

*English is not an official language of the Swiss Confederation. This translation is provided for information purposes only and has no legal force.*

# Ordinance on Protection against Major Accidents (Major Accidents Ordinance, MAO)

of 27 February 1991 (Status as of 1 April 2013)

*The Swiss Federal Council,*

on the basis of Article 10 paragraph 4 and Article 39 paragraph 1 of the Federal Act of 7 October 1983<sup>1</sup> on the Protection of the Environment (EPA) and Article 47 paragraph 1 of the Waters Protection Act of 24 January 1991<sup>2,3</sup>  
*ordains:*

## Section 1: General Provisions

### Art. 1 Purpose and scope

<sup>1</sup> The purpose of this Ordinance is to protect the public and the environment against serious harm or damage resulting from major accidents.

<sup>2</sup> It applies to:

- a.<sup>4</sup> establishments where the threshold quantities for substances, preparations or special wastes specified in Annex 1.1 are exceeded;
- b.<sup>5</sup> establishments where an activity involving genetically modified or pathogenic microorganisms is carried out which is to be assigned to Class 3 or Class 4 in accordance with the Containment Ordinance of 9 May 2012<sup>6</sup>.
- c.<sup>7</sup> railway installations where dangerous goods are transported or transhipped in accordance with the Ordinance of 3 December 1996<sup>8</sup> on the Carriage of

AS 1991 748

<sup>1</sup> SR 814.01

<sup>2</sup> SR 814.20

<sup>3</sup> Amended by No I of the Ordinance of 13 Feb. 2013, in force since 1 April 2013 (AS 2013 749).

<sup>4</sup> Amended by No II 8 of the Ordinance of 18 May 2005 on the Repeal and Amendment of Ordinances in connection with the Commencement of the Chemicals Act, in force since 1 Aug. 2005 (AS 2005 2695).

<sup>5</sup> Amended by Annex 5 No 7 of the Containment Ordinance of 9 May 2012, in force since 1 June 2012 (AS 2012 2777).

<sup>6</sup> SR 814.912

Dangerous Goods by Rail and Cableway (RSD) or the relevant international agreements;

- d. transit roads, as defined in the Ordinance of 6 June 1983<sup>9</sup> on Transit Roads, where dangerous goods are transported or transhipped in accordance with the Ordinance of 17 April 1985<sup>10</sup> on the Carriage of Dangerous Goods by Road (SDR) or the relevant international agreements;
- e. the Rhine, where dangerous goods are transported or transhipped in accordance with the Ordinance of 29 April 1970<sup>11</sup> on the Carriage of Dangerous Goods on the Rhine (ADNR);
- f.<sup>12</sup> pipeline installations as defined in the Pipelines Ordinance of 2 February 2000<sup>13</sup> which meet the criteria specified in Annex 1.3.

<sup>3</sup> In individual cases, the enforcement authority may make the following establishments, transport routes or pipeline installations subject to this Ordinance if, on account of their hazard potential, they could cause serious harm to the public or damage to the environment:<sup>14</sup>

- a.<sup>15</sup> establishments handling substances, preparations or special wastes;
- b. establishments where an activity involving genetically modified or pathogenic microorganisms is carried out which is to be assigned to Class 2 in accordance with the Containment Ordinance, in consultation with the Swiss Expert Committee for Biosafety;
- c. transport routes outside establishments, where dangerous goods are transported or transhipped in accordance with paragraph 2;
- d.<sup>16</sup> pipeline installations as defined in the Pipelines Ordinance of 2 February 2000 which do not meet the criteria specified in Annex 1.3.<sup>17</sup>

<sup>7</sup> Amended by No II 8 of the Ordinance of 18 May 2005 on the Repeal and Amendment of Ordinances in connection with the Commencement of the Chemicals Act, in force since 1 Aug. 2005 (AS **2005** 2695).

<sup>8</sup> [AS **1996** 3436, **2008** 5747 Annex No. 19 5995. AS **2012** 6541 Annex 3 No. I]. See now: the Ordinance of 31 Oct. 2012 (SR 742.412).

<sup>9</sup> [AS **1983** 678. SR **741.272** Art. 7]. Now: the Transit Roads Ordinance of 18 Dec. 1991 (SR **741.272**).

<sup>10</sup> [AS **1985** 620, **1989** 2482, **1994** 3006, **1995** 4425 Annex 1 No II 11 4866, **1997** 422 No II, **1998** 1796 Art. 1 No 18 and Art. 6, **1999** 751 No II, **2002** 419 1183. AS **2002** 4212 Art. 29 para. 1]. Now: the Ordinance of 29 Nov. 2002 (SR **741.621**).

<sup>11</sup> [AS **1971** 1957, **1977** 768, **1983** 486, **1987** 1454, **1990** 1356]. Now: the Ordinance of 29 Nov. 2001 (SR **747.224.141**).

<sup>12</sup> Inserted by No I of the Ordinance of 13 Feb. 2013, in force since 1 April 2013 (AS **2013** 749).

<sup>13</sup> SR **746.11**

<sup>14</sup> Amended by No I of the Ordinance of 13 Feb. 2013, in force since 1 April 2013 (AS **2013** 749).

<sup>15</sup> Amended by No II 8 of the Ordinance of 18 May 2005 on the Repeal and Amendment of Ordinances in connection with the Commencement of the Chemicals Act, in force since 1 Aug. 2005 (AS **2005** 2695).

<sup>16</sup> Inserted by No I of the Ordinance of 13 Feb. 2013, in force since 1 April 2013 (AS **2013** 749).

<sup>17</sup> Amended by Annex 5 No 2 of the Containment Ordinance of 25 Aug. 1999, in force since 1 Nov. 1999 (AS **1999** 2783).

<sup>4</sup> This Ordinance does not apply to installations and forms of transport which are subject to legislation on nuclear energy and radiological protection, insofar as the associated radiation could cause harm to the public or damage to the environment.<sup>18</sup>

<sup>5</sup> The provisions of Article 10 EPA are directly applicable to establishments or transport routes which, in the case of exceptional events, could cause serious harm to the public or damage to the environment not arising from substances, preparations, special wastes or dangerous goods, or from genetically modified or pathogenic microorganisms.<sup>19</sup>

## **Art. 2** Definitions

<sup>1</sup> An *establishment* comprises installations as defined in Article 7 paragraph 7 EPA which have closely related operations and are in close proximity to each other (operating area).

