

## PUBLIC NOTICE 2020

Please re-read this notice regularly  
and keep it easily available!  
You can also find the  
notice on the Internet at  
[www.ouka.fi/pelastuslaitos](http://www.ouka.fi/pelastuslaitos)



# SAFETY INFORMATION BULLETIN

**for the residents of the Oulu region in case of  
emergency caused by hazardous substance**



- Bulletin describes the hazards that substance leakage or emissions may cause.
  - Locations of the production facilities that may cause an emergency.
- Warnings to the population in case of hazardous chemical emergency.
  - What to do in case of an emergency.
  - When and where to get more information.



# Awareness of the threat of an emergency help prepare

SEVESO facilities that may cause a major emergency have to distribute the safety information bulletin to the regions where a major emergency can have an impact.

The determination of a plant handling hazardous substances to pose a major-emergency hazard is based on e.g. the Chemical Safety Act (390/2005) and the Control of Dangerous Substances Regulation (685/2015). This is a production plant or storage area where the quantity and quality of hazardous substances require a safety assessment. The sites are commonly referred to as the SEVESO facility.

**EASTMAN**

**Kemira**

**KRATON**

**NEOT**  
North European Oil Trade

**Nouryon**



**TEBOIL**

There are seven SEVESO facilities in the Oulu-Koillismaa rescue area that require a safety assessment, and they are all located within a few kilometres of the city centre of Oulu.

## Large-scale operations is subject to a permit and supervised by the authorities

Large-scale industrial handling and storage of dangerous substances requires a permit. The Agency for Safety and Chemicals (Tukes, [www.tukes.fi](http://www.tukes.fi)) acts as the chemical control authority for SEVESO plants. Oulu-Koillismaa Rescue Department and e.g. Occupational safety and environmental authorities monitor the safety of sites and emergency preparedness within the framework of their own legislation. Surveillance visits are carried out, depending on the authority, every 1 to 3 years.

The SEVESO facilities mentioned in this safety information bulletin have prepared applications for permits for large-scale industrial handling and storage of hazardous chemicals, internal emergency plans and safety

reports. The documents have been submitted to the supervisory authority (Tukes).

## An emergency can develop quickly

A major emergency at a SEVESO facility could be, for example, a fire, explosion, leakage or other emergency that may cause an immediate or delayed hazard to human health, the environment, or property.

The hazardous effects of a major emergency can develop quickly (e.g., explosion). A major emergency that reaches outside a production facility is most likely to be a release of a substance that is hazardous to health due to a large chemical spill. There may be several dangerous substances, especially if the development of an emergency is accompanied by fires or explosions.

Emissions of hazardous substances, explosions and fires can, at worst, cause immediate threat to life even hundreds of meters away from the emergency site. Various health effects and irritation symptoms can occur up to 1 to 2 kilometres from the mill area.

*The area of immediate danger in case of emergencies involving dangerous substances is always determined on a case-by-case basis. The baseline is formed from e.g. properties and amount of leaking chemical, amount of leakage and weather conditions.*

## Examples of major spill hazard areas:

### Liquids hazardous to health

- 50 metres in all directions and 150-300 metres downwind (e.g., leakage of a formic acid storage tank)

### Liquefied toxic gases

- 50-300 metres in all directions and up to 1-2 kilometres downwind (e.g., ammonia leakage from a tank car)

### Liquefied flammable gases (ignition of leak and tank rupture)

- 600-700 metres in all directions (e.g., risk of LPG storage tank explosion)

# For companies, safety comes first

The key starting point for the design, construction, and maintenance of SEVESO plants is emergency prevention and restriction of the consequences of emergencies. Companies comply with chemical legislation and regularly assess the environmental, health, and safety risks of their operations.



## Depending on the site, safety is promoted e.g. with following arrangements:

- Fire detection, extinguishing and smoke extraction equipment, fire compartmentation, concentration measurement, access control, camera surveillance, and area protection in production facilities.
- Drain basins and site shelters for chemical tanks and processes.
- Safety systems where, for example, a power failure or a change in the measured value (e.g. pressure, temperature, surface height, flow rate, concentration) the deviation stops the necessary processes, controls its functions to a safe state, initiates the desired protection measures and communicates the information about the deviation to the control rooms / staff.
- Safety documentation (safety assessment, internal emergency plan), personnel training and exercises related to threats and incidents.
- Cooperation with the various authorities so that the actions of the various parties together create an effective way of preventing emergencies and limiting their consequences.

