

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

An introduction for the mining and metals industry



Introduction

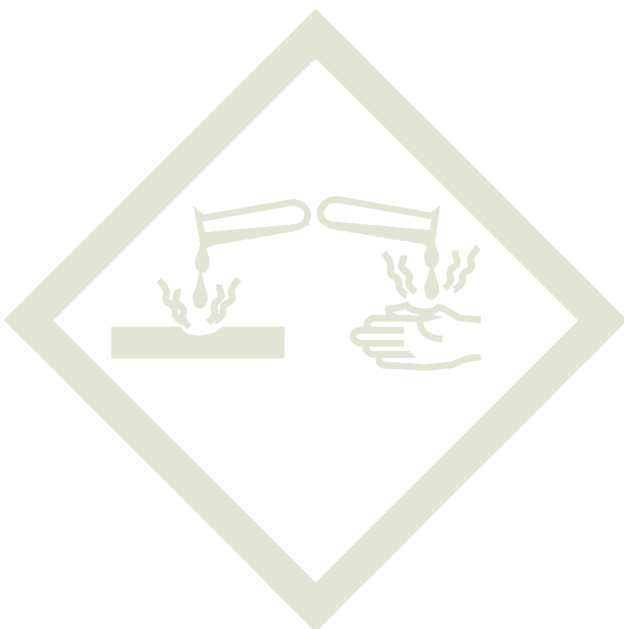
The Globally Harmonised System (GHS) is an international standardised system for classifying chemicals and communicating their health and environmental hazards to consumers, workers, transport workers and emergency responders. The system is now undergoing worldwide implementation at a national or regional level. The added significance for global mining and metals companies is that the GHS will provide a basis for future harmonisation of wider rules and regulations on chemicals at national, regional and global level. It will for example become the classification and labelling protocol under REACH.

The selection of GHS pictograms used in this document were downloaded from the UNECE website

Development of GHS

Many countries have developed standards for classifying the hazards posed by chemicals in the workplace and during transportation. In many cases, differences among these national standards have caused confusion for companies that market chemical products globally. This is particularly true for the mining and metals industry, with widely diverse supply chains and market geographies. An attempt to provide a common basis for classification for all the different target audiences is therefore of relevance and welcomed by industry. Under GHS, it is anticipated that all chemicals (including minerals and metals) will be uniformly classified, with a single system of hazard warning signs and statements used for MSDS's (Material Safety Data Sheets), product, and shipping labels.

The development of the GHS is an output of the first 'Earth Summit' on Sustainable Development in Rio de Janeiro in 1992, which recognised the need for a single global system to classify and label chemicals. The United Nations formally adopted GHS as its proposed model in December 2002, culminating more than a decade of collaborative work by the UN, the Organisation for Economic Cooperation and Development (OECD), and the International Labour Organisation (ILO). International support for the GHS is broad and implementation by country or region has already begun. Most countries will not require GHS classifications until mid-2008; however, some countries such as Japan, South Africa, New Zealand and Australia already accept GHS labels on imported products.





How will GHS impact the mining and metals industry?

GHS will impact mining and metals companies in several important ways. It will require the industry to reformat all of its product shipping labels and MSDS's to conform to: a new template; a new series of hazard statements; and, new signs or 'pictograms' representing particular hazards. As various regulatory jurisdictions implement GHS under different timeframes, companies must be prepared to comply with each of the new requirements as they unfold.

The Plan of Implementation of the World Summit on Sustainable Development (WSSD), adopted in Johannesburg in 2002, encourages countries to implement the GHS as soon as possible with a view to having the system fully operational by 2008. Currently the timetable for implementation varies between countries or regions and the following table summarises the status of GHS implementation in major regulatory jurisdictions around the world, (as of July 2007).

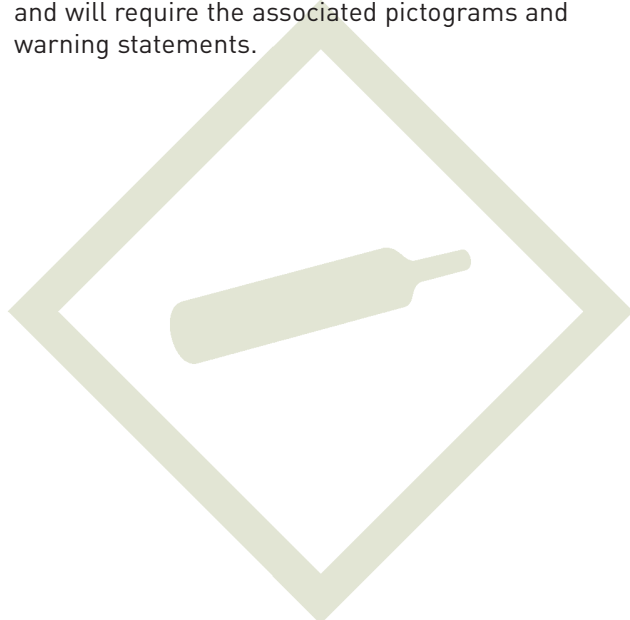
How does GHS work?