<sup>2</sup> *Railway installations* are buildings and other fixed installations used directly for the transport or transshipment of dangerous goods. They include, in particular, tracks (open or in stations), private sidings outside an operating area and transshipment areas. They do not include, in particular, warehouses.

<sup>3</sup> The *hazard potential* is the sum of the impacts which could arise from the quantities and properties of the substances, preparations, special wastes, microorganisms or dangerous goods in question.<sup>20</sup>

<sup>4</sup> A *major accident* is an exceptional event occurring in an establishment, on a transport route or in a pipeline installation which has significant impacts:<sup>21</sup>

- a. outside the operating area;
- b. on or near the transport route;
- c.<sup>22</sup> near the pipeline installation.

<sup>5</sup> The *risk* is determined by the extent of the possible harm to the public or damage to the environment resulting from major accidents and the likelihood of their occurrence.

<sup>18</sup> Amended by No I of the Ordinance of 13 Feb. 2013, in force since 1 April 2013 (AS 2013 749).

<sup>19</sup> Amended by No II 8 of the Ordinance of 18 May 2005 on the Repeal and Amendment of Ordinances in connection with the Commencement of the Chemicals Act, in force since 1 Aug. 2005 (AS 2005 2695).

<sup>20</sup> Amended by No II 8 of the Ordinance of 18 May 2005 on the Repeal and Amendment of Ordinances in connection with the Commencement of the Chemicals Act, in force since 1 Aug. 2005 (AS 2005 2695).

<sup>21</sup> Amended by No I of the Ordinance of 13 Feb. 2013, in force since 1 April 2013 (AS 2013 749).

<sup>22</sup> Inserted by No I of the Ordinance of 13 Feb. 2013, in force since 1 April 2013 (AS 2013 749).

## Section 2: Principles of Prevention

### Art. 3 General safety measures

<sup>1</sup> The person responsible for an establishment, a transport route or a pipeline installation shall take all appropriate measures to reduce risk that are available in accordance with the state of the art of safety technology, supplemented by personal experience, and which are economically viable. These shall include measures to reduce the hazard potential, to prevent major accidents and to limit the impacts thereof.<sup>23</sup>

<sup>2</sup> When measures are selected, account shall be taken of operational and local factors which could cause major accidents, as well as actions of unauthorised persons.

<sup>3</sup> When measures are adopted, account shall be taken in particular of the principles laid down in Annex 2.

### Art. 4 Special safety measures for establishments

If the person responsible is clearly required to produce a risk report given the nature of the establishment, its hazard potential and the surrounding area, or if the need for such an assessment has been determined in accordance with Article 6, the person responsible shall, in addition to the general safety measures, adopt the special safety measures laid down in Annex 3

### Art. 5 Summary report

<sup>1</sup> The person responsible for an establishment must submit a summary report to the enforcement authority. It shall include:

- a. a concise description of the establishment, together with a general plan and information on the surrounding area;
- b.<sup>24</sup> a list of the maximum quantities of the substances, preparations or special wastes present in the establishment which exceed the threshold quantities specified in Annex 1.1, together with the applicable threshold quantities;
- c.<sup>25</sup> the risk assessment specified in Article 8 of the Containment Ordinance of 9 May 2012<sup>26</sup>;
- d. documents drawn up in the preparation of any property and corporate liability insurance policies;
- e. details of safety measures;

<sup>23</sup> Amended by No I of the Ordinance of 13 Feb. 2013, in force since 1 April 2013 (AS **2013** 749).

<sup>24</sup> Amended by No II 8 of the Ordinance of 18 May 2005 on the Repeal and Amendment of Ordinances in connection with the Commencement of the Chemicals Act, in force since 1 Aug. 2005 (AS **2005** 2695).

<sup>25</sup> Amended by Annex 5 No 7 of the Containment Ordinance of 9 May 2012, in force since 1 June 2012 (AS **2012** 2777).

<sup>26</sup> SR **814.912**

- f. an estimate of the extent of possible harm to the public or damage to the environment resulting from major accidents.

<sup>2</sup> The person responsible for a transport route shall submit a summary report to the enforcement authority. It shall include:

- a. a concise description of the structural and technical design of the transport route, together with a general plan and information on the surrounding area;
- b. data on the volume and structure of traffic on the transport route and accident statistics;
- c. details of safety measures;
- d. an estimate of the likelihood of a major accident causing serious harm to the public or damage to the environment.

<sup>3</sup> The person responsible for a pipeline installation shall submit a summary report to the enforcement authority. It shall include:

- a. a concise description of the structural and technical design of the pipeline installation, together with a general plan and information on the surrounding area;
- b. data on the type, composition and physical state of the substances and preparations transported, together with the approved operating pressure and accident statistics;
- c. details of safety measures;
- d. an estimate of the likelihood of a major accident causing serious harm to the public or damage to the environment.<sup>27</sup>

<sup>4</sup> The person responsible shall update the summary report if substantial changes have occurred or relevant new knowledge becomes available.<sup>28</sup>

#### **Art. 6** Evaluation of the summary report, risk report

<sup>1</sup> The enforcement authority shall verify that the summary report is complete and correct.

<sup>2</sup> In particular, it shall verify:

- a. in the case of establishments, whether the estimate of the extent of possible harm or damage (Art. 5 para. 1 let. f) is plausible;
- b. in the case of transport routes, whether the estimate of the likelihood of a major accident causing serious harm or damage (Art. 5 para. 2 let. d) is plausible.

<sup>27</sup> Amended by No I of the Ordinance of 13 Feb. 2013, in force since 1 April 2013 (AS 2013 749).

<sup>28</sup> Inserted by No I of the Ordinance of 13 Feb. 2013, in force since 1 April 2013 (AS 2013 749).

- c.<sup>29</sup> in the case of pipeline installations, whether the estimate of the likelihood of a major accident causing serious harm or damage (Art. 5 para. 3 let. d) is plausible.

<sup>3</sup> Following an on-site inspection, where appropriate, it shall evaluate the validity of the assumption that:

- a. in the case of establishments, serious harm to the public or damage to the environment arising from major accidents is not to be expected;
- b. in the case of transport routes, the likelihood of occurrence of a major accident causing serious harm or damage is sufficiently low;
- c.<sup>30</sup> in the case of pipeline installations, the likelihood of occurrence of a major accident causing serious harm or damage is sufficiently low.