## Preparedness of the Rescue Department

Section 48 of the Rescue Act (379/2011) requires that the rescue service prepare an external rescue plan for objects of special danger in co-operation with the relevant operator. The external emergency plan defines the measures to limit and manage emergencies and their consequences as effectively as possible. The implementation of the planning is monitored by the Regional State Administrative Agency.

### Additional information on external emergency plans:

Tomi Honkakunnas,  
Risk Management Executive,  
+358 8 558 410 (exchange),  
[www.ouka.fi/pelastuslaitos](http://www.ouka.fi/pelastuslaitos)

### The Oulu-Koillismaa Rescue Department is prepared for major emergencies at production and storage sites for hazardous substances.

#### The activity is based on:

- Basic equipment for fire-fighting and rescue operations, as well as special equipment for combating dangerous substances.
- Professional and in-service training in the control of hazardous substances, introduction to SEVESO facilities and regular emergency exercises at the facilities together with the operators and co-operating authorities.
- A population warning system that takes into account the risks of chemical emergencies and the readiness to issue hazard statements.

### External rescue plans

The Oulu-Koillismaa Rescue Department's preparedness for major-emergency hazards at safety assessment sites has been compiled into three external rescue plans: **Nuottasaari biopark, Laanila industrial area, and Vihreäsaari area.**

An external rescue plan has also been prepared for **the Oulu rail yard** for transport of dangerous goods and **the Oulu port** for transport of dangerous goods (Oritkari port), which are the subject of safety assessments on the basis of other legislation.

# Companies and operations

SEVESO facilities and their key chemicals causing major emergency hazard require a safety report by the Oulu-Koillismaa rescue service region.

## GLOSSARY

### Area of immediate danger

To be evacuated and isolated immediately (or those in the area are urged to seek shelter inside).

### Danger area

Those in the area are urged to seek shelter inside or to leave the danger area.

**Danger areas are always determined on a case-by-case basis.**



storaenso

### Stora Enso Oulu Oy

Nuottasaarentie 17, Oulu

#### Information on safety report and hazardous substances:

Mill Protection Manager,  
tel. +358 20 46 124 (exchange)

Stora Enso's Oulu mill includes wood handling, pulp mill, power plant, effluent treatment plants, and kraftliner production line. The pulp mill produces brown softwood pulp and the kraftliner line brown and white-top kraftliner for direct food contact. Finished goods are delivered to customers mainly by ships.

Stora Enso has tanks for liquefied petroleum gas (propane).

### Possible hazardous situations

The most significant hazard is LPG storage tanks. At its worst, a liquefied petroleum gas leak and its ignition can cause an explosive fire that also has effects outside the industrial area. The danger is especially posed by thermal radiation from the combustion of liquefied petroleum gas. Insulation and warning limit 700 m.



### Nouryon Finland Oy Oulu mill

Nuottasaarentie 17, Oulu

#### Information on safety report and hazardous substances:

Timo Korva, Plant Manager,  
tel. +358 40 840 6111

The Oulu plant of Nouryon Finland Oy produces chemicals required for pulp bleaching. The main product is sodium chlorate, which is transported to customers by tank trucks, tank cars and containers. Hydrogen is additionally formed as a by-product.

The main raw materials for production are salt and water, as well as the excipients, sodium hydroxide and hydrochloric acid.

### Possible hazardous situations

The most notable hazard is the hydrochloric acid storage tank, from which toxic hydrogen chloride gas and hydrochloric acid mist evaporate.

The isolation limit is 50 metres in all directions and 150 metres downwind. The warning limit is 500 metres downwind.



