

5-day Training Program for Urea Engineers

23-27 July 2012 in Dubai

Group Discount:

Participate with 5... Pay for 4

5-day Training Program for Urea Engineers

Designed for Process, Operational, Mechanical, Maintenance, Instrumentation, Process Control and Inspection Engineers working in any kind of Urea Plant.

For New and Experienced Engineers, covers All Topics a Urea Engineer needs to know.

Parallel Training Modules for Process/Operational and Mechanical/Maintenance to facilitate detailed discussions.

Detailed discussions of numerous Troubleshoot and other Corrosion / Reliability Cases.

Including Guest Lectures from Industry Experts.



Including a Certificate of Completion.

Enroll Now, Class Sizes are Limited !

Previous Participants say: *"Rating is Very Good / Excellent"* and *"Nothing was missing in this course"*

UreaKnowHow.com

An internet platform to exchange technical information within the urea industry with the target to improve the performance and safety of urea plants

Partnerships




Round Tables



> 1500 Members representing >90% of all urea plants worldwide

Largest network in urea industry



E-library



Biweekly a Technical paper



Mr. Giel Notten

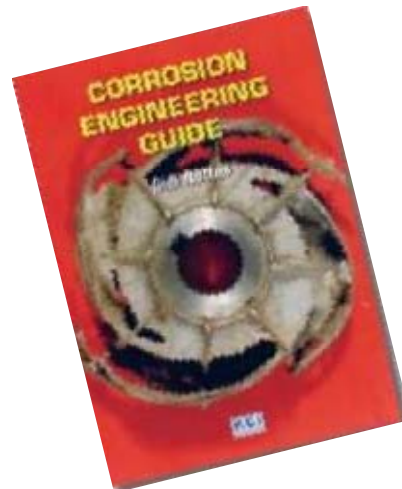
Mechanical Engineer

38 Years DSM Corrosion and
Materials

7 Years NTT Consultancy

Co-founder of Safurex®

Author of the Corrosion
Engineering Guide





Mr. Mark Brouwer

Process Engineer,
University of Technology Eindhoven,
The Netherlands

7 years ethylene plant DSM
(revamp projects)

14 years Stamicarbon
(revamp projects, services, hardware supply)

Founder of UreaKnowHow.com (March 2009)

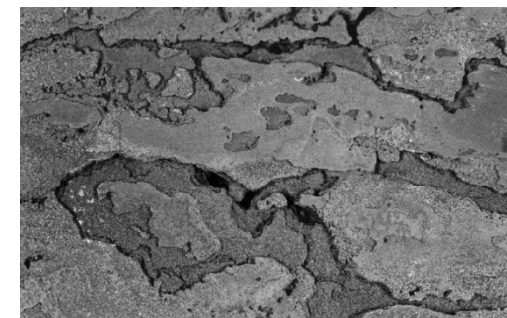
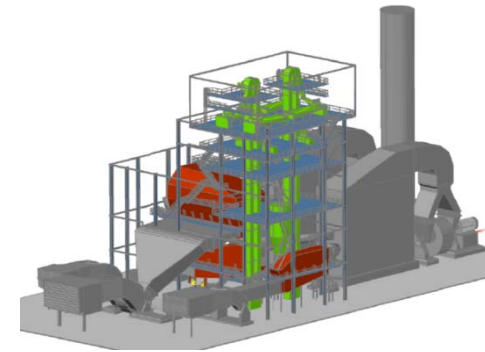
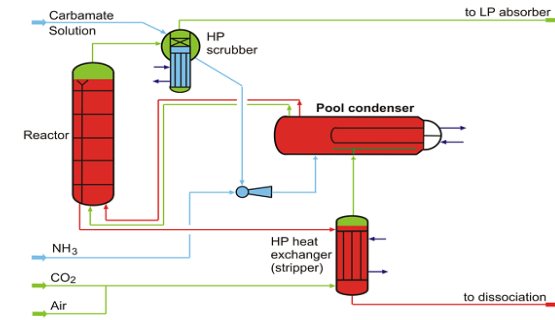
- ✓ Introduction Urea Process Technologies
- ✓ Corrosion theory & Overview of various corrosion phenomena in urea plants
- ✓ Fluid Bed Granulation
- ✓ Thermodynamics and Phase diagrams
- ✓ Operational aspects and Troubleshooting techniques
- ✓ Safety, Health & Environmental aspects
- ✓ Historical Overview of Materials of Construction in urea plants
- ✓ High Pressure Synthesis equipment
- ✓ High Pressure Piping & Valves
- ✓ Corrosion Inspection Techniques and Inspection Program
- ✓ CO₂ Compressors design and operational issues
- ✓ Revamp and debottlenecking technologies
- ✓ Discussion of numerous Troubleshoot and Corrosion / Reliability Cases
- ✓ Latest Innovations

