

TECHNICAL DATA SHEET: FROZEN NFC GINGER JUICE

- **Product Name:** Frozen NFC (Not From Concentrate) Ginger Juice
- **Product Code:** PAS-NFC-GIN-200K
- **Botanical Name:** *Zingiber officinale*
- **Processing Method:** Direct Cold-Pressed / Cryogenic Blast Frozen
- **Document Ref:** TDS-PAS-GIN-2026-V2
- **Country of Origin:** India
- **Effective Date:** August 2026

1. PRODUCT DESCRIPTION

Passaro Frozen NFC Ginger Juice is 100% pure, natural ginger extract obtained exclusively by continuous mechanical cold-pressing of freshly harvested, washed, and peeled ginger rhizomes (*Zingiber officinale*). The extracted juice undergoes low-fiber centrifugal filtration and rapid cryogenic air-blast freezing (-40°C) to retain its natural heat profile, volatile gingerols, and fresh sensory characteristics without thermal degradation.

- **Ingredients:** 100% Pure Ginger Rhizome Extract.
- **Additives & Carriers:** Zero added water, sugars, acids, preservatives, or artificial additives.

2. ORGANOLEPTIC & PHYSICO-CHEMICAL SPECIFICATIONS

Parameter	Target Specification / Range	Test Method / Standard
Appearance	Uniform opaque pale yellow-gold liquid (upon thawing)	Visual Inspection
Flavour & Aroma	Pungent, sharp, fresh ginger bite; clean & aromatic	Sensory Evaluation
Brix (°Bx at 20°C)	4.0° – 7.0° Brix	Refractometer (ISO 2173)
pH Value (at 20°C)	5.80 – 6.40	pH Meter (AOAC 981.12)

Parameter	Target Specification / Range	Test Method / Standard
Titrateable Acidity	0.25% – 0.50% w/w (as Citric Acid)	Titrimetric (AOAC 942.15)
Pulp / Insolubles	2.0% – 6.0% v/v (Low-fiber centrifugal standard)	Centrifuge (10 min @ 3000 RPM)
Volatile Ginger Oils	$\geq 0.35\%$ v/w	Clevenger Distillation

3. MICROBIOLOGICAL STANDARDS

Test Parameter	Maximum Acceptable Limit	Reference Standard
Total Plate Count (TPC)	< 5,000 CFU/g	ISO 4833-1
Yeast & Moulds	< 500 CFU/g	ISO 21527-1
Coliforms	< 10 CFU/g	ISO 4832
Escherichia coli	Absent in 1g (< 3 MPN/g)	ISO 16649-2
Salmonella spp.	Absent in 25g	ISO 6579-1
Listeria monocytogenes	Absent in 25g	ISO 11290-1

4. HEAVY METALS & CONTAMINANTS COMPLIANCE

Contaminant	Maximum Limit	Test Method
Lead (Pb)	≤ 0.10 mg/kg	ICP-MS (AOAC 999.11)
Arsenic (As)	≤ 0.10 mg/kg	ICP-MS (AOAC 999.11)
Cadmium (Cd)	≤ 0.05 mg/kg	ICP-MS (AOAC 999.11)
Mercury (Hg)	≤ 0.01 mg/kg	ICP-MS (AOAC 999.11)
Pesticide Residues	Complies with EU & US FDA MRL Standards	GC-MS / LC-MS Screen

5. PACKAGING, LOGISTICS & STORAGE CONDITIONS

- **Bulk Packaging:** 200 kg net weight open-top food-grade steel drums lined with double food-grade aseptic polyethylene liner bags and a sterilized nitrogen gas flush seal.
- **Trial/Express Packaging:** 20 kg insulated Bag-in-Box (BIB) formats.
- **Storage Temperature:** Continuous cold chain storage at or below **-18°C (-0.4°F)**.
- **Shelf Life: 24 Months** from manufacturing date when stored unopened at $\leq -18^{\circ}\text{C}$.
- **Thawing Guidelines:** Thaw at controlled ambient ($+15^{\circ}\text{C}$ to $+20^{\circ}\text{C}$) or chilled ($+4^{\circ}\text{C}$) conditions. Mix thoroughly post-thawing to homogenize natural insoluble ginger solids.
- **Post-Thaw Shelf Life:** Process or consume within 48 to 72 hours when held under chilled refrigeration ($+2^{\circ}\text{C}$ to $+4^{\circ}\text{C}$). **Do not refreeze once thawed.**

6. INTENDED APPLICATIONS & ALLERGEN DECLARATIONS

- **Commercial Applications:** Functional Immunity Shots, Kombucha Brewing, RTD Herbal Teas, Craft Beverages, Culinary Sauces, Commercial Seasonings & Marinades.
- **Allergen Statement:** Free from major food allergens including Gluten, Crustaceans, Eggs, Fish, Milk, Peanuts, Soybeans, Tree Nuts, and Sesame (Complies with EU Regulation 1169/2011 and US FALCPA).

- **GMO & Irradiation Status:** Non-GMO, Non-Irradiated, Non-EHO treated.

Disclaimer: The information provided in this Technical Data Sheet is based on verified batch parameters and standard quality control protocols. Customers are advised to conduct their own analytical tests to determine formulation compatibility prior to full-scale commercial manufacturing.