

美国药典在线点播课程 *USP On-Demand Webinar*

水电导率：USP 通则<645>

Water Conductivity: USP General Chapter <645>

课程时长 Course Duration: 75分钟 75 minutes

课程介绍与目的 Course Description and Objectives:

“USP 通则<645>水电导率”自1996年USP23版生效至今，已被其他药典采用作为测定纯化水和注射用水中无机杂质和离子杂质的主要方法。该通则是确定水纯化系统中有充分的化学物质控制/减少的两项主要的化学限度测试之一（USP 通则<643>总有机碳是另一项测试）。此外，电导率也作为一项在线分析、实时工艺控制工具，用于整个水纯化工艺和其他生产工艺。课程将阐述测试的目的、仪器和校准要求、在线和离线测量、温度补偿、以及各种制药用水的测试限度要求。

通过学习，您将了解电导率的基本原理；仪器和温度补偿的参数要求；制药用水在线与离线测量的区别；USP 和其他药典对于各种散装水和无菌水的不同检验阶段的检验限度；并回顾 USP 通则<1644>溶液电导率测量的理论与实践内容。

USP General Chapter <645> Water Conductivity has been official since USP 23 (1996), and it has been adopted by other pharmacopoeias as the primary method for the determination of inorganic/ionic impurities in Purified Water and WFI. <645> Water Conductivity is one of the two primary chemical limit tests (USP <643> Total Organic Carbon is the other) to determine that there is sufficient control/reduction of chemicals in the water purification system. In addition, electrical conductivity is also used as an analytical on-line, real-time process control tool for the entire water purification process and other manufacturing processes. This webinar will explain the purpose of this test, instrumentation and calibration requirements, on-line and off-line measurements, temperature compensation, and test limit requirements for various pharmaceutical waters.

By taking this course, you will

- Understand the basic principles of conductivity.
- Determine instrumentation and temperature compensation requirements.
- Understand the differences between on- and off-line measurements of pharmaceutical waters.
- Understand the test limits for the different stages of testing for various bulk and sterile waters for USP and other pharmacopoeias.
- Review <1644> Theory and Practice of Electrical Conductivity Measurements of Solutions.

参课对象 Who Should Attend:

化学分析员、QA/QC 经理、合规经理、水系统工程师/所有者、实验室经理、生产经理、法规事务人员等。

Analytical chemists, QA/QC managers, Compliance managers, Water system engineers and owners, Lab managers, Production managers, Regulatory affairs specialists

授课语言 Language:

英语（含中文字幕） English (with Chinese subtitles)

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讲师介绍 Instructor:

Anthony C. Bevilacqua 博士，美国药典专家委员会委员 USP Consultant & Expert Committee Member

Anthony Bevilacqua 博士是美国梅特勒-托利多·桑顿 (Mettler-Toledo Thornton) 公司的研发负责人。他在美国塔夫茨大学 (Tufts University) 获得了分析化学和物理化学博士学位。自 1994 年以来，Bevilacqua 博士一直任职于桑顿公司，在仪器仪表开发的多个研发领域取得进展，包括优化高温电导率测量，研究二氧化碳对纯水的影响，使用超纯水 (UPW) 作为电导率标准溶液，开发数字化传感器，以及拓展用于分析和控制高纯水系统 (包括制药用水系统) 的实时分析参数 (电导率、总有机碳、微生物检测、臭氧、钠和二氧化硅)。

在 90 年代中期，Bevilacqua 博士在 USP 通则<645>水电导率和<643>总有机碳的实施期间担任 USP 的电导率顾问，他开发了用于纯净水和注射用水的电导率测试的理论、方法和实践。Bevilacqua 博士在 2000-2005 年和 2005-2010 年期间曾担任 USP 制药用水专家委员会主席，在 2010-2015、2015-2020、2022-2025 期间担任 USP 化学分析专家委员会委员。在过去的 20 年中，Bevilacqua 博士一直与欧洲药典、日本药典及其他药典机构一起致力于制药用水质量标准和分析测试方法的国际协调工作。

Dr. Anthony Bevilacqua is the Head of Research and Development at Mettler-Toledo Thornton. He earned a doctorate in Analytical and Physical Chemistry from Tufts University. He has been at Thornton since 1994, leading the instrumentation development for Thornton in several areas of R&D including improved high temperature conductivity measurements, the impact of CO₂ on pure water, use of ultrapure water (UPW) as a conductivity solution standard, development of digital sensors, and the expansion of real-time analytical parameters (conductivity, TOC, microbial detection, ozone, sodium, and silica) for measurement and control of high purity water systems, including pharmaceutical water systems.

Anthony was the conductivity consultant to the USP during the implementation period for the <645> Water Conductivity and <643> Total Organic Carbon USP chapters in the mid-1990's, and he developed the theory, methods, and practices used for conductivity testing for Purified Water and WFI. Anthony was Chair of the USP Pharmaceutical Water Expert Committee from 2000-2005 and 2005-2010. In addition, Anthony's role continued in the 2010-2015 and 2015-2020 USP Chemical Analysis Expert Committee (CA EC), and he is serving on the current CA EC for 2020-2025. For the last 20 years, he has been working with EP, JP and other Pharmacopeias for international harmonization of pharmaceutical water quality standards and analytical test methods.

课程有效期 Access Deadline:

课程在线观看有效期：自在线报名并缴费成功日起，14 天内有效，逾期课程访问通道将自动关闭。

This course will be only available to you for 14 days from the day of successful registration or until you mark it 'Complete' in your transcript– whichever occurs first.

培训费用 Fee: 250 元人民币/人 RMB 250/attendee

报名方式 Register Procedures:

1. 点击[这里](#) ([课程报名](#)) 进行在线报名。

USP-China 收款账户: USP-China account

收款人 Beneficiary: 美药典标准研发技术服务 (上海) 有限公司

账号 Account No.: 6841 12464 120

银行 Bank: 美国银行有限公司上海分行

2. 发票领取: 快递/邮寄方式提供 Invoice is available after registration.