SANAATCHI
INDUSTRIAL VISION GROUP

Grape-Juice Concentrate Production Line

Complete Turnkey Business Proposal

Supplier reference: real complete fruit-juice and concentrate processing equipment from washing through extraction and preparation.

1-2 t/h	65-68 °Brix	120-250 kW	10-16
starter fresh-grape input	**typical concentrate target**	**indicative connected load**	**entry operators per shift**

Prepared for investment planning in Afghanistan and regional export markets. Final specifications, pricing, civil works, and utility loads require supplier quotation and site survey.

Executive Summary

This plant makes clarified grape-juice concentrate as an industrial ingredient. It differs from grape molasses: the process targets controlled clarification, low-temperature vacuum evaporation, defined Brix and acidity, hygienic sterilization and aseptic bulk filling. The entry plant is still utility-intensive and should proceed only with confirmed grape tonnage, buyer specifications, steam and cooling-water availability and a plan for seasonal utilization.

Why this project fits Afghanistan

- Concentrate preserves seasonal Afghan grapes as a transport-efficient industrial ingredient.
- Beverage, jam, confectionery and food factories can buy standardized Brix and acidity.
- Aseptic bag-in-drum packing supports longer distribution than chilled single-strength juice.
- Pomace and tartrate-rich streams require planned, safe handling and potential recovery.

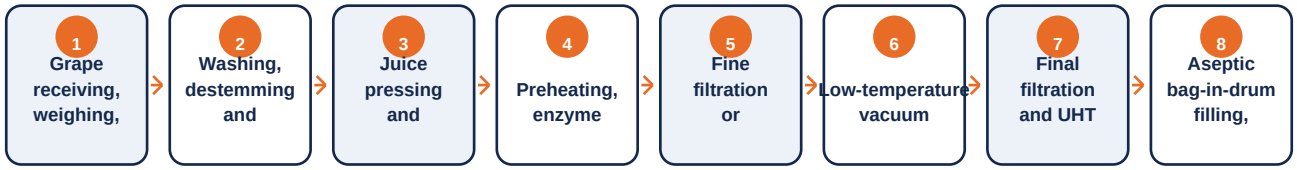
Sanaatchi delivery scope

- Factory setup planning, supplier pre-qualification, and technical comparison
- Complete production-line and individual equipment supply
- Factory layout, utilities, civil-work coordination, installation, and commissioning
- Raw-material sourcing, trial-batch qualification, and repeat supply planning
- International logistics, customs documentation, operator training, spare parts, and after-sales support

Recommended configuration	For the lowest credible industrial entry, select a 1-2 t/h grape line with press, enzyme and clarification tanks, filter, small vacuum evaporator, sterilizer and bag-in-drum filler. Begin with clarified concentrate for one contracted industrial buyer and exclude expensive membrane polishing or resin treatment unless the buyer requires it.

Manufacturing Process & Product Portfolio

Integrated process flow



Target products

Product	Typical specification	Primary market
Clarified grape-juice concentrate	Contracted Brix, acidity, color, turbidity and microbiology	Beverage, jam, confectionery and ingredient factories
Single-strength grape juice	Optional pasteurized intermediate within a validated cold or hot-fill system	Local beverage processors
Grape pomace	Separated promptly and kept traceable	Approved feed, compost, seed-oil or extraction users

Supplier references describe full lines from washing and destemming through pressing, enzyme treatment, filtration, vacuum evaporation, sterilization and aseptic filling. One published industrial product cites 66-68 °Brix. Final equipment cannot be selected from nominal tonnes per hour alone: evaporator water-removal duty must be calculated from incoming Brix, target Brix, operating hours and seasonal grape volume.

