

Kemikalieutsläpp på en kemikaliefabrik.

930918 MARS 1993_15

Till följd av långvarig överbelastning svämmade en reaktor över. Formaldehyden utgjorde 60% av reaktionsblandningen och förångades. Det framgår inte varför reaktorn överbelastades, eller hur det gick till.

Inblandade ämnen och mängder

	CAS Nr.	Mängd
formaldehyd	50-00-0	183,5 kg

Skador:

Människor: Inga.
Materiella: Inga.
Miljö/ekologi: Inga effekter rapporterade.
Infrastruktur: Inga.

Erfarenheter redovisade (Ja/Nej): Nej

Report Profile

Identification of Report:

country: FA ident key: 1993_015_01

reported under Seveso I directive as major accident reports: SHORT

Date of Major Occurrence: Time of Major Occurrence

start: 1993-09-18 start: 02:00:00

finish: finish:

Establishment:

name:

address:

industry: - not applicable -

Plant for manufacturing and production of plastic resin or chemical fibers, trioxan plant.

Seveso II status: not applicable: Yes art. 6 (notification): No

art. 7 (MAPP): No

art. 9 (safety report): No

Date of Report:

short: full:

Authority Reporting:

name:

address:

Authority Contact:

rep_cont_name:

rep_cont_phone:

rep_cont_fax:

Additional Comments:

a) - not applicable -

b) - not applicable -

c) - not applicable -

d) - not applicable -

e) - not applicable -

Short Report

country: FA ident key: 1993_015_01

Accident Types:

release: Yes explosion: No

water contamination: No other: No

fire: No

description:

In the trioxplant outcame, from a bellow violently opened, (from PTFE) a side of the content of the Trioxane-reactor. The reactor contained a mixture of 60 % formaldehyde, 35 % water, 3 % trioxane and 2 % sulphuric acid. The outcome product... see Appendix Short Report / description of accident types

Substance(s) Directly Involved:

toxic: Yes explosive: No

ecotoxic: No other: No

flammable: No

description:

Formaldehyde 183,5 kg.

Immediate Sources of Accident:

storage: No transfer: No

process: Yes other: No

description:

- not applicable -

Suspected Causes:

plant or equipment: Yes environmental: No

human: No other: No

description:

Cause of the failure was an overload of the PTFE-bellows as a consequence of a faulty interpretation. The damage did not consist in a short rapid overloading, but due to a long duration one. Only the time of the bursting resulted as consequ... see Appendix Short Report / description of suspected causes

Immediate Effects:

material loss: Yes

human deaths: No

human injuries: No **community disruption:** No

other: No

ecological harm: No

national heritage loss: No

description:

- not applicable -

Emergency Measures taken:

on-site systems: Yes **decontamination:** No

external services: No **restoration:** No

sheltering: Yes **other:** No

evacuation: No

description:

The arriving firemen admitted fluid on the damage point and on the building with a spray water beam. Through these measures the formaldehyde vapours were largely deposited.... see Appendix Short Report / description of emergency measures taken

Immediate Lessons Learned:

prevention: Yes **other:** Yes

mitigation: No

description:

The bellows from PTFE in the reactors were replaced through high quality steel compensators with a tantalum lagging. The operation parameters were increased to a pressure of 0,5 - 0,6 bar and to a temperature of 106 oC through a maintenance... see Appendix Short Report / description of immediate lessons learned

Appendices for the FA / 1993_015_01 report

Appendix Short Report / description of accident types:

In the trioxplant outcame, from a bellow violently opened, (from PTFE) a side of the content of the Trioxane-reactor. The reactor contained a mixture of 60 % formaldehyde, 35 % water, 3 % trioxane and 2 % sulphuric acid. The outcome product sprayed over the near devices and pipes and solidificated. Vapour products drawn off. In total outcame 2,6 m³ of the reactor mixture, of which 183,5 kg of formaldehyede were released to the atmosphere.

Appendix Short Report / description of suspected causes:

Cause of the failure was an overload of the PTFE-bellows as a consequence of a faulty interpretation. The damage did not consist in a short rapid overloading, but due to a long duration one. Only the time of the bursting resulted as consequence of a temperature oscillation during the production process.

Appendix Short Report / description of emergency measures taken:

The arriving firemen admitted fluid on the damage point and on the building with a spray water beam. Through these measures the formaldehyde vapours were largely deposited.

The service personnel after the failure detection shutted down the reactor and then discharged it completely in another reactor.

Appendix Short Report / description of immediate lessons learned:

The bellows from PTFE in the reactors were replaced through high quality steel compensators with a tantalum lagging. The operation parameters were increased to a pressure of 0,5 - 0,6 bar and to a temperature of 106 oC through a maintenance instruction. In each reactor near the preassure measurement point with nitrogen bubbling was inserted a pressure measurement diaphragm.