BIO-SUPPORT × TAILIN

Introduction of Integrated Aseptic, Contamination Control & QC Solutions

For Korean PharmaBio Customers

Tailin Technology × Bio-Support GMP Expertise
From Product Supply to GMP-Ready Implementation

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Proposed by: Bio-Support

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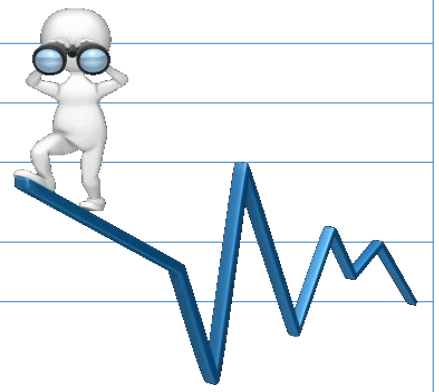
Bio-Support, Your Trusted GMP Value Chain Integrator
Leading Value. Connecting with Trust. Realizing the Future.



Bio-Support: Company Overview

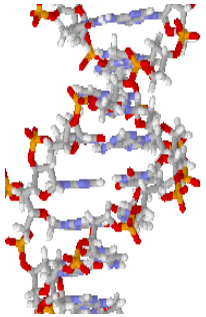
제약·바이오 고객의 GMP와 글로벌 기술을 연결하는 통합 실행 파트너

ITEM	DECSRIPTION
Name	Bio-Support Co,. Ltd
Founded	Apr. 19, 2000
CEO	Kim Kyung-min
Address	65, Dongpyeon-ro 13beon-gil, Dongan-gu, Anyang-si, Gyeonggi-do, Republic of Korea
Employee	61 Persons(GMP Consultant 50, GEP Engineer 2)(as of Aug 2026)
Main business	• [GMP & Validation Solution Consulting Biz] • [PharmaBio Value Chain Collaboration Biz] • [GMP Design & Modular Construction Biz] • [PharmaBio Knowledge & Competency Development Biz] • [Global BioTech Gateway Collaboration Biz] • GMP (Good Manufacturing Practices, pharmaceutical manufacturing management and quality control standards) for pharmaceuticals, biopharmaceuticals, ATMP, veterinary drugs, medical devices, and health functional foods
Main Certificates	• Venture Business Verification (2006~), Gov. Promising SME Certification (2008) • Technology Innovation SME (Innobiz) Verification (2008~) • Professional Research Biz. Certificate(Ministry of Science & ICT)(2007~) • ISO 9001 Quality Management System (2009~), • Ministry of Employment and Labor SME Verification (2024~)
Contact us	www.biosupport.co.kr, gmp@biosupport.co.kr



Bio-Support: Company Overview

제약·바이오 고객의 GMP와 글로벌 기술을 연결하는 통합 실행 파트너



한 장으로 보는 바이오써포트

고객사가 GMP 프로젝트를 더 빠르고, 더 안전하게, 더 확실하게 실행하도록 지원합니다.

26년	1,306+	392+	111+	202+
GMP & Validation 컨설팅 역사	총 프로젝트 수행 건수	함께한 고객사	Turnkey 프로젝트 실적	GMP 제조소 설계 프로젝트

Bio-Support의 고객 가치

규정·기술·엔지니어링·운영을 하나의 실행체계로 연결하여 GMP 리스크를 낮추고 프로젝트 성공 가능성을 높입니다.

고객과 함께 만드는 성과

신축·개축 GMP 제조소, PQS, DI, CCS, Qualification/Validation, 글로벌 GMP 대응까지 고객사의 목표 GMP 수준에 맞춰 수행합니다.

Global Technology × Global GMP Expertise × Integrated Realization

"Bio-Support", The Leader in GMP Solution Consulting, Our Valued 392 Customers!!



