

Top 10 in 2022

2022 has been quite the year! Unsurprisingly, new guidances and regulatory matters make a few appearances in the newsletter. Other critical issues — cleaning validation and environmental monitoring, GMPs, factory acceptance testing, and quality risk management — maintain interest while the industry continues to develop and produce critical medicines for patients in need.

As an eventful 2022 draws to a close, we encourage you to spend a few minutes reviewing the lists below — and reading (or rereading) the content you and your peers found most compelling.

Top 10 Editorials

1. [FDA Updates Guidance For Investigating OOS Test Results For Pharma Production](#)
By Mark Durivage, Quality Systems Compliance LLC
2. [SOPs, The Modern Worker, And How Pharma Companies Must Evolve The “Read And Understand” Model](#)
By Mark Simon and Ben Locwin
3. [Replacing The MAC/MACO With The MSC: Rethinking How Cleaning Validation Limits Are Calculated](#)
By Andrew Walsh, Thomas Altmann, Ralph Basile, Joel Bercu, Ph.D., Alfredo Canhoto, Ph.D., Andreas Flueckiger, M.D., Igor Gorsky, Jessica Graham, Ph.D., Ester Lovsin Barle, Ph.D., Ovais Mohammad, Mariann Neverovitch, Siegfried Schmitt, Ph.D., and Osamu Shirokizawa
4. [CAPA System Best Practices For GMP Compliance](#)
by Thomas Peither, GMP-Verlag Peither AG
5. [New ICH Q14 Guidance Applies QbD To Analytical Procedures](#)
By Brian Glass, senior analytical consultant, Pharmatech Associates
6. [Factory Acceptance Testing, Site Acceptance Testing, Commissioning Activities, Oh My!](#)
By Ajay Pazhayattil, Praveen Joseph, and Ciona Forsythe
7. [U.S. Congress Passes Bill Supporting New Era Of Biopharma Advanced Continuous Manufacturing](#)
By Madeleine Giaquinto, JD, and Kalah Auchincloss, JD, MPH
8. [Mold Investigations Using Biofluorescent Particle Counting Systems](#)
By Dawn Watson, director, Microbial Control & Sterile COE, Merck & Co., Inc.
9. [How To Set Up An Effective Quality Risk Management Program](#)
By Peter H. Calcott, Ph.D., president and CEO, Calcott Consulting LLC
10. [How AstraZeneca Optimized Vapor-Phase Hydrogen Peroxide Gassing Cycle Development With Enzyme Indicators](#)
By Stephen Dawson and Miriam Guest, AstraZeneca

Top 10 White Papers

1. [Terminal Sterilization Of Prefilled Syringes](#)
By Thomas Ofenboeck and Christian Dallner, Syntegon
2. [Overcome Lyophilization Challenges During Development, Scale-Up, And Manufacturing Of Biologic Products](#)
By Zak Yusoff, SP Industries, USA
3. [Biologic Drug Products: A Five-Point Strategy For Building A CMC Dossier](#)
By Daniela Decina and Michele Duggan, Thermo Fisher Scientific
4. [Components Of An Effective Disinfectant Prequalification Strategy](#)
By Mariana Breña, Christopher Parker, and Michael Mrvos, Cambrex

5. [Review Of Annex 1 2022: Environmental Monitoring Changes](#)
By Mark Hallworth, Particle Measuring Systems
6. [Why Biological Indicators Survive A Validated Cycle](#)
By Garrett Krusheski, Mesa Laboratories
7. [What Is Pharma 4.0 And How Can You Implement It?](#)
By Kelly Stewart, Apprentice
8. [Modernizing Biopharma Manufacturers To Improve Quality And Safety](#)
By David Jensen, MasterControl
9. [Considerations For Prefilled Syringes For 503\(b\) Compounding Facilities](#)
By Keith Dodson, AST
10. [Pharma Analysis And Quality Control: Trends From The Rapid Pharma Evolution](#)
By MilliporeSigma

