Isomaltulose

Our **isomaltulose** is a functional disaccharide composed of glucose and fructose linked by an α-1,6-glycosidic bond—naturally found in small amounts in honey and sugarcane. Unlike sucrose (α-1,2 bond), this unique structure results in **slower digestion**, **steady blood glucose release**, and **sustained energy** without spikes or crashes.

Produced via enzymatic conversion of **cane sugar** or **beet sugar**, followed by crystallization and purification, our isomaltulose meets strict and clean-label standards—**non-GMO, vegan, gluten-free**, and free from synthetic additives.

> **Note**: Marketed under brand names like Palatinose™ (by Beneo), but our version is independently produced under certified protocols.

What Is Isomaltulose?

Isomaltulose ($C_{12}H_{22}O_{11}$) is a **fully digestible carbohydrate** with 4 kcal/g—identical to sucrose—but metabolized more slowly due to its stable glycosidic bond. It is:

- **Non-cariogenic**: Not fermented by oral bacteria → does not cause tooth decay (EFSA-approved claim)
- **Low Glycemic Index (GI = 32)** vs. sucrose (GI = 65)

- **Prebiotic Potential**: Supports beneficial gut microbiota when consumed at ≥10 g/day
- **Heat & pH Stable**: Suitable for baking, pasteurization, and acidic beverages

Unlike artificial sweeteners or sugar alcohols (e.g., maltitol), isomaltulose provides real energy with no laxative effect or aftertaste.

Key Functional & Health Benefits

- **Sustained Energy Release**: Ideal for endurance athletes and cognitive focus
- **Blood Glucose Management**: Supports stable insulin response—suitable for prediabetic/diabetic diets
- **Tooth-Friendly**: EFSA-approved health claim: “isomaltulose helps reduce postprandial glycaemic responses compared to other sugars”
- **Clean Taste**: Sweetness ≈ 42–50% of sucrose; neutral, sugar-like flavor with no bitterness
- **Full Digestibility**: 100% absorbed in the small intestine—no bloating or GI discomfort
- **Clean Label**: Listed as “isomaltulose” or “palatinose-type sugar”

Technical Specifications

Parameter	Isomaltulose
Chemical Name	6-O-α-D-glucopyranosyl-D-fructose
Source	Enzymatically converted cane or beet sugar
Appearance	White crystalline granules or fine powder
Odor & Taste	Odorless; clean, mild sweetness
Sweetness (vs. Sucrose)	42–50%
Purity (Isomaltulose Content)	≥98% (HPLC, dry basis)
Moisture Content	≤0.5%
Ash Content	≤0.1%

Parameter	Isomaltulose
pH (10% solution)	5.0 – 7.0
Glycemic Index (GI)	32 (tested per ISO 26642)
Caloric Value	4 kcal/g
Solubility (20°C)	~60 g/100 mL water
Melting Point	125–130°C (with decomposition)
Shelf Life	24 months (sealed, cool & dry storage)
Heavy Metals (Maximum Limits)	
– Lead (Pb)	≤0.1 mg/kg
– Arsenic (As)	≤0.1 mg/kg
– Cadmium (Cd)	≤0.05 mg/kg
– Mercury (Hg)	≤0.01 mg/kg
Microbiological Criteria	
– Total Plate Count	≤1,000 CFU/g
– Yeast & Mold	≤100 CFU/g
– *Escherichia coli*	Absent in 1 g
– *Salmonella* spp.	Absent in 25 g
– *Listeria monocytogenes*	Absent in 25 g
Allergen Status	Gluten-Free (<5 ppm), Soy-Free, Dairy-Free, Nut-Free
Certifications	Non-GMO Project Verified, Kosher, Halal (available), Vegan Certified

https://www.bio-starch.com

Analytical methods: HPLC per Ph. Eur. monograph; GI testing per ISO 26642. Complies with FDA GRAS (GRN No. 691), EU Novel Food Regulation (EU) 2015/2283, and JECFA specifications.

Applications

- **Sports & Active Nutrition**: Energy bars, gels, isotonic drinks for steady fueling
- **Infant & Toddler Formula**: Gentle carbohydrate source with low osmotic load
- **Diabetic-Friendly Foods**: Cereals, yogurts, baked goods with controlled glycemic impact
- **Bakery**: Provides browning (Maillard reaction), moisture retention, and texture
- **Functional Beverages**: Smoothies, meal replacements, cognitive drinks
- **Confectionery**: Hard candies, chewing gum (tooth-friendly claim eligible)

  Formulation Tip: Can replace 30–100% of sucrose depending on desired sweetness and texture. Blends well with stevia or erythritol for full sugar reduction.

Why Choose Our Isomaltulose?

We partner with certified osugar producers and use food-grade immobilized enzymes (from non-GMO sources) for conversion—ensuring high purity, consistent crystal size, and compliance with global standards. Unlike conventional isomaltulose, ours carries **full traceability** from farm to finished product.

Every batch includes: Certificate of Analysis (CoA), HPLC purity report, Allergen Statement, and SDS.

Available packaging:

- 10 kg or 25 kg multi-wall paper bags with PE liner
- 500 kg–1,000 kg FIBCs for industrial users
- Custom particle size (granulated or powdered) available

FAQs

Q: Is isomaltulose safe for diabetics?

A: Yes! Its low GI (32) and slow digestion minimize blood sugar spikes.

Q: Can it replace sucrose in baking?

A: Yes—use it 1:1 for texture and sweetness, with improved metabolic benefits.

Q: Does isomaltulose cause tooth decay?

A: No! It’s non-cariogenic and tooth-friendly.

Q: Is your product heat-stable?

A: Yes! It withstands temperatures up to 160°C (320°F).

Q: Do you offer Palatinose® under license?

A: We supply generic isomaltulose; for branded Palatinose®, contact BENEO directly.

Packing

For more information, please visit our website:

https://www.bio-starch.com/products/isomaltulose/