

# An Introduction to EPSC



**EPSC**

THE PROCESS SAFETY NETWORK

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After Bhopal  
“Protecting Society  
Together”

Legitimate  
Network



**EPSC**

THE PROCESS SAFETY NETWORK

Industrial Best  
Practices

# Topics

SQRA

Pharma:  
Dust &  
Statics

Loading &  
Unloading

PS  
Developments



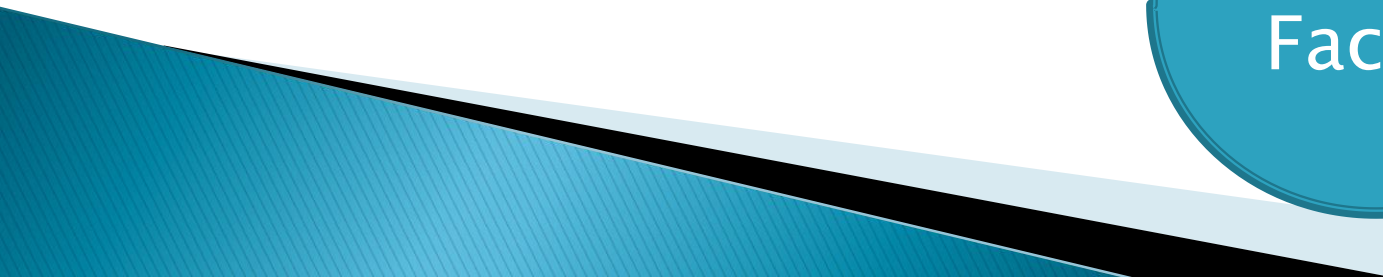
**EPSC**

Digitalization

Fire Safety  
FABIG

Human  
Factor

PS  
Fundamentals



# The Network

- ▶ Two day Technical meeting in spring and autumn
- ▶ Valuable information (documents) with web access
- ▶ Working Groups
- ▶ Training material

# Organisation

- ▶ Chosen board: DSM, BASF, Bayer, Total, LyondellBasell
- ▶ Founding members: Dechema & EFCE
- ▶ Operation Manager & Secretary at Dechema
- ▶ Full members
- ▶ Associate members



# Conferences

Big Data & Digitalization



3<sup>rd</sup> European Conference on **Process Safety** and **Big Data**  
*Augmenting Process Safety Performance through  
Big Data and Digitalization*  
November 14 & 15 2018 in Frankfurt, Germany

European Conference on Plant &  
Process Safety



Participation in: Achema, Hazards,  
EuroCorr, Loss Prevention



Processes with Hazardous Chemicals  
Practical Learnings

# Learning Sheets



## Imploded Storage Tank

EPSC Learning Sheet, June 2019



### What Happened:

After cleaning with steam a tank was quenched with cold water to shorten the cooling time (not normal practice). The tank vent was not calculated for the vacuum resulting from this rapid quenching operation, resulting in a collapsed tank (without liquid release).



Imploded storage tank

A larger vent size was installed after the incident



### Aspects:

- Atmospheric storage tanks are not designed to withstand external pressure on the tank wall. A pressure as low as 20 mbar below atmospheric pressure can cause tank damage
- The force on the wall can be high even at low pressure as the tank wall surface area is very large:  $\text{Force} = \text{Area} \times \Delta P$
- Consider all scenarios resulting in pressures below atmospheric and make sure vent sizes are adequately designed for these, including abnormal operations
- Make sure vents and safety devices remain operable: fouling bird nests, plastic bags, have all caused tank implosions

Atmospheric tanks are usually not designed for under pressures and can be damaged easily

# Membership formats & Fee

- ▶ Full membership, for asset owners: voting rights, participation at the technical meetings. Fee depend on revenue (2000 – 10.000 euro per year)
- ▶ Associate membership for solution providers: Access to website, reports, invited to working groups. Fee 1000.– euro per year

# EPSC Members



Nouryon

EASTMAN



Linde



Linde



HUNTSMAN



DU PONT



MERCK



centrica



worldsteel ASSOCIATION



ExxonMobil



Johnson & Johnson





our shared responsibility to protect society

