Question 12: The industry is recently discussing alternative metallurgy specifications for HF alkylation units. What is your experience on this issue?

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One metallurgy issue that has been a hot topic in recent years is the specification for low Residual Elements (RE) in carbon steel for HF service. Based on recommendations made in NACE paper 03651, ASTM developed Supplemental Specifications for carbon steel that can be called out in purchase orders for steel that is to be used in HF Alky service. However, steel that meets those Supplemental Specifications has sometimes been difficult and/or expensive to procure. Recently, there have been one or two suppliers that have made a commitment to maintaining a supply of steel that meets the low RE spec, but price and availability are still a bit of a concern.

Normalization of the steel is one of the requirements listed in the ASTM Supplemental Specifications mentioned above. Many prominent metallurgists agree that Normalization of the steel is not beneficial toward resistance to corrosion from HF and it has been suggested that the requirement for Normalization be dropped from the ASTM Supplemental Specs for carbon steel in HF service.

The use of Hastelloy C-276 in HF service has increased significantly in recent years. In most cases, it does not appear to be significantly better or worse than Monel from a corrosion standpoint, but it is a much harder material than Monel and it is often easier to cast, so it is an attractive alternative to Monel in some specific cases even though the material cost is typically somewhat higher than Monel. Hastelloy C22 and C-2000 has also been successfully used in HF service on a very limited scale.

Tags

Alkylation

Corrosion

HF Alkylation (HF Alky)

Year

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