*Stora Enso Oulu Mill was converted into kraftliner production during 2019-2020. Due to conversion many hazardous chemicals are no longer in use in the production process.*







**Kraton Chemical Oy  
Oulu plant**

Nuottasaarentie 17, Oulu

**Information on safety report  
and hazardous substances:**

Erkki Kaihlaniemi, Technical Manager,  
tel. +358 40 341 3348

Kraton Chemical Oy refines Crude Tall Oil (CTO) into various fractions and further upgrades them into raw materials for the adhesive, paint, printing ink, rubber and chewing gum industries, among others. The production facilities in Oulu includes CTO refinery and Rosin upgrading operations. The most significant of hazardous substances is Crude Sulphate Turpentine (CST), which is stored in two storage tanks.

**Possible hazardous situations**

The most significant hazard is a large-volume leakage from a Crude Sulphate Turpentine storage tank or the related piping. The immediate danger area resulting from the leak is limited to the plant territory, but smoke generated in case of leakage ignition can cause harm outside the plant territory as well. The isolation limit is 50 metres in all directions.



**Eastman Chemical Company  
(Taminco Finland Oy)  
Oulu plant**

Typpitie, Oulu

**Information on safety report  
and hazardous substances:**

Manager, HSES Harri Turunen,  
tel. +358 20 7108 300 (exchange)

Taminco Finland Oy produces formic acid which is stored at the plant area and at Vihreäsaari. Hazardous chemicals are used as production raw materials, the most significant of them being liquefied natural gas, ammonia and methanol. Ammonia is transported to

the plant and stored in rail cars. LNG and methanol are transported to the plant by tank trucks. LNG is used to produce carbon monoxide and hydrogen. Carbon monoxide is used for formic acid production. The products are transported from the plant mainly by road (to destinations in Finland) or to the Oulu port (for export).

**Possible hazardous situations**

The most significant hazard may be induced by a large-volume leakage from an ammonia rail tank car or ammonia unloading and transfer piping. The immediate danger area of a piping leak is limited with the factory area. A particularly serious leak from an ammonia rail car can cause health hazards even outside the plant area, and irritation symptoms may occur up to 1-2 kilometres from the site area. The

isolation limit is 300 metres. The warning limit is up to 2 kilometres downwind.

A serious emergency can also be caused by a methanol storage tank fire or large-volume leakage. The immediate danger area caused by such a leakage is limited with the factory area. The isolation limit is 50 metres in all directions. The warning limit is determined if necessary, e.g., if the flue gases from the fire cause harm.

The immediate danger area resulting from a large-volume formic acid storage tank leakage is limited to the plant territory, but formic acid vapours can cause irritation symptoms outside the plant territory as well. The isolation limit is 50 metres in all directions and 250 metres downwind. The warning limit is 350 metres downwind.



**Kemira Chemicals Oy  
Oulu plant**

Typpitie, Oulu

**Information on safety report  
and hazardous substances:**

Mikko Pöntinen, Production Manager,  
tel. +358 10 8611 (exchange)

Kemira Chemicals Oy's main products manufactured in Oulu are hydrogen peroxide and peracetic acid. Water, hydrogen and oxygen are the key raw materials for production. Hydrogen is obtained from liquefied natural gas (supplied by Eastman Chemical Company/Taminco Finland Oy in the same plant area) and oxygen is obtained from the Air Liquide Finland Oy air gas plant in Oulu (in the same plant area). There are several storage tanks for hydrogen peroxide and peracetic acid in the Laanila plant area. The products are mainly transported from the plant in tanker trucks.

**Possible hazardous situations**

The main hazards are accidents, such as a fire involving a large amount of hydrogen peroxide, which promotes combustion. A major accident caused by hydrogen peroxide alone is unlikely to occur. The hazard area for hydrogen peroxide leakage is limited to the factory site (50 meters) in the worst case. A serious accident may result from a major leak in a peracetic acid storage tank or tank area pipeline that cannot be quickly shut off. However, the hazard area of the accident is limited to the plant area. The isolation limit is 50 meters in all directions and 200 meters downwind of the accident site.

**TEBOIL**

**NEOT**

North European Oil Trade

**Oy Teboil Ab**

**Vihreäsaari terminal**

Hietasaarentie 54, Oulu

**North European Oil Trade Oy (NEOT)**

**Vihreäsaari terminal**

Hietasaarentie 60, Oulu

**Information on safety report  
and hazardous substances:**

**Teboil:** Sampo Huhta, Terminal Manager,  
tel. +358 20 47001 (exchange)

**Neot:** Risto Kinnunen, Terminal Manager,  
tel. +358 10 768 0850 (exchange)

Teboil and Neot store transport fuels, light fuel oil and (Teboil) heavy fuel oil at Vihreäsaari in Oulu. Liquid fuels are delivered to the terminal by sea. The products are stored in above-ground steel tanks and delivered to customers by tank trucks. The necessary additives are added to the fuels in connection with tank truck loading. Fuel loading and transport operations are carried out around the clock.

