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## > GHS in Switzerland

*Economic impact assessment of the Introduction of the  
«Globally Harmonized System of Classification and Labelling  
of Chemicals» (GHS)*

*Summary of the publication: «GHS in der Schweiz»: [www.bafu.admin.ch/uw-0732-d](http://www.bafu.admin.ch/uw-0732-d)*

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## > Summary

### Background

Several national and regional systems for the classification and labelling of chemical substances and preparations are applied worldwide. Many states, especially developing countries and newly industrialising countries have no regulations at all on the classification and labelling of chemicals. Thus in some countries dangerous chemicals are produced, imported and used without any information on the danger that they present to humans and to the environment, resulting in unnecessary exposure. Moreover, different systems for the classification and labelling of chemicals represent barriers to international trade in chemical products. Before this background, at the 1992 UN Conference on the Environment and Development in Rio de Janeiro it was decided to develop a worldwide uniform system at the UN level, containing harmonised criteria for the classification and labelling of substances and preparations (mixtures) and harmonised hazard communication elements (Globally Harmonized System of Classification and Labelling of Chemicals, GHS). In 2002, at the UN summit in Johannesburg, the UN member states recommended that GHS should be implemented into national legislation by 2008. In the EU a European Commission proposal for an EU GHS Regulation is currently being discussed by the European Parliament and the Council. The intention is that the GHS regulation will enter into force on 1 January 2009 in the EU. When Switzerland harmonized the legislation on chemicals in 2005 with the EU legislation the current EU rules on the classification and labelling of substances and preparations have been adopted. With the introduction of the GHS regulation in the EU the Swiss regulation on classification and labelling of chemicals will again be completely different from the regulation on C&L in the EU, which will result in new barriers to trade. Therefore Switzerland will consider implementing the GHS into its national legislation.

### Objectives of the EIA

To assess the impact of implementation of the GHS on the economy in Switzerland, the Federal Office for the Environment (FOEN), in agreement with the Federal Office of Public Health (FOPH) and the State Secretariat for Economic Affairs (SECO) contracted the present economic impact assessment (EIA). An economic impact assessment contains in particular an evaluation of the effects of a measure on the environment and on society (i.e. on various stakeholders such as enterprises, the public sector, and private households). By using the EIA method developed and applied within the federal administration, the FOEN is implementing the "Regulatory Impact Analysis (RIA)" within its area of responsibility for the federal government. The EIA is compatible with the RIA. In this EIA on the implementation of the GHS mainly impacts on affected enterprises have been analysed since effects on the environment and on other target groups are considered to be minimal.

The objectives of this investigation were:

- > to evaluate the impact of the introduction of the GHS in Switzerland on Swiss enterprises (costs and benefits) and
- > to determine the best option for the introduction of the GHS in Switzerland from an economic point of view.

The following options for action have been investigated in this EIA study:

- > Option 1: GHS is not implemented in Switzerland;
- > Option 2: completely harmonised implementation of the European Union GHS system in Switzerland (EU GHS);
  - 2a: with identical obligations and identical transition periods for substances and preparations in Switzerland as in the EU;
  - 2b: with identical obligations as in the EU, but a longer transition period for substances in Switzerland and the same transition period for preparations in Switzerland as in the EU;
- > Option 3: Complete adoption of the UN GHS and of additional (“left-over”) elements of the EU GHS.

### **Impacts of the Introduction of the GHS**

In case of an introduction of the GHS in Switzerland (options 2 and 3) all enterprises that are obliged to classify substances and preparations will have to bear costs. These costs result from changing to the new system of classification and labelling, additional indirect costs for alterations in composition of certain preparations and marketing costs. There would for instance be a need for re-formulation of chemical products that have to be classified more strictly according to the GHS compared to the current C&L rules and would thereby fall under the rules about special obligations on handling of particularly dangerous substances and preparations. Another motivation for re-formulation of preparations could arise from marketing considerations within the company (chemical products labelled as less hazardous are marketed with more success). In case where the GHS would not be implemented in Switzerland (option 1) additional costs are expected for enterprises that export substances and preparations to countries where classification and labelling according to the GHS is required and companies that import chemicals from such countries. The latter costs result due to the re-labelling requirements for imported products (classification according to the current Swiss legislation and corresponding changes in labelling and safety data sheets).

### **Boundary conditions**

The effects of implementing the GHS in Switzerland on the economy and on business are influenced by various factors, which have to be taken into account as boundary conditions for the EIA. These include, in particular, the means and timing of the introduction of the GHS by Switzerland’s important trade partners, the new European Community REACH Regulation (EC Regulation 1907/2006 of 18.12.2006 concerning the registration, evaluation, authorisation and restriction of chemical substances), the

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planned partial revision of the Federal Law on technical barriers to trade (introduction of the “Cassis-de-Dijon-Principle” on free movement of goods in Switzerland) and the type of adaptation of rules pertaining to the classification and labelling of substances and preparations in the subordinate ordinances.

The following assumptions provide the boundary conditions for the present EIA: the REACH Regulation, which entered into force in the EU on 1 June 2007, will not be implemented in Switzerland during the phase of introduction of the GHS, in particular until the end of the transition period for the classification of substances according to the GHS. The “Cassis-de-Dijon-Principle” applies for imported products with GHS labelling, if there is not a harmonisation with EU legislation anyway. All regulations in the Swiss legislation that are related to classification of substances and preparations (“downstream legislation”) would be affected by the implementation of the GHS and would have to be adjusted e.g. parts of the legislation on chemicals (ordinances on chemicals, on plant protection products, on biocidal products etc.), environmental legislation (ordinance on major accidents) and possibly ordinances in the areas of safety in the workplace, waste, protection of water bodies, agriculture etc. However, necessary adaptations to “downstream legislation” linked to the introduction of the GHS, and their effects are not within the scope of this EIA. Nevertheless, it is assumed that adaptations in the “downstream legislation” that would be necessary when the GHS is implemented, could be arranged in such a way, that the existing obligations for the use of chemicals will not or only negligibly change.