Module 1: Introduction Urea Process Technologies

- Urea product
- General urea market information
- History of process technologies
- Various process technologies currently in operation (Conventional, Stamicarbon, Saipem, TEC, UCSA)
- Challenges in urea plants (thermodynamics, corrosion, emissions, urea efficiency)
- Discussions

Module 2: Corrosion

- Theory
- Overview of various corrosion phenomena in urea plants
- Process side (passive, active, condensation, crevice, stress corrosion cracking)
- Atmospheric corrosion (corrosion under insulation)
- Corrosion phenomena in cooling water and steam systems
- Several cases will be presented
- Discussions

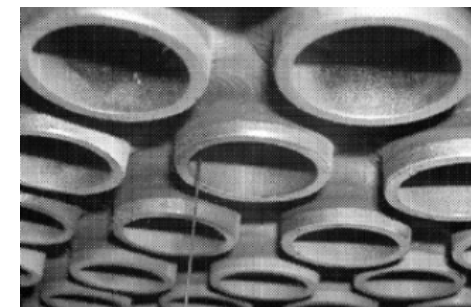
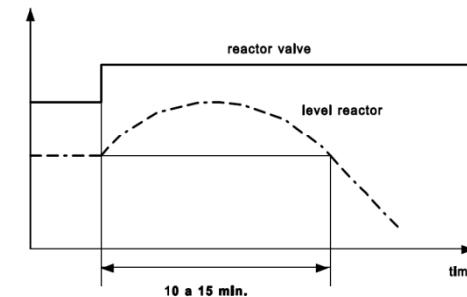
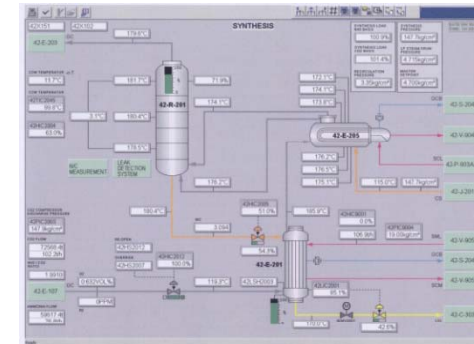


Module 3: Operational aspects

- Control philosophy
- Key performance indicators
- Main calculations
- Key analysis for process control
- Key analysis for corrosion control
- What to do when ...
- Discussions

Module 4: Troubleshoot cases

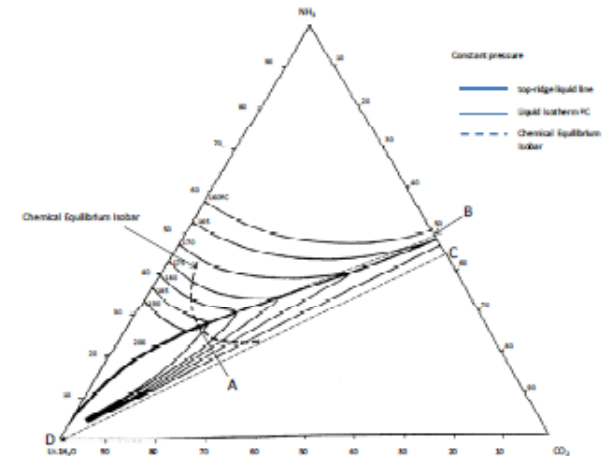
- Several Troubleshoot cases will be presented and discussed in detail
- Participants can also introduce cases (please take with you design documents and fabrication drawings in order to study the cases more in detail)
- Discussions



Parallel session A: Process & Operational

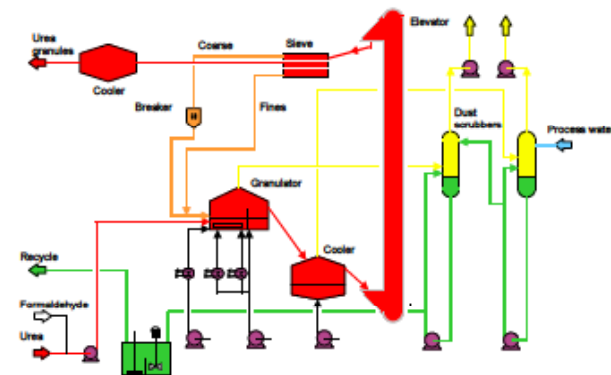
Module 5a: Thermodynamics and Phase diagrams

