

Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals

Sub-Committee of Experts on the Globally Harmonized
System of Classification and Labelling of Chemicals

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Hazard communication: practical labelling issues

Second thought starter on digitalisation of hazard information for chemical products

**Transmitted by the European Chemical Industry Council (Cefic) on
behalf of the informal working group on practical labelling issues**

Background

1. At its thirty-sixth meeting, the Sub-Committee acknowledged the growing use of digitalisation in the context of chemicals and inserted in the 2019-2020 program of work specific work items on how to consider the opportunities that digitalization may bring to convey hazard information and make proposals to address them.
2. In order to continue the discussion within the working group, this thought starter has been drafted by the experts from International Association for Soaps, Detergents and Maintenance Products (A.I.S.E.), People's Republic of China, Responsible Packaging Management of Southern Africa (RPMASA), International Paint and Printing Ink Council (IPPIC) and the European Chemical Industry Council (Cefic). It was subsequently enriched by contributions from members of the group during and after a web conference.

Discussion

3. At the thirty-seventh meeting of the Sub-Committee, digitalisation of hazard information for chemical products was discussed (see informal document INF.7 (37th session))¹. members expressed general support, acknowledging the progress digital technology is providing to society, including potential benefits of the use of digital means in terms of hazard communication. The feedback from several experts and the discussion during a web conference of the WG are taken into consideration in the current revised thought starter; this includes a thorough assessment of benefits and concerns.
4. The main findings by informal document INF.7 (37th session) on the use of digital means are summarized below:
 - (a) Several international organizations and governments have adopted policies to promote and support digitalisation, including in the field of chemicals management and

¹ "Thought starter on digitalisation of hazard information for chemical products":
<http://www.unece.org/fileadmin/DAM/trans/doc/2019/dgac10c4/UN-SCEGHS-37-INF7e.pdf>

labelling information (UN, OECD, EU Commission, People's Republic of China, United States etc.)

(b) The use of digital means to address hazard information for chemicals is increasing worldwide. Digital means offer significant advantages in terms of a more targeted and effective hazard communication. However, no global standards are currently available covering hazard labelling of chemicals.

(c) An increasing proportion of the world's population has access to internet information (83% on average in 2016 in OECD member countries, 95% for young people). In the short term, internet access is expected to further increase and will become part of the daily life of every individual, business and government.

(d) In developed countries active mobile broadband subscriptions exceeded 100%, in the developing world this averaged to 61%. Mobile high-speed broadband access in OECD countries was on average 99.3% in 2016.

(e) In modern society, use of online technologies is more and more widespread. It is increasingly part of people's daily lives, also commonly including retail shopping, banking, government e-services, etc. Similarly, the application of digital hazard information has gradually extended to many fields, such as transportation, logistics, daily management and supervision of chemicals, etc. This presents novel opportunities for users seeking to access information. While there are challenges to be addressed, in several jurisdictions most consumers/users would be able to access this information given the proper education and tools to do so.

5. Consumer research (see informal document INF.5, 34th session)² has shown that the current regulatory implementation of the GHS labelling of chemicals may not be fully effective at conveying safe use and hazard information to the general public. Consumers experience the labels as overloaded and unattractive, and the text is small. This is particularly problematic on small packaging and when multiple languages are required. In addition, consumers frequently find the content too technical and difficult to understand and consequently, they miss the crucial safety warnings. Similar findings were made by the Consumer Labelling Initiative focused on pesticides, insecticides and household hard surface cleaners (US EPA 1996).

Benefits of digitalisation of hazard information for chemical products

6. Providing the GHS hazard label also via digital means, in addition to the traditional on-pack label, offers substantial opportunities to improve hazard communication.

(a) Label comprehension and readability can be improved as the language can be selected by the user, and the font size can be adapted to meet the user's needs.

(b) Vulnerable members of society such as the visually impaired, poorly literate or those with reading and/or spelling difficulties (e.g. dyslexia) can more easily access information via digital accessibility tools such as audible screen readers or voice controllers.

(c) Critical safety information can be more prominently emphasised. Customized search options can allow easy and swift identification of the information that is of

² "10 years of GHS: More effective labelling for hazardous consumer products?"
<http://www.unece.org/fileadmin/DAM/trans/doc/2017/dgac10c4/UN-SCEGHS-34-INF05e.pdf>

highest importance for individual users (e.g. presence of specific sensitizing substances).

(d) Safe use instructions and sustainability tips could also be more easily and attractively accommodated.

Thus, a digital label addresses many of the aspects of physical on-pack GHS labels that currently lead to a consumer dislike, whilst providing additional support to vulnerable members of society. The digital approach can help to more effectively provide consumers with relevant hazard information.

7. In both a workplace and transport context, a digital system that provides the GHS hazard label could also be utilised to provide access to the Safety Data Sheet. Such an arrangement would give the worker the option to access a digital copy of the SDS. In turn facilitating access to comprehensive information about a substance or mixture when a paper copy of the SDS is not readily at hand. Potentially offering a substantial safety benefits for workers.

8. Swift and targeted updates of hazard information can be implemented very timely via electronic labels. With physical on-pack labels, a transition period cannot be avoided. As such, the digital alternative can be the more accurate reference during times of label modifications.

