

## Gasutsläpp på en fabrik för ytbehandling.

901206 MARS 1990\_04

Vid en fabrik för ytbehandling och färgämnesproduktion avlägsnades avloppsgaserna med en fläkt till förbränning. Dessa gaser innehöll fosgen. Efter en störning byttes fläkten ut. Kort tid senare kändes doften av fosgen utanför anläggningen. Fosgen hade lämnat systemet via ett vattenlås. Vattnet hade av okänt skäl pressats ut från låset. För säkerhets skull genomfördes en medicinsk undersökning av 200 personer.

### Inblandade ämnen och mängder

	CAS Nr.	Mängd
fosgen	75-44-5	mindre än 50 gram

**Övers. anm:** Det anges faktiskt vara mindre än 50 gram i rapporten: 0,050 kg.

### Skador:

Människor: 200 personer fick genomgå en medicinsk kontroll.

Materiella: Inga.

Miljö/ekologi: Inga effekter rapporterade.

Infrastruktur: Inga.

### Erfarenheter redovisade (Ja/Nej): Ja

Kortfattat anges förebyggande åtgärder.

## Report Profile

### Identification of Report:

country: FA ident key: 1990\_004\_01

reported under Seveso I directive as major accident reports: SHORT+FULL

### Date of Major Occurrence: Time of Major Occurrence

start: 1990-12-06 start:

finish: finish:

### Establishment:

name:

address:

industry: 2001 general chemicals manufacture

Surface Coating & Dyes (Dyes Production)

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:** 1990\_004\_01

**Accident Types:**

**release:** Yes **explosion:** No

**water contamination:** No **other:** No

**fire:** No

**description:**

ACCIDENT CASE HISTORY DESCRIPTION:... see Appendix Short Report / description of accident types

**Substance(s) Directly Involved:**

**toxic:** Yes **explosive:** No

**ecotoxic:** No **other:** No

**flammable:** No

**description:**

- Phosgene (C.A.S. CODE: 75-44-5, E.E.C. CODE: 006-002-00-8): amount involved = less than 0,050 kg.

**Immediate Sources of Accident:**

**storage:** No **transfer:** No

**process:** Yes **other:** No

**description:**

The accident occurred in the waste gas unit of a dyes production plant in a surface coating and dyes industry.

The accident occurred during the start-up of a fan replacing the one already operating because of

disturbances in its functioning... see Appendix Short Report / description of immediate sources

**Suspected Causes:**

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

**human:** No **other:** No

**description:**

CAUSES:... see Appendix Short Report / description of suspected causes

**Immediate Effects:**

**material loss:** No

**human deaths:** No

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

**other:** No

**ecological harm:** No

**national heritage loss:** No

**description:**

EFFECTS ON PEOPLE:

As a precautionary measure, outside the establishment 200 people were put under medical control.

### **Emergency Measures taken:**

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

**external services:** Yes **restoration:** No

**sheltering:** No **other:** No

**evacuation:** No

**description:**

INTERNAL TO THE ESTABLISHMENT:... see Appendix Short Report / description of emergency measures taken

### **Immediate Lessons Learned:**

**prevention:** Yes **other:** No

**mitigation:** No

**description:**

MEASURES TO PREVENT ANY RECURRENCE OF SIMILAR ACCIDENTS:... see Appendix Short Report / description of

immediate lessons learned

## **A Occurrence Full Report**

**country:** FA **ident key:** 1990\_004\_01

### **1 Type of Accident**

**remarks:** The waste gas with phosgene from the reaction (at low pressure) for the dyes

production, was removed by a fan and led to combustion. As there was a

disturbance in the functioning of the ventilator, the process was

interrupted and a replacem... see Appendix Full Report A / type of accident

### **2 Dangerous Substances**

**remarks:** The total establishment and the potential directly involved inventories of

phosgene refer to the amount released during the accident.

### **3 Source of Accident**

**illustration:** - not applicable -

**remarks:** The accident occurred in the waste gas unit (code 3402) of a dyes production

plant in a surface coating and dyes industry (code 2001). The accident

occurred during the start-up of a fan replacing the one already operating

because of disturb... see Appendix Full Report A / source of accident -

remarks

### **4 Meteorological Conditions**

**precipitation none: fog: rain: hail: snow:**

No No No No No

**wind speed (m/s):**

**direction (from):**

**stability (Pasquill):**

**ambient temperature (°C):**

**remarks:** - not applicable -

## **5 Causes of Major Occurrence**

**main causes**

**technical / physical** - not applicable -

- not applicable -

- not applicable -

- not applicable -

- not applicable -

**human / organizational** 5501 other: not identified

- not applicable -

- not applicable -

- not applicable -

- not applicable -

**remarks:** The phosgene escaped the system as the water in the immersion point of the waste gas

system was pressed out, leaving open a passage to a waste water channel and, through the

cover, to open air. The causes that led the water to be pressed ou... see Appendix Full

