

## Aircraft Portable Water Management

Sofema Online (SOL) <u>www.sofemaonline.com</u> considers best practices and health and safety requirements to ensure the correct management of potable water for use in aircraft.

## Introduction to Aircraft Portable Water

Maintaining the quality of potable water on aircraft requires regular testing, vigilant monitoring, and adherence to best practices. Proper treatment and handling procedures, combined with a robust testing regimen, can ensure that passengers and crew have access to safe drinking water during their flights.

The primary distinction is between water that is safe for human consumption (potable water) and water that is not. On commercial aircraft, the main concern is ensuring that potable water is safe and uncontaminated, given its direct impact on passenger health.

Aircraft potable water systems are designed to provide safe and clean water to passengers and crew, continuous monitoring and maintenance are crucial to ensure the highest water quality standards are met.

- Aircraft potable water is the water used on board an aircraft for drinking, food preparation, hand washing, and other sanitary purposes.
- Ensuring the safety and quality of this water is of paramount importance, as contaminated water can lead to health issues for passengers and crew.
- The water systems on aircraft are designed to store, distribute, and typically heat water for onboard use.

### **Potable Water Summary**

- Used for onboard services like drinking, washing hands, and preparing food.
- Must meet strict health and safety standards to ensure it's safe for consumption.
  - $_{\odot}\,$  Airlines and airports often have rigorous testing and treatment processes to ensure the water's safety.
- Stored in separate tanks on the aircraft, specifically designed for potable water. These tanks are regularly cleaned and disinfected.
- Distribution: Distributed through taps in the lavatories and galleys. Some aircraft might also have water fountains or dispensers.

## **Typical Sources of Aircraft Potable Water:**



**Municipal Water Supply:** This is the most common source of potable water for aircraft. Airports usually have a connection to the local municipal water supply, which is treated and meets the standards for safe drinking water. This water is transferred to the aircraft using specialized vehicles or equipment.

**Bottled Water:** For drinking purposes, many airlines provide bottled water to passengers. This water is sourced from suppliers who adhere to bottled water quality standards. It's a way to ensure the quality of drinking water, especially in regions where the local water supply might be questionable.

**Ground Service Providers:** At some airports, especially in regions where the local water quality might be a concern, specialized ground service providers supply treated water to aircraft. These providers ensure that the water meets international standards for portability.

### **Challenges and Concerns:**

- Contamination during Transfer: Even if the source water is of high quality, contamination can occur during the transfer process. This can be due to unclean hoses, connectors, or water service vehicles.
- Onboard Storage: Bacteria or other pathogens can grow in the onboard water tanks if they are not regularly cleaned and disinfected.
- Varied Quality Standards: Water quality standards can vary from one country or region to another.
- Airlines need to be aware of these differences and ensure that the water they source meets the highest standards.

### **Regular Testing:**

• To ensure the safety of potable water, regular testing is essential. This can detect any microbial contamination or other issues before they become a health concern.

### **Concerning International and National Potable Water Regulations**

Aircraft potable water is essential for drinking, handwashing, and other onboard uses. Both international and national organizations have set guidelines and regulations to ensure the safety of potable water on aircraft.

### World Health Organization (WHO)

• Guide to Hygiene and Sanitation in Aviation addresses water, cleaning and disinfection, and waste disposal, among other topics.



 $_{\odot}\,$  For water, it provides guidance on the quality of water sources, water treatment, and distribution on board.

• Water Safety Plans (WSPs): WHO recommends the use of WSPs for managing risks to water safety.

• This approach ensures that water remains safe for consumption from its source to the point of use, including during storage and distribution.

## International Air Transport Association (IATA)

• IATA's Cabin Operations Safety Best Practices Guide includes best practices for ensuring the safety of onboard water. It addresses topics like water source selection, onboard treatment, and distribution.

• IATA provides guidelines for the safe servicing of aircraft potable water systems, including procedures for filling, disinfecting, and sampling.

# **USA Potable Water Regulations**

- The U.S. Environmental Protection Agency (EPA) and the Federal Aviation Administration (FAA) have regulations and guidelines in place.
- The EPA's Aircraft Drinking Water Rule (ADWR) sets national standards for onboard water systems, including regular disinfection and sampling.

## Key Aspects of Regulations:

- Regulations often specify the quality of source water that can be used to fill aircraft potable water systems.
- Guidelines may specify treatment methods, such as chlorination or UV treatment, to ensure water safety.
- Regular sampling and monitoring are crucial to ensure water remains safe. Regulations often specify sampling frequencies, methods, and acceptable limits for contaminants.
- Procedures for the regular disinfection of onboard water systems are often specified to prevent microbial growth.
- Crew and ground staff involved in water servicing often need training to ensure they follow best practices.

## Aircraft Potable Water Quality Testing

Ensuring the quality of potable water on aircraft is crucial for the health and safety of passengers and crew. Contaminated water can lead to outbreaks of gastrointestinal illnesses. Consider the following aspects essential to effective control.

## **Parameters for Testing:**

• pH: This measures the acidity or alkalinity of water. A pH level between 6.5 and 8.5 is generally considered safe for drinking.



• Turbidity measures the clarity of water. High turbidity can indicate the presence of pathogens, organic matter, or other contaminants.

• Microbial Content testing is crucial and testing for coliform bacteria, especially E. coli, is standard.

 $_{\odot}\,$  Their presence indicates that the water may be contaminated with human or animal wastes and could contain pathogens.

## Frequency and Methods of Testing:

• The frequency of testing can vary based on regulations and the source of the water.

 $_{\odot}\,$  For aircraft, it's common to test the water at regular intervals, such as monthly or quarterly, and any time there's a reason to suspect contamination.

### **Standard Potable Testing Methods Include:**

- Colilert Test: For detecting coliforms and E. coli.
- Turbidity Meters: For measuring water clarity.
- pH Meters: For measuring the pH level.
- Chlorine Test Kits: To ensure appropriate disinfectant levels.

### Interpretation of Results:

- If all parameters are within the recommended safe limits, the water is considered potable.
- Exceedances If any parameter exceeds the safe limit, immediate action is required.

 This might involve re-testing, notifying passengers and crew, providing alternative drinking water sources, and taking corrective actions to address the source of contamination.

• Regular testing allows for trend analysis. Even if results are within safe limits, a trend towards increasing contamination levels can be a warning sign.

### Water Treatment:

• Chlorination is a common method, but it's essential to ensure the right concentration. Too little, and it won't effectively kill pathogens; too much, and it can be harmful to drink.

• Filters can remove particulates and some pathogens. They need regular maintenance and replacement.

• Ultraviolet (UV) Treatment: UV light can kill or inactivate pathogens without adding chemicals to the water.

• In emergency situations, boiling water for at least one minute can kill most pathogens.



## **Cautions:**

Be cautious when filling aircraft water tanks. Ensure that hoses and equipment are clean and free from potential sources of contamination.

Water tanks on aircraft should be regularly cleaned and disinfected to prevent microbial growth.

Always document testing results, maintenance activities, and any corrective actions taken. This provides a record for regulatory compliance and helps in trend analysis.

If there is a potential issue with water quality, communicate it promptly to relevant stakeholders, including passengers, crew, and regulatory authorities.

## Next Steps

Please see the following training course <u>https://sassofia.com/course/aircraft-servicing-</u> <u>cleaning-and-detailing-2-day/</u> for questions or comments please email <u>team@sassofia.com</u>