Core Equipment Schedule

Step	Equipment	Function	Indicative parameter
1	Receiving, washer and sorting conveyor	Creates traceable clean grape lots	1-2 t/h with gentle handling
2	Crusher-destemmer and juice press	Extracts juice while limiting seed and stem tannins	Variable roller gap and press pressure
3	Preheater and enzyme tanks	Controls enzyme inactivation or depectinization recipe	Temperature-controlled sanitary vessels
4	Clarifier and fine filter	Reduces suspended solids to buyer turbidity limits	Plate, membrane or centrifugal option by contract
5	Vacuum evaporator	Concentrates juice at reduced boiling temperature	Water-removal rate calculated from mass balance
6	CIP and sanitary transfer system	Cleans tanks, pipes, evaporator and filler	Documented chemical concentration, flow and temperature
7	Tubular sterilizer	Applies validated final microbial reduction	Automatic temperature recording and diversion
8	Aseptic bag-in-drum filler	Fills sterile concentrate into bulk packs	Buyer-approved bag and drum format

Equipment models are indicative and will be matched to the selected capacity, local raw-material tests, available utilities, and preferred automation level.

Reference Equipment Gallery

Supplier reference: real complete fruit-juice and concentrate processing equipment from washing through extraction and preparation.

Supplier reference: real industrial juice filtration and vacuum concentration equipment used in concentrate production.

Images are supplier references for configuration discussion; final equipment appearance and model may differ.

Plant, Raw Materials & Utility Requirements

Raw materials

- Sound mature Afghan grapes under contracted specifications
- Potable process water
- Approved food enzymes and clarification aids
- Aseptic bags and food-grade drums
- CIP chemicals and laboratory consumables

Utilities & infrastructure

- Stable three-phase electricity
- Food-grade steam sized for evaporation and sterilization
- Reliable cooling water or cooling tower
- Potable water, sanitary drainage and wastewater treatment
- Oil-free compressed air and aseptic air where specified
- Dry clean drum storage and temperature-controlled finished storage if required

Quality, safety and environmental controls

- Contract grape variety, ripeness, Brix, acidity, pesticide limits and daily tonnage
- Record juice yield and mass balance from grapes to concentrate and pomace
- Validate enzyme dose, clarification, filtration and turbidity
- Monitor evaporator vacuum, temperature, residence time and concentrate Brix
- Verify sterilization record, aseptic integrity, microbiology and drum seal
- Test color, flavor, acidity and storage stability against the buyer contract

A final factory layout must reserve safe forklift routes, maintenance clearances, raw-material segregation, finished-goods storage, fire protection, ventilation, and future expansion space.

Indicative Investment & Implementation Plan

LOW-ENTRY CONFIGURATION

Lowest industrial entry uses one 1-2 t/h intake, essential clarification, a small vacuum evaporator and one aseptic bag-in-drum format. Land, building, grapes, boiler, cooling tower, wastewater plant, drums and working capital are excluded unless quoted.

Component	Indicative range	Notes
Receiving, washing, destemming and pressing	US$18k-40k	One 1-2 t/h fruit intake
Enzyme, clarification and filtration section	US$12k-30k	Select only contracted filtration quality
Small vacuum evaporation and CIP	US$28k-65k	Duty follows incoming Brix mass balance
Sterilization and aseptic drum filling	US$18k-45k	One bulk pack format
Utilities, installation, freight and spares	US$20k-50k	Steam, cooling and wastewater interfaces
Indicative low-entry total	US$96k-230k	Building, grapes, boiler, cooling tower and working capital may add cost

Implementation sequence

Phase 1	4-7 weeks	Confirm annual grape supply, buyer contract, Brix, acidity and packs
Phase 2	5-8 weeks	Run pilot processing, mass balance and utility engineering
Phase 3	12-22 weeks	Engineer, manufacture, inspect and ship the line
Phase 4	6-10 weeks	Install, commission, validate CIP, sterilization and aseptic batches

Ranges are planning targets for a low-cost entry configuration, exclude land, and remain subject to confirmed capacity, supplier quotation, freight, duties, exchange rates and site conditions.

Next Steps & Contact Information

Recommended next steps

- Confirm target products, hourly output, and packaging formats
- Test representative raw materials and document quality requirements
- Complete site survey covering electricity, water, fuel, drainage, roads, and warehouse space
- Request comparable technical and commercial quotations from shortlisted suppliers
- Finalize financing, logistics, installation, training, and spare-parts plan

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Research and image references

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