SANAATCHI
INDUSTRIAL VISION GROUP

# IV-Fluid & Sterile-Solution Factory

Complete Turnkey Business Proposal

*Made-in-China supplier reference: real iv-fluid & sterile-solution factory equipment.*

| bankable study | confirmed feedstock | EPC scope | quality laboratory |
|---|---|---|---|
| **investment gate** | **supply gate** | **delivery gate** | **release gate** |

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

Sterile pharmaceutical facility that prepares validated water-for-injection, compounds and filters approved solutions, fills containers aseptically or terminally sterilises them, inspects, tests and releases regulated IV products.

## Why this project fits Afghanistan

- This is a strategic plant, not a low-entry equipment package.
- Bankable feedstock, utility, permit, market, EPC and financing evidence is required before selection.
- Operate only with an independent laboratory, defined quality release and preventive-maintenance program.

## 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** | Proceed only after regulator approval, sterile GMP design, WFI/clean steam, validated sterilisation, container compatibility, microbiology laboratory, qualified persons and hospital demand are proven. |

# Manufacturing Process & Product Portfolio

## Integrated process flow


## Target products

| Product | Typical specification | Primary market |
|---|---|---|
| Registered IV fluids and sterile solutions | Solution composition, container material/volume, sterility assurance, endotoxin limit, fill volume, shelf life and pharmacopeial standard | Hospitals, clinics, licensed distributors, humanitarian health programmes and regulated health systems |

Final capacity, process, resource quality, utilities, permit conditions, emissions, acceptance test and commercial terms require independent engineering review before any order.

# Core Equipment Schedule

| Step | Equipment | Function | Indicative parameter |
|---|---|---|---|
| 1 | Purified water/WFI and clean steam | Provides sterile utility | Microbiological quality |
| 2 | Compounding and filtration | Makes validated solution | Formula and bioburden |
| 3 | Aseptic filling or terminal sterilisation | Creates sterile container | Sterility assurance |
| 4 | Visual inspection and packing | Detects defects | Particles and traceability |
| 5 | Microbiology/QC and batch release | Releases medicine | Endotoxin and sterility |

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

*Made-in-China supplier reference: real iv-fluid & sterile-solution factory equipment.*


*Made-in-China supplier reference: second real machine configuration for iv-fluid & sterile-solution factory.*

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

# Plant, Raw Materials & Utility Requirements

## Raw materials

- Approved pharmaceutical inputs, WFI system consumables, bottles/bags/stoppers, labels, filters, cleanroom garments, steriliser indicators and certified lab standards

## Utilities & infrastructure

- Bankable electricity/fuel/water plans, process cooling and treatment, plant fire safety, laboratory, covered stores and qualified operation team
- Environmental permits, emissions control, waste route, maintenance workshop, critical spares and site-specific safety systems

## Quality, safety and environmental controls

- Confirm registered formulas, WFI/clean-steam design, container supplier, sterility route, validation, qualified person, medical waste and hospital off-take
- Control water quality, compounding, filtration integrity, fill volume, sealing, steriliser cycle, inspection and environmental monitoring
- Test sterility, endotoxin, particulate matter, pH/osmolality, assay, fill volume, container closure and stability per specification

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**

Sterile IV production requires validated water, sterilisation and microbiological release. It must only proceed with regulator-approved GMP and qualified sterile-manufacturing leadership.

| Component | Indicative range | Notes |
|---|---|---|
| WFI, compounding, filling and sterilisation | US$90m-300m | Container and sterile route |
| Inspection, QC/microbiology and packaging | US$35m-120m | Batch-release scope |
| Cleanrooms, validation and installation | US$45m-150m | GMP critical |
| Indicative strategic project total | US$170m-570m | Dossiers, inventory and finance excluded |

## Implementation sequence

| | | |
|---|---|---|
| Phase 1 | 2-5 weeks | Confirm product specification, representative raw material, buyer, capacity, site and utilities |
| Phase 2 | 3-7 weeks | Run supplier trials with the buyer material and freeze the balanced machine, tooling and utility scope |
| Phase 3 | 8-22 weeks | Manufacture or refurbish, inspect, document and ship the contracted equipment |
| Phase 4 | 3-12 weeks | Install, commission, train operators and pass material-specific acceptance tests |

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

- bottled-water-production-line
- automatic-filling-machine