

■ **Course title:**

# Introduction to Ammonia Plant Process Units

■ **Introduction:**

Ammonia is produced from synthesis gas containing hydrogen and nitrogen in the ratio of approximately 3:1. This training course describes the process units, operation parameters and theory of the reactions involved in ammonia production.

The purpose of this training program is to provide operators and engineers with an introduction to ammonia process units and get them familiarized with the ammonia plants.

*Duration 7 hours.*

■ **Course outline:**

## Lessons

1. Commercial Ammonia Processes
2. Natural Gas Desulphurisation
3. Natural Gas Compression Unit
4. Steam Reforming
5. Waste Heat Recovery
6. Process Air Compressor
7. Secondary Reformer
8. CO - Shift Conversion
9. CO<sub>2</sub> removal
10. Methanation
11. Syngas Compression Unit
12. Ammonia Synthesis Unit
13. Ammonia Refrigeration
14. Ammonia Recovery
15. Steam Generation System

■ **Learning outcomes:**

By the end of this training course you will understand:

- The history of commercial ammonia plants

Author(s) / Trainer(s):

## Venkat Pattabathula

Ammonia Process Consultant



Venkat Pattabathula has more than 35 years of experience in nitrogen manufacturing industry in various parts of the world such as Asia, North America, and Australia.

Extensive experience in process design and engineering of world scale ammonia/urea projects valued at more than US\$ 600 million engineered by different process licensors and EPC companies.

A Technology Manager experienced in being responsible for economic evaluation and technology selection in plant upgrades and performance guarantees on all ammonia plant related projects.

## Dan Cojocar

Ammonia Process Safety Consultant



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](http://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).

- The purpose of the main units in ammonia plants
- Theory of the reactions in each unit and process parameters
- What are the main equipment in each ammonia plant unit

■ **Who will benefit:**

Employees who are responsible or share responsibility for the ammonia plant operation, maintenance and inspection: plant operators, process engineers, mechanical, maintenance, instrumentation and inspection engineers.

■ **Course materials:**

- Hand-out presentation slides in PDF format

■ **Price:**

**€ 700**

■ **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:** AMO02