9. Beyond improving label effectiveness, digitalization has a broader benefits potential. For example, it can allow complementing the limited information given on a physical label of very small packaging. It can address issues in the context of online purchases (especially when made in different countries - with different languages). In some jurisdictions different information is required on product labels and in the workplace³, so if a product on general sale is purchased for use in work, a digital solution would allow the relevant information to be retrieved readily.

10. Availability of online information may be a useful instrument that can facilitate enforcement and inspections. Specifically, it enables inspections to be conducted more via desk activity instead of field work.

Concerns with digitalisation of hazard information for chemical products

11. The digitalisation of hazard information relies on the use of electronic technologies such as internet, high speed mobile data connections, image analysis, radio frequencies, etc. While a large and increasing proportion of the population is able to use these technologies, this is not covering 100%. Further, in some situations access to these technologies might not be available (e.g. areas with limited internet access, a malfunctioning mobile device, emergency situations with electrical power outages, etc.).

12. Access to the digital label information must be free for all and must respect privacy. This includes concerns around data security. For example, access should not be conditional to a priori subscription / registration or be only accessible through an online shopping area. No personally identifiable information should be collected, or used for any other purposes than providing the digital label information.

³ e.g. Mexican standard NOM-003-SSA1-2006 on paint labelling and workplace hazard communication standard NOM-018-STPS-2015.

13. The GHS text currently does not consider digital labels. It defines the “label” only as a physical entity (GHS chapter 1.2: “*Label means an appropriate group of written, printed or graphic information elements concerning a hazardous product [...] that is affixed to, printed on, or attached to the immediate container [...] or to the outside packaging [...]*”).

14. Principles for enforcement and legal validity of digital labels should be duly considered. It needs to be clarified to which compliance standards the digital labels are to be held, in terms of content as well as accessibility.

Proposal

15. During the planned meeting at the 11 - 13 December 2019 plenary, the informal working group is invited to further discuss this revised thought starter and advise on the best approach to progress the mandate provided by the Sub-Committee.

Digital label implementation

16. Digital communication is not proposed as a replacement of the physical label. The implementation of digital information is envisaged in parallel to the traditional physical label. Digital information can also be utilised to complement the physical label by providing additional information and/or functionality:

(a) Parallel use - Principles are to be established to ensure that digital labels provide equivalent information as the traditional on-pack labels, and do not lead to contradictions or cast doubts.

(b) Complementary use - Conditions are to be explored where digital label information can complement the content of the physical label (e.g. to complement the limited information given on the physical label of very small packaging in accordance with GHS 1.4.10.5.4.4; or to give supplemental information, safe use instructions etc.)

17. Principles are to be established to ensure that access to digital information on chemicals hazard be simple, intuitive and user-friendly. These principles should be established in away that allows a technology-neutral implementation, now and in the future. For example, today bar code scanning (traditional or QR code), as well as RFID, appear to be relevant technologies to link a chemical product with its online digital label. However, upcoming technologies such as digital watermarking, image analysis, and voice recognition technology may prove to be more convenient or appropriate in the future.

18. Clear rules about data privacy have to be developed. IT systems that provide digital labels (e.g. apps, websites, etc.) must limit the collection of user-specific information to elements that are essential for a user-friendly experience, such as preferences settings for language, text size, voice information options, specific search items of interest, etc.

19. The need for off-line backup solutions needs to be assessed. The digital label is proposed in addition to, not instead of, the current traditional label. As such, the on-pack label will serve as the backup for the equivalent digital information in the event that a user chooses digital means and they are not able to operate (e.g. due to lack of connectivity, internet failure etc.). However, for digital information that is complementary to the on-pack label (e.g. in case of small packaging), the need for a separate backup solution may have to be explored.

20. It is proposed that a framework of principles be developed (principles should ensure that there is clear hazard communication), instead of prescribing an explicit layout or template. The visualisation of digital hazard information should be flexible such that it can be optimised across different device types (e.g. mobile and non-mobile). The label design

should also be sufficiently flexible to allow differentiation depending on the target audience (cf. GHS section 1.4.3). As a general principle, this flexibility should be levered in a hazard centred manner.

Digital label in GHS

21. GHS does not currently require making available label information in a digital / online form. However, if a digital label is provided, it may need to be considered to which compliance standards this shall be held. This may include, in addition to information completeness and accuracy, principles of user-friendly access and data format (e.g. number of 'clicks' required to access the data, procedure to identify the product in the online system; absence of advertising; etc.).

22. In the GHS text, digital label principles may be captured by:

- (a) introducing and defining a digital label in Chapter 1.2,
- (b) providing the principles for use, implementation, layout and enforcement in a dedicated Annex.

23. During its meeting planned during the plenary, the informal working group is invited to explore for which elements of the digital label harmonization under GHS would be desirable, and achievable.

Call for additional information

24. The members of the Sub-committee are invited to share any existing experiences at national level with the use of electronic labels to convey hazard information (e.g. practical applications, standards, regulations, lessons learned and improvement areas, etc.). The received information will be captured in the background document.

25. The informal working group is invited to further discuss what are additional potential challenges, issues or drawbacks of the use of digitalization.
