

Etanolutsläpp från en kemikaliedepå.

970207

Till följd av feltolkade instruktioner vid lossning av etanol från ett fartyg rann en tank över och etanol spilldes ut i miljön. När misstaget upptäcktes stoppades lossningen. Inga externa myndigheter behövde larmas. Ungefär 6 ton etanol kunde samlas upp, resten gick förlorat.

Inblandade ämnen och mängder

	CAS Nr.	Mängd
etanol	925-93-9	ca14 ton

Skador:

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

Erfarenheter redovisade (Ja/Nej): Ja

Kortfattat anges förebyggande åtgärder

Report Profile

Identification of Report:

country: FA ident key: 1800_100_01

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

Date of Major Occurrence: Time of Major Occurrence

start: 07/02/1997 start: 21:08:00

finish: 07/02/1997 finish: 21:15:00

Establishment:

name:

address:

industry: 2008 wholesale and retail storage and distribution (incl. LPG bottling & bulk

distrib., more: F1!)

bulk liquid storage

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_100_01

Accident Types:

release: Yes **explosion:** No

water contamination: No **other:** No

fire: No

description:

Ethanol (20 tonnes) overspilled bulk storage tank when being pumped ashore from a vessel (ship).

Substance(s) Directly Involved:

toxic: No **explosive:** No

ecotoxic: No **other:** No

flammable: Yes

description:

20 tonnes pure ethanol (6 tonnes were subsequently recovered).

Immediate Sources of Accident:

storage: Yes **transfer:** Yes

process: No **other:** No

description:

Band "N", tank 70, Tank Terminals: Ethanol spill occurred around 21:00 hrs during project discharge from a vessel (ship).

Suspected Causes:

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

human: Yes **other:** Yes

description:

Enquiries suggest a misinterpretation of pumping orders given to the crew of the ship. Previous tank had been underfilled, now this one was being overfilled. There were no level gauge and no high level alarm on the receiving tanks. Written ... 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:

20 tonnes ethanol spilled, of which 6 tonnes could be recovered, hence about 14 tonnes ethanol lost. Material loss due to lost ethanol. No fire, no injury etc. Product held in bunded area.

Emergency Measures taken:

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

external services: No **restoration:** No

sheltering: No **other:** No

evacuation: No

description:

3 operators were on duty at the time of the accident, upon discovery of the accident the discharge from the ship was stopped. Recoverable product was pumped out of a bund into another tank. No external emergency service involvement was needed... see Appendix Short Report / description of emergency measures taken

Immediate Lessons Learned:

prevention: Yes **other:** No

mitigation: No

description:

Written pumping orders (written procedures, written instructions) had been given to and acknowledged by the crew of the ship. Beyond this reliance was placed on the crew of the ship to get it right (lack of control, lack of supervision). This... see Appendix Short Report / description of immediate lessons learned

A Occurrence Full Report

country: FA **ident key:** 1800_100_01

1 Type of Accident

remarks: During ship discharge a tank was overfilled, spilling about 20 tonnes ethanol into bund.

2 Dangerous Substances

remarks: Product was being pumped into 3 tanks, one after the other. Due to miscalculation on board ship too much product was pumped into the second tank thus causing overflow

3 Source of Accident

illustration: Map of surrounding area and map of site are attached.

remarks: No high level alarm or gauge on tank. Spillage noticed by site personnel during routine check.

4 Meteorological Conditions

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

Yes No No No No

wind speed (m/s):

direction (from):

stability (Pasquill):

ambient temperature (°C):

remarks: Meteorological conditions not relevant to accident.

5 Causes of Major Occurrence

main causes

technical / physical 5108 operation: blockage

- not applicable -

- not applicable -

- not applicable -

- not applicable -

human / organizational 5401 person: operator error

- not applicable -

- not applicable -

- not applicable -

- not applicable -

remarks: Accident arose because of human error - miscalculation. Lack of high level alarm and gauge meant that no early warning was given to shut down pumps.

