

Organic Maltodextrin Powder



What is Organic Maltodextrin Powder?

Organic Maltodextrin Powder is a white-to-off-white, neutral-tasting carbohydrate polymer produced through the enzymatic hydrolysis of certified organic corn or tapioca starch. The degree of hydrolysis — expressed as the **Dextrose Equivalent (DE)** — determines the molecular chain length and, with it, the product's functional profile: sweetness, solubility, hygroscopicity, viscosity, and film-forming capacity. Unlike conventional maltodextrin, our organic version is processed using enzyme-only hydrolysis with no synthetic acids, bleaches, or chemical processing aids — making it fully compatible with clean-label, organic, and natural product formulations.

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<https://www.organic-way.com>

Understanding Dextrose Equivalent (DE)

The DE value is the single most important specification when selecting maltodextrin for a formulation. It indicates the degree of starch hydrolysis relative to pure glucose (DE = 100). A lower DE means longer polymer chains, lower sweetness, and higher viscosity. A higher DE means shorter chains, faster solubility, and slightly higher sweetness.

DE Grade	Sweetness	Viscosity	Solubility	Hygroscopicity	Primary Function
DE 8-10	Negligible	Highest	Moderate	Lowest	Fat replacement, texture, film formation
DE 10-15	Very low	Medium	High	Medium	Standard carrier, bulking agent, flavor delivery
DE 15-20	Low	Lowest	Excellent	Higher	Spray-drying carrier, encapsulation, energy substrates

Why Choose Organic Maltodextrin?

- **Clean-label compatibility:** No artificial additives, no chemical processing aids, no solvent extraction
- **Dual organic certification:** Both USDA NOP and EU Organic — suitable for products sold in North American and European markets
- **Source flexibility:** Available in corn or tapioca base — tapioca preferred for corn-free or specialty dietary formulations
- **Functional versatility:** From spray-drying to fat replacement to flavor encapsulation in a single ingredient
- **Consistent quality:** Each batch tested for purity, moisture, DE value, microbiological safety, and heavy metals with COA issued per production run

Starch Sources Available

- **Organic Corn Maltodextrin** — Standard source; optimal for most food and beverage applications
- **Organic Tapioca Maltodextrin** — Corn-free option; preferred for paleo, allergen-conscious, and specialty natural formulations

TECHNICAL SPECIFICATIONS

Physical & Chemical Specification by DE Grade

Parameter	DE 8-10	DE 10-15	DE 15-20	Test Method
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Appearance	White fine powder	White fine powder	White fine powder	Visual
Taste	Neutral, bland	Neutral, very slight sweetness	Neutral, slight sweetness	Organoleptic
Dextrose Equivalent (DE)	8-10	10-15	15-20	Lane-Eynon / HPLC
Moisture Content	≤6.0%	≤6.0%	≤6.0%	AOAC 925.09
pH (10% solution)	4.0-6.0	4.0-6.0	4.0-6.0	AOAC 981.12
Ash (Sulphated)	≤0.6%	≤0.6%	≤0.6%	AOAC 923.03
Protein	≤0.1%	≤0.1%	≤0.1%	AOAC 991.20
Fat	0 g	0 g	0 g	AOAC 922.06
Reducing Sugars (as glucose)	≤10.0%	≤15.0%	≤20.0%	Lane-Eynon
Sulfur Dioxide (SO ₂)	≤10 mg/kg	≤10 mg/kg	≤10 mg/kg	Monier-Williams
Particle Size (through 80 mesh)	≥97%	≥97%	≥97%	US Sieve
Colour	White (APHA ≤10)	White (APHA ≤10)	White (APHA ≤10)	ICUMSA GS1
Solubility	1:3 in water	1:2 in water	1:1.5 in water	USP dissolve test
Bulk Density	0.40-0.60 g/mL	0.40-0.60 g/mL	0.40-0.60 g/mL	USP <616>
Non-GMO	Verified	Verified	Verified	PCR
Gluten	<20 ppm	<20 ppm	<20 ppm	ELISA R5
Pesticide Residue	NOP & EU compliant	NOP & EU compliant	NOP & EU compliant	GC-MS / LC-MS-MS
Heavy Metals (as Pb)	<5 mg/kg	<5 mg/kg	<5 mg/kg	ICP-OES