**Possible hazardous situations**

At storage areas, the danger area in case of stored products leakage is limited to the storage areas or their immediate vicinity. The most significant hazard is a leak from, for example, a gasoline storage tank or a large-volume piping leak at the storage area and ignition of the leak.

Other fires, such as a tank truck fire at the storage area, may also spread to fuel storage tanks. Tanker fires at the oil berth are possible as well. Intensive thermal radiation from a fire can be dangerous at a distance of nearly 150 metres from the emergency site. The greatest harm is caused by the flue gases resulting from a fire. In the worst case, smoke can cause harm and irritation symptoms at a distance of kilometres from the storage area. The isolation limit is 250 metres in all directions. The warning limit is determined if necessary, e.g., if the flue gases from the fire cause danger/harm.



# Identify chemicals and gases

Several hazardous chemicals are produced, stored and handled at SEVESO facilities in the Oulu-Koillismaa rescue service region. Hazardous chemicals produced at the production facilities or their raw materials classified as hazardous chemicals are transported by road, rail and sea.

**112**  
SUOMI

Download the 112 Suomi application to your phone. Whenever you call the emergency number by the phone, exact location information is automatically transmitted to the emergency centre.



## Transports of hazardous substances are marked with warning labels and orange-coloured plates

Examples of warning labels:



Explosives



Non-combustible gases



Combustible gases



Toxic gases



Combustible liquids



Spontaneously combustible substances



Substances emitting combustible gases in contact with water



Oxidising substances



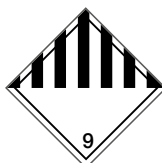
Toxic substances



Radioactive substances



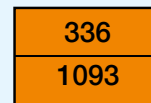
Corrosive substances



Other hazardous substances and objects

## Hazardous substances in case of a traffic emergency

- Stop your vehicle at a distance (at least 50 metres) from the vehicle involved in the emergency and prevent further emergencies by warning others.
- If possible, approach vehicles upwind. Do not smoke.
- Make an emergency call to 112.
- In the emergency call, state, among other things, all markings referring to dangerous goods during transport (warning labels, orange plates etc.).



- Follow the emergency centre operator's instructions.
- If you notice leaks from the vehicle or detect an abnormal odour, experience eye/respiratory tract irritation or the like, move further away and warn other road users. Try to isolate the area (at least 50 metres in all directions and 150 metres downwind).
- Follow the emergency vehicle driver's instructions.

## Labelling of hazardous substances

Packages of hazardous substances are marked with warning labels in accordance with the so-called CLP regulation (EU 1272/2008), which describe the hazard associated with the product.



Explosive



Flammable



Oxidising



Gas under pressure



Corrosive



Acutely toxic



Harmful/irritant/sensitising/dangerous for the ozone layer



Severe health hazard
















Hazardous to the environment



## Hazardous chemicals used at SEVESO facilities in the Oulu region

The names and warning symbols of key hazardous chemicals used at SEVESO facilities in our area, information on identification of the chemicals and hazardous properties thereof.

