

GHS: the status quo

Current developments and challenges in a global market



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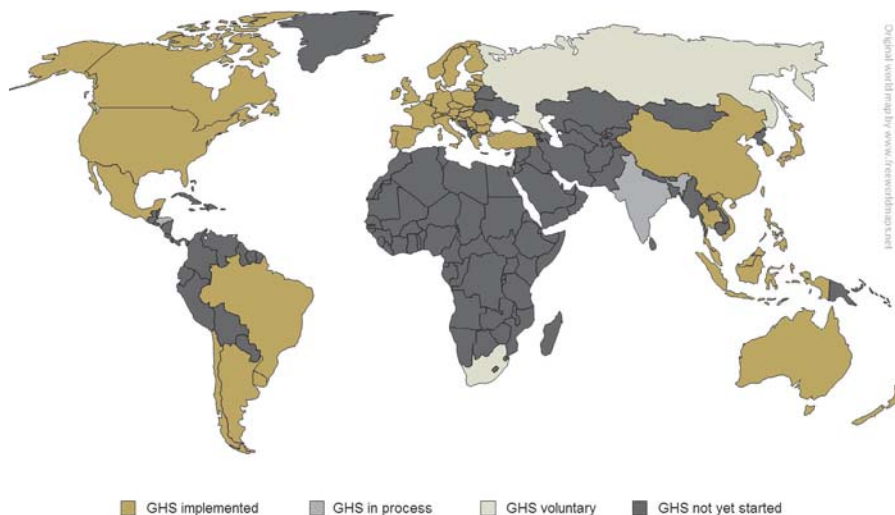
The protection of human health and the environment by way of an internationally harmonised approach, and to provide a basis to ensure safe use of chemicals, is the objective of the Globally Harmonized System of classification and labelling of chemicals (GHS).

It is more than a decade since the World Summit on Sustainable Development (WSSD) encouraged countries to adopt the first edition of GHS in 2002 to implement the system as soon as possible. Since then, the pace of implementing has varied across countries. Despite harmonised hazard communication elements, including labels and safety data sheets (SDSs), when it comes to compliance with national requirements, the details are still what matter.

China, South Korea and Taiwan

Following the completion of technical work on the GHS in 2002, China, South Korea and Taiwan established their own system. South Korea has amended its GHS several times and it has been mandatory for all hazardous chemicals since 1 July 2013. The recent version in the Ministry of Employment and Labor's (MoEL) notice 2016-19 is conceptualised according to the fourth revision of the UN's GHS. The same is true of the new Chinese national standards GB 30000.2~29-2013, which were fully implemented at the end of 2014. Between 2008 and 2013, Taiwan's GHS was solely applied to highly hazardous substances, used in large volume. But after the adaptation of the fourth revision of the UN's GHS in 2015, it has been fully implemented, since 1 January 2016, for all hazardous chemicals and will become mandatory after a one year transition period.

Although China, South Korea and



World map of GHS

Taiwan's GHS are all based on the UN's fourth revision, there are some differences. While China and Taiwan implemented all hazard classes and categories, known as the UN's GHS building blocks, "chemically unstable gases" and "flammable liquids, category 4" are not adopted by South Korea. Furthermore, hazard classes such as skin corrosion are adopted without the subcategories proposed by the UN GHS.

Along with the implementation of the GHS building blocks, as well as harmonised rules for classification and labelling, the international standard 16-section SDS was introduced in all three countries.

China requires a 24-hour local emergency phone number to be stated; South Korea, however, only a local number. In both countries, under section 3, certain substances can be protected as confidential business information, but their hazards must be fully disclosed. Labels differ, not only in language, but also in mandatory content. Chinese labels require three additional elements: a reference to the

SDS, the 24-hour local emergency phone number and composition details. None of these requirements are included in the Taiwanese regulation, except that the names of hazardous ingredients in a mixture must be marked on the label. Due to such fine distinctions, it is advisable to read the regulatory texts carefully before preparing labels and SDSs.

