

■ **Course title:**

# Methanator Feed Preheater Flange Leak and Explosion Case Study

## A Process Safety Management Approach

■ **Introduction:**

Case Studies training courses will present various incidents in fertilizer industry detailing the incident causes, consequences, and lessons learned. This training series introduce a process safety analysis of each incident and the impact in Operational Excellence program.

This incident is related to fire caused by a gas leak at the outlet flange of the methanator feed heater leading to a jet fire impinging on a pipe followed by explosion. The instrument cables and other hardware were damaged forcing a plant shutdown.

Similar leaks, in the same location was noticed by us in other ammonia plants leading to development of this training course.

*Duration 1 hour.*

■ **Course outline:**

### Lessons

1. Introduction
2. General plant description
3. Process Unit Description
4. Incident Description
5. Cause of the Incident
6. Consequences of the Incident
7. Lessons Learned
8. Process Safety Analysis
9. Impact on Operational Excellence
10. Conclusions

Author(s) / Trainer(s):



### Dan Cojocar

Ammonia Process Safety Consultant,  
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Dan has over 20 years of operational, engineering and consultancy experience in ammonia plants and LNG projects.

He started his career as a field operator at ammonia plant and worked his way up being uniquely exposed to Operator, Licensor and EPC worlds on his professional path. His experience in all project phases starting from Concept and Front End Engineering (FEED) through Detailed Design, Commissioning and Operation is extensively enhanced by his Process Safety expertise. All of that brings Dan to founding Fertilizer Industrial Services – the UK based company providing Owner Engineer support to fertilizer companies developing greenfield and revamp projects. The team experience is also shared with operators and engineers worldwide via online training courses of Fertilizer Academy platform, and ammoniaknowhow.com industry forum.

Dan is a Chartered Chemical Engineer of The Institution of Chemical Engineers IChemE, a Registered Professional Engineer of Queensland (RPEQ) and senior member of American Institute of Chemical Engineers (AIChE).

#### ■ Learning outcomes:

By the end of this training course you will understand:

- The causes and consequences of the gas leak that generate a jet fire and pipe explosion leading to complete shut-down of an ammonia plant.
- How to prevent such incident by incorporating the lessons learned in your process safety management system

#### ■ Who will benefit:

Operators, process engineers and maintenance specialists involved in operation, maintenance and inspection of ammonia plants

#### ■ Course materials:

- Hand-out presentation slides in PDF format

#### ■ Price:

**€ 120**

#### ■ Discounts:

- 2 places – 10% discount
- 3 places – 15% discount
- 4 or more places – 20% discount.

#### ■ In-company training:

This course is also available as an in-company course (face-to-face or online) where content can be customised to meet your organisation's specific needs and delivered on a date/location that suits your requirements.

[Contact us](#) for more information.

#### ■ Training code: CAST03