Bio-Support PharmaBio Value Chain Collaboration Biz

단순 제품 공급이 아니라 고객의 GMP 과제와 글로벌 파트너 기술을 실제 적용 솔루션으로 구현



Bio-Support 수행 역할

- GMP Requirement Review
- Application & Product Selection
- URS / Technical Specification Review
- Design & Interface Review
- Qualification Review or Execution
- Training & Lifecycle Support

고객 기대효과

- 제품 도입 목적과 GMP 요구사항 정렬
- 초기 단계에서 Spec·Interface·Validation 리스크 확인
- 공급자 기술자료와 고객 SOP·Validation 체계 연결
- 도입 후 운영·점검·Lifecycle Support 가능

BIO-SUPPORT × TAILIN

Integrated Aseptic, Contamination Control & QC Solutions for PharmaBio

TAILIN Technology

- Isolator
- Sterile Transfer
- VH_2O_2 Bio-decontamination
- Microbiology QC
- TOC / Filter Integrity / CCIT

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Bio-Support GMP Expertise

- GMP Requirement Review
- URS / Specification
- Design & Interface Review
- Qualification / Validation
- Training & Lifecycle Support

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Customer Value

- Better CCS
- Faster Implementation
- Stronger GMP Evidence
- Lifecycle Support

바이오써포트는 Tailin의 한국 공식 대리점으로서
국내 GMP 환경에 적합한 제품 도입과 Qualification을 지원합니다

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TAILIN: Integrated Life Science Solution Provider

무균격리, Bio-decontamination, Microbiology QC, Water Quality, Integrity Test를 연결하는 Life Science Solution Provider

Aseptic Isolation & Containment	Sterile Transfer	VH_2O_2 Bio-decontamination	Barrier Integrity Testing
Microbiology QC	TOC Analysis	Filter Integrity / PUPSIT	CCIT

One Connected Contamination Control & Quality Control Value Chain

Website: tailinscitech.com/
YouTube: youtube.com/@tailinbioengineering/videos

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Tailin Solution Portfolio for PharmaBio

국내 제약·바이오 고객의 Annex 1, CCS, QC Lab, 제약용수, 무균여과 및 CCIT 이슈와 직접 연결

Barrier & Aseptic

- Sterility Test Isolator
- Aseptic Filling Isolator
- Containment / CGT Isolator

Transfer & Bio-decon

- Sterile Pass Box
- Sterile Connector
- VH_2O_2 / Dry Fogging

Integrity Assurance

- Glove Integrity Tester
- RTP Integrity Tester
- Filter Integrity / PUPSIT
- CCIT

Microbiology & Water QC

- Sterility Test Pump & Canister
- Rapid Sterility Test
- Microbiology QC
- TOC Analyzer

제품별 슬라이드는 주요 사양·적용분야·GMP Value·공식 Website/YouTube를 함께 제공합니다.

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Sterility Test Isolator

HTY Series — 무균시험 QC 작업을 위한 fully enclosed ISO 5 / Grade A isolator system.

Aseptic Isolation



Key Specification

- Cleanliness: GMP Class A
- Pressure: -80 Pa to +80 Pa
- Airflow: Laminar, 0.36–0.54 m/s
- VH_2O_2 kill rate: ≥ log6
- Leakage: <0.5% vol/h
- Residual H_2O_2: <1 ppm

Applications

- Sterility testing
- Sampling / weighing / dispensing
- Aseptic QC operations

GMP Value for Customer

외부오염과 operator intervention을 줄이고 CCS와 audit readiness를 강화합니다.

Bio-Support Consulting:
URS · GMP Review · Interface Review · FAT/SAT · IQ/OQ · Training

Website: tailinscitech.com/solutions/sterility-test-isolator-hty-series/
YouTube: youtube.com/@tailinbioengineering/videos

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Automatic Aseptic Filling Isolator

AFL Series — 전임상·임상·소규모 injectable batch 생산을 위한 isolator-integrated filling platform.

Aseptic Filling



Key Specification

- Isolator-based filling platform
- Batch / small-scale injectable use
- Closed barrier operation
- Integrated filling workflow
- Configurable utility / interface
- Qualification support required by project

Applications

- Clinical batch filling
- Small-batch aseptic filling
- Advanced therapy products

GMP Value for Customer

제품·공정·장비 interface를 초기 URS 단계에서 정렬하여 무균공정 구현 리스크를 낮춥니다.

Bio-Support Consulting:
URS · GMP Review · Interface Review · FAT/SAT · IQ/OQ · Training

Website: tailinscitech.com/solutions/automatic-aseptic-filling-Isolator-afl-series/
YouTube: youtube.com/@tailinbioengineering/videos

Containment Isolator

ADC / HPAPI Applications — 고활성 물질, ADC, HPAPI의 취급을 위한 containment-focused isolator solution.