All three countries have published their own lists of harmonised classifications of hazardous substances. China's State Administration of Work Safety (SAWS) released the *Guidance for the implementation of the catalogue of hazardous chemicals* (trial copy) that provides mandatory classifications for all 2,828 listed entries. The Occupational Safety and Health Administration (Osha) of Taiwan published a list of 6,000 chemical substances with advisory GHS classifications only. South Korea's list stipulates compulsory classification for approximately 900 substances and was released in 2011 by the South Korean National Institute of Environmental Research (Nier). South Korea's Occupational Safety and Health Agency

(Kosha) also provides its own advisory GHS classifications for over 10,000 substances.

South-East Asian countries

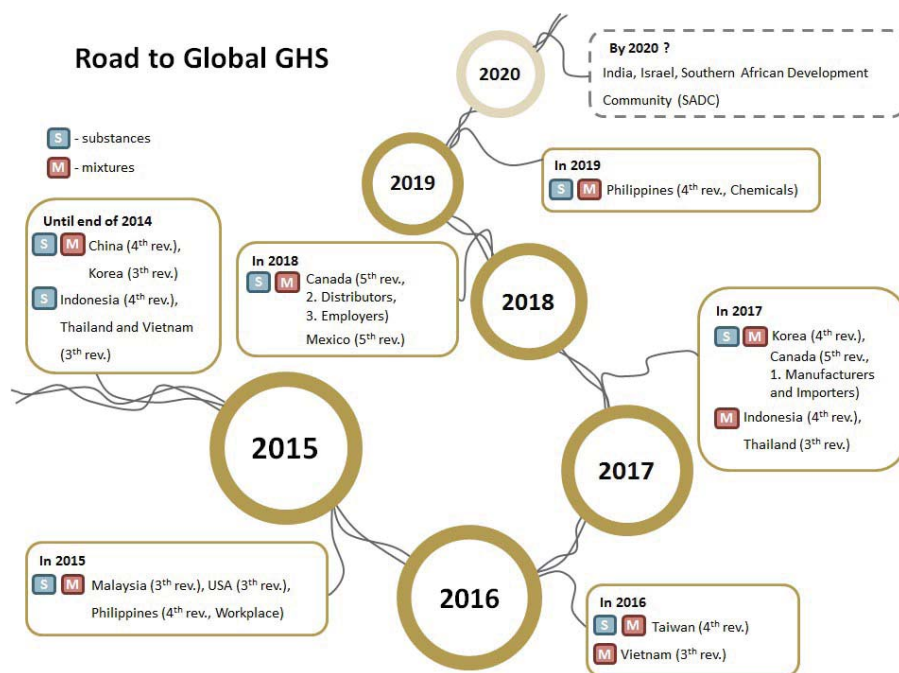
In Indonesia, first steps towards GHS implementation were made by the Ministry of Industry (MoI) in 2010, when its decree (MoI No.87/M-IND/PER/9/200), based on the second UN GHS revision, was published. On 12 April 2013, the decree (MoI No.23/M-IND/PER/4/2013), based on the fourth revision of UN GHS, revised the regulation and extended the transition period for mixtures, until 31 December 2016. It also required SDS and labelling to be updated for substances.

In Thailand, GHS became mandatory through the notification of the Ministry of Industry on the hazard classification and communication system for hazardous substances (B.E. 2555) in 2012, based on the third UN GHS revision. All building blocks of the third revision were implemented, except eye irritation, category 2 and the subcategories for skin corrosion, category 1.

In Vietnam, the Ministry of Industry and Trade (MoIT) implemented GHS, based on the third revision. Although the country has adopted the standard 16-section SDS format, section 2 (hazard identification) and section 3 (composition/information on ingredients) are reversed.

Malaysia's Department of Occupational Safety and Health (DoSH) implemented GHS on 11 October 2013, with the publication of the classification, labelling and safety data sheets of hazardous chemicals (CLASS Regulations). The corresponding Industry Code of Practice (Icop) on chemicals classification and hazard communication was published on 16 April 2014 and is a legally binding guidance to chemical suppliers, for compliance with the provisions of the CLASS Regulations. The Icop is based on the third revision of UN GHS and consists of four parts, part 1 of which currently lists 229 substances that have been classified by the DoSH. A local or international emergency number, stated in section 1 of the SDS, has to provide advice 24 hours a day.

The Philippines have fully implemented GHS, based on the fourth revision, since 2015 through department order no 136-14.