6 Discussion about the Occurrence

- not applicable -

Type of Accident country: FA ident key: 1800_100_01

event:

major occurrence 1102 release: fluid release to ground

initiating event - not applicable -

associated event - not applicable -

Dangerous substances

country: FA ident key: 1800_100_01

a) total establishment inventory

CAS number: identity: Highly flammable (general)

name from Seveso I Directive: - not applicable -

name from Seveso II Directive: - not applicable -

category from Seveso II: highly flammable liquids R17, R10

other hazards (1): - not applicable -

other hazards (2): - not applicable -

maximum quantity (tonnes): 300

use of substance as: normal finished product

b) substance belongs to relevant inventory directly involved: Yes

actual quantity: 20 potential quantity: 100

c) substance belongs to relevant inventory indirectly involved: No

actual quantity: 0 indir_pot_quant: 0

a) total establishment inventory

CAS number: identity: toxic (general)

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): 20

use of substance as: normal finished product

b) substance belongs to relevant inventory directly involved: No

actual quantity: 0 potential quantity: 0

c) substance belongs to relevant inventory indirectly involved: No

actual quantity: 0 indir_pot_quant: 0

a) total establishment inventory

CAS number: identity: acrylonitrile

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): 10

use of substance as: normal finished product

b) substance belongs to relevant inventory directly involved: No

actual quantity: 0 potential quantity: 0

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_100_01

situation

industry

initiating event - not applicable -

associated event - not applicable -

activity/unit

major occurrence 3202 storage: distribution-associated (not on-site of manufacture)

initiating event - not applicable -

associated event - not applicable -

component

major occurrence 4003 container; non-pressurised (hopper, tank, drum, bag, etc.)

initiating event - not applicable -

associated event - not applicable -

B Consequences Full Report

country: FA ident key: 1800_100_01

1 Area concerned

affected

extent of effects installation: Yes

establishment: Yes

off-site; local: No

off-site; regional: No

off-site; transboundary: No

illustration of effects - not applicable -

remarks Spill contained within bund Area N (see plan). No fire, No damage.... see Appendix Full Report B

/ area concerned - remarks

2 People

establishment popul. emergency personnel off-site population

total at risk 4 0 0

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) No

- common wild flora/fauna (death or elimination) No

- rare or protected flora/fauna (death or elimination) No

- water catchment areas and supplies for consumption or recreation No

- land (with known potential for long term ecological harm or No

preventing human access or activities)

- marine or fresh water habitat No

- areas of high conservation value or given special protection No

remarks - not applicable -

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 Pound Sterling ECU Pound Sterling

material losses -1 -1 0 0

response, clean up, restoration 0 0 0 0

remarks Spilt ethanol subject to excise duty at £18 perlitre (Company is hoping loss wil... see Appendix

Full Report B / material loss

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 Yes No No

- media interest Yes No No

- political interest Yes No No

remarks - not applicable -

7 Discussion of Consequences

- not applicable -

Ecological Components involved

country: FA ident key: 1800_100_01

type: - not applicable -

threatened: not applicable affected: No

C Response Full Report

country: FA ident key: 1800_100_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

Tank gauging has been installed... see Appendix Full Report C / lesson learned - prevent

measures to mitigate consequences:

Existing bunding

useful references:

- not applicable -

5 Discussion about Response

- not applicable -

Appendices for the FA / 1800_100_01 report

Appendix Short Report / description of suspected causes:

Enquiries suggest a misinterpretation of pumping orders given to the crew of the ship. Previous tank had been underfilled, now this one was being overfilled. There were no level gauge and no high level alarm on the receiving tanks. Written pumping orders (written procedures, written instructions) had been given to and acknowledged by the crew of the ship. Beyond this reliance was placed on the crew of the ship to get it right (lack of control, lack of supervision).

Appendix Short Report / description of emergency measures taken:

3 operators were on duty at the time of the accident, upon discovery of the accident the discharge from the ship was stopped. Recoverable product was pumped out of a bund into another tank. No external emergency service involvement was necessary.

Appendix Short Report / description of immediate lessons learned:

Written pumping orders (written procedures, written instructions) had been given to and acknowledged by the crew of the ship. Beyond this reliance was placed on the crew of the ship to get it right (lack of control, lack of supervision). There was no direct monitoring of rising tank level nor means to do so (other than dipping). Level gauge, high level alarm etc. and a procedure in which these were used would prevent re-occurrence of such an accident.

Appendix Full Report B / area concerned - remarks:

Spill contained within bund Area N (see plan). No fire, No damage.

Appendix Full Report B / material loss:

Spilt ethanol subject to excise duty at £18 perlitre (Company is hoping loss will be written off by HM Customs and Excise). Overall potential financial loss in excess of £360,000

Appendix Full Report C / lesson learned - prevent:

Tank gauging has been installed across site (improvement of equipment design). The tank in question was one of a few which have not yet been so equipped. Operator procedures to be made more specific (improvement of procedures).