Containment



Key Specification

- Negative/contained operation concept
- High-potency material handling
- Integrated glove/transfer interfaces
- Custom configuration
- Cleaning/decontamination strategy needed
- Containment validation support

Applications

- API / HPAPI
- ADC manufacturing
- Weighing / sampling / dispensing

GMP Value for Customer

작업자·제품·환경 보호를 동시에 고려하여 containment risk management를 지원합니다.

Bio-Support Consulting:
URS · GMP Review · Interface Review · FAT/SAT · IQ/OQ · Training

Website: tailinscitech.com/solutions/isolator-for-adc/
YouTube: youtube.com/@tailinbioengineering/videos

Cell & Gene Therapy Isolator

CGT / ATMP Platform — 세포·유전자치료제의 closed aseptic processing을 지원하는 isolator-based platform.

Advanced Therapy



Key Specification

- Closed aseptic processing concept
- Grade A protection strategy
- Integrated transfer interfaces
- Process-specific customization
- Environmental monitoring linkage
- Validation-ready lifecycle approach

Applications

- Cell therapy
- Gene therapy
- ATMP processing
- Aseptic manipulation

GMP Value for Customer

개방조작을 최소화하고 batch-specific contamination control을 설계단계에서 확보합니다.

Bio-Support Consulting:
URS · GMP Review · Interface Review · FAT/SAT · IQ/OQ · Training

Website: tailinscitech.com/solution/cell-and-gene-therapy/
YouTube: youtube.com/@tailinbioengineering/videos

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Sterile Pass Box

PBL Series — Grade A 내부환경과 VH_2O_2를 통합한 vertical laminar flow decontamination airlock.

Sterile Transfer



Key Specification

- Airflow: Vertical laminar flow
- Cleanliness: GMP Grade A
- Cycle time: 150 min
- Residual H_2O_2: ≤1 ppm
- HEPA: H14
- Chamber: SUS316L
- SAL: ≥6-log kill

Applications

- Class B/A area material transfer
- APIs/tools transfer
- Heat-sensitive item transfer

GMP Value for Customer

자재 반입 과정의 표면오염 리스크를 줄이고 Grade A/B 구역 transfer를 표준화합니다.

Bio-Support Consulting:
URS · GMP Review · Interface Review · FAT/SAT · IQ/OQ · Training

Website: tailinscitech.com/solutions/sterile-pass-box-pbl/
YouTube: youtube.com/@tailinbioengineering/videos

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Sterile Connector

Sterisafe — 두 fluid path 사이의 closed aseptic fluid transfer를 지원하는 sterile connection solution.

Closed Transfer



Key Specification

- Single-use sterile connection concept
- Closed fluid path
- Aseptic connection/disconnection
- Tubing / connector configurations
- Suitable for bioprocess fluids
- URS-based selection required

Applications

- Media / buffer transfer
- Bioreactor inoculation
- Sampling / harvest
- Sterile filtration / filling

GMP Value for Customer

open manipulation을 줄이고 sterile fluid transfer의 contamination risk를 낮춥니다.

Bio-Support Consulting:
URS · GMP Review · Interface Review · FAT/SAT · IQ/OQ · Training

Website: tailinscitech.com/solutions/sterile-connector/
YouTube: youtube.com/@tailinbioengineering/videos

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Vaporized Hydrogen Peroxide Generator

VH₂O₂-Classic — pipeline sterilization과 space sterilization을 모두 지원하는 dual-purpose VH₂O₂ generator.

Bio-decontamination



Key Specification

- Pipeline capacity: ≥4 m³
- Space capacity: ≥300 m³
- Max vaporization: 15 g/min
- H₂O₂ bottle: 2.5 L
- Compatible: 30–35% H₂O₂
- Dimensions: 790×620×1200 mm
- Weight: ≤125 kg

Applications

- Isolator / BSC / BIBO
- Cleanroom / laboratory
- Enclosed chamber decon

GMP Value for Customer

cycle development와 distribution/BI challenge를 통해 bio-decontamination evidence를 확보합니다.

