BIOAGE



COMPANY BROCHURE

BIOPROCESS AND LAB WATER EQUIPMENT · SINCE 2004

Bench to plant with one team behind you

Fermenters from 0.5 L to 50 kL, lab water to 18.2 MΩ·cm, filtration and process systems. Designed, built and tested at our own works. 1000+ installations in India and abroad.

- FERMENTERS AND BIOREACTORS
- LABORATORY WATER PURIFICATION
- FILTRATION, VESSELS AND UTILITIES
- LAB-SCALE PRODUCTS, AUTOMATION, SERVICE

WWW.BIOAGE.TECH

You talk to the people who built your system

Our own people design, fabricate, program, test and service each system we build, for pharma, biotech, probiotics, enzymes, food, nutraceuticals, biofuels and research labs in India and abroad. When you call, you reach that team.



SEED AND PRODUCTION LINE · CUSTOMER SITE

2004
Founded

1000+
Installations across our range, in India and abroad

300+
Fermentation projects, from lab to production

70+
People in design, automation, manufacturing and service

WHY WORK WITH BIOAGE

INDIAN MSME OF THE YEAR 2022 · MICRO CATEGORY · ET MSME AWARDS

Tested before it leaves
We test systems at our works before dispatch, so commissioning on your site starts from equipment that already runs.

A clear path to scale up
Start in glass at 0.5 L and grow to 50 kL. Pilot and production vessels share the same engineering, so your process moves up on known ground.

Ready for your auditors
We work to ISO 9001:2015, supply DQ, IQ, OQ and PQ documents on request, and give process systems an audit trail designed to support 21 CFR Part 11.

Support from the same team
Our own engineers install, commission and train your operators. The people who built your system supply AMC, spares and upgrades.

CLIENTS IN PHARMA, INDUSTRY, GOVERNMENT AND RESEARCH

Mankind Serving Life · Reliance Industries Limited · Navbharat Agro Industries · Geocon · HG Hindustan Gum · Zydus Dedicated To Life · Dr. Reddy's · Gujarat Themis Biosyn Limited · Matrix Life Science · Sribio A Microbiome Company · GCC Biotech · TechInvention · NFL · teri · RNZ · alfanzyme · Biolaxi · Morepen The Joy Of Growing Together · Acme Formulation · SCL · icmr Indian Council of Medical Research · BHEL · AIIMS · Shiv Kailash green energy pvt. Ltd

Every step from lab water to recovery

Eight product groups cover the main steps of a bioprocess, from laboratory water to recovery, with utilities, automation and service around them. Buy one system, or let us join several into one line that we design, build and support.

01 LAB WATER
Lab water purification systems
Type I, II, III

→

02 MEDIA
Media and mixing vessels
Built to order

→

03 SEED
Lab and pilot fermenters
0.5–750 L

→

04 PRODUCTION
Production fermenters
1–50 kL

→

05 RECOVERY
TFF, MF and UF filtration skids
Lab and pilot

→

06 FORMULATION
EncapXpert microencapsulator
2.5–100 L

SUPPORTED ACROSS THE LINE

Utilities
Chillers, compressors, steam, CIP and SIP

Automation
PLC and SCADA on process systems

Quality
TOC analyser, validation documents

Service
Installation, training, AMC and spares

RANGE	WHAT IT COVERS	SCOPE	PAGE
Fermenters and bioreactors	Autoclavable glass lab units, SIP pilot vessels and production fermenters built to order	0.5 L–50 kL	04
Specialised fermentation	Parallel and twin units, photobioreactors, solid-state fermenters, seed-to-production lines	Lab to production	04
Laboratory water purification	Five families from general lab water to 18.2 MΩ·cm ultrapure, with RO, EDI, UV and UF stages	Type I, II, III	05
Downstream and filtration	TFF and cross-flow skids for clarification, concentration and diafiltration	Lab and pilot	06
Process vessels, CIP and SIP	Media, mixing, harvest and storage vessels with CIP and SIP; ASME U stamp when required	SS316L and SS304	06
Utilities and accessories	Chillers, compressors and steam supply, plus pumps, sensors, valves, filters and spares	Sourced, integrated	06
Lab-scale products from our R&D	EncapXpert microencapsulator, portable TOC analyser, photoreactor and biocompost unit	Four products	06
Automation and services	PLC and SCADA; sizing, works testing, installation, training, validation documents, AMC	Unit to plant	07

ONE RESPONSIBILITY

One builder, one call. When we design, build, automate and test your line, the interfaces are designed together, we coordinate the sourced utilities, and the same team supports the line afterwards.

Scale up without starting again

Develop on the bench, prove the process in a pilot vessel sterilised in place, then move to production on the same engineering. More than 300 fermentation projects stand behind the range.



LAB SCALE **0.5–10 L**

Autoclavable glass

Develop your process in borosilicate glass that goes straight into your lab autoclave, with pH, DO, foam and feed under control.