GHS will introduce a set of criteria for categorising the human health and environmental hazards of chemicals. There are ten different endpoints of human health considered under GHS (e.g., acute toxicity, skin and eye irritations, CMRs) and two environmental endpoints based on toxicity to aquatic life in the case of an accidental spill. Since many countries have existing classification systems, several of the GHS classifications may be unfamiliar to metals and mining companies and will require the associated pictograms and warning statements.

These new criteria for categorisation will require companies to reassess virtually all of their products, ingredients, and impurities to ensure they are accurately classified and labelled. Companies will be required to revise their product MSDS's to the new global format, and will change their supply labels accordingly depending on the implementation timelines in each country. Some products that do not currently carry hazard warnings will require labelling under GHS.

There will be changes to 'inbound' (vendor-supplied) MSDS's as well. Suppliers of raw materials and processing aides, lubricants, fuels, cleaning products, etc. will change their MSDS's and labelling, such that mining and metals companies will face a deluge of new upstream information. Employees who handle chemicals in the workplace will need to become familiar with the new hazard warning statements and pictograms, and be aware that some handling and storage procedures may change.

Importantly, these new classifications will set the stage for more in-depth chemical assessments under national or regional chemicals management systems. The European Union's REACH (Registration, Evaluation and Authorisation of CHemicals) legislation for example came into force in June 2007 and will rely on GHS as its basis for classification and labelling. Because REACH will potentially restrict or ban the use of certain chemicals, it is vital for the industry to ensure that the classifications of its products are scientifically accurate, and globally consistent. This will help to avoid unnecessary testing and regulatory work in the future, and ensure that chemical registration and authorisation decisions are based on sound metal substance classifications.



Preparation and implementation

How should mining and metals corporations prepare for GHS?

Many mining and metals corporations have begun to anticipate, plan for and implement changes in MSDS's and labelling under GHS. The work to revise MSDS's and labelling, consistent with GHS health and environmental criteria, can be substantial. An internal GHS Task Force with Health, Safety and Environment (HSE) managers from all business units can help to make the transition as smooth and as cost-effective as possible.

In many mining and metals companies, individual business units in each country have historically been responsible for meeting local MSDS and product and shipping label requirements. This worked well in the past, but GHS will require greater coherency and consistency among business units, geographies, and international markets. Companies will need to ensure that a substance used or sold across business units or geographies is classified and labelled the same way, and that the same standards of chemical handling and storage are followed in all facilities. The challenge for most companies will be to align their business units and create a system by which identical materials that require MSDS's are classified and labelled consistently. Companies that have recent acquisitions or business unit mergers will want to ensure that GHS compliance work is not duplicated.

Assessing company and business unit needs

Many companies are beginning to assess the needs of their business units and understand the challenges they face during GHS implementation. One common approach has been to interview HSE members of the business unit responsible for regulatory compliance to identify their specific MSDS requirements, how they have managed their MSDS and labelling needs in the past, and what special needs they might have in the future. The input gained can assist in designing a global system that will serve all business unit needs; including the development of product ('outbound') MSDS's as well as management of indirect ('inbound') MSDS's.

Classifying key products and ingredients

Because it is critical that products, ingredients and any impurities are accurately classified, it is often valuable to engage corporate toxicologists and HSE managers across business units. They can work with metals associations to ensure that classifications are consistent across the industry, and are based on scientifically sound data. Many commodity associations are partnering with member companies to assist in the classification of various metal compounds, including: ores and concentrates; intermediates; soluble and insoluble salts, metal massives and powders, and alloys.





Guidance on implementation

The metals and mining industry, through the joint venture of the International Council on Mining and Metals (ICMM), Eurometaux, and Eurofer, is implementing technical external relations, outreach and training on GHS for member companies. Through a cooperative effort we aim to provide GHS review, guidance and interpretation for substances and mixtures typical for the metals and mining industry. Our members are committed to implementing GHS globally in a manner that meets or exceeds regulatory requirements, and is based on scientifically-sound hazard classifications for the chemicals in the metals and mining industry. Through communication with relevant trade associations and industry experts we aim to align scientific data for consistent classifications, and deliver a training program that is useful to member companies.