Microbiological Standards

Test	Limit	Test Method
Total Plate Count (TPC)	<10,000 CFU/g	AOAC 990.12
Mould & Yeast	<100 CFU/g	AOAC 997.02
Coliforms	<100 CFU/g	ISO 4832
<i>E. coli</i>	Negative / <10 CFU/g	ISO 16649-2
<i>Salmonella</i> spp.	Negative / 25g	ISO 6579-1
<i>Staphylococcus</i>	Negative	ISO 6888-1

Heavy Metal Standards

Metal	Limit	Reference
Lead (Pb)	<0.5 mg/kg	FDA RL / EU Regulation
Arsenic (As)	<0.5 mg/kg	EFSA CONTAM Panel
Cadmium (Cd)	<0.1 mg/kg	EFSA CONTAM Panel
Mercury (Hg)	<0.1 mg/kg	FDA RL

Testing Methods Reference

Parameter	Method
DE Value	Lane-Eynon titration or HPLC
Moisture	AOAC 925.09
Ash	AOAC 923.03
Heavy Metals	ICP-MS per AOAC 2015.01
Pesticide Residues	GC-MS / LC-MS-MS per EU 396/2005
Microbiology	ISO 4832, ISO 16649-2, ISO 6579-1
Non-GMO	PCR-based identity testing
Gluten	ELISA R5 Mendez method

FUNCTIONAL PROPERTIES & DE GRADE COMPARISON

DE Grade Selection Guide

Functional Need	Recommended DE Grade	Reason
Spray-drying carrier for fruit juice, plant extracts, oils	DE 15-20	Highest solubility and film-forming speed; lowest viscosity for pump spray systems
Fat replacement / creamy mouthfeel in low-fat products	DE 8-10	High viscosity mimics fat texture; minimal sweetness contribution
Bulking agent in powder blends and sachets	DE 10-15	Balanced solubility and neutral taste; excellent flow properties
Encapsulation matrix for flavors and active ingredients	DE 15-20	Rapid solubility ensures fast wall-matrix formation
Anti-caking agent in dry mixes	DE 8-10 or DE 10-15	Hygroscopic coating of other particles reduces clumping
Energy carbohydrate in sports drinks and gels	DE 15-20	Higher solubility and faster absorption; moderately rapid energy release
Infant formula carbohydrate base	DE 10-15	Gentle on developing digestive systems; neutral taste; easy dissolution

Functional Need	Recommended DE Grade	Reason
Flavor carrier in dry seasoning blends	DE 10-15	Neutral flavor; excellent flavor binding and retention
Film coating for tablets	DE 8-10	Low DE produces stable, consistent film due to longer polymer chains

Functional Property Comparison

Property	DE 8-10	DE 10-15	DE 15-20
Sweetness (relative to sucrose)	<5%	5-10%	10-20%
Solubility	Moderate	High	Excellent
Viscosity (10% solution, 25°C)	Highest	Medium	Lowest
Hygroscopicity	Lowest	Medium	Higher
Film-forming capacity	Excellent	Good	Moderate
Fat replacement capacity	Best	Good	Limited
Water activity depression	High	Medium	Low
Maillard browning potential	Lowest	Medium	Highest

APPLICATIONS & USAGE GUIDELINES

Recommended Application Sectors

Application	Recommended DE	Usage Level	Key Functions
Spray-drying carrier	DE 15-20	10-40% of dry basis	Converts liquids, extracts, oils into stable free-flowing powders
Sports nutrition (recovery shakes, energy gels)	All grades	5-30%	Rapid/sustained carbohydrate energy; improves texture and mouthfeel
Fat replacement (dressings, low-fat dairy analogues)	DE 8-10	2-8%	Mimics creaminess and body; calorie reduction without texture loss
Flavor encapsulation	DE 15-20	20-60%	Wall matrix for essential oils, spice extracts, and flavor compounds
Dry beverage mixes & sachets	DE 10-15	5-20%	Bulking, free-flow, fast reconstitution
Infant formula	DE 10-15	3-10%	Digestible carbohydrate; neutral taste; osmolality management