Borosilicate, single wall or jacketed
Top or magnetic drive; air 0.5–2 VVM
pH, DO, foam, OD, ORP and dCO_2



PILOT SCALE **5–750 L**

Sterilised in place

Prove your process at volume in jacketed SS316L designed to ASME guidelines, with SIP and CIP, filter sterilisation and back-pressure control.

Design 3.0, test 4.0 kg/cm²
Inner finish Ra ≤ 0.5 µm
Dry or double wet mechanical seal



PRODUCTION **1–50 kL**

Built to order

Take a proven process to production in vessels sized and laid out for your plant.

Jacketed or limpet vessel
Manhole and sight glass
Access platforms

SPECIALISED FERMENTATION SYSTEMS



Parallel and multi-unit

Compare conditions side by side: 2 to 5 vessels on one control unit, or twin fermenters.



Photobioreactors

0.5–10 L, LED light checked with a lux meter, temperature and pH control, for microalgae and cyanobacteria.



Solid-state fermenters

Tray type, 5 L–5 kL, sterilised in place, for enzymes and microbes on solid substrates.



Seed-to-production lines

Your seed train as one line, with media vessels and transfer piping on skids or platforms.

ONE CONTROL SYSTEM

Your operators learn one control system. Every fermenter we build, from 0.5 L to 50 kL, comes with a PLC and a colour touch screen, recipes, alarms and batch reports.

Full specifications are in our Fermenters and Bioreactors brochure.

The right water grade for every bench

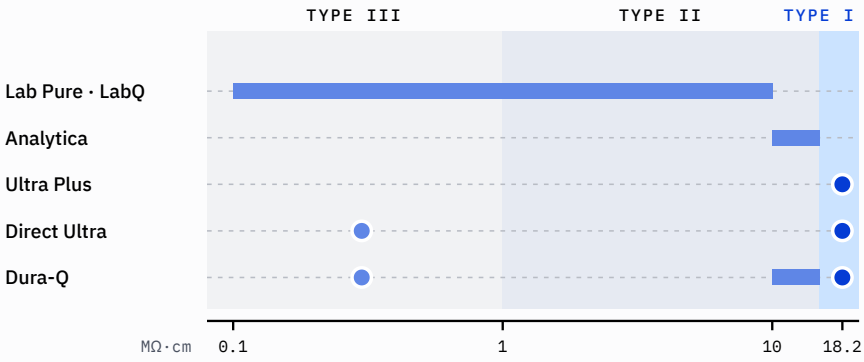
Feed your autoclave, your HPLC and your cell culture from one range. Five families cover Type III to Type I, with 2–50 L/h of Type II and III, and Type I dispensed at up to 2 L/min. We have built lab water systems since 2005.

TYPE I WATER AT 25 °C

18.2

MΩ·cm

Type I from Ultra Plus, Direct Ultra and Dura-Q



Where each family sits on the resistivity scale, from Type III at 0.1 MΩ·cm to Type I at 18.2 MΩ·cm.



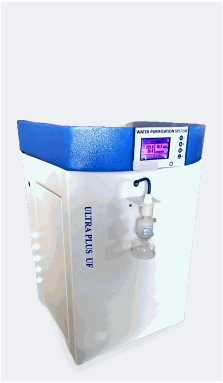
TYPE III · II

Lab Pure and LabQ

0.1 to >10 MΩ·cm

5–20 L/h

General lab water; Lab Pure replaces distillation, using less water and power



TYPE I

Ultra Plus UV and UF

18.2 MΩ·cm

Up to 2 L/min

HPLC, GC, ICP-MS; TOC below 10 ppb. UF: endotoxin below 0.001 EU/ml



TYPE II

Analytica and Analytica EDI

10–15 MΩ·cm

2–50 L/h

Media, buffers, autoclave, stability-chamber and Type I feed; TOC below 20 ppb

TYPE I · III

Direct Ultra

18.2 MΩ·cm

Double-pass RO

Type I and III from one unit, with up to 60 % recovery

TYPE I · II · III

Dura-Q Classic and Premium

18.2 MΩ·cm

Classic I, II · Premium I–III

Several grades from one system: Classic gives I and II, Premium all three

ACROSS THE RANGE

- Online conductivity and resistivity
- Cartridge, UV, pressure and level alarms
- Options: online TOC and EDI
- Auto flush and recirculation
- Data storage, RS232 or USB, for GLP
- IQ, OQ and PQ documents on request

Models, outputs and options are in our Lab Water Systems brochure.

What comes before and after the fermenter

A fermenter is one step in your line. We also build the filtration skids, process vessels, and CIP and SIP systems around it, and source and integrate the chillers, compressors and steam supply that serve them.



