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WSI - market guide

Why measure water separation?

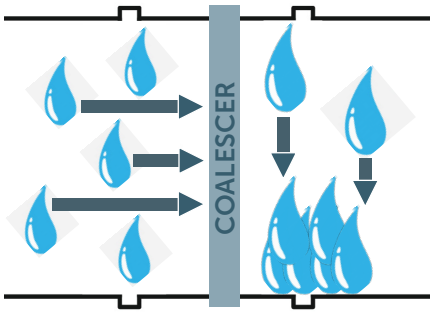
- For fuel quality assurance throughout the supply chain *(see 'from refinery to wing')*

Why is water removal so important?

- Water provides an environment for bugs to grow, resulting biomass can block filters
- When water forms ice it can restrict fuel flow
- Particulates can cause excessive wear in sensitive fuel system components or block protective filters

Water coalescence

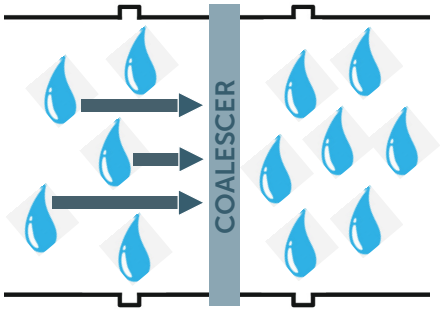
- Water molecules are termed 'polar' because they have positive and negative charges that join up with each other
- In a storage tank, dispersed water droplets bump into each other and coalesce
- The coalescence process forms larger droplets that settle to the bottom of the tank and can be drained off
- Coalescing filters can speed up this process



Coalescence: the joining or merging of elements to form one mass or whole

Surfactants

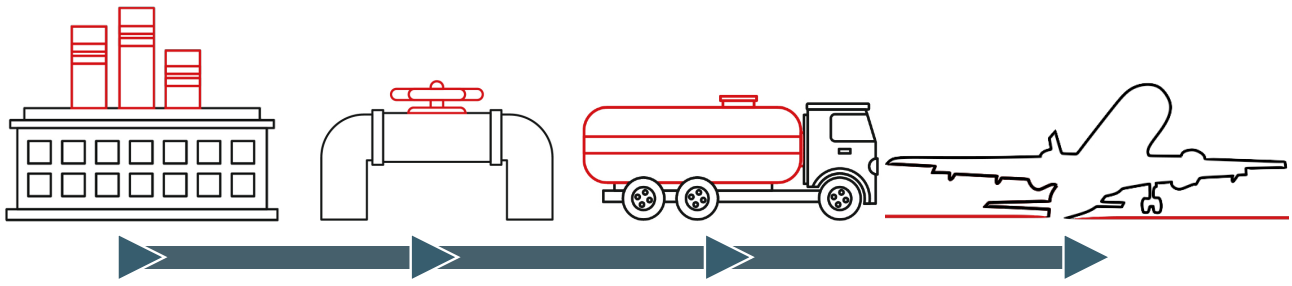
- Surfactants or 'surface active agents' are soap or detergent like compounds
- They can be introduced from refinery processes, pipeline or truck cross contamination
- They can coat water droplets or the polar fibres in coalescer elements and make them look non-polar
- The result is droplets don't coalesce with other droplets and coalescer elements are 'disarmed'
- Water droplets stay in the fuel stream



How does the WSI SA9000-0 help?

- The WSI rapidly and precisely measures the presence of surfactants
- This helps to predict jet fuel coalescence failure and therefore water separation

From refinery to wing



Refinery run down lines | Pipeline distribution terminal | Marine and truck offloading/ loading terminals | Field base operators (airports)

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