

Explosion och brand på ett tegelbruk.

950404 MARS 1995_02

Ett utsläpp av naturgas på ett tegelbruk uppstod till följd av en slang som antingen brast eller lossnade i ett fäste. Såväl slangmaterialet som fästena befanns vara mycket slitna och undermåliga. Naturgasen blandades med luft och formade en synnerligen explosiv blandning. En naturgasexplosion inträffade i en tunnelugn och en brand uppstod. Omedelbart efter explosionen ströps tillflödet av gas och olycksplatsen utrymdes.

Inblandade ämnen och mängder

	CAS Nr.	Mängd
naturgas		okänt

Skador:

Människor: 3 anställda skadades.
Materiella: Anläggningen skadades.
Miljö/ekologi: Inga effekter rapporterade.
Infrastruktur: Inga.

Erfarenheter redovisade (Ja/Nej): Nej

Report Profile

Identification of Report:

country: FA ident key: 1995_002_01

reported under Seveso I directive as major accident reports: SHORT

Date of Major Occurrence: Time of Major Occurrence

start: 1995-04-04 start:

finish: 1995-04-04 finish:

Establishment:

name:

address:

industry: - not applicable -

ceramics industry

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:** 1995_002_01

Accident Types:

release: No **explosion:** Yes

water contamination: No **other:** No

fire: Yes

description:

Description of the Circumstances of the Major Accident: In the tunnel furnace of a brick ... see Appendix

Short Report / description of accident types

Substance(s) Directly Involved:

toxic: No **explosive:** No

ecotoxic: No **other:** No

flammable: Yes

description:

flammable gases

Immediate Sources of Accident:

storage: No **transfer:** No

process: Yes **other:** No

description:

It can be assumed that the explosion did occur in the firing chamber but instead in the intermediate roof (cooling channel). Furthermore, it is likely that the released gas was aspirated through the grid of the air intakes in the roof of th... see Appendix Short Report / description of immediate sources

Suspected Causes:

plant or equipment: Yes **environmental:** No

human: No **other:** No

description:

technical error (devices / fittings). Failure probably due to dirt / crusting / grease.

Immediate Effects:

material loss: Yes

human deaths: No

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

other: No

ecological harm: No

national heritage loss: No

description:

6.600.000 DM material loss onsite, 3 injuries onsite.

Emergency Measures taken:

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

external services: No **restoration:** No

sheltering: No **other:** No

evacuation: Yes

description:

Immediately after the explosion the supply of natural gas was shut down. The accident site was closed and secured. Two employees and one member of the response team had to be treated externally.

Immediate Lessons Learned:

prevention: Yes **other:** No

mitigation: No

description:

Regular safety assessment of the plant by the operator and by experts.

Appendices for the FA / 1995_002_01 report

Appendix Short Report / description of accident types:

Description of the Circumstances of the Major Accident: In the tunnel furnace of a brick

yard, a natural gas explosion and subsequent fires occurred. The damages to the plant and to buildings are of 6.5 million DM. The preliminary investigation of the state criminal

investigation agency could not identify the cause of the explosion. For this reason an

expert agency was engaged. A clear cause could not be identified even through the

experts, only a most probable cause could be determined. According to that, the explosion was caused by the release of gas from a ruptured hosepipe or a loose

plug-in fitting. Hosepipes and plug-in fittings showed evidence of serious pre-existing

damages. It can be assumed that either a porous hosepipe ruptured or that a plug in fitting got loose. As a report of the company proves, in particular the smaller and the older hoses were in a very bad condition. The internal rubber hose was porous and the external wire mesh in part defective. The same applied to the plug in fittings. The internal part of the plug in fittings was very dirty with a fatty grease, which in part was even encrusted. This could have allowed a plug in fitting to get loose. The typology of the damages corresponds to the assumed cause of damage. It can be assumed that the explosion did occur in the firing chamber but instead in the intermediate roof (cooling channel). Furthermore, it is likely that the released gas was aspirated through the grid of the air intakes in the roof of the tunnel furnace and from there pulled backwards through the intermediate roof, where it mixed with air and formed thus the explosive mixture. The temperature in the cooling channel was of 127 degrees Celsius, which was not high enough for the ignition of the air/gas mixture. However the mixture could ignite in the range of the metal holders of the suspended roof or also be ignited by air pouring through leaks (cracks) in the suspended roof. The amount of released gas, the amount of the aspirated air and the degree of mixture could not be determined.

Appendix Short Report / description of immediate sources:

It can be assumed that the explosion did occur in the firing chamber but instead in the intermediate roof (cooling channel). Furthermore, it is likely that the released gas was aspirated through the grid of the air intakes in the roof of the tunnel furnace and from there pulled backwards through the intermediate roof, where it mixed with air and formed thus the explosive mixture.