

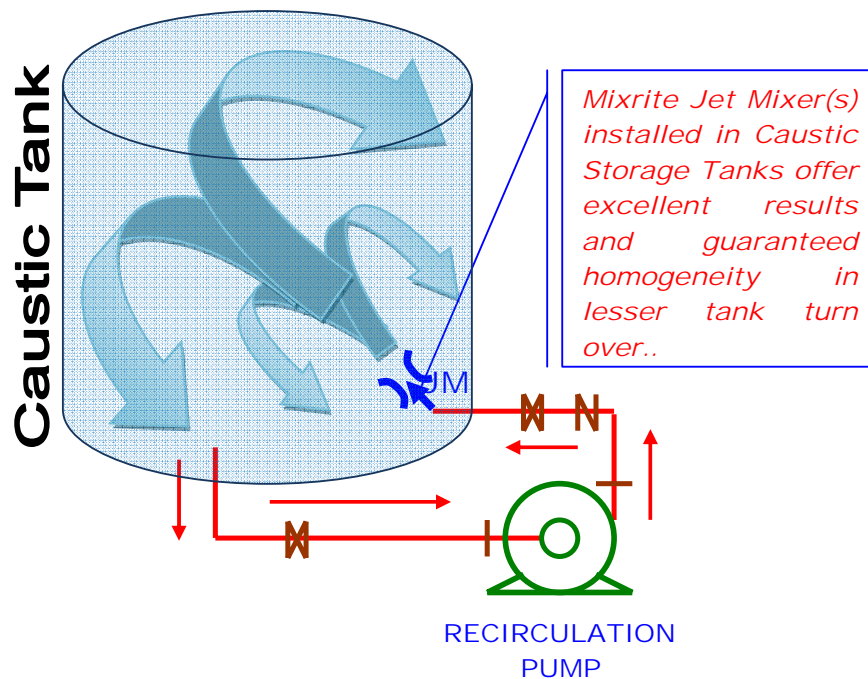
# — MIXRITE — Caustic Homogenization

case study



## PROBLEM

Caustic Soda Solution plays an important role in many industries such as: pulp and paper, textiles, soaps and detergents, bleach manufacturing, petroleum products, aluminum, and the Chemical Processing Industry (CPI). In majority cases, it is observed that the caustic storage tanks have concentration gradient. This results in supply of inconsistent caustic to various users of caustic in the Plant. In most cases, Recirculation pump is provided on caustic storage tanks, however this does not solve the problem.



## MIXRITE MIXING SYSTEMS

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## **SOLUTION**

Mixrite Jet Mixers are designed specifically for the above application and are tailor made to suit existing installation. Jet Mixers in this case are designed taking into account the specifications of existing Recirculation Pump so that no major modification have to be done to existing installation. The Homogenization time of storage tank can be reduced by 70% with Jet Mixer when applied on recirculation discharge line.

## **HOW IT WORKS**

The velocity difference between the jet and the secondary liquid creates a mixing layer of jet boundary. This mixing layer grows in the direction of jet flow, entraining / mixing the bulk liquid into the jet. The Recirculation Pump Discharge is pumped through a header into one or multiple jet mixers submerged within the tank depending on the tank geometry. The static pressure at the entrance of the nozzle is converted into kinetic energy by allowing the fluid to flow freely through a convergent type nozzle. As the operating fluid exits the nozzle, it entrains liquid from the tank through the suction chamber.

The operating liquid along with entrained liquid then undergoes thorough mixing in the parallel section of the diffuser. The divergent portion of the diffuser helps in converting the velocity head to pressure head at the discharge end of the mixer. The discharge flow continues the mixing action of the liquid and imparts uniform mixing throughout the tank.

## **SALIENT FEATURES:**

- Simple And Compact In Construction.
- Low Capital And Operating Cost As Compared To Conventional Agitators.
- No Moving Parts And Hence Maintenance Free.
- Easy To Install.
- High Energy Efficiency.
- Designed To Have Practically No Dead Spots In The Tank.
- High Degree Of Operational Safety.
- High Degree Of Mixing Per Unit Of Expended Energy.

## **CONCLUSION**

Mixrite Jet Mixer designed for caustic homogenization delivers excellent level of homogeneity within the tank. As these mixers are designed to suit the existing Pump, it is very easy to retrofit Jet mixers in existing caustic storage tanks without making major modification. The mixers have no moving parts and hence require no attention once they are installed.

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