Report A / causes of major occurrence

## **6 Discussion about the Occurrence**

- not applicable -

**Type of Accident** country: FA **ident key:** 1990\_004\_01

**event:**

**major occurrence** 1101 release: gas/vapour/mist/etc release to air

**initiating event** 1101 release: gas/vapour/mist/etc release to air

**associated event** - not applicable -

## **Dangerous substances**

country: FA **ident key:** 1990\_004\_01

### **a) total establishment inventory**

**CAS number:** 75-44-5 **identity:** Phosgene

**name from Seveso I Directive:** - not applicable -

**name from Seveso II Directive:** - not applicable -

**category from Seveso II:** - not applicable -

**other hazards (1):** - not applicable -

**other hazards (2):** - not applicable -

maximum quantity (tonnes): 0,05

use of substance as: STARTING MATERIAL

**b) substance belongs to relevant inventory directly involved:** Yes

actual quantity: 0,05 potential quantity: 0,05

**c) substance belongs to relevant inventory indirectly involved:** No

actual quantity: -1 indir\_pot\_quant: -1

**Source of Accident - Situation** country: FA ident key: 1990\_004\_01

## **situation**

**industry**

**initiating event** 2001 general chemicals manufacture

**associated event** - not applicable -

**activity/unit**

**major occurrence** 3402 other: disposal activities (incinerating, burying, etc.)

**initiating event** 3402 other: disposal activities (incinerating, burying, etc.)

**associated event** - not applicable -

**component**

**major occurrence** 4011 general pipework/flanges

**initiating event** 4011 general pipework/flanges

**associated event** - not applicable -

# **B Consequences Full Report**

country: FA ident key: 1990\_004\_01

## **1 Area concerned**

**affected**

**extent of effects installation:** Yes

**establishment:** Yes

**off-site; local:** Suspected

**off-site; regional:** No

**off-site; transboundary:** No

**illustration of effects** - not applicable -

**remarks** As a precautionary measure, outside the establishment 200 people were put under ... see Appendix

Full Report B / area concerned - remarks

## **2 People**

**establishment popul. emergency personnel off-site population**

**total at risk**

**immediate fatalities**

**subsequent fatalities**

**hospitalizing injuries**

**other serious injuries**

health monitoring 200

remarks As a precautionary measure, outside the establishment 200 people were put under ... see Appendix

Full Report B / people

### 3 Ecological Harm

**pollution/contamination/damage of:**

- residential area (covered by toxic cloud) Suspected
- common wild flora/fauna (death or elimination) Suspected
- rare or protected flora/fauna (death or elimination) Suspected
- water catchment areas and supplies for consumption or recreation Suspected
- land (with known potential for long term ecological harm or Suspected

**preventing human access or activities)**

- marine or fresh water habitat Suspected
- areas of high conservation value or given special protection Suspected

remarks In the Original Report there is no evidence of significant ecological harms.... see Appendix

Full Report B / ecological harm

### 4 National Heritage Loss

**effects on:**

- historical sites not applicable - historic monuments not applicable
- historic buildings not applicable - art treasures not applicable

remarks No data available.

### 5 Material Loss

**establishment losses off site losses**

**costs (direct costs to operator) (social costs)**

**in ECU ECU**

**material losses**

**response, clean up, restoration**

remarks No material losses occurred.

### 6 Disruption of Community Life

**establishment/plant evacuated disabled/unoccupiable destroyed**

- nearby residences/hotels No No No
- nearby factories/offices/small shops No No No
- schools, hospitals, institutions No No No
- other places of public assembly No No No

**interruption of utilities etc. no / yes duration**

- gas No
- electricity No
- water No
- sewage treatment works No

- telecommunications No

- main roads No

- railways No

- waterways No

- air transport No

significant public concern none local level national level

- off site populations No Yes No

- media interest No No No

- political interest No No No

remarks As a precautionary measure, outside the establishment 200 people were put under ... see Appendix

## 7 Discussion of Consequences

# C Response Full Report

country: FA ident key: 1990\_004\_01

## 1 Emergency Measures

taken - on site - not applicable - - not applicable -

- not applicable - - not applicable -

- not applicable - - not applicable -

- off site - not applicable - - not applicable -

- not applicable - - not applicable -

- not applicable - - not applicable -

still - on site - not applicable - - not applicable -

required

- not applicable - - not applicable -

- not applicable - - not applicable -

- off site - not applicable - - not applicable -

- not applicable - - not applicable -

- not applicable - - not applicable -

continuing contamination or danger

-on site not applicable

-off site not applicable

remarks - not applicable -

## 2 Seveso II Duties

pre-accident evaluation

Article item not due yet not done done/submitted evaluated

6 notification No No No No

7 policy (MAPP) No No No No

9 safety report No No No No

9, 10, 11 update No No No No

11 internal plan No No No No

11 external plan No No No No

13 informing public No No No No

9, 12 siting policy No No No No

post-accident evaluation

Seveso II duty was actual were actual compared with actual

contingency consequences consequences, the

addressed? addressed? predicted extent was?

