

# Utsläpp från en kemikaliefabrik

Start datum.990528

Händelse kod: DE/1999/007-[01]

## Kort rapport

### Typ av händelsen

Utsläpp i en vinylklorid-anläggning.

### Inblandade ämnen

1,2-dikloroetan (DCE)(CAS nr: 107-06-2)  
Väteklorid (vätska gas )(CAS nr: 7647-01-0)  
Vinylklorid (CAS nr: 75-01-4)

### Olycksobjekt

Den 28 maj 1999 arbetade en vinylklorid-anläggning (DCE) under normala förhållanden när en rörkrök över en släckt spalt knäcktes 9:20. Ett högt ljud hördes.

Händelsesekvens:

09:20:00 en rörkrök över en släckt spalt knäcktes.

09:22:30 I samband med akutnedstängningen av anläggningen utfördes följande;

- DCE- matning stängdes automatisk.
- Akut kvävematning till reaktorn var öppen.
- Gasmatningen till spalten stängdes.

Ca.10:15 efter trycket minskats inne i spalten till <300 m bar.

Ca.12:30 stängdes spalten med ett lock.

### Olycksorsak

Skadan orsakades vid försvagning av rörkrök på grund av tjockleksreduktion av densamma.

### Skador

Inne i anläggningen kom inget till skada bortsett från den förstörda rörkröken.

6 personer från räddningstjänsten och 7 brandmän var på plats.

### Akutåtgärder

Räddningstjänsten larmades omedelbart av företaget efter skadan upptäckts.

Brandkåren agerade snabbt och satte upp vattengardiner runt omkring läckaget. Miljöskyddsverket larmades samtidigt som brandkåren genomförde de nödvändiga kontrollmätningarna.

### Erfarenheter

- Borttagning av höjningsplatta.
- Återinsättande av rörkrök.
- Rörledningen har isolerad.

## English summary

Start date: 28/05/1999

Accident code: DE/1999/007-[01]

## Accident type(s)

Release in a vinyl chloride plant

## Substance(s) directly involved

1,2 dichloroethane (DCE) (C.A.S. No: 107-06-2), hydrogen chloride (liquefied gas) (C.A.S. No: 7647-01-0), vinylchloride (C.A.S. No: 75-01-4).

## Immediate source(s) of accident

28/05/1999 a subunit (1,2 dichloroethane (DCE) plant) of a vinyl chloride plant was operating under normal conditions when at 9:20 a pipe bend above a quench column cracked. A loud expansion noise was heard.

### Sequence of the event

09:20:00: cracking of a pipe bend at the gas outlet of a quench column.

09:22:30: According to the event an emergency shut down of the cracking plant was performed together with the following measures:

- DCE-feed automatically closed
- Emergency nitrogen feed open to the cracking coils of the reactor
- Cracking gas feed to the column closed, gas outlet to the gas scrubber open

Ca. 9:30: switching of the cracked condensate from the receiving vessel to the emergency tank in order to avoid a expansion back to the quench column.

Ca. 10:15: after pressure drops the pressure in the quench column <300 mbar, emergency nitrogen feed towards the cracking reduced to a minimum.

Ca. 12:30: closure of the quench column with a flanged lid.

## Suspected cause(s)

The damage was caused by the weakening of the pipe bend due to thickness reduction of the same

## Immediate effects

In the Plant there have been no other damages apart from the destroyed pipe bend.

As preventive measure related to the release of substances during the incident the 28/05/1999 6 persons from the off-site emergency response services and other 7 persons (three of which members of the on-site emergency response service) presented themselves. Two other persons which had suffered from some annoyance the 28/05/1999 presented themselves also at the outpatient department the 31/05/1999.

## Emergency measures taken

The company alerted the fire department immediately after detection of the damage. The fire brigade got into action immediately and set up water curtains around the release point using monitors. The environmental protection alerted at the same time as the fire department carried out the necessary emission measurements.

## Immediate lessons learned

- Removal of the deflecting plate
- Replacement of the pipe bend
- The wall thickness of the newly mounted pipe bend has to be measured with ultra-sound in order to have a reference measurement.
- The pipeline has to be insulated in order to reduce the influence of condensation.
- After insulation of the pipeline the wall thickness shall be measured by using shadowgraphs (zero measurement).