

## European scale of industrial accidents

### Graphic presentation used in France

This severity scale was made official in 1994 by the Committee of Competent Authorities of the member States which oversees the application of the 'Seveso' directive. It is based on 18 parameters designed to objectively characterise the effects or consequences of accidents: Each of these 18 parameters include 6 levels. The highest level reached by any one of the parameters determines the accident's severity level.

A new presentation of the European scale with four indices was proposed following problems that arose with the attribution of an overall rating covering the a very different range of consequences depending on the accidents (refer to the report available in the "European scale of industrial accidents" section on the internet site <http://www.aria.ecologie.gouv.fr/>). After having completed a large consultation of the various categories of the players concerned in 2003, this proposal was retained by the CSIC ("Conseil Supérieur des Installations Classées", Higher Council for Classified Installations). It includes the 18 parameters of the European severity scale in four uniform groups of effects or consequences:

- 2 parameters concern the quantities of dangerous materials involved,
- 7 parameters bear on the human and social aspects,
- 5 concern the environmental consequences, and
- 4 refer to the financial aspects.

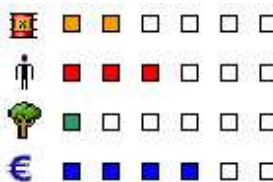
This presentation modifies neither the parameters nor the rating rules of the European scale.

#### Graphic presentation:

The graphic presentation retained for the 4 indices is as follows:




When the indices have already been explained elsewhere, a simplified presentation without the wording may be used:





#### European severity scale parameters

Quantities of dangerous substances		1 □ □ □ □ □ □	2 □ □ □ □ □ □	3 □ □ □ □ □ □	4 □ □ □ □ □ □	5 □ □ □ □ □ □	6 □ □ □ □ □ □
Q1	Quantity Q of substance actually lost or released in relation to the "Seveso" threshold *	$Q < 0.1\%$	$0.1\% \leq Q < 1\%$	$1\% \leq Q < 10\%$	$10\% \leq Q < 100\%$	1 to 10 times the threshold	$\geq 10$ times the threshold
Q2	Quantity Q of explosive substances having actually participated in the explosion (equivalent in TNT)	$Q < 0.1 \text{ t}$	$0.1 \text{ t} \leq Q < 1 \text{ t}$	$1 \text{ t} \leq Q < 5 \text{ t}$	$5 \text{ t} \leq Q < 50 \text{ t}$	$50 \text{ t} \leq Q < 500 \text{ t}$	$Q \geq 500 \text{ t}$

\* Use the upper thresholds of the current Seveso directive. In the event of an accident involving several specified substances, the highest level reached shall be retained.

 <b>Human and social consequences</b>		1 ■ □ □ □ □ □	2 ■ ■ □ □ □ □	3 ■ ■ ■ □ □ □	4 ■ ■ ■ ■ □ □	5 ■ ■ ■ ■ ■ □	6 ■ ■ ■ ■ ■ ■
H3	Total number of deaths: including - employees - external rescue personnel - persons of the public	- - - -	1 1 - -	2 – 5 2 – 5 1 -	6 – 19 6 – 19 2 – 5 1	20 – 49 20 – 49 6 – 19 2 – 5	≥ 50 ≥ 50 ≥ 20 ≥ 6
H4	Total number of injured with hospitalisation ≥ 24 hours: including - employees - external rescue personnel - persons of the public	1 1 1 -	2 – 5 2 – 5 2 – 5 -	6 – 19 6 – 19 6 – 19 1 – 5	20 – 49 20 – 49 20 – 49 6 – 19	50 – 199 50 – 199 50 – 199 20 – 49	≥ 200 ≥ 200 ≥ 200 ≥ 50
H5	Total number of slightly injured cared for on site or with hospitalisation < 24 hours: including - employees - external rescue personnel - persons of the public	1 – 5 1 – 5 1 – 5 -	6 – 19 6 – 19 6 – 19 1 – 5	20 – 49 20 – 49 20 – 49 6 – 19	50 – 199 50 – 199 50 – 199 20 – 49	200 – 999 200 – 999 200 – 999 50 – 199	≥ 1,000 ≥ 1,000 ≥ 1,000 ≥ 200
H6	Total number of homeless or unable to work (outbuildings and production tool damaged...)	-	1 – 5	6 – 19	20 – 99	100 – 499	≥ 500
H7	Number N of residents evacuated or confined in their home > 2 hours x nbr of hours (persons x nbr of hours)	-	N < 500	500 ≤ N < 5 000	5,000 ≤ N < 50,000	50,000 ≤ N < 500,000	N ≥ 500,000
H8	Nbr N of persons without drinking water, electricity, gas, telephone, public transport for more than 2 hours x nbr of hours (persons x hour)	-	N < 1,000	1,000 ≤ N < 10,000	10,000 ≤ N < 100,000	100,000 ≤ N < 1 million	N ≥ 1 million
H9	Number N of persons having undergone extended medical supervision (≥ 3 months after the accident)	-	N < 10	10 ≤ N < 50	50 ≤ N < 200	200 ≤ N < 1 000	N ≥ 1,000

