



Product Specification Sheet – CGX® Lupulin Hop Pellets

Product Name: CGX® Lupulin Hop Pellets

Product Input: 100% by weight dried, compressed hop cones of the cultivated hop plant *Humulus lupulus*.

Product Ingredients: 99% by weight pulverized hop resins of the cultivated hop plant *Humulus lupulus*.

Processing Aid: Food-grade nitrogen. We use food-grade liquid nitrogen for cooling during our milling process to maintain desired temperature and optimize quality of the hops, and food-grade nitrogen gas when packaging hops to increase shelf life and preserve quality by reducing oxygen level to <2.5%.

Manufacturer: Crosby Hops™

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Description

CGX or Lupulin Enriched Hop Pellets are a natural hop product developed through a process of mechanical concentration whole leaf hops at low temperatures. First, the whole bale is carefully decompressed using a bale-breaker. The loose-leaf hops are then sent through a cryogenic process to freeze the lupulin for maximum extraction through the mechanical concentration steps. The resulting concentrated powder is homogenized in a large mixer and pressed through a pellet die (6mm diameter). The resulting pellets pass through a pellet shaker, which separates the usable pellets from hop dust and broken pellets, which are recycled in the system. Throughout this process, by way of our unique cooling and oxygen limiting steps, we progressively chill our hops as required during the most critical steps of the pelleting process – our methods vary considerably from traditional liquid nitrogen pellet die application methods.

Our extremely low operating temperatures and processing methods create the highest quality lupulin enriched hop pellets that retain their whole hop complexity, boldness, and character. More importantly, there is an average 1.8-2x increase in alpha acid utilization compared to whole leaf product. Crosby CGX hop pellets can be made from any hop variety. Detailed technical data sheets for these hop varieties are available upon request.



Quality Statement

Crosby Hops™ produces CGX® Lupulin Hop Pellets that offer exceptional utilization and dry hopping capabilities. We thoughtfully shepherd our hops through our process under the strictest process controls to preserve the robust flavor and aroma compounds often lost during traditional processing.

Throughout our operations we maintain world-class quality via continuous, in-process monitoring using a zero-chemical NIR spectrometer and a series of gating quality control points.

All CGX is processed and delivered as a single variety product. The mixing of varieties is not allowed except for in the special case of Crosby Hops™ specialty blends which are prepared, advertised, and sold as varietal blends. The mixing of conventional and organic varieties is strictly prohibited.

Packaging

Packaged in one of the highest food-grade bag-sealing solutions on the market, Crosby hops are safely parceled in heavy-duty foil barrier bags utilizing a fully automated WeighPack™ vertical fill form and seal bagger. The packs are carefully filled and weighed according to industry standard specifications for upmost quality and consistency. Crosby Hops offers two weight options: 5kg and 10kg. A robust nitrogen flush ensures minimum oxygen (less than 2.5%) for optimum shelf life.

Storage

Immediately following packaging, all CGX hop pellets are transferred to cold storage units where all products are stored at -3°C. CGX pellets should be stored between -3 to +5°C in original packaging or closed containers to avoid exposure to light and air to minimize oxidation of essential oils and alpha acids.

Shelf Life

Under storage conditions recommended above, CGX pellets have a shelf life of three years.

Application

Crosby CGX hop pellets are primarily used as kettle hop ingredient to provide bitterness and hop character to beer. Traditionally, kettle hopping with hop pellets will also lead to improved trub formation and wort sterilization.

Addition Procedure

Add CGX Hop Pellets in wort early during kettle boil for bitterness and late during kettle boil for aroma. Pellets are either thrown in the brew kettle during kettle boil or added to custom designed dosing systems through which wort is back flushing, taking away the pellets to the brew kettle. Pellets can also be added both during and after fermentation.



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Labeling – Bag and Box

0.1 inches

Nugget

2248



C-NUG-C-11-2248

CGX™ Lupulin Powder

11 lb. Net Weight



0713

Nugget

2248



Lot Lookup



C-NUG-C-11-2248



0713

4x11 lb. CGX™ Lupulin Pellets

44 lb. Net Weight

48 lb. Gross Weight



CROSBY HOPS™

Revision Number	Revision Section(s), Paragraph(s), and Description(s)	Summary of Changes	Revision Author	Revision Date*
1	Entire document	Created document	Kaitlyn Mac Leod	04/11/2025
2	Entire document	Annual review	Carman McKinney	06/11/2025
3	Entire document	Changed document reviewer and approval to Director of Quality	Jeff Edgerton	04/08/2026
3	Entire document	Annual review	Jeff Edgerton	07.01.2026

* Revision date is not the same as Effective date; see Approval section.

Approver Name (Printed)	Approver Role (Printed)	Approver Signature (Scanned or electronic)	Approval Date
Jeff Edgerton	Director of Quality	<i>Jeff Edgerton</i>	07.01.2026
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Jackie Crosby	Director of Operations	<i>Jackie Crosby</i>	07.01.2026