CATALYST REACTIVATE

# How a reactivated hydrogen peroxide catalyst restored isolator aeration on a Danish filling line

PRODUCTION CASE STUDY

A reactivated hydrogen peroxide catalyst was installed on a major filling line in Denmark. It addressed the observed catalyst capacity challenge and has remained in commercial production since installation. It is the first catalyst Catalyst Reactivate has returned to service on an active commercial line, and two more installations are in progress.

01

## The capacity challenge

The installation is a high-capacity vial filling line equipped with an isolator. Reduced catalyst capacity had been observed after only a few months of use, affecting hydrogen peroxide removal during aeration.

02

## Aeration outside the validated range

Aeration times became prolonged and the cycle was no longer reproducible within its validated limits. Modern isolators with automatic $H_2O_2$ endpoint control extend aeration if the specified low $H_2O_2$ level is not reached within the validated cycle time. In this case, investigation pointed to reduced catalyst capacity as the cause of the extended aeration. Reaching the $H_2O_2$ endpoint after an extension does not, by itself, establish compliance with the validated cycle.

03

## The reactivation approach

Catalyst Reactivate treated an existing catalyst for reuse. The reactivated unit, prepared for evaluation, was released to the production line under the site's change control when the capacity issue arose.

04

## The production outcome

Following installation, the reactivated catalyst addressed the observed capacity challenge. The unit remained in use on the line, providing a practical reference for catalyst reactivation in commercial production.

*Performance on other installations must be assessed against their operating conditions and acceptance criteria.*

05

## Residual testing

Airborne metals were sampled on mixed cellulose ester (MCE) filters following ISO 15202-1 and analyzed by a validated sector-field ICP-MS (ICP-SFMS) method at an accredited laboratory. This assessment addressed potential release of metals from the treated catalyst and supported the quality review for reuse. Results were assessed against ICH Q3D(R2) limits for platinum and palladium. Conclusions are specific to the elements analyzed and the conditions tested.

06

## Planned annual maintenance

As a preventive maintenance service, catalyst reactivation is carried out during the planned annual shutdown. Reactivation and performance testing help maintain consistent catalyst performance between service intervals and reduce the risk of unplanned production shutdowns caused by insufficient catalyst capacity. Reusing suitable catalysts can also extend their useful life and reduce replacement needs. Reactivated units are typically returned within days.

## STOP REPLACING. START REACTIVATING.

To discuss suitability for your isolator, book a free 30-minute technical screening at **catalystreactivate.com**.