Application	Recommended DE	Usage Level	Key Functions
Protein bar & nutrition bar	DE 10-15	5-15%	Binding, texture, protein particle dispersion
Baked goods (moisture retention)	DE 8-10	2-5%	Humectancy; extends shelf life; improves crumb texture
Pharmaceutical tablet excipient	DE 8-10	Variable	Diluent, binder, film-coating agent
Confectionery (hard candy, gummies)	DE 10-15	2-8%	Controls crystallization; adjusts texture and chewability

Formulation Notes

- Organic Maltodextrin is **water-soluble and heat-stable** up to 200°C — suitable for hot-fill and retort processing
- At high use levels (>20%), viscosity increases significantly, especially for DE 8-10; adjust water content accordingly
- Maltodextrin is **not a low-GI ingredient** — GI is similar to or slightly above glucose. For low-GI formulations, substitute with Organic Isomaltulose (GI ~35) or a blend with dietary fiber
- In spray drying: blend ratio of maltodextrin to active ingredient typically ranges from 1:1 to 4:1 (by weight) depending on active solubility and required encapsulation efficiency
- In fat-replaced formulations: use DE 8-10 at 3-5% to recreate viscosity and mouthfeel lost from fat reduction; pair with inulin or pectin for improved body
- DE 15-20 is more hygroscopic — ensure tight packaging and controlled humidity storage to prevent caking during warehousing

CERTIFICATIONS

Certification	Status	Issuing Body
USDA Organic (NOP)	Available	USDA-accredited certifier
EU Organic	Available	EU-authorized certifier
Non-GMO Project Verified	Available	Non-GMO Project
Gluten-Free (<20 ppm)	Available	GFCO / AACC
Kosher (Pareve)	Available	OU / Star-K
Halal	Available	MUI / IFIC
FSSC 22000	Available	Accredited certification body
GMP (Food Grade)	Available	National authority
FDA Food Facility Registration	Available	US FDA

COA (Certificate of Analysis) and C/A (Certificate of Conformance) provided with each batch.
SDS and TDS available on request.

FAQ

Q1: What is Dextrose Equivalent (DE) and why does it matter for my formulation?

A: Dextrose Equivalent (DE) is a measure of the degree of starch hydrolysis, expressed as a percentage relative to pure glucose (DE = 100). The lower the DE, the longer the polysaccharide chains — resulting in higher viscosity, lower sweetness, and lower hygroscopicity. The higher the DE, the shorter the chains — giving better solubility, faster dissolution, and moderate sweetness. Selecting the right DE grade is critical: DE 8–10 is the standard choice for fat replacement and film coating; DE 10–15 for bulking and flavor carrying; DE 15–20 for spray drying and encapsulation. Mismatching DE grade to application can result in viscosity problems, poor spray drying yields, or off-flavors.

Q2: Is Organic Maltodextrin truly gluten-free?

A: Yes. Even when derived from a wheat base (though our primary source is organic corn or tapioca), the enzymatic hydrolysis and purification process breaks down and removes gluten proteins to well below the 20 ppm threshold established by FDA and EU regulations for gluten-free labeling. All production batches are tested using ELISA R5 Mendez method. For markets with strict corn-free or cross-contamination requirements, our **Organic Tapioca Maltodextrin** is the preferred specification.

Q3: What is the glycemic index (GI) of Organic Maltodextrin?

