HANS Scientific

Quality Water for Healthcare Facilities

Water quality is paramount in medical environments, where it plays a crucial role in ensuring the safety and efficacy of healthcare delivery. Impurities in municipal water sources can jeopardize the integrity of medical equipment, increasing the risk of infections and complications for patients. To decrease and mitigate these risks, healthcare facilities need to adhere to stringent standards for water quality, such as AAMI/ANSI ST108.

Introduction to AAMI/ANSI ST108

The AAMI/ANSIST108 standard sets forth the requirements for water used in critical processes within healthcare facilities. It aims to replace previous guidelines and establish minimum criteria for different grades of water utilized in the cleaning and processing of reusable medical devices (RMD). By adhering to these standards, healthcare facilities can ensure the effectiveness of cleaning, disinfection, and sterilization processes while minimizing the potential for device damage.

Challenges in Healthcare Water Quality

Adherence to the AAMI/ANSI ST108 standard requires healthcare facilities to address various challenges related to water quality. These include:

- **Sample Collection:** Facilities must collect water samples at specified frequencies as outlined in ST108, ranging from monthly to annually.
- **Interpretation of Results:** Analytical results from water testing must be accurately interpreted to identify any deviations from established standards.
- **Investigation and Troubleshooting:** Facilities must promptly investigate and address any instances where water contaminants exceed allowable limits, identifying root causes and implementing corrective actions.
- **Engineering Solutions:** Designing and implementing engineering solutions may be necessary to rectify water quality issues and ensure compliance with ST108.

Staying Ahead of Standards

Early adoption of the AAMI/ANSI ST108 standard is crucial for healthcare facilities seeking to maintain compliance and enhance patient care. Initiating performance qualification testing as soon as possible allows facilities to establish baseline water quality metrics and identify any deficiencies in treatment systems and processes. This proactive approach enables proper planning for necessary investments and resource allocation to achieve compliance.

Water Quality Measurement

HANS Scientific provides comprehensive water treatment systems and analytical testing services aligned with the requirements of AAMI/ANSI ST108. HANS Scientific works with healthcare facilities to provide the appropriate water treatment systems and testing of water that can help ensure compliance and safe delivery of healthcare to patients.

Key Parameters for Critical Water Quality

Water Quality Measurement	Units	Utility Water	Critical Water	Steam*
PH @ 25 °C:	pH	6.5 - 9.5	5.0 - 7.5	5.0 - 9.2**
Total Alkalinity	mg CaCO3/L	<400	<8	<8
Bacteria	CFU/mL	<500***	<10	N/A
Endotoxin	EU/mL	N/A***	<10	N/A
Total Organic Carbon (TOC)	mg/L (ppm)	N/A	<1.0	N/A
Color and Turbidity	Visual	Colorness, clear, without sediment	Colorness, clear, without sediment	Colorness, clear, without sediment
Ionic Contaminants				
Aluminum	mg/L	<0.1	<0.1	<0.1
Chloride	mg/L	<250	<1	<1
Conductivity	µS/cm	<500	<10	<10
Copper	mg/L	<0.1	<0.1	<0.1
Iron	mg/L	<0.1	<0.1	<0.1
Manganese	mg/L	<0.1	<0.1	<0.1
Nitrate	mg/L	<10	<1	<1
Phosphate	mg/L	<5	<1	<1
Sulfate	mg/L	<150	<1	<1
Silicate	mg/L	<50	<1	<1
Total Hardness	mg CaCO3/L	<150***	<1	<1
Zinc	mg/L	<0.1	<0.1	<0.1

* Steam parameters are for monitoring as steam condensate
** For local steam generation, the condensate pH should be 5.0 to 7.5. For boiler-treated steam, most boilers should be treated to maintain a condensate pH of 7.5 to 9.2
*** When Utility Water is used after chemical high-level disinfection as a final rinse, the bacteria should be <10 CFU/mL and endotoxin <10EU/mL
**** If hardness is greater than 150 mg/L, a water softener is recommended unless used for washing where the cleaning chemistry is capable of handling higher levels of hardness

Contact Information

For further inquiries or assistance in ensuring water quality compliance for healthcare facilities, please contact:

National Sales Team
Toll Free 877-500-7806
Website: HANSScientific.com

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At HANS Scientific, we are committed to safeguarding water quality in medical settings and supporting healthcare providers in delivering optimal patient care.