Our intention is to:

- Track and offer guidance to member institutions regarding key aspects of the proposed GHS systems that have specific relevance for the mining and metals sectors.
- Track GHS implementation in key jurisdictions and understand the interpretation of the GHS by the Competent Authorities within these jurisdictions.
- Ensure that the implementation of the GHS Classification and Labelling system in key jurisdictions recognises issues that are relevant to the metals and minerals sector, through responding to calls for public comments.
- Communicate information and provide guidance to ICMM, Eurometaux and Eurofer members to facilitate proper and timely anticipation, preparation, and implementation.



Training resource

A training resource providing guidance on practical aspects of the implementation of GHS will be available in August 2007. For additional information, please contact:

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Status of GHS implementation around the world

Country	July 2007
Australia	<p>Law Enforceable legislation varies by state. National guidance and advisory standards that GHS will affect are: 1.) <i>National Code of Practice for the Labeling of Workplace Substances</i> [NOHSC: 2012 (1994)] and 2.) <i>National Code of Practice for the Preparation of Material Safety Data Sheets</i> 2nd Edition [NOHSC: 2011 (2003)].</p>
	<p>Web link www.ascc.gov.au/ascc/AboutUs/PublicComment/OpenComment/WorkplaceHazardousChemicalsPublicComment.htm</p>
	<p>Timing and key information Mid-2008 likely implementation of GHS. Public comment period on Australian GHS will close March 1, 2007. In 2007, comments received from all stakeholders will be analysed and a final regulation impact analysis will be conducted to allow the ASCC to make a decision on GHS implementation, including transition/implementation timeframes to harmonise with trading partners. National Standard will not require UN's Acute Category 5 for acute oral, dermal, and inhalation toxicity; will not require environmental classifications.</p>
Canada	<p>Law Four pieces of Canadian legislation impacted by GHS: <i>Hazardous Products Act (PART I)</i>, <i>Consumer Chemicals and Containers Regulations, 2001</i> (consumer chemical products sector); <i>Hazardous Products Act (PART II)</i>, <i>Controlled Products Regulations</i> (workplace chemicals sector/WHMIS); <i>Pest Control Products Act</i>, <i>Pest Control Products Regulations</i> (pest control products sector); and <i>Transportation of Dangerous Goods Act, 1992</i>, <i>Transportation of Dangerous Goods Regulations</i> (products regulated under the Dangerous Goods Regulations).</p>
	<p>Web link Comparison of sector deliberations: www.hc-sc.gc.ca/ahc-asc/pubs/ghs-sgh/index_e.html Situational Analysis Document: www.hc-sc.gc.ca/ahc-asc/pubs/ghs-sgh/index_e.html Implementation Workshop: www.hc-sc.gc.ca/ahc-asc/intactiv/ghs-sgh/implement/tor/index_e.html</p>
	<p>Timing and key information Canada likely to implement GHS in mid 2008, with certain deviations from the UN system. GHS endpoints under discussion are Acute Toxicity Categories 4 and 5, Aspiration Hazard, and Acute/Chronic Environmental.</p>
China	<p>Web link www.unece.org/trans/doc/2005/ac10c4/UN-SCEGHS-10-inf12e.doc</p>
	<p>Timing and key information Implementation by 2008. Administration of Quality Supervision, Inspection and Quarantine (AQSIQ) heading up GHS and REACH research. Standardisation Law of the People's Republic of China have made regulation for Chinese standardisation management to centralise standards to correspond with international standards. International chemical safety cards (ICSCs) were compiled in a Chinese version as a joint scientific and technical program with WHO, ILO, and UNEP.</p>
EU Directives (DSD/DPD)	<p>Law <i>REACH, (Regulation (EC) 1907/2006)</i></p>
EU GHS Proposal	<p>Web link http://ec.europa.eu/enterprise/reach/ghs_en.htm</p>
	<p>Timing and key information Mid-2008 implementation likely in-line with REACH. Draft regulation published in August 2006 and currently public consultation being evaluated. Process to translate current Annex I into corresponding GHS classifications (Annex VI). Key differences from UN included non adoption of Acute Cat 5 (oral, dermal and inhalation) and Cat 2 and 3 (acute aquatic environment). On 27th of June 2007, the European Commission adopted the "Proposal for a Regulation of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures, and amending Directive 67/548/EEC and Regulation (EC) No 1907/2006" (COM(2007) 355 final). The proposed act aligns the EU system of classification, labelling and packaging substances and mixtures to the United Nations Globally Harmonised System (GHS). The proposed regulation also takes over provisions of the REACH Regulation regarding the notification of classifications, the establishment of a list of harmonised classifications and the creation of a classification and labelling inventory. A co-agreement between the European Parliament and the Council will be necessary to finalise the regulation.</p>
Japan	<p>Laws Three laws impacted: <i>The Industrial Safety and Health Law</i> (worker safety & health/SDS); <i>The Poisonous and Deleterious Substances Control Law</i> (toxic & corrosive substances/Labeling); and the <i>Japanese Industrial Standards</i> (SDS/Labeling). Three agencies engaged in GHS: METI, MHLW, and MOE. NITE is proposing GHS classifications.</p>
	<p>Web link Classification guide: www.meti.go.jp/policy/chemical_management/kokusai/GHS/GHS_Classification_Manual.htm Steps taken by Japan: www.unece.org/trans/doc/2005/ac10c4/UN-SCEGHS-10-inf12e.doc</p>
	<p>Timing and key information Japan is preparing to adopt the UN system in its entirety in 2008. Japan (NITE) published proposed GHS classifications for 1500 chemicals. Voluntary labelling compliance with GHS under the <i>Poisonous and Deleterious Substances Control Law</i> was recommended starting in December 2005. Likely to be law by 2010.</p>
South Korea	<p>Law Existing laws will be amended: <i>Toxic Chemicals Control Act</i>, <i>Industrial Safety and Health Act</i>, <i>High Pressure Gas Safety Control Act</i>, <i>Hazardous Material Safety Act</i>, <i>Agricultural Chemicals Control Act</i>, and the <i>Ship Safety Act</i>.</p>
	<p>Web link www.apec-vc.or.kr/EnvDB/EnvDB_View.asp?KeyValue=ED2006060054&DbName=Global%20Database</p>
	<p>Timing and key information Inter-ministry committee established to implement GHS. Translation of GHS document by 2007. Official government GHS website established by 2007. Enforce and adopt GHS by 2008.</p>
Malaysia	<p>Web link www.unece.org/trans/danger/publi/ghs/implementation_e.html</p>
	<p>Timing and key information Fully implemented by 2008. Ministry of International Trade and Industry (MITI) established in January 2006 to oversee GHS implementation. In 2006, the DOSH held a GHS workshop for government agencies. In 2005, the DOSH published a document on GHS to increase awareness for government officials and the chemical industry.</p>