Bio-Support Consulting:
URS · GMP Review · Interface Review · FAT/SAT · IQ/OQ · Training

Website: tailinscitech.com/solutions/vaporized-hydrogen-peroxide-generator-vh2o2-classic/

YouTube: youtube.com/@tailinbioengineering/videos

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Dry Fogging System

FD7 / FHP3 — 밀폐공간과 cleanroom surface bio-decontamination을 위한 dry fogging solution.

Bio-decontamination



Key Specification

- Dry fog dispersion concept
- Portable / flexible setup
- Fine aerosol distribution
- Room/chamber application
- Cycle development required
- BI/CI validation support needed

Applications

- Cleanroom decontamination
- Laboratory / BSC support
- Equipment space treatment

GMP Value for Customer

공간·표면 소독의 반복성과 cycle documentation을 개선하는 보완적 decon option입니다.

Bio-Support Consulting:
URS · GMP Review · Interface Review · FAT/SAT · IQ/OQ · Training

Website: tailinscitech.com/solutions/dry-fogger-fd7/
YouTube: youtube.com/@tailinbioengineering/videos

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Glove Integrity Tester

GIT-WLAN02 — Isolator/RABS glove & sleeve를 in-situ로 test하는 pressure decay 기반 integrity tester.

Barrier Integrity



Key Specification

- Inflation pressure: 500–2500 Pa
- Test time: 3–6 min
- Resolution: 0.1 Pa
- Smallest detectable hole: 100 μm
- Weight: ≈3 kg
- Battery: 12 V lithium
- Communication: WiFi

Applications

- Isolator glove testing
- RABS glove testing
- Routine CCS verification

GMP Value for Customer

Annex 1 기반 glove integrity control을 정량화하고 electronic record로 추적성을 높입니다.

Bio-Support Consulting:
URS · GMP Review · Interface Review · FAT/SAT · IQ/OQ · Training

Website: tailinscitech.com/solutions/glove-integrity-tester-git-wlan02/
YouTube: youtube.com/@tailinbioengineering/videos

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RTP Integrity Tester

RTP Integrity Tester — Alpha/Beta port의 leak test를 위한 positive/negative pressure mode integrity tester.

Barrier Integrity



Key Specification

- Test time: 5–8 min
- Resolution: 1 Pa
- Smallest detectable hole: 30 μm
- Inflation: -4000 to +4000 Pa
- Battery: 12 V lithium
- Communication: WiFi
- Dimensions: Ø260×135/165 mm

Applications

- RTP alpha/beta port test
- Isolator transfer interface
- Aseptic production support

GMP Value for Customer

RTP transfer boundary의 integrity evidence를 확보하여 barrier strategy를 강화합니다.

Bio-Support Consulting:
URS · GMP Review · Interface Review · FAT/SAT · IQ/OQ · Training

Website: tailinscitech.com/solutions/rtp-integrity-tester/
YouTube: youtube.com/@tailinbioengineering/videos

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Sterility Test Pump & Canister

HTY-ASL01/02 + Canisters — Membrane filtration 기반 sterility testing workflow를 표준화하는 pump와 closed canister system.

Sterility Testing



Key Specification

- Pump power: 95–260 VAC
- Speed: 1–300 rpm
- Material: 316L stainless steel
- Screen: 4.3 inch LCD
- Power: 120 W
- Canisters: multiple sample-specific models

Applications

- Sterile pharmaceuticals
- Antibiotics / sterile APIs
- LVP / WFI / medical devices

GMP Value for Customer

closed filtration과 SOP mode를 통해 operator variability와 contamination risk를 낮춥니다.

Bio-Support Consulting:
URS · GMP Review · Interface Review · FAT/SAT · IQ/OQ · Training

Website: tailinscitech.com/solutions/sterility-test-pump-hty-asl/
YouTube: youtube.com/@tailinbioengineering/videos

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Rapid Sterility Test System

AST Series — Microbial respiration CO_2 signal과 visual analysis를 이용하는 rapid sterility testing platform.

Rapid Microbiology



Key Specification

- Models: AST-80 / 180D / 180MF / 300
- Temperature: 20–45°C
- Accuracy: ±0.1°C
- Detection: microbial respiration
- Scan interval: every 15 min
- Capacity: 80 / 180 / 300 bottles or canisters

Applications

- Biopharmaceuticals
- Cell therapy QC
- Vaccines / rapid microbiology

GMP Value for Customer

기존 무균시험의 long lead-time을 줄일 수 있는 rapid microbiology 검토 옵션입니다.