 <b>Environmental consequences</b>		1 ■ □ □ □ □ □	2 ■ ■ □ □ □ □	3 ■ ■ ■ □ □ □	4 ■ ■ ■ ■ □ □	5 ■ ■ ■ ■ ■ □	6 ■ ■ ■ ■ ■ ■
Env10	Quantity of wild animals killed, injured or rendered unfit for human consumption t)	$Q < 0.1$	$0.1 \leq Q < 1$	$1 \leq Q < 10$	$10 \leq Q < 50$	$50 \leq Q < 200$	$Q \geq 200$
Env11	Proportion P of rare or protected animal or vegetal species destroyed (or eliminated by biotope damage) in the zone of the accident	$P < 0.1\%$	$0.1\% \leq P < 0.5\%$	$0.5\% \leq P < 2\%$	$2\% \leq P < 10\%$	$10\% \leq P < 50\%$	$P \geq 50\%$
Env12	Volume V of water polluted (in m <sup>3</sup> ) *	$V < 1,000$	$1,000 \leq V < 10,000$	$10,000 \leq V < 0.1$	$0.1 \text{ million} \leq V < 1 \text{ million}$	$0.1 \text{ million} \leq V < 1 \text{ million}$	$V \geq 10 \text{ million}$
Env13	Surface area S of soil or underground water surface requiring cleaning or specific decontamination (in ha)	$0.1 \leq S < 0.5$	$0.5 \leq S < 2$	$2 \leq S < 10$	$10 \leq S < 50$	$50 \leq S < 200$	$S \geq 200$
Env14	Length L of water front or water channel requiring cleaning or specific decontamination (in km)	$0.1 \leq L < 0.5$	$0.5 \leq L < 2$	$2 \leq L < 10$	$10 \leq L < 50$	$50 \leq L < 200$	$L \geq 200$

 <b>Economic consequences</b>		1 ■ □ □ □ □ □	2 ■ ■ □ □ □ □	3 ■ ■ ■ □ □ □	4 ■ ■ ■ ■ □ □	5 ■ ■ ■ ■ ■ □	6 ■ ■ ■ ■ ■ ■
€15	Property damage in the establishment (C expressed in millions of € - Reference 93)	$0.1 \leq C < 0.5$	$0.5 \leq C < 2$	$2 \leq C < 10$	$10 \leq C < 50$	$50 \leq C < 200$	$C \geq 200$
€16	The establishment's production losses (C expressed in millions of € - reference 93)	$0.1 \leq C < 0.5$	$0.5 \leq C < 2$	$2 \leq C < 10$	$10 \leq C < 50$	$50 \leq C < 200$	$C \geq 200$
€17	Property damage or production losses outside the establishment (C expressed in millions of € - Reference 93)	-	$0.05 < C < 0.1$	$0.1 \leq C < 0.5$	$0.5 \leq C < 2$	$2 \leq C < 10$	$C \geq 10$
€18	Cost of cleaning, decontamination or rehabilitation of the environment (expressed in millions of €)	$0.01 \leq C < 0.05$	$0.05 \leq C < 0.2$	$0.2 \leq C < 1$	$1 \leq C < 5$	$5 \leq C < 20$	$C \geq 20$

\* The volume is given by the expression  $Q/C_{lim}$ , in which:

- Q is the quantity of the substance released,

$C_{lim}$  is the maximum allowable concentration of the substance in the environment concerned, set by current European directives.