Top 10 Case Studies

1. [Selecting Sterile API Transfer Technologies](#)
By ChargePoint Technology
2. [How Augmented Reality Increases Productivity At Bristol Myers-Squibb](#)
By Apprentice
3. [Scale-Up And Site Transfer Of A Semi-Solid Product For Commercial Launch](#)
By Cambrex
4. [Catalent Cell And Gene Therapy Utilizes Robotic Aseptic Filling Systems To Meet Industry Needs](#)
By AST
5. [Aseptic T-Cell Production For Cell And Gene Therapy Manufacturing](#)
By Dec Group
6. [Leveraging An Integrated Network To Accelerate Spray Drying And Tableting Scale-Up](#)
By Catalent
7. [Analytical Procedure \(Method\) Lifecycle Management Drives Method Development At Innovative CDMO](#)
By Waters Corporation
8. [Flexible Production: Meet The Growing Demands Of The Biotech Sector](#)
By Matthias Angelmaier, Syntegon Pharma Technology Inc.
9. [Clinical Supply Optimization: Process Improvement Accelerates Clinical Trial Deliverables And Execution](#)
By Thermo Fisher Scientific
10. [Simplifying Tech Transfer With Automated Data Flow](#)
By Dassault Systèmes Americas

Top 10 Application Notes

1. [Basic Principles Of Freeze Drying](#)
By John Barley, SP Industries, Inc.
2. [Best Practices For The Design And Manufacture Of Radiopharmaceutical Containment Hot Cells, Isolators, And Gloveboxes](#)
By Craig Johnson, Nuclear Containment Subject Matter Expert, at Walker Barrier System
3. [Development Of An Aseptic Transfer System](#)
By ChargePoint Technology
4. [How To Perform HPLC Method Transfer Between Analytical Testing Equipment](#)
By Waters Corporation
5. [Pharma Manufacturing: Effect Of Insulation Coverage On Energy Savings](#)
By T-FIT®

6. Proper **Biological Indicator Placement** During Vaporized Hydrogen Peroxide Decontamination Cycles
By Kurt McCauley, Mesa Laboratories
7. Particle Counting In Injectable **Solutions**
By Particle Measuring Systems
8. **Highly Potent Active Pharmaceutical Ingredients Containment**
By Scott Patterson, ILC Dover
9. Streamlining Cell Therapy Delivery With **Efficiency-Led Design**
By Cytiva
10. **Understanding** Trace Element Variability In Custom Cell Culture Media
By Thermo Fisher Scientific

Top 10 Solutions

1. **RABS: Restricted Access Barrier System For Drug Manufacturing**
Syntegon Pharma Technology Inc.
2. **Overcoming Aseptic Manufacturing Challenges To Prevent Contamination**
Dec Group
3. **Vision Robot Unit: Driving Pharma Innovation**
Stevanato Group
4. **Manufacturing Execution System (MES) For Cell And Gene Therapy Drug Manufacturers**
Apprentice
5. **Single-Use Bioprocessing Bags**
ILC Dover
6. **Double Taper Die**
Wilson Tool International
7. **Palltronic Flowstar V Integrity Test Instrument**
Pall Corporation
8. **Single-Use mAb Process Playbook**
Thermo Fisher Scientific
9. **The Milliflex Oasis Membrane Filtration Method: Productivity And Reliability In Bioburden Testing**
MilliporeSigma
10. **Drug Manufacturing Facility Management Services**
JLL

Reference

[12.19.22 -- Pharmaceutical Online Top 10 Of 2022](https://www.pharmaceuticalonline.com/doc/pharmaceutical-online-top-10-of-2022-0001?utm_source=Onesignal&utm_medium=Pushnotification&utm_term=Top10)

https://www.pharmaceuticalonline.com/doc/pharmaceutical-online-top-10-of-2022-0001?utm_source=Onesignal&utm_medium=Pushnotification&utm_term=Top10