A: Organic Maltodextrin has a high glycemic index — similar to or slightly higher than glucose (GI ≈ 85–110 depending on DE grade and individual metabolic response). It is a rapidly absorbed carbohydrate and is not suitable for formulations marketed as "low-GI." For low-glycemic applications, consider using Organic Isomaltulose (GI ~35) or combining maltodextrin with soluble dietary fiber (inulin, pectin) to slow digestion and reduce glycemic impact. Maltodextrin is well-suited for sports recovery products and infant nutrition where rapid, accessible energy is desirable.

Q4: How does Organic Maltodextrin work as a spray drying carrier?

A: In spray drying, maltodextrin acts as the wall material (carrier) that encapsulates liquid actives — including fruit juices, plant extracts, essential oils, probiotics, and omega fatty acids. Dissolved in water with the active ingredient, the solution is atomized into a hot drying chamber; the maltodextrin rapidly

forms a thin, amorphous film shell around the active particles as water evaporates. DE 15-20 is preferred for spray drying because its lower viscosity allows higher solids loading in the feed solution, improving yield and reducing energy costs. Typical carrier:active ratios are 1:1 to 4:1 by dry weight.

Q5: Can Organic Maltodextrin replace modified food starch on an ingredient label?

A: In many applications, yes. Organic Maltodextrin can replace "modified food starch" as a clean-label bulking agent and carrier. While it does not match modified starch in thickening performance, it provides the body, stability, and water-binding functionality that formulators seek — without the need for chemical modification. Organic Maltodextrin appears on ingredient labels as "Organic Maltodextrin" or "Organic Corn Maltodextrin," which is universally recognized as a clean-label ingredient. It also supports NOP and EU Organic certification, which modified food starch typically cannot.

Q6: What is the difference between Organic Corn Maltodextrin and Organic Tapioca Maltodextrin?

A: Both sources are functionally similar in terms of DE performance, solubility, and nutritional profile. The primary difference is allergen and dietary positioning. Organic Corn Maltodextrin is our standard source and is suitable for most food, beverage, and supplement applications. Organic Tapioca Maltodextrin (cassava-derived) is corn-free — important for formulators targeting paleo, Whole30, or corn-sensitive consumer groups. Tapioca maltodextrin has a slightly cleaner flavor profile and is often preferred in premium natural supplement applications. Both sources are Non-GMO Verified and certified gluten-free.

Q7: What is the minimum order quantity (MOQ) and lead time?

A: MOQ is 20 kg for sample and trial orders. Commercial order MOQ is 500 kg. Standard lead time is 14-21 days from order confirmation depending on DE grade, source, and production scheduling. Expedited production may be available for time-sensitive projects — contact our sales team for lead time confirmation. Full batch COA is issued for every production run and provided with every shipment.

Q8: How does Organic Maltodextrin function as an anti-caking agent?

A: Maltodextrin particles act as a physical barrier coating over other hygroscopic ingredients in dry blends — such as fruit sugars, salt, or high-intensity sweeteners. The uniform particle size and low moisture content of organic maltodextrin allow it to coat and encapsulate these "sticky" particles, preventing them from absorbing ambient moisture and agglomerating. DE 8-10 is most effective for anti-caking due to its lower hygroscopicity. Typical use level for anti-caking is 2-5% of the total blend weight.

PACKAGING & STORAGE



Packaging Options

Package Size	Packaging Material	MOQ
1 kg	Aluminum foil pouch	Trial
5 kg	Aluminum foil pouch	Trial
20 kg	Kraft paper bag + PE liner	Standard
25 kg	Kraft paper bag + PE liner	Standard
Custom	Fiber drum with inner liner / Bulk bag	Commercial

Custom packaging (private label, branded bags, specific sizes) available for commercial orders ≥ 500 kg.

Storage Conditions

- **Storage temperature:** 15-25°C (cool, dry place)
- **Relative humidity:** $\leq 60\%$ RH; protect from humidity above 65%
- **Avoid:** Direct sunlight, moisture, strong odors, high ambient temperatures
- **Shelf life:** 24 months from manufacturing date when stored as directed

For more information, please visit our website:

<https://www.organic-way.com/products/organic-maltodextrin/>