<sup>4</sup> If this assumption is not admissible, it shall order the person responsible to prepare a risk report in accordance with Annex 4.

#### **Art. 7** Evaluation of the risk report

<sup>1</sup> The enforcement authority shall review the risk report and evaluate whether the risk is acceptable. It shall set out its evaluation in a regulatory review report.

<sup>2</sup> When evaluating the acceptability of the risk, it shall take account of local risk factors and pay particular attention to the fact that the likelihood of occurrence of a major accident must be all the lower:

- a.<sup>31</sup> the more the need to protect the public or the environment against serious harm or damage arising from major accidents outweighs private and public interests in the operation of an establishment, a transport route or a pipeline installation;
- b. the greater the extent of the possible harm to the public or damage to the environment.

#### **Art. 8** Additional safety measures

<sup>1</sup> If the risk is unacceptable, the enforcement authority shall order such additional measures as may be required. If necessary, these may include restrictions or prohibitions on operations and traffic.

<sup>2</sup> In the case of measures for which a different public body is responsible, the enforcement authority shall submit appropriate requests to the competent authority. If necessary, the Federal Council shall coordinate the adoption of measures.

<sup>29</sup> Inserted by No I of the Ordinance of 13 Feb. 2013, in force since 1 April 2013 (AS 2013 749).

<sup>30</sup> Inserted by No I of the Ordinance of 13 Feb. 2013, in force since 1 April 2013 (AS 2013 749).

<sup>31</sup> Amended by No I of the Ordinance of 13 Feb. 2013, in force since 1 April 2013 (AS 2013 749).

**Art. 9** Disclosure of results of regulatory review

On request, the enforcement authority shall disclose the summary of the risk report according to Annex 4 and the regulatory review report, subject to legal requirements concerning secrecy.

**Art. 10** Information on the transport of dangerous goods

<sup>1</sup> The person responsible for railway installations on which dangerous goods are transported in accordance with the RSD<sup>32</sup> shall periodically compile and duly submit to the enforcement authority all the data on transport operations which is required to determine and evaluate the risk, such as the date of transport, the classification and volume of goods, and the place of departure and destination.<sup>33</sup>

<sup>2</sup> Any transport operator who transports dangerous goods in accordance with SDR<sup>34</sup> shall submit the following information to the enforcement authority of the canton where he is domiciled or has his place of business:

- a. his name and address;
- b. on request, all other data on transport operations which is required to determine and evaluate the risk, such as the date of transport, the classification and volume of goods, and the place of departure and destination.

<sup>3</sup> At the request of the Federal Office for the Environment (Federal Office)<sup>35</sup>, the Directorate of the Federal Military Administration shall ensure that the data specified in paragraph 2 is collected from the sections of the Federal Department of Defence, Civil Protection and Sport<sup>36</sup> which transport dangerous goods in accordance with the SDR or with the Ordinance of 1 June 1983<sup>37</sup> on Military Road Traffic.

<sup>4</sup> Any transport operator who transports dangerous goods in accordance with the ADN<sup>38</sup> shall submit the following information to the enforcement authority:

- a. his name and address;
- b. on request, all other data on transport operations which is required to determine and evaluate the risk, such as the date of transport, the classification and volume of goods, and the place of departure and destination.

<sup>32</sup> [AS 1996 3436, 2008 5747 Annex No. 19 5995. AS 2012 6541 Annex 3 No. I]. See now: the Ordinance of 31 Oct. 2012 (SR 742.412)

<sup>33</sup> Amended by No II 8 of the Ordinance of 18 May 2005 on the Repeal and Amendment of Ordinances in connection with the Commencement of the Chemicals Act, in force since 1 Aug. 2005 (AS 2005 2695).

<sup>34</sup> SR 741.621

<sup>35</sup> The title of the administrative unit was modified in application of Art. 16 para. 3 of the Publications Ordinance of 17 Nov. 2004 (SR 170.512.1).

<sup>36</sup> Title in accordance with unpublished Federal Council Decree dated 19 Dec. 1997.

<sup>37</sup> [AS 1983 627, 1985 890, 1986 22, 1991 95, 1992 1737. AS 1994 2211 Art. 63 No 1] See now the Ordinance of 11 Feb. 2004 (SR 510.710).

<sup>38</sup> [AS 1971 1957, 1977 768, 1983 486, 1987 1454, 1990 1356]. Now: Ordinance of 29 Nov. 2001 (SR 747.224.141).

### **Section 3: Response to Major Accidents**

#### **Art. 11**

<sup>1</sup> The person responsible shall make every effort to respond to major accidents.

<sup>2</sup> In particular, he shall:

- a. immediately tackle major accidents and notify the point of contact;
- b. immediately secure the accident site and prevent further impacts;
- c. remedy any impacts as soon as possible.

<sup>3</sup> He shall submit a report to the enforcement authority within three months after the accident. The report shall include:

- a. a description of the course and impacts of the major accident, and of the response provided;
- b. information on the effectiveness of the safety measures;
- c. an assessment of the accident.

<sup>4</sup> If the person responsible is unable to draw up the report within the period specified, he must submit an application for an extension to the enforcement authority, stating the reasons, together with an interim report on the state of the investigations.

### **Section 4: Responsibilities of the Cantons**

#### **Art. 11a<sup>39</sup>** Coordination with structure and land use plans

<sup>1</sup> The cantons shall take major accident prevention into account in structure and land use plans.

<sup>2</sup> For establishments, transport routes and pipeline installations, the enforcement authority shall designate the adjoining area in which the construction of buildings and installations may lead to a significant increase in the risk.

<sup>3</sup> Before the competent authority makes a decision on a change to a structure or land use plan in an area as specified in paragraph 2, it shall obtain an expert opinion from the enforcement authority for risk evaluation purposes.

#### **Art. 12** Point of contact

<sup>1</sup> The cantons shall designate a point of contact, which is responsible for receiving notifications of major accidents at any time and immediately alerting the emergency services.

<sup>39</sup> Inserted by No I of the Ordinance of 13 Feb. 2013, in force since 1 April 2013 (AS 2013 749).