SUBSTANCE	IDENTIFICATION	EFFECTS
<b>Ammonia</b> 	<p>Gaseous ammonia is colourless, has strongly pungent odour and is extremely irritating. Gaseous ammonia can be easily liquefied and is usually transported in the liquefied form.</p>	<p>Ammonia causes severe respiratory tract and eye irritation. High concentrations are dangerous to life. Ammonia is hazardous to the environment.</p>
<b>Diesel oil and light fuel oil</b> 	<p>Diesel oil is a clear or yellowish liquid with a mild hydrocarbon odour. Light fuel oil is a liquid dyed red with a hydrocarbon odour.</p>	<p>Diesel oil and light fuel oil are flammable liquids. Inhalation of vapours may cause nausea, fatigue and headache. Diesel oil is hazardous and light fuel oil harmful to the environment.</p>
<b>Methanol</b> 	<p>Methanol is a colourless, clear liquid with a mild alcohol odour.</p>	<p>Methanol is toxic by inhalation or ingestion or on the skin. Vapours cause headache, fatigue and dizziness. If swallowed, even a small amount can damage vision or even cause death. Methanol is highly flammable. Methanol vapours cause a fire hazard outdoors and explosion hazard indoors.</p>
<b>Motor gasoline</b> 	<p>Motor gasoline is a yellowish liquid with an aromatic and ether-like odour.</p>	<p>Exposure to gasoline vapours causes headache and nausea, among others. Also poses a risk of cancer. Motor gasoline and its vapours are extremely flammable. Gasoline leaks cause an explosion hazard indoors and in sewers. Hazardous to the environment.</p>
<b>Formic acid</b> 	<p>Formic acid is a colourless, corrosive, fuming liquid with pungent odour. It forms a mist in humid air. Formic acid vapours are heavier than air.</p>	<p>Formic acid-containing vapour or mist is severely irritating to the nose and respiratory tract. Exposure to high concentrations causes difficulty to breathe and can even be life threatening. Acid splashes are corrosive to the skin and cause painful skin reddening, stinging and blisters. The acid easily absorbs through the skin.</p>
<b>Sodium chlorate</b> 	<p>Sodium chlorate is an odourless, white, slightly hygroscopic, crystalline substance with a salty taste. Aqueous sodium chlorate solution is colourless.</p>	<p>Sodium chlorate dust and splashes and mists of the concentrated solution are mildly irritating to the nose, throat, skin, and eyes. Inhalation of large amounts of sodium chlorate causes nausea, diarrhoea, vomiting and abdominal pain. Sodium chlorate is a strong oxidizer. The substance can react explosively with flammable substances, for example. With strong acids, sodium chlorate forms chlorine and chlorine dioxide.</p>
<b>Liquefied petroleum gas (LPG)</b> 	<p>Liquefied petroleum gas is a mixture of gaseous hydrocarbons stored and transported liquefied in gas cylinders and tanks. Leaking LPG is heavier than air and colourless. An odorant is added to LPG to facilitate gas leak detection.</p>	<p>Liquefied petroleum gas is extremely flammable. An LPG leakage can cause a fire hazard outdoors and a fire and explosion hazard indoors. At high concentrations, LPG causes paralysis of the central nervous system and susceptibility to arrhythmias.</p>

SUBSTANCE	IDENTIFICATION	EFFECTS
<b>Liquefied natural gas (LNG)</b> 	Liquefied natural gas is a mixture of gaseous hydrocarbons (mainly methane) in the liquid state stored and transported cold in thermally insulated tanks. Leaking LNG is heavier than air and colourless. Liquid leaks evaporate immediately. Evaporated LNG is lighter than air.	Liquefied natural gas is extremely flammable. An LNG leakage can cause a fire hazard outdoors and a fire and explosion hazard indoors. Deflagration of a gas cloud causes severe burns to those caught inside the cloud. Direct contact with liquefied natural gas or inhalation of cold vapours may cause severe frostbite in the respiratory tract, skin and eyes.
<b>Peracetic acid</b> 	Peracetic acid is a colourless liquid with pungent odour.	Peracetic acid causes severe damage to the skin and eyes. Peracetic acid is toxic if inhaled or swallowed. Peracetic acid is a flammable liquid and also a strong oxidant, which has a flammable and combustion-accelerating effect. Peracetic acid is toxic to the environment.
<b>Heavy fuel oil</b> 	Black, thick liquid that solidifies on cooling. Has strong smell.	Hot oil causes burns when splashed in the eyes or on the skin. Oil mist irritates the eyes and respiratory tract. Prolonged or repeated contact with skin causes skin irritation and dryness and may lead to changes inducing the danger of skin cancer.
<b>Hydrochloric acid</b> 	Hydrochloric acid is a clear, colourless or pale yellow liquid with pungent odour.	Hydrochloric acid causes severe damage to the skin and eyes. Hydrochloric acid mist and hydrogen chloride gas forming in case of hydrochloric acid leakage are highly corrosive to the skin and eyes and toxic by inhalation. Exposure to high levels of hydrogen chloride causes severe nasal irritation, a feeling of suffocation, breathing difficulties and even life-threatening lung oedema.
<b>Turpentine (crude turpentine)</b> 	Crude turpentine is a colourless or yellowish liquid with a characteristic odour.	Turpentine irritates the eyes and upper respiratory tract, causing a sore throat and cough. Inhalation of high concentrations may cause, for example, dizziness, headache, malaise, and breathing difficulties. Turpentine is a combustible liquid. Warm liquid can be ignited by sparks, static electricity and flames.
<b>Hydrogen peroxide</b> 	Hydrogen peroxide is a colourless liquid.	Hydrogen peroxide causes severe damage to the skin and eyes. In high concentrations, hydrogen peroxide vapours cause severe irritation of the nose, throat and respiratory tract. Hydrogen peroxide does not cause burns, but as a powerful oxidant, it can accelerate and sustain combustion. Clothing and leather footwear that have become saturated with hydrogen peroxide may spontaneously combust.





