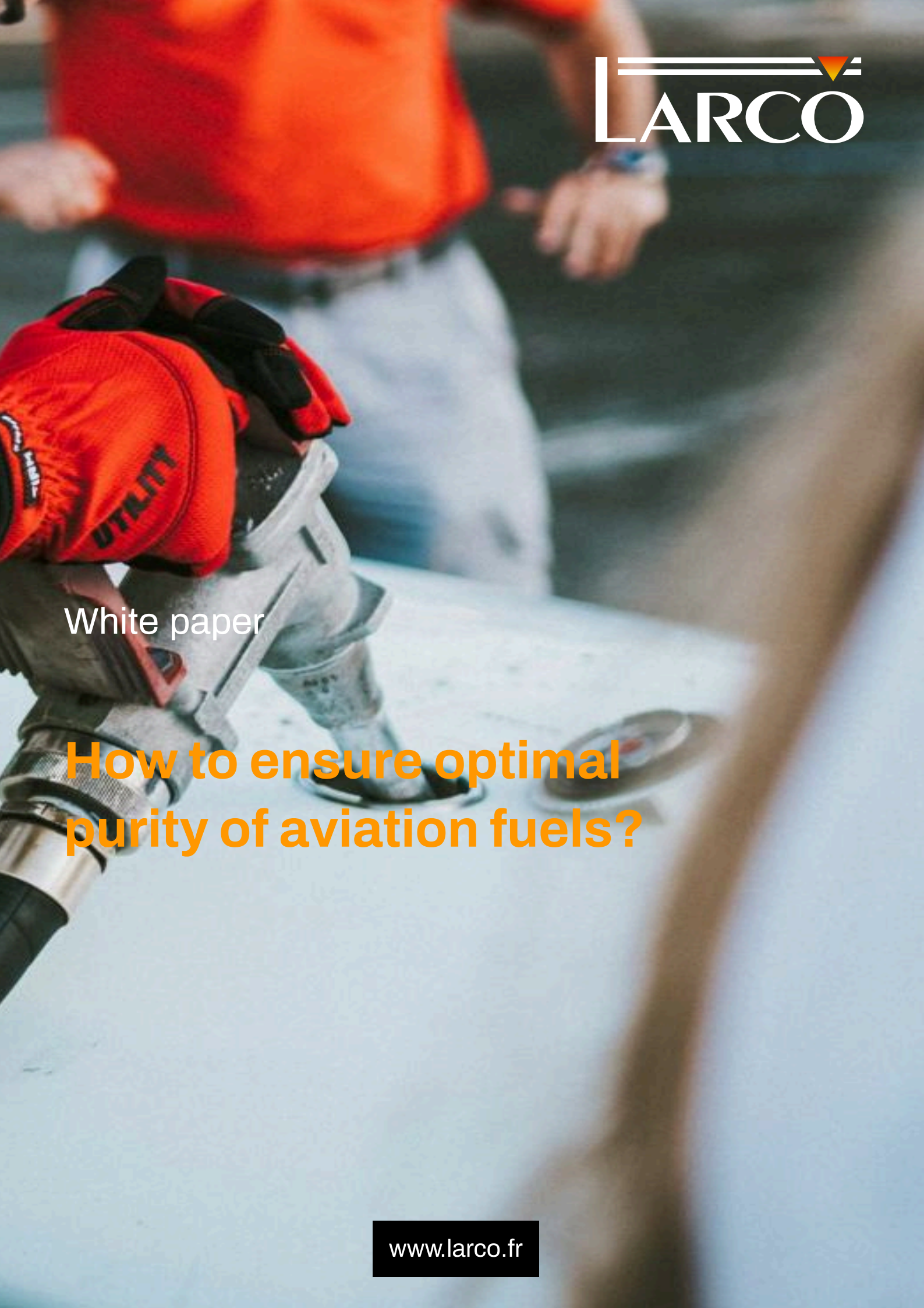


White paper

How to ensure optimal purity of aviation fuels?

www.larco.fr

How to ensure optimal purity of aviation fuels to meet the performance and safety requirements of aviation?

In the aviation industry, fuel quality plays a crucial role in flight safety and performance. Kerosene must meet extremely strict purity standards.

Aircraft engines require fuel that is completely free of contamination in order to operate at their best and ensure safe flights—even under extreme conditions.

Presence of water

One of the most feared threats in aviation is the presence of water in the fuel. At high altitudes, temperatures drop drastically, and any trace of residual moisture may freeze, clogging filters and disrupting fuel supply.

Even minimal contamination can have serious consequences, such as engine failure, which can endanger the safety of passengers and crew.