<sup>2</sup> The cantons shall also ensure that a central office is designated, which immediately forwards notifications of major accidents to the National Emergency Operations Centre (NEOC) Emergency Desk (ASN).<sup>40</sup>

**Art. 13** Information and alerts

<sup>1</sup> The cantons shall ensure that, in the event of a major accident, the population affected is informed in good time and, if necessary, alerted and advised how to act.

<sup>2</sup> They shall also ensure that neighbouring cantons and states are informed in good time and, if necessary, alerted, if major accidents could have significant impacts beyond cantonal or national borders.

**Art. 14** Coordination of emergency services

The cantons shall coordinate the emergency services with the responsible persons' emergency plans.

**Art. 15** Coordination of inspections of establishments

As far as possible, the cantons shall coordinate the inspections of establishments which they are required to carry out under this and other legislation.

**Art. 16** Provision of information to the Federal Office

<sup>1</sup> The cantons shall periodically provide the Federal Office with information in the form of an overview of the hazard potentials and risks within their territory (risk register), together with the measures adopted.

<sup>2</sup> To this end, the competent federal and cantonal authorities shall make the necessary information available on request.

<sup>3</sup> The above is subject to legal requirements concerning secrecy.

## **Section 5: Responsibilities of the Confederation**

**Art. 17** Data collection by the Federal Office

<sup>1</sup> The competent federal and cantonal authorities shall forward to the Federal Office on request any information collected in accordance with this Ordinance.

<sup>2</sup> The Federal Office shall ensure that the data is processed and made available to the competent authorities, insofar as this is necessary for the implementation of this Ordinance.

<sup>3</sup> The above is subject to legal requirements concerning secrecy.

<sup>40</sup> Amended by No I of the Ordinance of 13 Feb. 2013, in force since 1 April 2013 (AS 2013 749).

**Art. 18** Data concerning the import, export and transit of dangerous goods by road

At the request of the Federal Office, the Customs Administration shall ensure that any data concerning the import, export and transit of dangerous goods which is required to determine and evaluate the risk is made available to the Federal Office.

**Art. 19** Processing of data concerning the transport of dangerous goods by road

The Federal Office shall be responsible for processing data concerning the transport of dangerous goods by road (Art. 10 and Art. 18).

**Art. 20** Information

In the event of major accidents which could have significant impacts beyond national borders, the competent federal authorities shall inform the relevant Swiss missions abroad and the foreign authorities concerned.

**Art. 21** Expert commissions

<sup>1</sup> The Federal Department of the Environment, Transport, Energy and Communications<sup>41</sup> may set up expert commissions, on which interested parties are duly represented, to advise the Federal Office.

<sup>2</sup> The advisory body for establishments where an activity involving genetically modified or pathogenic microorganisms is carried out is the Federal Expert Commission for Biosafety.<sup>42</sup>

**Art. 22** Guidelines

The Federal Office shall, as required, publish guidelines which explain the essential provisions of the Ordinance; these include, in particular, the provisions concerning the scope of the Ordinance, safety measures, the preparation of the summary report and risk report, and the review and evaluation thereof.

## **Section 6: Final Provisions**

**Art. 23**<sup>43</sup> Enforcement

<sup>1</sup>The cantons shall enforce this Ordinance unless responsibility for enforcement is assigned to the Confederation.

<sup>41</sup> The title of the administrative unit was modified in application of Art. 16 para. 3 of the Publications Ordinance of 17 Nov. 2004 (SR **170.512.1**).

<sup>42</sup> Inserted by Annex 5 No 2 of the Containment Ordinance of 25 Aug. 1999, in force since 1 Nov. 1999 (SR **814.912**).

<sup>43</sup> Amended by No II 8 of the Ordinance of 2 Feb. 2000 to the Federal Act on the Coordination and Simplification of Decision-Making Procedures (AS **2000 703**).

<sup>2</sup> When applying other federal acts or international agreements or resolutions relating to matters regulated by this Ordinance, federal authorities shall also be responsible for enforcing this Ordinance. Participation of the Federal Office and the cantons is governed by Article 41 paragraphs 2 and 4 EPA; these provisions are subject to legal requirements concerning secrecy.

<sup>3</sup> The Federal Office shall specify the minimal geodata models and presentation models for official geodata in accordance with this Ordinance for which it is designated as the competent federal authority in Annex 1 of the Ordinance of 21 May 2008<sup>44</sup> on Geoinformation.<sup>45</sup>

#### **Art. 24** Amendment of existing legislation

...<sup>46</sup>

#### **Art. 25** Transitional provisions

<sup>1</sup> The person responsible shall submit the summary report (Art. 5) to the enforcement authority:

- a. in the case of establishments, by 1 April 1993;
- b. in the case of railway installations used for national and international transit traffic such as main lines according to Article 2 of the Railways Act of 20 December 1957<sup>47</sup>, by 1 April 1993; in the case of other railway installations, by 1 April 1994;
- c. in the case of European roads, motorways and expressways as defined in the Ordinance of 6 June 1983<sup>48</sup> on Transit Roads, by 1 April 1993; in the case of other transit roads, by 1 April 1994;
- d. in the case of the Rhine, by 1 April 1993.

<sup>2</sup> The information specified in Article 10 paragraph 1 shall be submitted to the enforcement authority for the first time in respect of 1991; the information specified in Article 10 paragraph 2 letter a and paragraph 4 letter a shall be submitted to the enforcement authority by 1 October 1991.

<sup>3</sup> The enforcement authority shall waive the requirement to provide information in accordance with paragraphs 1 and 2 in cases where it already has the necessary information.

<sup>44</sup> SR **510.620**

<sup>45</sup> Inserted by Annex 2 No 5 of the Ordinance of 21 May 2008 on Geoinformation, in force since 1 July 2008 (SR **510.620**).

<sup>46</sup> The amendments may be consulted under AS **1991** 748.

<sup>47</sup> SR **742.101**

<sup>48</sup> Now: the Transit Roads Ordinance of 18 Dec. 1991 (SR **741.272**).

**Art. 25<sup>a49</sup>** Transitional provisions relating to the amendment of 13 February 2013

<sup>1</sup> The person responsible for a pipeline installation shall submit the summary report (Art. 5 para. 3) to the enforcement authority no later than 5 years after this amendment to the Ordinance comes into force.

