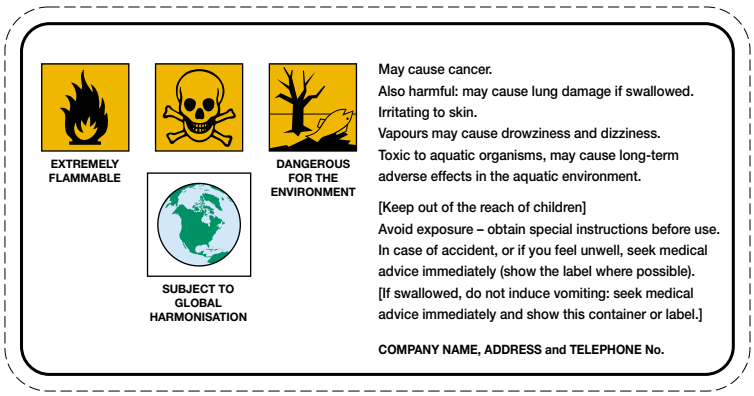
Global harmonized system of hazard communication for chemicals

Non-harmonized classification and labelling lists can be a nightmare when products are traded 'out of region'.

Classification and Hazard Communication (labels and safety data sheets) for hazardous chemicals including some oil products are currently driven by national legislation for supply, and by UN harmonized agreements for international transport. Moves are under way towards a global harmonized system (GHS) for both, although probably not fast enough for the globalization of many supply arrangements. Agreement could bring cost savings for industry and enhanced protection for workers and consumers, if the established systems in the major trading blocks, particularly the USA and Europe, can be brought together and a harmonized framework established. Much of the debate, hitherto, has been technical discussion of classifications, but the critical phase concerning hazard communication in now under way. A group of representatives from twelve nations, together with four industry representatives and four worker representatives, under the chairmanship of Ireland, is currently attempting to shape the future direction of chemical hazard communication.



The process stems from one of the commitments under the Agenda 21 (for the 21st century) section of the 1992 UN Conference on Environment and Development held in Rio de Janeiro. The process has been divided into two stages. The first, under the direction of the OECD, has been concerned with the harmonization of hazard classification. This process is almost complete for substances but continues for mixtures. The second stage, under the ILO, started more recently and is concerned with the labelling and hazard communication.

The GHS proposal was to be ready by 2000, although it is clear that this will not be met. The GHS will not be binding, but may become the de facto (minimum) standard. It should be of help to those many countries that have no system at present, and do not have the resources to develop one of their own. In contrast, systems in a number of countries such as Europe, the USA, Canada, and Australia are well developed, but different. In addition, a system for the classification of dangerous goods for international carriage has developed over the past 30 years or so. (For gasoline, the designation UN1203, Hazard Class 3 may be familiar to many.) This system is updated and developed through the UN Committee of Experts on the Transport of Dangerous Goods (UNCETDG) and cascaded through the various international and regional

committees for road, rail, sea and air transport, such as the International Maritime Organization (IMO) and International Civil Aviation Organization (ICAO) on a two-yearly cycle.

Given the existence of the UNCETDG, and the wish by the UN and member nations for no increase in resources, it is proposed that the future operation of the GHS be managed through a reorganized UNCETDG. This will continue to operate under the UN Economic and Social Committee (UN ECOSOC) of which IPIECA is the oil industry corresponding member. For the present, CONCAWE will represent IPIECA at UNCETDG and follow developments.

The aim of the GHS is to harmonize the classification and hazard communication for both transport and supply, indeed throughout the supply chain. Clearly this is neither a simple, nor a quick task, particularly given the resources currently employed.

Correct classification of materials (substances and preparations) is the foundation of any system, and much time has been devoted to establishing criteria for hazards and their severity. This process has been carried out by separate OECD expert working groups, with industry represented by BIAC (Business and Industry Advisory Committee to the OECD). BIAC ensured that it could represent industry's views by holding separate meetings of industry experts to comment on and critique OECD proposals. The European oil industry was represented by CONCAWE. In this way, industry has been a part of the GHS process. The intent of this process has been to develop an internally harmonized system without compromising the safe working practices of any existing system.