Article item

7 policy (MAPP) not applicable not applicable not applicable

9 current safety report not applicable not applicable not applicable

11 internal plan not applicable not applicable not applicable

11 external plan not applicable not applicable not applicable

13 informing public not applicable not applicable not applicable

9, 12 siting policy not applicable not applicable not applicable

evaluation of safety organisation

organisational element element existed did element relate to actual circumstances of

yes / no no / partly / yes adequate?

- written policy objectives No

- specified management No

structure

- specified responsibilities No

- specified working procedures No

- specified procedures for No

assessment/auditing of

management system

- specified procedures for No

review and update of

management policy

- specified general training No

procedures

- specified emergency No

training procedures

evaluation of ecological impact control

organisational element element existed did element relate to actual circumstances of

yes / no no / partly / yes adequate?

- ecological status review No

before incident

- potential ecological No



#### **consequences assessment**

- ecological impact review No

#### **after incident**

- ecological restoration No

#### **procedures**

- subsequent review of No

#### **restoration success**

remarks - not applicable -

### **3 Official Action Taken**

#### **legal action**

- not applicable -

#### **other official action**

- not applicable -

### **4 Lessons Learned**

#### **measures to prevent recurrence**

After the accident the followi... see Appendix Full Report C / lesson learned - prevent

#### **measures to mitigate consequences:**

- not applicable -

#### **useful references:**

- not applicable -

### **5 Discussion about Response**

- not applicable -

## **Appendices for the FA / 1990\_004\_01 report**

### **Appendix Short Report / description of accident types:**

#### **ACCIDENT CASE HISTORY DESCRIPTION:**

The waste gas with phosgene from the reaction (at low pressure) for the dyes production, was removed by a fan and led to combustion. As there was a disturbance in the functioning of the ventilator, the process was interrupted and a replacement fan was taken into use. A little later, phosgene smell was detected near the plant. The phosgene escaped the system as the water in the immersion point of the waste gas system was pressed out, leaving open a passage to a waste water channel and, through the cover, to open air. As a precautionary measure, 200 people were put under medical control.

### **Appendix Short Report / description of immediate sources:**

The accident occurred in the waste gas unit of a dyes production plant in a surface coating and dyes industry. The accident occurred during the start-up of a fan replacing the one already operating because of disturbances in its functioning.

### **Appendix Short Report / description of suspected causes:**

#### **CAUSES:**

The phosgene escaped the system as the water in the immersion point of the waste gas system was pressed out, leaving open a passage to a waste water channel and, through the cover, to open air. The causes that led the water to be pressed out of the waste lock were not fully identified (probably they were related to the maintenance operations).

### **Appendix Short Report / description of emergency measures taken:**

#### **INTERNAL TO THE ESTABLISHMENT:**

The waste gas system was checked and the trap was filled with water.

#### **EXTERNAL TO THE ESTABLISHMENT:**

As a precautionary measure, 200 people were put under medical control.

### **Appendix Short Report / description of immediate lessons learned:**

MEASURES TO PREVENT ANY RECURRENCE OF SIMILAR ACCIDENTS:

After the accident the following measures were established:

- 1- checking of the waste gas system;
- 2- improvement of the servicing of the waste gas treatment system;
- 3- filling of the trap.

**Appendix Full Report A / type of accident:**

The waste gas with phosgene from the reaction (at low pressure) for the dyes production, was removed by a fan and led to combustion. As there was a disturbance in the functioning of the ventilator, the process was interrupted and a replacement fan was taken into use. A little later, phosgene smell was detected near the plant (code 1101).

**Appendix Full Report A / source of accident - remarks:**

The accident occurred in the waste gas unit (code 3402) of a dyes production plant in a surface coating and dyes industry (code 2001). The accident occurred during the start-up of a fan replacing the one already operating because of disturbances in its functioning. From the Original Report it is not fully clear which component was involved in the release.

**Appendix Full Report A / causes of major occurrence:**

The phosgene escaped the system as the water in the immersion point of the waste gas system was pressed out, leaving open a passage to a waste water channel and, through the cover, to open air. The causes that led the water to be pressed out of the waste lock were not fully identified [code 5501] (probably they were related to the maintenance operations).

**Appendix Full Report B / area concerned - remarks:**

As a precautionary measure, outside the establishment 200 people were put under medical control.

**Appendix Full Report B / people:**

As a precautionary measure, outside the establishment 200 people were put under medical control.

**Appendix Full Report B / ecological harm:**

In the Original Report there is no evidence of significant ecological harms.

**Appendix Full Report B / disruption of community life:**

As a precautionary measure, outside the establishment 200 people were put under medical control.

**Appendix Full Report C / lesson learned - prevent:**

After the accident the following measures were established:

- 1- checking of the waste gas system;
- 2- improvement of the servicing of the waste gas treatment system;
- 3- filling of the trap.