<sup>2</sup> The enforcement authority shall waive the requirement to provide information in accordance with paragraph 1 in cases where it already has the necessary information.

**Art. 26** Commencement

This Ordinance comes into force on 1 April 1991.

<sup>49</sup> Inserted by No I of the Ordinance of 13 Feb. 2013, in force since 1 April 2013 (AS **2013** 749).

## Scope and summary report

*Annex 1.<sup>50</sup>*  
(Art. 1 and Art. 5)

### Threshold quantities for substances, preparations or special wastes

**1** ...

#### **2 Determination of threshold quantities**

##### **21 Substances or preparations**

<sup>1</sup> For substances or preparations listed in the table under number 3, the threshold quantities specified therein are applicable.

<sup>2</sup> For other substances or preparations, the person responsible shall determine the threshold quantity using the criteria specified in number 4.

<sup>3</sup> The criteria are classified into three areas (no. 41: toxicity; no. 42: fire and explosion characteristics; no. 43: ecotoxicity). Only one threshold quantity is to be determined in each area, proceeding in the order in which the criteria are listed (letters). After a threshold quantity has been determined for one area, one proceeds to the next area. The lowest threshold quantity obtained in this manner shall be adopted.

<sup>4</sup> The person responsible need not determine the threshold quantity for a criterion or area if he can argue convincingly that the costs of acquiring the data would be disproportionate.

#### **22 Special wastes**

The Federal Department of the Environment, Transport, Energy and Communications (DETEC) shall specify the threshold quantities for special wastes designated as such in the waste list issued in accordance with Article 2 of the Ordinance of 22 June 2005<sup>51</sup> on Movements of Waste. In doing so, it shall take account of their:

- a. toxicity;
- b. fire and explosion characteristics;
- c. ecotoxicity.

<sup>50</sup> Revised in accordance with No II 8 of the Ordinance of 18 May 2005 on the Repeal and Amendment of Ordinances in connection with the Commencement of the Chemicals Act (AS 2005 2695) and Annex 3 No II 2 of the Ordinance of 22 June 2005 on Movements of Waste, in force since 1 Jan. 2006 (SR 814.610).

<sup>51</sup> SR 814.610

### 3 Substances and preparations with specified threshold quantities (list of exceptions)

No.	Substance name	CAS no. <sup>1</sup>	TQ (kg) <sup>2</sup>
1	Acetylene	74-86-2	5 000
2	4-Aminodiphenyl and its salts		1
3	Arsenic(III) oxide, arsenic(III) acid and their salts		100
4	Arsenic(V) oxide, arsenic(V) acid and/or their salts		1 000
5	Benzidine and its salts		1
6	Gasoline (regular, super)		200 000
7	Bis(chloromethyl) ether	542-88-1	1
8	Chlorine	7782-50-5	200
9	Chloromethyl methyl ether	107-30-2	1
10	Dimethylcarbamoyl chloride	79-44-7	1
11	Dimethylnitrosamine	62-75-9	1
12	Heating oil, diesel		500 000
13	Hexamethylphosphoric triamide	680-31-9	1
14	Kerosene		200 000
15	4,4'-Methylenebis(2-chloroaniline) and its salts, in powder form		10
16	2-Naphthylamine and its salts		1
17	Nickel compounds in inhalable powder form (nickel monoxide, nickel dioxide, nickel sulphide, trinickel sulphide, dinickel trioxide)		1 000
18	4-Nitrodiphenyl	92-93-3	1
19	Methylisocyanate	624-83-9	150
20	Polychlorodibenzofurans, calculated as TCDD-equivalents		1
21	Polychlorodibenzodioxins (including TCDD), calculated as TCDD-equivalents		1
22	1,3-Propane sultone	1120-71-4	1
23	Sulphur dichloride	10545-99-0	1 000
24	Hydrogen	1333-74-0	5 000

<sup>1</sup> Substance identifier in the Chemical Abstracts Service Registry

<sup>2</sup> Threshold quantity in kg

4

Criteria for determining threshold quantities

41

Toxicity

Criteria	Values for criteria			
	TQ <sup>1</sup> = 200 kg	TQ <sup>1</sup> = 2000 kg	TQ <sup>1</sup> = 20 000 kg	TQ <sup>1</sup> = 200 000 kg
a. EU classification	T <sup>+</sup>	T, C	X <sub>n</sub>	X <sub>i</sub>
b. acute toxicity				
– oral (mg/kg)	< 25	25 to ≤ 200	200 to ≤ 2000	
– dermal (mg/kg)	< 50	50 to ≤ 400	400 to ≤ 2000	
– inhalation (mg/l 4h)	< 0.5	0.5 to ≤ 2	2 to ≤ 20	
c. SDR <sup>2</sup> classification				
– Class 8		PG <sup>3</sup> I, II		PG <sup>3</sup> III
– Class 6.1	PG <sup>3</sup> I	PG <sup>3</sup> II	PG <sup>3</sup> III	
1	Threshold quantity			
2	SR <b>741.621</b>			
3	Packaging group			

42

Fire and explosion characteristics

Criteria	Values for criteria			
	TQ <sup>1</sup> = 200 kg	TQ <sup>1</sup> = 2000 kg	TQ <sup>1</sup> = 20 000 kg	TQ <sup>1</sup> = 200 000 kg
a. Fire risk according to SWISSI <sup>2</sup>		E1	E2, AF, HF, F1, F2, O1, O2	F3, F4, O3
b. EU classification		E	F <sup>+</sup> , F, O, R10	
c. Flashpoint (°C)			≤ 55	>55
d. SDR <sup>3</sup> classification				
– Class 3			PG <sup>4</sup> I, II	PG <sup>4</sup> III
1	Threshold quantity			
2	Institute of Safety and Security			
3	SR <b>741.621</b>			
4	Packaging group			

43 Ecotoxicity

Criteria	Values for criteria			
	TQ <sup>1</sup> = 200 kg	TQ <sup>1</sup> = 2000 kg	TQ <sup>1</sup> = 20 000 kg	TQ <sup>1</sup> = 200 000 kg
a. acute toxicity for <i>Daphnia</i> : EC <sub>50</sub> <sup>2</sup> (mg/l) after 1 day		≤ 10		
b. acute toxicity for fish <sup>3</sup> : LC <sub>50</sub> <sup>4</sup> (mg/l) after 2 to 4 days		≤ 10		
<sup>1</sup> Threshold quantity				
<sup>2</sup> Median effective concentration for immobilisation of 50% of <i>Daphnia</i>				
<sup>3</sup> The provisions of animal protection legislation are to be complied with.				
<sup>4</sup> Median lethal concentration				

5 ...