The process is in three stages. Stage 1 is to establish what systems currently exist and what they consist of. Stage 2 is to identify areas of similarity and difference, and areas for improvement. Stage 3 is to make proposals for a harmonized system.

Good progress has been made in harmonizing health hazard criteria for substances. For example OECD has agreed harmonized criteria for acute toxicity, skin sensitization, genotoxicity, cancer and reproductive effects, and those for organ toxicity are expected to be agreed within the next few months. Environmental hazard criteria are yet to be agreed. The process with mixtures started only 18 months ago and is already at Stage 2, with proposals for harmonized criteria for classifying mixtures currently being discussed in BIAC and at OECD level. It is anticipated that this process with be completed towards the end of 2000. OECD currently has agreed on the use of cut-off concentrations in mixtures and is currently struggling with issues such as how to classify mixtures that contain untested components and what cut-off concentrations should be used for different hazard classes.

The process for hazard communication is currently at Stage 2, and the major area of discussion is the hazard label. Supply hazard labels, in Europe at least, have evolved into a complicated combination of hazard symbols (flame, skull and crossbones, St Andrews cross, etc.), indications of danger (flammable, toxic etc), and risk and safety phrases, based on the assessed hazards. Comprehensibility studies both in Europe and the USA indicate most of the detail is incomprehensible. Transport labelling is much simpler and better understood by those who need it, for example the emergency services after an incident, but mainly because of training and a clear communication escalation process. Their process relies on a four-stage ladder:

- the primary hazard warning label and any coded information;
- the product code as defined by the UN number (e.g. UN1223 for kerosine) which can be checked in a look-up list advising an appropriate response (e.g. IMDG guide for marine transport);
- the safety data sheet; and
- experts at the product manufacturers or suppliers or equivalent.

Despite similar elements, a parallel scheme is not even being considered for supply, where labelling has been driven by a wish to summarize all the hazards, indicate precautionary measures and, in the case of the USA, avoid litigation. Little thought has been given to whether such information is comprehensible, and more importantly, acted upon in an appropriate manner. Given the propensity of most people to equate hazard with risk, the current approach helps no-one, except perhaps the lawyer. The group has acknowledged the need to consider risk as opposed to hazard in labelling, particularly for end consumers where the use is well determined, but the current habit is proving hard to cure. The very fact that the work is on hazard communication and not risk communication, and that it was decided to delay the work until after work on hazard classification was almost complete, is a strong indication of the direction anticipated.

European Chemical Industry representatives have put forward a proposal that hazard labels should avoid the use of words and rely entirely on symbols both for hazard indication and for precautionary measures. This is based on a desire to avoid multiple or wrong language labels, which are even more incomprehensible, or those which cannot be read.

The question of a global harmonized list along the lines of that established for transport has not even been considered, yet would provide a powerful means of harmonizing classifications and labelling. Non-harmonized lists, particularly between the US Toxic Substances Control Act (TSCA) and European Inventory of Existing Chemical Substances (EINECS) lists, are of concern for companies selling globally, and can be a nightmare when products are traded on beyond the area for which they were intended.

This work may not be seen as a high priority by many at present, but decisions made now may affect how our products are dealt with for many years into the future. Representation at the relevant UN bodies such as the revamped UNCETDG or its GHS subcommittee will help steer things in future, but the direction is being set now. Is this a topic we should be taking more seriously, or can we live with the consequences? Chemical hazard labelling may seem a somewhat arcane subject for the oil industry, but all our products are seen as chemicals by legislators. Eventually the public will see them in that light too, and if hazard labelling is seen as indicating risk, the oil industry could be fighting on an unnecessary front.