

Case Study – Effect of corrosion in API reactor

The Client

Janssen Pharmaceuticals, Little Island, Cork

The Problem

A new API product was recently transferred to the Janssen Pharmaceutical plant in Little Island from its sister site in Belgium. However it was noticed that extensive pitting corrosion on the inside of the existing SS316 reactor was taking place. It was decided to firstly test the corrosive nature of the solvent system on SS316 and then to identify which materials show greatest resistance to the solvent system.

The Solution

At Glantreo we have access to state of the art microscopy equipment. Several reactor grade steel coupons were tested under reaction simulated reactor conditions in order to determine which alloy was most resistant to the reaction condition being utilised on site. Example of the microscopy results are shown in Figure 1. As can be quite clearly seen extensive ‘pitting’ can be observed for SS316 (original reactor design), however no corrosion was noticed in the Hastelloy C276 sample. A number of other steels were also tested. Extensive corrosion in reactors can lead to a slight discolouration of an API.

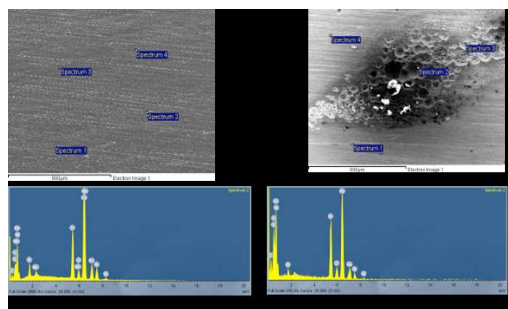


Figure 1 SEM/EDX profile of Hastelloy C276 and SS316

TimeLine

Due to the extensive workload involved in this project (from both parties) this analysis work was conducted over a 2 week period. After an initial meeting on the Janssen site a project plan was drawn up with clear milestones and deliverables. A final report and presentation of the data was given to Janssen at the end of the project, outlining the main conclusion of the work and recommendations for reactor design.

Benefit to the Client

- ensuring API is free from corrosion particulates
- Increased reactor lifetime
- Clear understanding of corrosion chemistry

Testimonies

....Glantreo had a rapid turn around time with well presented results and conclusions....**GSK 2008**

....We got a very professional response and with the company being so close to the site the turn around time was excellent.....**Novartis 2007**

....efficient, professional, and friendly attitude. Glantreo provide a service that is greatly needed within Ireland.....**Celtic Sea Mineralis 2007**

Glantreo Ltd provides a fast and confidential materials analysis service. We specialise in the analysis of unknown inorganic/organic materials that may be found in sediment tanks, pharmaceutical powders or on food products. Applications for consultation are welcome and will be discussed on a one-to-one basis.