The Department of Environment and Natural Resources (DENR) administrative order (DAO) no 2015-09 sets out specific requirements for SDSs and labelling of toxic chemicals, while the guidance manual for DAO 2015-09 (EMB memorandum No 2015-011) has set GHS classification criteria and basic requirements on the same.

With regard to several health hazard classes, US Osha and Health Canada have adopted the lower generic concentration limits provided by UN GHS

The SDS, for all these countries, must be written in the national language, except for in the Philippines where English is sufficient. The SDS in Malaysia has to be also provided in English (either in one or two separate documents), while the Indonesian SDS may be accompanied by a version in another official UN language.

North America Free Trade Agreement (Nafta) countries

In 2012, US Osha updated the hazard communication standard (HCS 29 CFR 1910.1200), which aligns US chemical law with the UN's third revision of GHS. Other sectors of the US government, like the

EPA, have not adopted the system.

Canada followed on 11 February 2015, when the government published the Hazardous Products Regulations (HPR), which modified the Workplace Hazardous Materials Information System (WHMIS) of 1988, to incorporate GHS based on the fifth revision. It is referred to as WHMIS 2015. Through the publication of the new HPR, Canada fulfilled a key commitment under the Canada-United States Regulatory Cooperation Council (RCC).

Mexico, on the other hand, had implemented GHS on a voluntary basis, by publishing NMX-R-019-SCFI-2011 in 2011, a non-mandatory guidance document for implementation of GHS, based on the UN's third revision. In October 2015, the Mexican Ministry of Labor and Social Welfare enacted NOM-018-STPS-2015, a mandatory standard implementing all physical and health hazard categories of the UN's fifth revision.

None of the Nafta countries has adopted GHS criteria for environmental hazards. Both the US and Canada have some hazard classes otherwise not part of the GHS, among those, simple asphyxiants, combustible dusts and hazards not otherwise classified (HNOCs). In addition, the hazard class of pyrophoric gases (sixth revision of UN GHS) was adopted in both countries. In Canada, the hazards posed by explosives are not part of GHS, but regulated by the Explosives Act (1985). With regard to several health hazard classes,

US Osha and Health Canada have adopted the lower generic concentration limits provided by UN GHS, meaning for reproductive toxicity. This has major consequences for the classification of mixtures. The Mexican regulation NOM-018-STPS-2015, on the other hand, references the NMX-R-019-SCFI-2011 standard for the

classification of mixtures, which allows both the higher and lower thresholds. Thus any SDS compliant with the US/Canada thresholds will meet Mexican requirements.

None of the Nafta governments has released any lists of harmonised classifications (mandatory or advisory) of hazardous

substances; the only exception is schedule 4 of HPR (Canada) listing prescribed classifications for physical HNOCs.

All three have adopted the 16-section GHS SDS, although sections 12-15 are not required by Osha, but recommended. There are other elements to be considered, when compiling a SDS. Any classification, as laid down by the International Agency for Research on Cancer (Iarc) and the National Toxicology Program (NTP), is mandatory in US SDSs. American Conference of Government Industrial Hygienists (ACGIH) threshold limit values (TLVs), Osha permissible exposure limits (PELs) and any other exposure limit shall be included. HNOCs need to be disclosed in section 2 of the US and Canadian SDS; they are not required on the label, but may be included.

New developments – a look ahead

The GHS world map shows that many nations have already adopted the system. The rest of the world can be grouped in three classes.

Implementation in process

India's government announced a few years ago, it would publish its first national policy for the chemical sector in 2014, including GHS standards.

Israel notified the World Trade Organization on 3 December 2013 of a draft revision of standard SI 2302 which will implement GHS. Comments received through a public consultation, which ended in February 2014, are still under consideration.

Implementation voluntary

South African national standard SANS

10234 has set detailed rules for classification, labelling and SDSs, but is not yet incorporated in the Hazardous Chemical Substances Regulations. No deadline has been set for compulsory GHS adoption. The Southern African Development Community (SADC) GHS policy was developed under its Technical Regulations Liaisons Committee, to implement a harmonised regional GHS standard based on SANS 10234.

Not yet started

Arabian Peninsula and various countries in South and Central Asia have not yet started the implementation process, as well as the majority of Africa. However, in Africa, several SADC countries have committed to it by 2020.

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