

Miljöutsläpp från en petrokemisk anläggning.

960220

Mycket kortfattad

Utsläppet skedde från en värmeväxlare till följd av ett materialfel. En rörledning i koppar-zink-aluminium legering visade sig inte vara tillräckligt hållbar – förmodligen med avseende på korrosion.

Inblandade ämnen och mängder

	CAS Nr.	Mängd
2-furaldehyd	98-01-1	15 ton

Skador:

Människor:	Inga personskador.
Materiella:	Inga skador.
Miljö/ekologi:	Utsläppet dödade 400 kg fisk.
Infrastruktur:	Inga effekter.

Erfarenheter redovisade (Ja/Nej): Ja

Kortfattat anges förebyggande åtgärder

Report Profile

Identification of Report:

country: FA ident key: 1800_101_01

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

Date of Major Occurrence: Time of Major Occurrence

start: 20/02/1996 start: 01:00:00

finish: 20/02/1996 finish:

Establishment:

name:

address:

industry: 2002 petrochemical, refining, processing

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: 1800_101_01

Accident Types:

release: Yes explosion: No

water contamination: Yes other: No

fire: No

description:

damage to the aquatic fauna

Substance(s) Directly Involved:

toxic: Yes explosive: Yes

ecotoxic: Yes other: No

flammable: Yes

description:

2-furancarboxaldehyde (furfural, 2-furaldehyde), CAS no. 98-01-1 / amount lost (released): 15 tonnes

Immediate Sources of Accident:

storage: No transfer: No

process: No other: Yes

description:

heat exchanger made out of 321 copper/zinc/aluminium alloy tubes (pipes)

Suspected Causes:

plant or equipment: Yes environmental: No

human: No other: No

description:

corrosion

Immediate Effects:

material loss: No

human deaths: No

human injuries: No community disruption: No

other: No

ecological harm: Yes

national heritage loss: No

description:

400 kilograms of fish destroyed

Emergency Measures taken:

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

external services: No **restoration:** No

sheltering: No **other:** No

evacuation: No

description:

dams (barrages, damming) and recovery of dead fish /analyses (testing, monitoring)

Immediate Lessons Learned:

prevention: Yes **other:** No

mitigation: Yes

description:

unsuited material (equipment)

A Occurrence Full Report

country: FA **ident key:** 1800_101_01

1 Type of Accident

remarks: - not applicable -

2 Dangerous Substances

remarks: Furfural is employed (used) as a solvent in a lubricant production process

for the extraction (removal) of substances

3 Source of Accident

illustration: A map showing the industrial area in which the accident occurred with the

lay out of the different establishments (installations), the river flowing

around the area and the dominant wind direction (NE).

remarks: the heat exchanger is made out of 321 tubes (pipes) of copper, zinc,

aluminium alloy. This alloy has been chosen in 1989 for resisting corrosion

caused by water

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 5104 operation: corrosion/fatigue

- not applicable -

- not applicable -

- not applicable -

- not applicable -

human / organizational - not applicable -

- not applicable -

- not applicable -

- not applicable -

- not applicable -

remarks: the metallurgical examination (test, control) of the leaking pipes (tubes), showed a reduction in the zinc content on the side with the cooling water

6 Discussion about the Occurrence

- not applicable -

Type of Accident country: FA ident key: 1800_101_01

event:

major occurrence 1103 release: fluid release to water

initiating event - not applicable -

associated event - not applicable -

Dangerous substances

country: FA ident key: 1800_101_01

a) total establishment inventory

CAS number: 98-01-1 **identity:** 2-furaldehyde (2-furancarboxaldehyde, furfural)

name from Seveso I Directive: - not applicable -

name from Seveso II Directive: - not applicable -

category from Seveso II: toxic

other hazards (1): - not applicable -

other hazards (2): - not applicable -

maximum quantity (tonnes): -1

use of substance as: starting material

b) substance belongs to relevant inventory directly involved: Yes

actual quantity: 15 **potential quantity:** 60

c) substance belongs to relevant inventory indirectly involved: No

actual quantity: 0 **indir_pot_quant:** 0

Source of Accident - Situation country: FA ident key: 1800_101_01

situation

industry

initiating event - not applicable -

associated event - not applicable -

activity/unit

major occurrence 3104 process: physical operations (mixing, melting crystallizing, etc.)

initiating event - not applicable -

associated event - not applicable -

component

major occurrence 4009 heat exchanger (boiler, refrigerator, heating coils, etc.)

initiating event - not applicable -

associated event - not applicable -

B Consequences Full Report

country: FA **ident key:** 1800_101_01

1 Area concerned

affected

extent of effects installation: Yes

establishment: No

off-site; local: Yes

off-site; regional: No

off-site; transboundary: No

illustration of effects - not applicable -

remarks - not applicable -

2 People

establishment popul. emergency personnel off-site population

total at risk -1 -1 -1

immediate fatalities 0 0 0

subsequent fatalities 0 0 0

hospitalizing injuries 0 0 0

other serious injuries 0 0 0

health monitoring 0 0 0

remarks - not applicable -

3 Ecological Harm

pollution/contamination/damage of:

- residential area (covered by toxic cloud) not applicable

- common wild flora/fauna (death or elimination) Yes

- rare or protected flora/fauna (death or elimination) not applicable

- water catchment areas and supplies for consumption or recreation not applicable

- land (with known potential for long term ecological harm or not applicable

preventing human access or activities)

- marine or fresh water habitat not applicable

- areas of high conservation value or given special protection not applicable

remarks 400 kilograms of fish dead (killed)

4 National Heritage Loss

effects on:

- historical sites None - historic monuments None

- historic buildings None - art treasures None

remarks - not applicable -

5 Material Loss

establishment losses off site losses

costs (direct costs to operator) (social costs)

in ECU FFR ECU FFR

material losses -1 -1 -1 -1

response, clean up, restoration -1 -1 -1 -1

remarks - not applicable -

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 No No

- media interest No No No

- political interest No No No

remarks - not applicable -

7 Discussion of Consequences

- not applicable -

Ecological Components involved

country: FA ident key: 1800_101_01

type: 6203 freshwater: stream/tributary

threatened: not applicable affected: Yes

C Response Full Report

country: FA ident key: 1800_101_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

the metal (alloy) employed was... see Appendix Full Report C / lesson learned - prevent

measures to mitigate consequences:

a sample outlet has been insta... see Appendix Full Report C / lesson learned - mitigate

useful references:

no information is given

5 Discussion about Response

- not applicable -

Appendices for the FA / 1800_101_01 report

Appendix Full Report C / lesson learned - prevent:

the metal (alloy) employed was not appropriate (adequate).

Appendix Full Report C / lesson learned - mitigate:

a sample outlet has been installed on the water circuit (system) in order to allow the monitoring (control, surveillance) each hour.