### **Approach of the study**

Based on the impact assessment on the introduction of the GHS in the EU, carried out on behalf of the EU Commission and based on the authors’ own reflections, all cost and benefit elements relevant to the GHS were identified. Then the sectors of the Swiss chemical industry that are most affected by the implementation of the GHS have been identified. The extent of the involvement was determined based on statistical data on trans-boundary trade and on data on the number and size of the companies and the number of their employees.

Fifteen enterprises from the most affected sectors (basic chemicals, construction chemistry, lacquers and colours, biocides, flavours and perfumes, surfactants, paper chemistry, cosmetics, washing and cleaning detergents and lubricants) were interviewed about their assessment of costs and benefits of the GHS depending on the different options described above. The interviews with the enterprises were carried out with the help of a questionnaire that has been distributed to them in advance. These companies represent manufacturers of substances and formulators of preparations, different sizes of companies (very small enterprises, SMEs, and large international companies) with different proportions of trans-boundary and domestic trade. The costs and benefits for the different options of non-implementation and implementation of the GHS were evaluated qualitatively based on data received from the interviewed companies, and on results of the impact assessment carried out by the EU. In addition, the costs of the different options were estimated (semi)quantitatively using a simple model.

## Results

The selection of companies that have been interviewed within this project can be regarded as almost representative since these companies represent enterprises of different size and most relevant sectors of the Swiss chemical industry that are affected by the GHS. However, the sample size was too small to make statistically valid statements about the effects for the entire Swiss economy. The study also showed that many companies have not yet got deeply involved in the GHS, so the indications of costs are only rough estimates, marked by great uncertainty.

In the case of options 2 and 3, the costs of change to the GHS are limited to the transition period. In contrast, for option 1 there would be continuous costs, since two systems of classification and labelling would have to be run in parallel. Therefore, the costs for option 1 were calculated for a period of ten years in order to compare the costs for different options in this study. The semi-quantitative estimation showed – for all options – that the costs of introducing the GHS tend to rise with increasing company-size and with an increase in the number of products. A comparison of the costs between the different options showed that option 1 (maintaining the status quo for a period of 10 years or longer) induces the highest costs, followed by options 3 and 2b, with the lowest costs for option 2a (implementation of the EU GHS system with the same transition period as the EU). The introduction of the complete UN GHS (option 3) would require classification and labelling of considerably more products than for options 2a and 2b, which would imply considerable extra costs, which cannot be estimated.

## Costs

The semi-quantitatively estimated costs for the selected companies that have been interviewed vary greatly and therefore the uncertainty of the estimated data on costs is considerably high. The estimated cost of changing to the EU GHS system (option 2a or 2b) would be on average 0.7 million CHF ( $0.698 \pm 0.603$ ) for small companies (up to 50 employees), 1.4 million CHF ( $1.37 \pm 0.641$ ) for medium-sized companies (51–250 employees) and 1.6 million CHF ( $1.56 \pm 1.45$ ) for large companies (251–5000 employees). However, for most companies, if calculated for a period of ten years, the basic costs of maintaining the current system of classification and labelling (chemicals management) are higher than the costs of introducing the GHS.

The estimated costs per product for implementation of the GHS vary greatly from company to company for all options. For the 15 companies included in the study, the estimated costs of introducing the EU GHS (option 2a) ranged from about 100 to 3500 CHF.

14 of the 15 interviewed companies favoured option 2a. All companies agreed that the applicability of the GHS in Switzerland should be coordinated in time with the entry into force of the GHS regulation in the EU, otherwise more work and higher costs could be expected.

For companies that export most of their chemical products to countries with a GHS regulation, the implementation of the GHS in Switzerland would cause relatively small

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additional costs compared with the unavoidable costs for changing classification, labelling and safety data sheets for exported products. This applies in particular for medium-size and large companies. However, companies that mainly produce for the home market, especially small and medium-size enterprises, are more strongly affected since the additional cost of the introduction of the GHS in Switzerland will be relatively higher for them. Compared to the basic costs for maintaining the current classification and labelling system, the cost for changing to the GHS will be relatively higher for small enterprises than for large companies.

The benefits of introducing the GHS in Switzerland will become more apparent in the long term. The most important factors are the facilitation of global trade (especially for SMEs), the harmonisation of the classification of substances and preparations and the harmonisation of hazard communication with regulations on the transport of dangerous goods. The interviewed companies particularly desired further harmonisation of the chemicals C&L regulation with the regulation on transport of dangerous goods, and world-wide standardisation of the labelling of chemicals. With the introduction of the GHS, users of chemicals will be better informed throughout the world about dangerous properties and protection measures. In Switzerland the introduction of the GHS can hardly be expected to improve the level of protection for humans and environment, and in particular for consumers, since the current legislation on chemicals and the existing system of classification and labelling already ensure a high level of protection.

#### Benefits

#### Conclusions

Although the implementation of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) is expected to cause significant costs, none of the companies interviewed questioned its introduction in Switzerland. The implementation of the GHS in Switzerland, harmonised with the EU in terms of its contents, starting time and duration of the transition period, is considered as the economically most favourable option. It seems that, in comparison with the existing basic costs for chemicals management in enterprises, the one-time additional costs for changing to the GHS, if spread over several years, is bearable for enterprises. In the long term, it is expected that the world-wide introduction of the GHS will be favourable for global trade in chemical products and will improve the communication about hazardous properties of chemicals.