Other contaminants

But water is not the only contaminant that can affect kerosene quality. Impurities such as solid particles or hydrocarbon residues from storage infrastructure can also alter the fuel's composition.

These pollutants can lead to inefficient combustion, clogged filters and injectors, and accelerated engine wear—ultimately compromising engine performance and reliability.

Contamination can occur at various stages of the supply chain: storage, transport, transfer between tanks, and aircraft refueling.

Floating suction unit: an essential solution to ensure kerosene purity

The Joint Inspection Group (JIG), a leading authority on aviation fuel quality, sets strict recommendations to ensure that kerosene meets the highest standards.

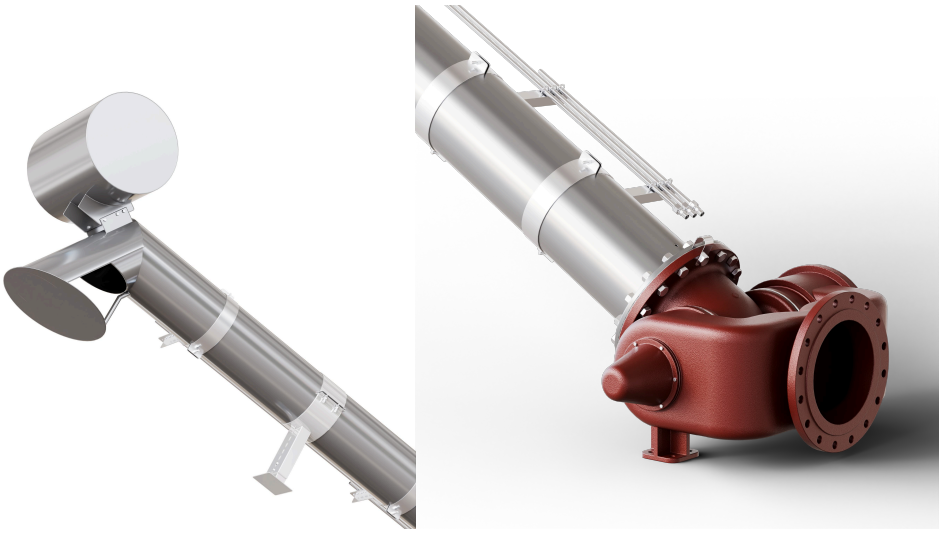
Among these recommendations, the use of a floating suction unit is considered an essential solution for airport depots. This technology draws fuel from the cleanest area of the tank, thereby avoiding impurities that tend to settle at the bottom.

How does a floating suction unit work?

A floating suction unit is a device designed to draw kerosene from the optimal level within the tank. It operates on the principle of natural settling, where heavier particles and water tend to accumulate at the bottom of the tank, while the purest phase remains near the surface.

Thanks to a float, the suction point constantly adjusts to the fuel level, ensuring that only uncontaminated product is drawn.

In addition to preserving product purity, using a floating suction unit reduces settling time by up to 70% before loading, thereby optimizing logistics operations and shortening aircraft refueling times.



The LARCO floating suction unit

Capacity and adaptation to storage volumes: The floating suction unit must be sized according to the required flow rate and tank capacity. LARCO offers models ranging from 2 to 30 inches, ensuring compatibility with all types of installations—from small tanks to high-flow infrastructure.

Compatibility with floating roofs: Some tanks are equipped with floating roofs to limit evaporation and contamination. The floating suction unit must be designed to operate without interfering with these devices. LARCO's solutions are adapted to tanks with floating roofs, ensuring efficient extraction without compromising the integrity of the installation.

Flow optimization and pressure drop reduction: A well-designed system prevents excessive restrictions and reduces the load on pumps. LARCO's floating suction unit uses a symmetrically designed swivel joint that limits pressure drops and eliminates elbows, improving efficiency and extending system lifespan.

Reliability and robustness: To ensure stable and safe operation, the floating suction unit must be made with durable materials and maintain consistent buoyancy. LARCO models can be fitted with unsinkable floats, guaranteeing suction at the highest product purity level and avoiding the risk of drawing in water or impurities.

Real-time monitoring and tracking: The LARCO floating suction unit can be equipped with an external position indicator, allowing operators to instantly know the position of the floating suction. This feature enables simple and effective real-time monitoring of system operation.

Fuel quality verification: To ensure kerosene remains free from impurities at all times, some floating suction units—like those developed by LARCO—can be equipped with a sampling device, allowing for easy and regular monitoring of fuel purity at various levels.

Interested in the floating suction unit?

contact@larco.fr

+33-1-39-47-12-22

www.larco.fr