



Jainex Speciality Chemical

Calcium Propionate



Elevating Food Preservation through Innovation and Excellence

About Us

Founded in 2005, Jainex Speciality Chemical has evolved into a global leader in advanced food preservation solutions. Our inception marked the pioneering production and export of butyrate salts, including calcium and sodium butyrate, catering to stringent European market demands. Building on this legacy, we launched our food-grade calcium propionate division in 2018, addressing the critical need for safe, high-performance preservatives in the global food industry.

Vision

As a trusted partner to manufacturers across 15+ countries, we strive to redefine industry standards through continuous innovation. Our R&D initiatives focus on expanding a premium portfolio of food additives and preservatives, driven by a customer-centric ethos that prioritizes tailored solutions and competitive value.

Commitment to Quality

Our state-of-the-art manufacturing facilities operate under rigorous international protocols, certified by FSSAI, WHO-GMP, HACCP, ISO 22000:2005, and FAMI-QS.

These accreditations underscore our unwavering dedication to safety, consistency, and compliance with global food safety benchmarks.



Calcium Propionate (Food Grade): A Benchmark in Preservation Technology

1. Advanced Microbial Protection

Proven to inhibit mold, yeast, and bacterial proliferation, our calcium propionate extends product shelf life while maintaining sensory integrity—critical for baked goods, dairy, meats, and snacks.

2. Unparalleled Versatility

Compatible with diverse applications:

- Bakery: Extends freshness in breads, cakes, and pastries without altering flavor.
- Dairy & Meats: Safeguards processed cheeses and cured meats against spoilage.
- Snack Foods: Ensures crispness and longevity in high-moisture environments.



3. pH-Neutral Efficacy

4. Global Regulatory Compliance

Recognized as GRAS by FDA, EFSA, and FSSAI, meeting Codex Alimentarius and EU Directive 95/2/EC standards for global market access.

5. Custom Engineered Solution

Leverage our proprietary encapsulation technology for:

- Enhanced thermal stability in high-temperature processing
- Controlled release kinetics for targeted preservation
- Masking of residual propionic acid notes

Calcium Propionate (Food Grade): Enhancing Shelf Life in the Food Industry

A Versatile Preservative in Modern Food Science



Why Partner with Jainex?

- **Technical Expertise:** Over 18 years of specialized experience in preservative chemistry.
- **End-to-End Support:** Formulation guidance, regulatory documentation, and supply chain agility.
- **Sustainable Practices:** Eco-conscious production aligned with UN SDGs.

1. Bakery & Baked Goods

Ensuring freshness while preserving process integrity.

- **Bread & Rolls:** Selectively inhibits mold and rope bacteria without disrupting yeast activity, extending shelf life by 30–50%.
- **Cakes & Pastries:** Suppresses xerophilic fungi and **Aspergillus** species, maintaining moisture balance and crumb structure.
- **Pizza Dough:** Protects against post-baking fungal contamination during refrigerated storage.

2. Dairy Products

Combating spoilage without compromising sensory profiles.

- **Processed Cheese:** Blocks **Penicillium** and **Clostridium** growth in high-moisture matrices, ensuring compliance with international cold-chain protocols.
- **Yogurt & Dairy Beverages:** Compatible with live cultures; prevents post-fermentation spoilage in pH-neutral formulations.

3. Meat & Poultry Applications:

Enhancing safety in protein-rich matrices.

- **Cured Meats & Sausages:** Synergizes with nitrites to inhibit **Listeria monocytogenes** and **Salmonella** in low-aw environments.
- **Marinated Products:** Reduces **Pseudomonas** and **Brochothrix** proliferation in vacuum-packed or MAP systems.



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4. Beverages & Fermented Foods Stabilizing complex formulations.

- **Fruit Juices & Concentrates:** Effective against osmophilic yeasts (e.g., **Zygosaccharomyces bailii**) in high-Brix environments.

- **Pickles & Sauerbraten Sauces:** Mitigates surface mold in brined products without altering brine acidity or flavor complexity.

5. Confectionery & Snacks Securing stability in low-moisture and high-fat systems.

- **Dry Snacks & Nuts:** Targets aflatoxin-producing molds (e.g., **Aspergillus flavus**) in hygroscopic substrates.