- Thermodynamics
- Phase diagrams
- Parameters (CO_2 conversion, α , N/C, H/C, H/U)
- System pressure, inert pressure
- Liquid isotherms
- Top ridge line
- Fraction approach to equilibrium



Module 6a: Fluid Bed Granulation

- Principles of granulation
- Critical operating parameters and its control
- Operational problems
- Troubleshooting
- Urea Product quality issues
- Discussions



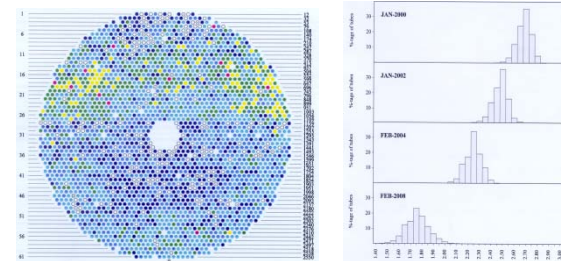
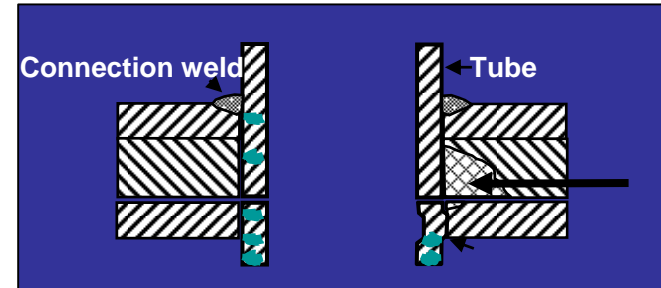
Parallel session B: Mechanical & Maintenance

Module 5b: Materials of Construction in urea plants

- Austenitic, duplex
- Safurex®
- Titanium, Zirconium
- Bimetallic, OmegaBond
- DP12 and DP28W®
- Discussions

Module 6b: Corrosion Inspection Techniques

- High Pressure Equipment
- High Pressure Piping
- Inspection techniques
- Risk Based Inspection
- Life Time studies
- Setting up Inspection Programs
- Discussions

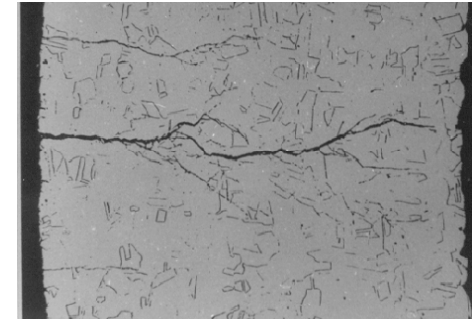


Module 7: High Pressure Synthesis equipment

- Process aspects
(liquid divider, fouling)
- Mechanical aspects
(liners, overlay welding, chlorides, nitrates)
- Leak detection systems for loose liners and tube failures
- Corrosion cases caused by failing leak detection systems
- How to assure a high reliability of critical equipment
- Discussions

Module 8: Safety, Health & Environmental aspects

- Reliability aspects
- Safety and Health concerns
- Emission sources (continuous and discontinuous)
- Flare systems, containment systems
- Explosion diagrams
- Safety valves
- HAZOP & SIL classification
- Discussions

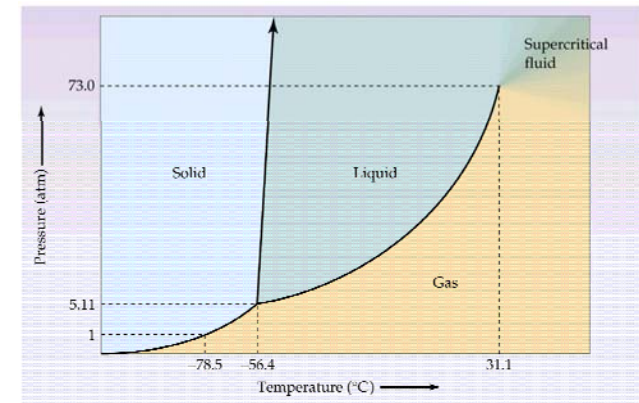


Module 9: HP Piping & Valves

- Base materials
- Features HP Control and Manual Valves
- Maintenance practices
- Troubleshooting cases
- Typical failure modes HP Piping
- Safety Incidents
- Discussions

