

# Explosion och brand på en petrokemisk anläggning på grund av ett terrordåd.

900909

MARS 1800\_020

Olyckan fanns med i våras men under slutdatum (900911; MARS 1990\_16). Startdatum är 900909.

Sammanfattning

## Inblandade ämnen och mängder

	CAS Nr.	Mängd
ämne		

### Skador:

Människor:

Materiella:

Miljö/ekologi: Inga effekter rapporterade.

Infrastruktur:

### Erfarenheter redovisade (Ja/Nej):

Kortfattat anges förebyggande åtgärder.

## Report Profile

### Identification of Report:

country: FA ident key: 1800\_020\_01

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

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

start: 09/09/1990 start:

finish: 11/09/1990 finish:

### Establishment:

name:

address:

industry: 2002 petrochemical, refining, processing

Petrochemical

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\_020\_01

**Accident Types:**

**release:** Yes **explosion:** Yes

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

**fire:** Yes

**description:**

An explosion (due to a terroristic action) occurred in the propylene pipe in the pipe rack resulting in a big fire. About 25 minutes later, caused by the big fire that followed the first explosion, a second explosion in the butane/propane p... see Appendix Short Report / description of accident types

**Substance(s) Directly Involved:**

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

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

**flammable:** Yes

**description:**

- Propylene (C.A.S. CODE: 115-07-1); amount involved = not known.... see Appendix Short Report / description of substances involved

**Immediate Sources of Accident:**

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

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

**description:**

The accident involved an interconnecting pipe rack of a petrochemical industry. The pipings involved in the accident (4 in total) contained propylene, propane and butane.

**Suspected Causes:**

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

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

**description:**

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

**Immediate Effects:**

**material loss:** Yes

**human deaths:** No

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

**other:** No

**ecological harm:** No

**national heritage loss:** No

**description:**

MATERIAL LOSS:... see Appendix Short Report / description of immediate effects

### **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:** No **other:** Yes

**mitigation:** No

**description:**

not given

## **A Occurrence Full Report**

**country:** FA **ident key:** 1800\_020\_01

### **1 Type of Accident**

**remarks:** Due to a terrorist action, an explosion (code 1307) occurred in the propylene pipe in the pipe rack resulting in a big fire (code 1202). About 25 minutes later, caused by the big fire that followed the first explosion, a second explosion in... see Appendix Full Report A / type of accident

### **2 Dangerous Substances**

**remarks:** No data are available about the amounts of propane, butane and propylene involved in the accident.

### **3 Source of Accident**

**illustration:** - not applicable -

**remarks:** - not applicable -

### **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** 5404 person: malicious intervention

- not applicable -

- not applicable -

- not applicable -

- not applicable -

**remarks:** The first explosion was caused by a terroristic attack (code 5404); the second one was a consequence of the first. It occurred about 25 minutes later, caused by the big fire that followed the first explosion.

## 6 Discussion about the Occurrence

- not applicable -

**Type of Accident** country: FA ident key: 1800\_020\_01

**event:**

**major occurrence** 1307 explosion: VCE (vapour cloud explosion; supersonic wave front)

**initiating event** - not applicable -

**associated event** - not applicable -

**event:**

**major occurrence** 1202 fire: pool fire (burning pool of liquid, contained or uncontained)

**initiating event** 1307 explosion: VCE (vapour cloud explosion; supersonic wave front)

**associated event** - not applicable -

## Dangerous substances

country: FA ident key: 1800\_020\_01

### a) total establishment inventory

**CAS number:** 115-07-1 **identity:** Propylene

**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):** -1

**use of substance as:** NORMAL FINISHED PRODUCT

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

actual quantity: -1 potential quantity: -1

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

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

**a) total establishment inventory**

CAS number: 74-98-6 identity: Propane

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): -1

use of substance as: NORMAL FINISHED PRODUCT

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

actual quantity: -1 potential quantity: -1

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

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

**a) total establishment inventory**

CAS number: 106-97-8 identity: Butane

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): -1

use of substance as: NORMAL FINISHED PRODUCT

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

actual quantity: -1 potential quantity: -1

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

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

## **B Consequences Full Report**

country: FA ident key: 1800\_020\_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** In the Original Report there is no evidence of significant effects outside the e... see Appendix

Full Report B / area concerned - remarks

## 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** No people were injured during the accident.

## 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 ESP ECU ESP**

**material losses** -1 -1 0 0

**response, clean up, restoration** -1 -1 0 0

**remarks** The accident caused severe damages to the pipe rack and in the plant but no data... see Appendix

## 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 5 days

- **waterways** No

- **air transport** No

**significant public concern none local level national level**

- **off site populations** No No Yes

- **media interest** No No No

- **political interest** No No No

**remarks** Interruption of the railway Barcelona-Salou for 5 days.... see Appendix Full Report B / disruptio

## 7 Discussion of Consequences

# C Response Full Report

**country:** FA **ident key:** 1800\_020\_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**

not given

**measures to mitigate consequences:**

not given

**useful references:**

not given

### **5 Discussion about Response**

- not applicable -

## **Appendices for the FA / 1800\_020\_01 report**

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

An explosion (due to a terroristic action) occurred in the propylene pipe in the pipe rack resulting in a big fire. About 25 minutes later, caused by the big fire that followed the first explosion, a second explosion in the butane/propane piping occurred. As a result, a huge fire developed in the pipe rack. The fire fighting system proceeded initially to the cooling of the pipe rack and the adjacent installations and, at the same time, leaving the flammable gases in the involved pipings (4 in total) to be exhausted by the fire. The fire was totally extinguished on September 11, after 60 hours of fighting.

### **Appendix Short Report / description of substances involved:**

- Propylene (C.A.S. CODE: 115-07-1): amount involved = not known.
- Propane (C.A.S. CODE: 106-97-8): amount involved = not known.
- Butane (C.A.S. CODE: 74-98-6): amount involved = not known.

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

#### CAUSES:

The first explosion was caused by a terroristic attack; the second one was a consequence of the first. It occurred about 25 minutes later, caused by the big fire that followed the first explosion.

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

#### MATERIAL LOSS:

The accident caused severe damages to the pipe rack and in the plant but no data are available about the cost of these material losses..

#### COMMUNITY DISRUPTION:

Interruption of the railway Barcelona-Salou for 5 days.

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

#### INTERNAL TO THE ESTABLISHMENT:

The fire fighting system proceeded initially to the cooling of the pipe rack and the adjacent installations and, at the same time, leaving the flammable gases in the involved pipings (4 in total) to be exhausted by the fire. The fire was totally extinguished on September 11, after 60 hours of fighting.

#### EXTERNAL TO THE ESTABLISHMENT:

Activation of the External Emergency Plan of Tarragona PLASEQTA from 9 to 12 September. All the Actuation Groups were alerted. Interruption of the railway Barcelona-Salou for 5 days.

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

Due to a terrorist action, an explosion (code 1307) occurred in the propylene pipe in the pipe rack resulting in a big fire (code 1202). About 25 minutes later, caused by the big fire that followed the first explosion, a second explosion in the butane/propane piping occurred (code 1307). As a result, a huge fire developed in the pipe rack (code 1202).

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

In the Original Report there is no evidence of significant effects outside the establishment.

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

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

### **Appendix Full Report B / material loss:**

The accident caused severe damages to the pipe rack and in the plant but no data are available about the cost of these material losses.

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

Interruption of the railway Barcelona-Salou for 5 days.