

Accident Profile

Title

Fire at a warehouse for finished products made from silicone and solvents

Date/Time of Major Occurrence

Start Date 28-06-2016

End Date 28-06-2016

Accident Type

Major Accident

Reported under

EU Seveso III Directive

Seveso II Status

Upper tier

Industrial Activity

Plastic and rubber manufacture

Reasons for Reporting

Substances involved: greater than 5% of quantity in Column 3 of Annex I

Injury to persons: >= 1 fatalities, >= 6 hospitalizing injuries, evacuation, shelter-in-place, utility disruption and damage to real estate

Immediate damage to the environment (according to Annex VI)

Damage to property: on-site >2M €; off-site > 0.5M €;

Cross-border damage: transboundary accidents

Interesting for lessons learned.

Accident Report

Accident description

Flammable finished products were hit by a forklift, setting off a violent fire:

At a Seveso-classified chemical factory specialising in silicones, a forklift driver was moving a pallet containing 200 l barrels of highly flammable silicone oils (silozanes) in a 2,500 m² logistics warehouse. The fork accidentally pierced one of the barrels shortly before midday. He placed the affected pallet onto a mobile containment device taken from the adjacent storage unit before leaving the warehouse. The leaking product ignited on a hot point caused by friction of the (non-ATEX) forklift's metal forks against the ground. The worker grabbed a nearby powder-based fire extinguisher and tried to bring the fire under control. However it spread rapidly and killed him.

Accident involving

☐ Domino effects

☐ Natech events

☐ Transboundary effects

☐ Contractors

Site and installation

Site description

Factory manufacturing plastics in primary forms.

Installation/Unit description

Storage barrels in the vicinity of a logistics warehouse.

Storage

Initiating Events	Equipment Type
other	other transfer equipment/apparatus/vehicle

Substances

Substances Involved

Several 200 l barrels of silicone oil (siloxanes).

120 tonnes of finished products stored in the warehouse.

Substances Classification

P2. FLAMMABLE GASES cat. 1 or 2

E1. Hazardous to the Aquatic Environment cat. Acute 1 or Chronic 1

Substances detail

Substance	CAS Number	Quantities (t.)	
		Involved	Potential
Silicon oil	8012-95-1		

Causes

The leaking product ignited on a hot point caused by friction of the (non-ATEX) forklift's metal forks against the ground.

Consequences

The forklift driver who had been moving the pallet with the damaged barrel died.

A large plume of black smoke rose from the warehouse and could be seen from far away. Residents of a nearby neighbourhood overlooking the site gathered in a park to observe the accident.

A slightly injured in-house firefighter was taken to hospital, as was an employee who passed out due to the heat. The fire destroyed 600 m² of the warehouse and burned 120 tonnes of the 230 tonnes of finished product. The factory was shut down for a week. The 900 m³ of water used to extinguish the fire were stored

in a containment tank before treatment or treated by skimming into a settlement tank.

Human

On site	Quantity	Quantity/Effect
Fatalities	1	
Injuries	2	

Disruption

Off site	Quantity	Quantity/Effect
infrastructure (telecommunication, roads, railways, waterways, air transport etc		

Emergency Response

The fire detection system alerted the guard post at 11.55 a.m. and the guards notified the unit's firefighters. The firefighters arrived on the scene in less than 5 minutes and fought the fire with two foam trucks. Given the intensity of the fire, the operator launched the internal emergency plan at 12.10 p.m. The 750 employees were told to stay indoors. The emergency services arrived at 12.20 p.m. with 50 engines and around 100 firefighters.

The intensity of the fire and the urban location justified launching the external emergency plan.

As the site was situated beside a motorway in a built-up area, the prefect declared the external emergency plan at 1.10 p.m. Primary schools in the three nearby municipalities were ordered to keep children indoors for 1 hour. The motorway and its access roads were closed, causing numerous tailbacks. The fire was brought under control at 1.50 p.m. following a massive attack with foam monitors. The external emergency plan was lifted at 2.25 p.m. and the motorway access roads reopened.

Emergency Response	Quantity	Quantity/Effect
On-site systems		
Off-site external services		
Sheltering		
Evacuation		
Other		

Remedial Measure	Quantity	Quantity/Effect
Decontamination		
Restoration		
Other		

Lessons Learned

Theme of the Lessons Learned

Emergency Response

Lessons Learned

The intensity of the fire and its location in a built-up area justified launching the external emergency plan: the smoke visible in the Lyon urban area significantly disrupted road traffic.

Event Profile

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