Industrial juice concentrate specification & dilution guide

A procurement and bench-development worksheet. Qualify the proposed grade with your supplier and QA team before production.

RFQ field	Record before requesting a quotation
Identity	Fruit / vegetable, variety, clarity or pulp, ingredient statement and any acidulants or carriers.
Chemical specification	Target °Brix and tolerance; direct or corrected reading; temperature and method; pH; titratable acidity and acid basis.
Physical / sensory	Color, turbidity, viscosity, suspended solids, aroma and approved reference sample.
Quality documentation	Current technical data sheet, lot COA, microbiological criteria, traceability and destination documentation.
Certification	Required scheme and product/site scope. Request current evidence; a certification keyword is not proof.
Commercial programme	Trial quantity, annual tonnes, origin restrictions, crop year, delivery schedule and destination.
Packaging	Drum, pail, bag-in-box or compatible tote/IBC; net fill, pallet layout, seals and unloading system.
Storage	Specified receiving and holding temperatures, shelf life, thawing and post-opening handling.

Typical does not mean guaranteed

Published commercial grades help compare options. They do not establish PFVN inventory, a universal pH range or the contracted specification. Always request current documentation and a lot-specific COA. Aseptic packaging does not automatically mean ambient storage. Do not freeze a liquid IBC without written packaging approval.

Dilution: calculate by mass

For a simplified soluble-solids balance with water only, no process loss, no other solids and compatible Brix measurements:

Final mass = concentrate mass × concentrate °Brix / target °Brix

Water mass = final mass - concentrate mass

Example input / output	Mass-based calculation
Concentrate	100 kg at 70 °Brix
Target	11.5 °Brix
Final batch mass	100 × 70 / 11.5 = 608.70 kg
Water to add	608.70 - 100 = 508.70 kg
Water : concentrate ratio	5.087 : 1 by MASS

Do not confuse mass and volume

The example is not a litres-to-litres dilution instruction. Concentrate density differs from water and varies with Brix and temperature. Convert each mass using its measured density before planning volumetric dosing. Verify final Brix after mixing and account for acid correction, other ingredients and losses.

Keep formulation and labeling separate

This solids-balance worksheet is not a complete percentage-juice labeling calculation. Use 21 CFR 101.30 and relevant product standards with qualified regulatory review. Lemon and lime entries in the FDA reference are acid percentages, not Brix targets.

Sources: conservation of soluble solids; eCFR 21 CFR 101.30(h), checked November 17, 2026. Additional scope notes: pfvn.us/technical-references.html. Current specifications: pfvn.us/request-quote.html.