Bio-Support Consulting:
URS · GMP Review · Interface Review · FAT/SAT · IQ/OQ · Training

Website: tailinscitech.com/solutions/rapid-sterility-test-system/
YouTube: youtube.com/@tailinbioengineering/videos

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Automatic Colony Counter Workstation

A real-time microbial incubator and colony counting system

Microbiology QC



Key Specification

- Microbial limit testing portfolio
- Compressed air microbial sampler
- Microbial air sampler
- Automatic colony counting
- Monitoring system options
- Data traceability / QC workflow

Applications

- QC microbiology lab
- Environmental monitoring
- Compressed gas monitoring
- Colony enumeration

GMP Value for Customer

QC 실험실의 반복시험, trend monitoring, data integrity 기반 관리를 지원합니다.

Bio-Support Consulting:
URS · GMP Review · Interface Review · FAT/SAT · IQ/OQ · Training

Website: tailinscitech.com/solution/microbiological-testing/
YouTube: youtube.com/@tailinbioengineering/videos

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TOC Analyzer

HTY-GM2000 / GM3000 — PW/WFI 및 cleaning validation을 위한 UV + persulfate oxidation, membrane conductometric TOC analyzer.

Water Quality



Key Specification

- GM2000 range: 0.0001–20 mg/L
- GM3000 range: 0.0001–30 mg/L
- Repeatability: ≤3% / ≤2%
- Analysis time: 3 / 2.5 min
- UV: 185 & 254 nm
- Power: 100–240 VAC, 100 W
- Dimensions: 480×300×540 mm

Applications

- Purified Water / WFI
- Cleaning validation
- Pharmaceutical water monitoring

GMP Value for Customer

제약용수와 cleaning validation의 유기물 오염 관리 및 data integrity를 강화합니다.

Bio-Support Consulting:
URS · GMP Review · Interface Review · FAT/SAT · IQ/OQ · Training

Website: tailinscitech.com/solutions/toc-analyzer-hty-gm2000/
YouTube: youtube.com/@tailinbioengineering/videos

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Online Continuous TOC Monitoring for Pharmaceutical Water Systems

HTY-DI1500-OL TOC Analyzer

Water Quality

Detection Range 1.0–1500.0 µg/L · Test Time 3 min



What it is

제약용수(WFI/PW) 및 초순수 시스템의 Total Organic Carbon(TOC)을 온라인·연속으로 모니터링하는 분석기입니다.

Core Features

- Dual-Wavelength UV Oxidation
- Direct Conductivity Detection
- PC / IPC control options
- Remote analog & digital outputs
- Audit trail, password authority, backup

Customer Value

- 실시간 TOC Trend 확인
- GMP 수질관리 증거 강화
- Water System과 연계 가능
- 이상경향 조기 탐지 지원

Key Applications

- Water for Injection (WFI)
- Pharmaceutical water systems
- Ultra-pure water
- DI water in power plants

Website: https://www.tailinscitech.com/solutions/toc-analyzer-di1500-ol/

YouTube: youtube.com/@tailinbioengineering/videos

HTY-DI1500-OL: Major Specifications

Specifications and GMP-oriented implementation points for customer discussion

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Technical Specifications

Detection Range	1.0–1500.0 µg/L
Recommended Conductivity	0–5.1 µS/cm @25℃
Test Time	3 min
Indication Error / Repeatability	±5% / ≤2%
Power Supply / Rated Power	100–240 VAC, 50/60Hz / 100W
Sample Temperature	1–99℃
Ambient Condition	10–60℃, 5–90%RH, non-condensing
Dimension / Weight	24×34×16 cm / 12 kg

Integration & Data Integrity

- PC or IPC control; suitable for stand-alone operation
- MES linkage via transmitters and multi-signal outputs
- Transmits TOC, conductivity, pH, temperature and DO data
- Four-level password authority, audit trail and backup

Customer Discussion Points

- URS: sampling point, conductivity range, alarm strategy
- Interface: water system, SCADA/MES and data historian
- Qualification: IQ/OQ/PQ and TOC method verification
- Operation: calibration, maintenance and trend review

Product Website https://www.tailinscitech.com/solutions/toc-analyzer-di1500-ol/

YouTube Channel https://www.youtube.com/@tailinbioengineering/videos

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Filter Integrity Tester

HTY-FT223 Pro / HTY-MBP — 무균여과 filter 및 membrane integrity를 비파괴적으로 확인하는 tester와 PUPSIT online module.

