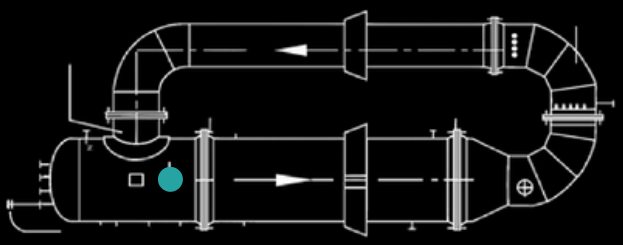
mPACT2WO a molex Business

CASE STUDY

SEGMENT: CHEMICALS CORPORATION

mCluez™ Corrosion Monitoring

Early Corrosion Detection for the EDC Reactor Cooler



Leveraging mCluez™ for Enhanced Asset Reliability Through Proactive Corrosion Monitoring

PROBLEM

A leading US petrochemical operator identified high corrosion rates in the ferrule tube of the Ethylene Dichloride Reactor Cooler originally made from A179 carbon steel, risking asset integrity.

ASSET

The original ferrule tube material, A179 carbon steel, a standard seamless cold-drawn tubing, showed high corrosion rates in service. It was replaced with A513 alloy steel, chosen for its superior corrosion resistance and enhanced durability.

ALERT

The fixed equipment team observed that corrosion rates displayed on the mCluez™ dashboard were significantly higher—approximately 70 mils per year (mpy)—than the expected corrosion rate for the newly installed A513 alloy steel ferrule tube of the EDC reactor.

INVESTIGATION

In early 2025, corrosion rates of approximately 20 mils per year prompted the replacement of the ferrule tube material from A179 to A513 to improve corrosion resistance. However, mCluez™ data later revealed corrosion rates spiking to 70 mpy after the switch, confirming significant deterioration. Similar increases were observed in two other EDC reactor coolers with the same material change, indicating a systemic issue.

RESULT

Early detection of increased corrosion thickness by mCluez™ enabled prompt corrective action. These insights help optimize maintenance, reduce costs, and improve safety.

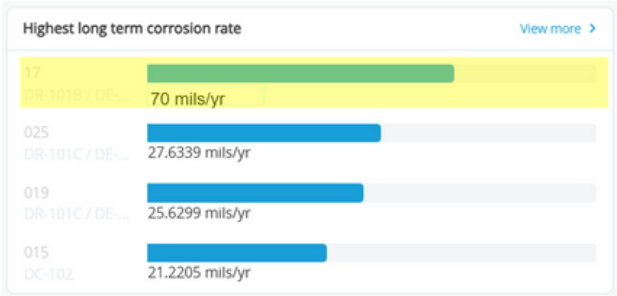


Figure 1: mCluez™ dashboard reveals elevated corrosion rate in replaced ferrule tube

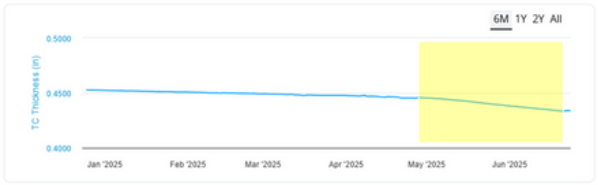


Figure 2: Thickness trends reveal increased corrosion rate following ferrule tube replacement

TRANSFORMATION

mCluez™ provides continuous corrosion monitoring, enabling prompt corrective actions before severe damage occurs. These insights help optimize maintenance, reduce repair costs, and enhance safety. By shifting corrosion management from reactive to proactive, mCluez™ has transformed into a powerful tool for improving asset reliability and operational efficiency.

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Contact us at **mPACT2WO@molex.com**
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