canning processes
Replacing modified starch	Direct substitution for modified food starches in clean-label formulations

Scenario	Recommendation
Snacking applications	Excellent as a dry binder for seasoning adhesion on roasted nuts, seeds, and extruded snacks
Clean-label declaration	Declare as "organic corn starch" or "organic waxy corn starch" — no "modified" required

FAQ

Q: What is the main functional difference between waxy corn starch and regular corn starch?

A: The key difference is amylopectin content. Regular corn starch contains approximately 27% amylose — a linear polymer that causes opaque, firm gels and retrogrades (re-crystallizes) during freezing, producing a hard "pudding skin" and water separation (syneresis). ORGANICWAY Organic Waxy Corn Starch contains ≥99% amylopectin — essentially amylose-free — resulting in clear gels, superior freeze-thaw stability, smooth creamy texture, and no retrogradation. Waxy corn starch is the natural alternative to chemically modified starches for freeze-thaw and transparency applications.

Q: Is organic waxy corn starch gluten-free?

A: Yes. Like all corn-derived starches, waxy corn starch is naturally gluten-free. ORGANICWAY's additional organic certification provides further assurance of no cross-contamination with prohibited substances, making it safe for celiac and gluten-sensitive consumer formulations.

Q: Can this be used to replace modified food starches in clean-label products?

A: Yes — this is one of the strongest use cases for Organic Waxy Corn Starch. For brands seeking "clean label" or "free from modified starch" claims, waxy corn starch is a powerful natural alternative that delivers equivalent or superior freeze-thaw stability, transparency, and viscosity performance compared to chemical modified food starches. No ingredient declaration change required — simply declare it as "organic corn starch."

Q: How does it affect the flavor of finished products?

A: Organic Waxy Corn Starch has a very neutral flavor profile. It does not contribute any noticeable starch taste or aftertaste, making it ideal for premium organic sauces, light fruit glazes, dairy products, and other applications where delicate flavors must remain unobscured.

Q: What is the recommended gelatinization procedure?

A: Step 1 — Disperse: Always pre-disperse the starch in cold liquid (water, juice, or milk) before heating. Step 2 — Heat: Heat the mixture to at least 85–90°C to complete gelatinization and stabilize the gel network (gelatinization onset at 63–72°C, but full gel stability requires reaching 85–90°C). Step 3 — Cool: Unlike regular starch, waxy corn starch will not form a firm gel or "pudding skin" upon cooling — it remains smooth, fluid, and spreadable.

Q: How does it perform in highly acidic formulations?

A: Organic Waxy Corn Starch has moderate acid tolerance and is suitable for most fruit-based and yogurt formulations. In highly acidic applications (pH below 4), slightly higher usage levels may be required to maintain target consistency, as acid can weaken the gel network. Conduct small-scale testing for specific pH applications.

Q: How does it prevent syneresis in frozen foods?

A: Syneresis — the weeping of water from a gel during freezing, thawing, or storage — is caused by amylose retrogradation. Since waxy corn starch contains no amylose (≤1%), it is highly resistant to retrogradation, allowing frozen foods, sauces, and fillings to maintain their original smooth texture, consistency, and visual appeal through multiple freeze-thaw cycles.

Q: What are the MOQ, sample availability, and lead times?

A: Free samples (1 kg) are available via FEDEX, UPS, and EMS. Bulk MOQ: 25 kg per order. Standard lead time: 10–20 business days from order confirmation. Custom packaging available on request. Payment: T/T, L/C, D/P, D/A, MoneyGram, Western Union, credit card. Ports of loading: Qingdao, Tianjin.

Packaging & Storage

Packaging Specifications

Parameter	Details
Standard Unit	25 kg multi-layer kraft paper bags
Pallet Configuration	40 bags/pallet
Custom Packaging	Available on request
Sample Pack	1 kg (free sample)

Storage Conditions

Condition	Requirement
Temperature	Cool, below 25°C
Humidity	Dry, below 50% RH
Container	Original sealed packaging
Moisture Protection	Starch absorbs moisture — keep sealed
Shelf Life	24 months from production date

For more information, please visit our website:

https://www.organic-way.com/products/organic-waxy-corn-starch-powder/