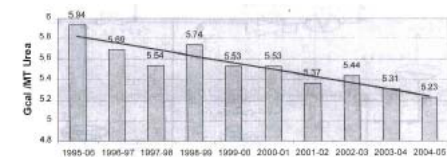
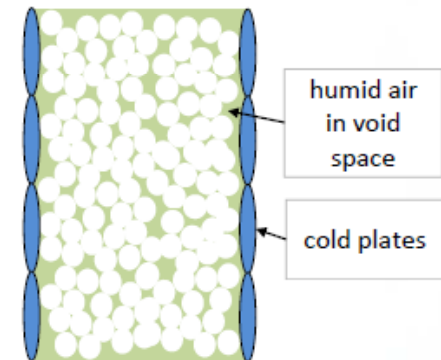
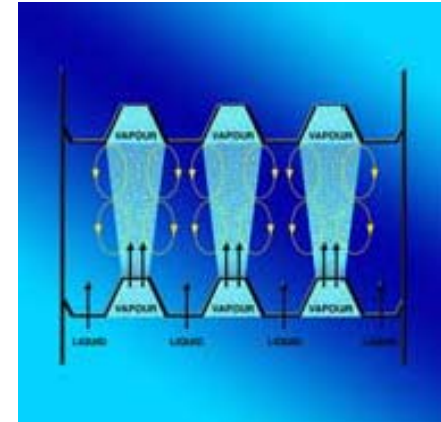
Module 10: CO₂ Compressors

- Phase and Mollier Diagram CO₂
- Different Type of CO₂ compressors
- Revamping CO₂ Compressors
- Operating problems in CO₂ Compressor
- Troubleshooting Compressor problems
- Discussions



Module 11: Revamp technologies

- Capacity increase
- Energy conservation
- Emission reduction
- New developments
- Solid heat exchanger revamp opportunities
- Energy reduction management
- References
- Examples
- Discussions



Examination and Certificate

Evaluation



Hand out and reference documents

- All presentations will be prepared in Microsoft Powerpoint and distributed as hand outs in digital form (acrobat format).
- Several topics will be elaborated by means of technical papers, which will also be distributed in digital form (acrobat format).
- Corrosion Engineering Guide, written by Mr. Giel Notten.



Please register me for the 5-Day Training Program for Urea Engineers on 23-27 July 2012 in Dubai

First Name :
Last Name :
Job Title :
Company :
Telephone :
E-mail :

For more information, contact Mark Brouwer, M: +31 6 295 76 845 or e-mail: mark.brouwer@ureaknowhow.com

Registration fee: EUR 3.950,-- + 19% VAT (if applicable)
Participation is confirmed only after received Registration fee
Fee is including lunches/refreshments and excluding travel/housing costs

UreaKnowHow.com bank account information:

RABOBANK Maastricht e.o.	BIC: RABONL2U
P.O. Box 200	Account number: 1402.09.840
6200 AE Maastricht	IBAN: NL07 RABO 0140 2098 40
The Netherlands	

**Enroll Now,
Class Sizes are
Limited !**

Please send the above information or a duly completed Registration Form to info@ureaknowhow.com

Q: If I enroll and pay for the Training but am unable to attend, will I receive a refund?

A: The Training Fee will be refunded for cancellations made no less than four weeks before the commencement of the program. If cancellation occurs less than four weeks prior, 90 percent of the paid fee will be returned, and 10 percent, will be retained to cover administrative costs.

Q: I am unable to attend the upcoming training program. Can I still receive a copy of the presentations, papers and reference material?

A: Unfortunately, presentations and reference materials are only available to participants who attend a training program.

Q: Does UreaKnowHow.com assist with visa applications?

A: Yes. When a visa is required to attend the Training, UreaKnowHow.com sends a letter of support to the concerned consulate and requests the issuance of a visa.

Q: Would it be possible for UreaKnowHow.com to provide an invitation letter upon registration but before paying the Training Fee?

A: No. An invitation letter is only provided to participants upon receipt of his/her Training Fee.

Q: Does UreaKnowHow.com arrange ground transportation for airport transfers?

A: UreaKnowHow.com is not responsible for any transportation outside of the training program dates/hours. This includes airport transfers, sightseeing, shopping, dinner, etc.

Q: Does UreaKnowHow.com offer free-time activities for program participants?

A: UreaKnowHow.com does provide information about local attractions and events that may be of interest to participants. However, all costs of such activities are borne by participants.

Q: Does UreaKnowHow.com provide follow-up support to participants with questions after the Training Program?

A: Yes. UreaKnowHow.com encourages participants to maintain a relationship and is pleased to provide advice or answer post-program questions.