*Annex 1.*<sup>52</sup>  
(Art. 1 and 5)

<sup>52</sup> Repealed by Annex 5 No 2 of the Containment Ordinance of 25 Aug. 1999 (SR **814.912**).

*Annex 1.3*<sup>53</sup>  
(Art. 1)

## Criteria for pipeline installations

<sup>1</sup> Pipeline installations for the transport of gaseous thermal and motor fuels fall within the scope of this Ordinance if they meet the following criteria:

- a. the approved operating pressure is greater than 5 bar and less than or equal to 25 bar and the product of the approved operating pressure in pascals (Pa) and the external diameter in metres is greater than 500,000 Pa m (500 bar cm) (“pressure” is to be taken to mean “positive pressure”); or
- b. the approved operating pressure is greater than 25 bar and the product of the approved operating pressure in pascals (Pa) and the external diameter in metres is greater than 1,000,000 Pa m (1,000 bar cm) (“pressure” is to be taken to mean “positive pressure”).

<sup>2</sup> Pipeline installations for the transport of liquid thermal and motor fuels fall within the scope of this Ordinance if, with an approved operating pressure of greater than 5 bar, the product of the approved operating pressure in pascals (Pa) and the external diameter in metres is greater than 200,000 Pa m (200 bar cm) (“pressure” is to be taken to mean “positive pressure”).

<sup>53</sup> Inserted by No II of the Ordinance of 13 Feb. 2013, in force since 1 April 2013 (AS 2013 749).

*Annex 2***Principles for the adoption of general safety measures***Annex 2.1<sup>54</sup>*  
(Art. 3)**Establishments handling substances, preparations or special wastes**

When adopting general safety measures, the person responsible for an establishment handling substances, preparations or special wastes shall take into account, in particular, the following principles; he shall:

- a. select a suitable site and ensure that appropriate safety distances are maintained;
- b. as far as possible, replace dangerous substances or preparations with less dangerous ones, or limit the quantities thereof;
- c. as far as possible, avoid hazardous processes, methods or operating procedures;
- d. design load-bearing structures in such a way that no additional serious impacts arise as a result of the stresses to be expected in the event of a major accident;
- e. store substances, preparations or special wastes in an orderly manner, taking account of their properties, and keep records of stocks;
- f. install the necessary safety equipment and take the necessary structural, technical and organisational protective measures;
- g. install reliable measurement or control systems, which, insofar as required for safety reasons, are multiple, of different types and operate independently of each other;
- h. install adequate warning and alarm systems;
- i. monitor equipment and the operation of safety-critical components and carry out regular servicing;
- k. define responsibilities within the establishment for the adoption and monitoring of safety measures;
- l. collect, evaluate and pass on to the staff concerned any information available on high-risk methods and processes used in the establishment;

<sup>54</sup> Revised in accordance with No II 8 of the Ordinance of 18 May 2005 on the Repeal and Amendment of Ordinances in connection with the Commencement of the Chemicals Act, in force since 1 Aug. 2005 (AS **2005** 2695).

- m. deploy a sufficient number of suitably qualified staff and train them to prevent, prepare for and respond to major accidents;
- n. control access to the establishment;
- o. provide the resources required for the response to major accidents and liaise with the emergency services.

*Annex 2.*<sup>55</sup>  
(Art. 3)

## **Establishments handling microorganisms**

The person responsible for an establishment where an activity involving genetically modified or pathogenic microorganisms is carried out shall:

- a. select a suitable site and ensure that appropriate safety distances are maintained;
- b. as far as possible, replace dangerous microorganisms with less dangerous ones;
- c. adopt the safety measures specified in Annex 4 of the Containment Ordinance of 9 May 2012<sup>56</sup>;
- d. establish internal rules for the prevention, control and management of major accidents and train staff in the application of these rules;
- e. provide the resources required for the management of major accidents and liaise with the emergency services;
- f. collect, evaluate and pass on to the staff concerned any information available on high-risk methods and processes used in the establishment.

<sup>55</sup> Amended by Annex 5 No 2 of the Containment Ordinance of 25 Aug. 1999 (AS **1999** 2783). Revised in accordance with Annex 5 No 7 of the Containment Ordinance of 9 May 2012, in force since 1 June 2012 (AS **2012** 2777)

<sup>56</sup> SR **814.912**

*Annex 2.3*  
(Art. 3)**Transport routes**

When adopting general safety measures, the person responsible for a transport route shall take into account, in particular, the following principles; he shall:

- a. select a suitable alignment and appropriate construction standards and ensure that the necessary safety distances are maintained;
- b. design the transport route in such a way that no additional serious impacts arise as a result of the stresses to be expected in the event of a major accident;
- c. install the necessary safety equipment and take the necessary structural, technical and organisational protective measures;
- d. install adequate warning and alarm systems;
- e. monitor equipment and the operation of safety-critical elements of the transport route and carry out regular servicing;
- f. take the necessary traffic management or control measures for the transport of dangerous goods;
- g. collect, evaluate and pass on to the staff concerned any information available on the transport of dangerous goods;
- h. in cooperation with the emergency services, draw up an emergency plan for major accidents and carry out periodic exercises on the basis of this plan.

*Annex 2.*<sup>57</sup>  
(Art. 3)

## Pipeline installations

When adopting general safety measures, the person responsible for a pipeline installation shall take into account, in particular, the following principles; he shall:

- a. select a suitable alignment/site and ensure that appropriate safety distances are maintained;
- b. taking the surrounding area into account, install the necessary safety equipment and take the necessary structural, technical and organisational protective measures;
- c. collect, evaluate and pass on to interested third parties (e.g. staff, emergency services and land owners) any information available on the hazards posed by the thermal and motor fuels transported.

<sup>57</sup> Inserted by No II of the Ordinance of 13 Feb. 2013, in force since 1 April 2013 (AS 2013 749).

