

# 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

CHEF /  
RAST

Leadership &  
Organization



**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, Covestro, Total, LyondellBasell, GSK, Evonik
- ▶ Founding members: Dechema & EFCE
- ▶ Operation Manager & Secretary at Dechema
- ▶ Full members
- ▶ Associate members



# Conferences

Big Data & Digitalization



2020 EUROPEAN CONFERENCE  
ON PROCESS SAFETY & BIG DATA



**CPS** EPSC  
Center for Chemical Process Safety



October 13–14, 2020  
DECHEMA House  
Frankfurt am Main, Germany

European Conference on Plant &  
Process Safety



Participation in: Achema, Hazards,  
EuroCorr, Loss Prevention

EUROPEAN  
CONFERENCE  
2021  
**ON PLANT &  
PROCESS  
SAFETY**  
DECEMBER 7 & 8  
ANTWERP  
FLANDERS CONVENTION CENTRE

Room with a Zoo  
Network Forum

Practical learnings on Processes  
with Hazardous Chemicals

The poster features a large image of a worker in an orange safety jacket and white hard hat looking towards an industrial facility. A green circular graphic contains the conference title and dates. Two smaller circular images at the bottom show a person with a large animal (labeled 'Room with a Zoo') and a group of people in a meeting (labeled 'Network Forum').

# 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).

A larger vent size was installed after the incident



Imploded storage tank

### 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

# EPSC Members



Nouryon

EASTMAN

lyondellbasell



Linde



Linde



sasol



HUNTSMAN



DU PONT



Hovione



MERCK



BOREALIS

centrica



worldsteel ASSOCIATION



ExxonMobil



Johnson & Johnson



our shared responsibility to protect society