Sterile Filtration



Key Specification

- FT223Pro forward flow: 0.1–600 mL/min
- Water intrusion: 0.01–100 mL/min
- Bubble point: 100–8000 mbar
- Repeatability: ≤3%
- FT223Pro size: 42×30×28 cm
- MBP bubble point: 400–8000 mbar
- MBP size: 300×200×200 mm

Applications

- Sterile filtration
- Hydrophilic / hydrophobic filters
- PUPSIT / online testing

GMP Value for Customer

filter pre-use/post-use integrity evidence와 PUPSIT strategy를 GMP 문서화와 연결합니다.

Bio-Support Consulting:
URS · GMP Review · Interface Review · FAT/SAT · IQ/OQ · Training

Website: tailinscitech.com/solutions/filter-integrity-tester-ft223pro/
YouTube: youtube.com/@tailinbioengineering/videos

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Container Closure Integrity Test(CCIT)

HTY-LT100P / BIT-L01 — Vacuum/pressure decay 및 bacterial ingress 방식으로 container closure system의 barrier performance를 확인.

Package Integrity



Key Specification

- LT100P method: vacuum/pressure decay
- Rigid container detection: 1–2 μm
- Flexible package: 5–10 μm
- Display: 10.1 inch touchscreen
- BIT-L01 pressure: -80 to +100 kPa
- Keep time: 0–999 min
- Recipe storage: ≥100

Applications

- Vials / ampoules / cartridges
- Package development / validation
- Microbial challenge testing

GMP Value for Customer

무균의약품의 microbial barrier와 package integrity를
제품 lifecycle 전반에서 검증합니다.

Bio-Support Consulting:
URS · GMP Review · Interface Review · FAT/SAT · IQ/OQ · Training

Website: tailinscitech.com/solutions/ccit-vacuum-pressure-decay-leak-tester/
YouTube: youtube.com/@tailinbioengineering/videos

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Capping Machine, Prefilled Syringe Stoppering Machine



Desktop Capping Machine

A capping machine for the vials and infusion bottles



Prefilled Syringe Stoppering

Specially designed for process development of prefilled syringes and cartridges



Wireless Capping Machine

Specifically designed for sealing of pharmaceutical vials with aluminum caps or aluminum-plastic caps

Website: https://www.tailinscitech.com/solution/pharma-processing/
YouTube: youtube.com/@tailinbioengineering/videos

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Biological Indicators

Self-contained



Autoclave Steam Biological Indicators

Used to confirm the performance of steam sterilization

Self-contained



Moist Heat Biological Indicators

Used to monitor the sterilization performance of moist heat sterilizer

Rapid / Ultra-Rapid Self-contained



Autoclave Steam Biological Indicators

Used to fast monitoring of steam sterilization effectivenes

Website: https://www.tailinscitech.com/solution/sterilization-monitoring-and-validation/
YouTube: youtube.com/@tailinbioengineering/videos

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Biological Indicators

Self-contained



VH2O2 Biological Indicators

For VH2O2 cycle validation and biodecontamination monitoring.

Strip



Gas Fumigation Biological Indicators

Used to monitor the effectiveness of space sterilization such as ozone, formaldehyde and chlorine dioxide

B-D Test Pack



B-D Test Pack

Used to assess the cold air removal efficiency and steam penetration effectiveness of pulsating vacuum steam sterilizers

Website: https://www.tailinscitech.com/solution/sterilization-monitoring-and-validation/
YouTube: youtube.com/@tailinbioengineering/videos

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Technology from Tailin. GMP Expertise from Bio-Support. One Integrated Solution for PharmaBio.

Your Partner for Aseptic, Contamination Control & QC Solutions

Global Technology × Global GMP Expertise

Thank you so much!!!

Bio-support has been growing together with our valued customers and partners since 2000!!!.

Official Website
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https://www.youtube.com/@tailinbioengineering/featured

Bio-Support Role
Korean official distributor,
GMP Value Chain Integrator

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