*Annex 3***Special safety measures***Annex 3.1*<sup>58</sup>  
(Art. 4)**Establishments handling substances, preparations or special wastes**

The person responsible for an establishment where substances, preparations or special wastes are handled shall:

- a. keep records of the quantities and locations of the substances, preparations or special wastes present in the establishment which exceed the threshold quantities specified in Annex 1.1; these records are to be updated immediately in the event of significant changes and otherwise once a week;
- b. keep a written record of the safety-related properties of the substances or preparations specified in letter a;
- c. subject to special provisions, retain the records of regular inspections of safety measures for five years;
- d. document any significant operational failures, their causes and the measures adopted; the documents are to be retained for the duration of operations, but for a maximum of ten years;
- e. retain the data and documents specified in letters a–d in a safe place and, on request, provide the enforcement authority with information on the current status thereof;
- f. in cooperation with the emergency services, draw up an emergency plan for major accidents and carry out periodic exercises on the basis of this plan;
- g. inform staff of the results of the risk report.

<sup>58</sup> Revised in accordance with No II 8 of the Ordinance of 18 May 2005 on the Repeal and Amendment of Ordinances in connection with the Commencement of the Chemicals Act, in force since 1 Aug. 2005 (AS **2005** 2695).



*Annex 3.259*  
(Art. 4)

## **Establishments handling microorganisms**

The person responsible for an establishment where an activity involving genetically modified or pathogenic microorganisms is carried out shall:

- a. keep a list of the microorganisms used in the establishment, together with details of where they are used and stored;
- b. document any significant operational failures, their causes and the measures adopted; the documents are to be retained for the duration of operations, but for a maximum of ten years;
- c. retain the data and documents specified in letters a and b in a safe place and, on request, provide the enforcement authority with information on the current status thereof;
- d. in cooperation with the emergency services, draw up an emergency plan for major accidents and carry out periodic exercises on the basis of this plan;
- e. inform staff of the results of the risk report and the emergency plan for major accidents;
- f. periodically, in an appropriate manner, inform the population that could be affected by a major accident about the emergency plan and how to act in the event of such an accident.

<sup>59</sup> Revised in accordance with Annex 5 No 2 of the Containment Ordinance of 25 Aug. 1999, in force since 1 Nov. 1999 (SR **814.912**).

*Annex 4***Risk report***Annex 4.1<sup>60</sup>*  
(Art. 6)**Establishments handling substances, preparations or special wastes****1 Principles**

<sup>1</sup> The risk report must contain all the information required by the enforcement authority in order to verify and evaluate, in accordance with Article 7, the risk posed by the establishment to the public or the environment. This includes, in particular, all the information listed in numbers 2–5.

<sup>2</sup> In justified cases, certain items of information may be omitted or replaced by others which are equally valid or more appropriate.

<sup>3</sup> The scope and degree of detail of the information given for each item will depend on the specific circumstances; in particular, consideration is to be given to the type of establishment, the hazard potential, the surrounding area and the safety measures.

<sup>4</sup> Documentation used for the risk report, particularly test results, empirical data, literature references, results of calculations and detailed analyses, are to be kept at the disposal of the enforcement authority.

**2 Basic data****21 Establishment and surrounding area**

- Description of the establishment, together with a site plan, including any licences, planning approvals or concessions;
- characterisation of the establishment (main activities, organisational structure, number of staff, etc.);
- details of the surrounding area, together with a general plan,
- division of the establishment into study units and the reasons for this division.

<sup>60</sup> Revised in accordance with No II 8 of the Ordinance of 18 May 2005 on the Repeal and Amendment of Ordinances in connection with the Commencement of the Chemicals Act, in force since 1 Aug. 2005 (AS **2005** 2695).

**22 List of substances, preparations or special wastes present in each study unit**

- Designation (chemical name, CAS number, trade name, etc.),
- maximum quantity,
- location,
- details of physical and chemical properties.

**23 Description of installations in each study unit**

- Structure of buildings,
- methods and processes,
- storage,
- incoming and outgoing shipments,
- provision of supplies and disposal,
- installation-specific major accidents.

**24 Safety measures in each study unit**

- Regulations applied and experience,
- measures taken to reduce the hazard potential,
- measures taken to prevent major accidents,
- measures taken to limit the impacts of major accidents.

**3 Analysis for each study unit****31 Methods**

- Description of the methods used.

**32 Hazard potentials**

- Overview and characterisation of the main hazard potentials.

**33 Main major accident scenarios****331 Release process**

- Possible causes,
- description of significant release processes,
- estimate of the likelihood of occurrence, given the safety measures in place.

**332 Effects of release**

- Description of effects, based on dispersion considerations,
- estimate of the likelihood of occurrence, given the safety measures in place.

**333 Consequences for the public and the environment**

- Description of the extent of possible harm to the public or damage to the environment,
- estimate of the likelihood of occurrence, given the safety measures in place.

**4 Conclusions**

- Account of the risk for each study unit, given the safety measures in place,
- estimate of the risk posed by the establishment as a whole.

**5 Summary of the risk report**

- Characterisation of the establishment and of the main hazard potentials,
- description of the safety measures,
- description of the main major accident scenarios,
- estimate of the risk posed by the establishment as a whole.

*Annex 4.261*  
(Art. 6)

## **Establishments handling microorganisms**

### **1 Principles**

<sup>1</sup> The risk report must contain all the information required by the enforcement authority in order to verify and evaluate, in accordance with Article 7, the risk posed by the establishment to the public or the environment. This includes, in particular, all the information listed in numbers 2–5.

<sup>2</sup> In justified cases, certain items of information may be omitted or replaced by others which are equally valid or more appropriate.

<sup>3</sup> The scope and degree of detail of the information given for each item will depend on the specific circumstances; in particular, consideration is to be given to the nature of the establishment, the hazard potential, the surrounding area and the safety measures. Items marked with an asterisk (\*) are generally only applicable to production facilities.

<sup>4</sup> Documentation used for the risk report, particularly test results, empirical data, literature references, results of calculations and detailed analyses, are to be kept at the disposal of the enforcement authority.

### **2 Basic data**

#### **21 Establishment and surrounding area**

- Description of the establishment, together with a site plan, including any permits or planning approvals,
- characterisation of the establishment,
- names of the persons responsible,
- information on the surrounding area, together with a general plan.