TFF and filtration skids

Clarify broth, concentrate enzymes and proteins, remove endotoxins and diafilter on wheeled lab and pilot skids. Also for extracts, juice, dairy and gelatin.

MF, UF and ceramic membranes
UF 1, 3, 10, 30, 50 and 100 kDa
SS316L, TC clamps, diaphragm valves



Process vessels, CIP and SIP

Tanks to prepare media, mix, receive, harvest and store, built to your batch and layout, with the CIP and SIP systems that keep them clean and sterile.

SS316L or SS304, jacketed or limpet
Ribbon mixers and custom vessels
ASME U-stamped when a job needs it



Utilities and accessories

We source chillers, compressors and steam supply and integrate them with your line, and supply the accessories and spares that keep it running.

Peristaltic pumps and sensors
Electronics cards, ports, housings
Valves, filters and impellers

LAB-SCALE PRODUCTS FROM OUR R&D

Our own lab-scale products, developed in-house and now part of our regular range: for encapsulation, water checks, photochemistry and composting.



EncapXpert microencapsulator

Spray-jet encapsulation with 0.5–1.0 mm nozzles and speed control, for pharma, food and agri-inputs.

2.5 L lab to 100 L scale



Portable TOC analyser

Check pharma and ultrapure water on the spot by UV oxidation and conductivity, on mains or battery power.

0.1–1000 ppb · portable



Photoreactor

Run photocatalysis, photochemistry and photostability studies under uniform LED light at your wavelength.

6 vials · custom LED light



Biocompost unit

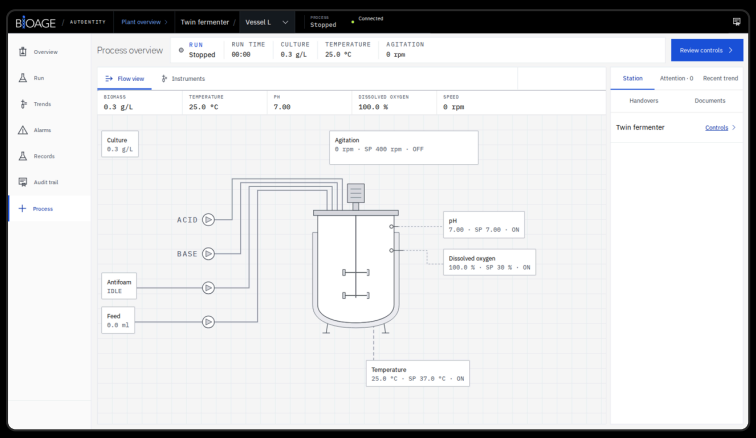
Turn organic waste into compost on site, for homes, housing societies, canteens and institutions.

5–10 to 80–100 kg/day

6 design patents filed. Research with DRDO and Punjab University; a tie-up with the Institute of Nano Science and Technology.

We stay with you from sizing to AMC

Watch each batch as it runs, keep the record and reach the system securely from your desk. Our fermenters and process systems run on a PLC, with SCADA for several units or a whole plant.



REPRESENTATIVE SCREEN

WHAT THE AUTOMATION DOES

- Real-time data, trends, batch reports
- Alarm management, recipes and phases
- User levels and an audit trail
- Designed to support 21 CFR Part 11
- Secure remote access
- USB and CSV export, PC software

FROM FIRST CALL TO LONG-TERM SUPPORT

01

Consult and size

We study your process, volumes and site, then size the system to fit.

02

Design and build

We design the system and layout, then fabricate it and build its panels at our own works.

03

Automate and test

We program the PLC and HMI in-house and test the system at our works before dispatch.

04

Install and commission

We install and commission at your site with your team, and hand over a running system.

05

Train and document

We train your operators and supply DQ, IQ, OQ and PQ documents on request for your QA.

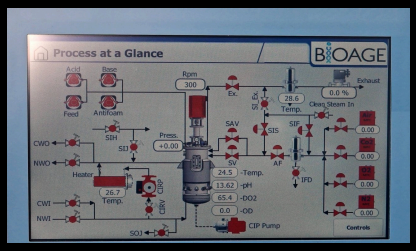
06

Support

AMC, spares and upgrades, from the same team that built your system.



PIPING BUILT AT OUR WORKS



OPERATOR PANEL AT OUR WORKS



OUR ENGINEERS AT AN INSTALLATION

TRAINING

Operators train on the system they will run. Since 2007 we have also run industrial training programmes for students and professionals in our labs.

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CONTACT

Tell us your process. We will size it.

Share your volumes, utilities and site, and our engineers will come back with a system to suit and a proposal, from one lab unit to a full line.

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SCAN TO VISIT
OUR WEBSITE

Distributors and consultants are welcome to contact us.

WE WORK TO ISO 9001:2015 · ASME U STAMP
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Specifications are subject to change without notice. Photographs show representative systems, some at customer sites. Client names and logos belong to their owners.