# Danger zones in the Oulu region on the map



## Danger areas in case of emergencies involving dangerous substances are always determined case-by-case.

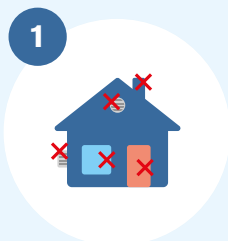
The distances are affected by the properties of the leaking chemical, the amount of the chemical, the amount of the leakage, and the weather conditions, among others. The isolation and warning limits shown on the map are possible in case of a particularly serious emergency.

# Instructions

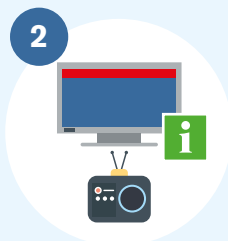
in case of major emergency caused by hazardous substances

In case of an emergency, everyone present in the area must comply with the instructions and regulations of the authorities.

## When indoors



Close the doors and windows and shut off air conditioning.



Turn on the radio or TV and follow the instructions given.



Only use the phone if you are in immediate need of help.



If you smell gas, breathe through a damp cloth.



If possible, stay on top floors of the building.

## When outdoors



Go inside. Help those physically or mentally incapable of protecting themselves. If you cannot get inside, check the wind direction and evacuate from under gas crosswind.



Aim for higher terrain. The higher, the safer.



If exposed to gas-containing air, move calmly. Protect yourself by breathing through a damp cloth.

**Do not leave the area before permitted to do so by the authorities. Follow instructions and wait for the danger to pass.**

Emergency number

**112**

**112**  
SUOMI

Download the 112 Suomi application to your phone. Whenever you call the emergency number by the phone, exact location information is automatically transmitted to the emergency centre.



## Audible warning signals



### General warning signal

The general warning signal is used for warning about an emergency endangering the population.

It is an ascending and descending sound signal lasting one minute and repeated several times if necessary.

The general warning signal is always accompanied by an emergency population warning.

It is broadcast on all radio channels and displayed on YLE, MTV3 and Nelonen teletext page 112 and in television programs as a text running at the top of the screen. The emergency population warning is also displayed by the 112 Suomi application for smartphones.

If necessary, the loudspeaker devices of emergency vehicles are used.



### Danger past signal

An uninterrupted even sound signal lasting one minute.

### Test signal

An even signal lasting 7 seconds, which may begin with an ascending part and end with a descending part. The test signal is tested on the first (working)

Monday of each month at 12 noon.

The Rescue Department and the production facilities in the area can also test their public alarms using the test signal at other times, if necessary.

[www.ouka.fi/pelastuslaitos](http://www.ouka.fi/pelastuslaitos)

The legal basis for the safety information bulletin is e.g. the Chemical Safety Act (390/2005) and the Government Decree on the Control of the Handling and Storage of Dangerous Chemicals (685/2015). The safety bulletin has been prepared in co-operation between the Oulu-Koillismaa Rescue Department and plants posing a special danger. The safety information bulletin is published every five years. You can also see this bulletin on the Internet at [www.ouka.fi/pelastuslaitos](http://www.ouka.fi/pelastuslaitos).