#### **22 Activities involving microorganisms**

Risk assessment in accordance with Article 8 of the Containment Ordinance of 9 May 2012<sup>62</sup>; in particular, the identity and characteristics of the microorganisms and the nature and scale of the activity:

<sup>61</sup> Revised by Annex 5 No 2 of the Containment Ordinance of 25 Aug. 1999 (AS 1999 2783) and Annex 5 No 7 of the Containment Ordinance of 9 May 2012, in force since 1 June 2012 (AS 2012 2777).

<sup>62</sup> SR 814.912

- a. the parental microorganisms or, where applicable, the host-vector system used;
- b. the source and intended function(s) of the genetic material involved in the manipulation,
- the purpose of the contained use,
- the culture volumes,
- \* the nature of the intended product and of any by-products which are or may be produced in the course of the activity.

## **23 Installation**

- Description of the sections of the installation,
- \* the maximum number of persons working in the installation and of persons working directly with the microorganisms.

## **24 Waste, wastewater and exhaust air**

- types and quantities of waste and wastewater arising from the use of microorganisms,
- ultimate form and destination of inactivated wastes.

## **25 Safety measures**

- Class of the activity in accordance with the Containment Ordinance of 9 May 2012
- measures specified in the Containment Ordinance,
- measures taken to prevent major accidents,
- measures taken to limit the impacts of major accidents.

## **3 Analysis**

### **31 Methods**

- Description of the methods used.

## **32 Hazard potentials**

- Overview and characterisation of the main hazard potentials.

**33 Main major accident scenarios**

- Possible causes of major accidents,
- description of significant release events and their effects, based on dispersal considerations,
- description of the extent of possible harm to the public or damage to the environment,
- estimate of the likelihood of occurrence, given the safety measures in place.

**4 Conclusions**

- Account of the risk, given the safety measures in place,
- estimate of the risk posed by the establishment.

**5 Summary of the risk report**

- Characterisation of the establishment and of the main hazard potentials,
- description of the safety measures,
- description of the main major accident scenarios,
- estimate of the risk posed by the establishment.

*Annex 4.3*  
(Art. 6)**Transport routes****1 Principles**

<sup>1</sup> The risk report must contain all the information required by the enforcement authority in order to verify and evaluate, in accordance with Article 7, the risk posed by the transport route to the public or the environment. This includes, in particular, all the information listed in numbers 2–5.

<sup>2</sup> In justified cases, certain items of information may be omitted or replaced by others which are equally valid or more appropriate.

<sup>3</sup> The scope and degree of detail of the information given for each item will depend on the specific circumstances; in particular, consideration is to be given to the specific features and location of the transport route, the surrounding area, the volume and structure of traffic, accident statistics and safety measures.

<sup>4</sup> Documentation used for the risk report, particularly test results, empirical data, literature references, results of calculations and detailed analyses, are to be kept at the disposal of the enforcement authority.

**2 Basic data****21 Transport route and surrounding area**

- Description of the transport route, together with a site plan,
- information on the structure of the transport route and technical and organisational data,
- information on safety equipment,
- information on the surrounding area, including a general plan.

**22 Volume and structure of traffic and accident statistics**

- Traffic data, such as the total volume of traffic and the proportion of heavy goods traffic,
- data on the volume of dangerous goods traffic as a proportion of total heavy goods traffic,
- data on the accident rate, accident black spots and general accident statistics.



**23                    Safety measures**

- Regulations applied and experience,
- measures taken to reduce the hazard potential,
- measures taken to prevent major accidents,
- measures taken to limit the impacts of major accidents.

**3                      Analysis****31                    Methods**

- Description of the methods used,
- description of the survey method used to determine the proportion of dangerous goods traffic.

**32                    Hazard potentials**

- Overview and characterisation of the main hazard potentials.

**33                    Main major accident scenarios**

- Possible causes of major accidents,
- description of significant release events and their effects, based on dispersion considerations,
- description of the extent of possible harm to the public or damage to the environment,
- estimate of the likelihood of occurrence, given the safety measures in place.

**4                      Conclusions**

- Account of the risk, given the safety measures in place,
- estimate of the risk posed by the transport route.

**5                      Summary of the risk report**

- Characterisation of the transport route and of the main hazard potentials,
- description of the safety measures,
- description of the main major accident scenarios,
- estimate of the risk posed by the transport route.

*Annex 4.4*<sup>63</sup>  
(Art. 6)

## **Pipeline installations**

### **1 Principles**

<sup>1</sup> The risk report must contain all the information required by the enforcement authority in order to verify and evaluate, in accordance with Article 7, the risk posed by the pipeline installation to the public or the environment. This includes, in particular, all the information listed in numbers 2–5.

<sup>2</sup> In justified cases, certain items of information may be omitted or replaced by others which are equally valid or more appropriate.

<sup>3</sup> The scope and degree of detail of the information given for each item will depend on the specific circumstances; in particular, consideration is to be given to the specific type of pipeline installation, its hazard potential and the surrounding area, as well as to safety measures.

<sup>4</sup> Documentation used for the risk report, particularly test results, empirical data, literature references, results of calculations and detailed analyses, are to be kept at the disposal of the enforcement authority.

### **2 Basic data**

#### **21 Pipeline installation and surrounding area**

- Description of the pipeline installation, together with a route/site plan,
- information on the structure of the pipeline installation and technical and organisational data,
- information on safety equipment,
- information on the surrounding area, including a general plan.

#### **22 Safety measures**

- Technical standards,
- measures taken to reduce the hazard potential,
- measures taken to prevent major accidents,
- measures taken to limit the impacts of major accidents.

<sup>63</sup> Inserted by No II of the Ordinance of 13 Feb. 2013, in force since 1 April 2013 (AS 2013 749).

**3                    Analysis****31                  Methods**

- Description of the methods used.

**32                  Hazard potentials**

- Overview and characterisation of the main hazard potentials.

**33                  Main major accident scenarios**

- Possible causes of major accidents,
- description of significant release events and their effects, based on dispersion considerations,
- description of the extent of possible harm to the public or damage to the environment,
- estimate of the likelihood of occurrence, given the safety measures in place.

**4                    Conclusions**

- Account of the risk, given the safety measures in place,
- estimate of the risk posed by the pipeline installation.

**5                    Summary of the risk report**

- Characterisation of the pipeline installation and of the main hazard potentials,
- description of the safety measures,
- description of the main major accident scenarios,
- estimate of the risk posed by the pipeline installation.