- **Chocolate & Cocoa Products:** Prevents heat-resistant mold spores from surviving conching processes (up to 50°C).

6. Ready-to-Eat & Frozen Foods Maintaining quality across supply chains.

- **Frozen Dough & Par-Baked Goods:** Retards ice crystal-induced microbial revival during thaw cycles.

- Instant Meals:

Controls **Bacillus cereus** and

psychrotrophic contaminants in retorted or dehydrated matrices.

Technical Advantages

- **pH Adaptability:** Effective in systems ranging from pH 5.0–8.5.

- **Thermostability:** Withstands baking (200–250°C) and UHT processing.

- **Synergy:** Compatible with sorbates, benzoates, and natural antimicrobials for hurdle technology.



Calcium Propionate General Specifications



Sr. No.	Parameter	Specification
1	Appearance*	Fine Powder
2	Color	White to off white
3	Odor	Faint Propionic acid smell
4	pH (10%w/w Aq. soln.)	7.0 – 10.00
5	Water content (%w/w)	Max. 5.0%
6	Density	0.5 - 0.7 g/cc
7	Particle size (%w/w)	-35 mesh ASTM : Min. 90%
8	Iron (Fe)	Max. 50 ppm
9	Calcium (Ca) on dried basis	Min. 20.0%
10	Propionic acid	Min. 77.0%
11	Purity (%w/w) on dried basis	98.0 - 100.5 %
12	Water Insoluble (%w/w)	Max. 0.2%
13	Lead (Pb)	Max. 5 ppm
14	Arsenic (As)	Max. 2 ppm
15	Cadmium (Cd)	Max. 5 ppm
16	Mercury (Hg)	Max. 2 ppm
17	Arsenic (As)	Max. 2 ppm
18	Fluoride (F ⁻)	Max. 20 ppm

Note: For detailed specifications or options with lower water content, contact us.





**Calcium Propionate
(Food Grade): Precision
Dosage for Optimal
Preservation
Science-Backed
Guidelines for Technical
Formulators**



Application	Dosage (%w/w)
Bread & Baked Goods	0.1% – 0.5%
Processed Cheese	0.2% – 0.4%
Meat & Poultry	0.2% – 0.5%
Beverages & Fermented Foods	0.05% – 0.3%
Confectionery & Snacks	0.05% – 0.3%



Packaging & Storage Protocols

Engineered for Integrity, Safety, and Compliance



Advanced Packaging Solution

- **Primary Packaging:** 25 Kg. multiply kraft paper bags with food-grade polyethylene liners (200 μ m thickness), ensuring moisture resistance (<0.5% RH ingress) and UV protection.
- **Bulk Handling:** Palletized units (40 bags/pallet) with shrink-wrap stabilization for secure logistics.
- **Custom Options:** Available in 1–10 Kg. HDPE resealable containers for R&D or small-batch production.

Storage & Handling Guidelines

Optimal Conditions:

- **Temperature:** $\leq 25^{\circ}\text{C}$ (ambient) | Humidity: <60% RH
- **Light Exposure:** Store in opaque, UV-shielded areas to prevent photodegradation.
- **Sealing:** Maintain original packaging integrity; repackage residual material in airtight containers.

Safety Protocols:

- **PPE Requirements:** EN 166-certified safety goggles, nitrile gloves (0.3 mm thickness), and N95 masks during dispensing.
- **Spill Management:** Neutralize with 5% sodium bicarbonate solution; rinse with copious water.
- **First Aid:** Ocular contact—irrigate with saline for 15 mins; dermal exposure—wash with pH-neutral soap.

Precision. Purity. Partnership.

Empower your formulations with globally compliant, science-driven preservation.



Regulatory & Scientific References



1. **FSSAI (2011):** Food Safety and Standards (Food Products Standards & Additives) Regulations, 2011 (Section 3.1.3).
2. **EFSA (2014):** Scientific Opinion on Calcium Propionate (E282) as a Food Additive (EFSA Journal 12(7):3772).
3. **FDA (2023):** 21 CFR §184.1221 – GRAS Status for Calcium Propionate.
4. **Codex Alimentarius (2020):** General Standard for Food Additives (GSFA), INS 282.

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