Country	July 2007
New Zealand	<p>Law GHS introduced as the primary framework for the management of hazardous substances in July 2001 through the <i>Hazardous Substances and New Organisms (HSNO) Act 1996</i> and Amendments.</p>
	<p>Web link ERMANZ website: www.ermanz.govt.nz Implementation of GHS in New Zealand: www.unece.org/trans/doc/2006/ac10c4/UN-SCEGHS-11-inf14e.pdf Interpreting regulations, etc.: www.ermanz.govt.nz/hs/abouths/classification.html</p>
	<p>Timing and key information For labelling, full implementation is not planned before 2008. An additional provision will allow for acceptance of labelling in accordance with the requirements of specified overseas jurisdictions until the end of 2010. NZ is adopting a unique Category numbering schemes to the UN GHS classification categories. NZ will not adopt certain UN GHS categories. They will adopt additional environmental precautionary statements and phrases. Amendments to the HSNO regulations incorporated amendments and additions made in Rev.1 of GHS made during 2006/2007. 2500 chemicals classified by HSNO/GHS hazard classification endpoints, 4000 chemicals partially classified, of these chemicals 5500 chemicals are contained on a temporary file on ERMA NZ website as of July 2006. This chemical classification file intended as a searchable database with cut off concentrations and assigned label elements to assist industry. Primary labelling guidance for NZ industries available on ERMA website. July 1, 2007 all hazardous substances in NZ have been transferred under HSNO legislation from Group Standards.</p>
Philippines	<p>Web link www.unece.org/trans/doc/2005/ac10c4/UN-SCEGHS-10-inf12e.doc</p>
	<p>Timing and key information Implementation by 2008. Draft GHS legislation under preparation, plan is to develop a national GHS standard. Between 2005-2007, the Philippines is participating as a pilot country UNITAR/ILO Global GHS Capacity Building Program. Planning meeting in 2005 to launch the UN Institute for training and Research (UNITAR) GHS Project. The BOI and EMB prepared the draft GHS legislation. Although the expected legal implementation of GHS was held for May 2006 only amendments were made to existing laws.</p>
South Africa	<p>Law A national standard system is being developed to address GHS.</p>
	<p>Web link www.stansa.co.za/Business_Units/Standards_SA/index.aspx www.unece.org/trans/doc/2005/ac10c4/UN-SCEGHS-10-inf12e.doc</p>
	<p>Timing and key information Aiming for mid-2008, but may be delayed because SA is not a primary producer of safety data and alignment with GHS will be time consuming. Similar to the UN GHS scheme, without certain endpoint categories. SA has a unique numbering scheme for precautionary statements. South Africa has established a National Committee on Chemical Safety and Management (NCCSM) to monitor chemicals and the progress towards national implementation of GHS. The South African Bureau of Standards (SABS) has developed a draft for a national standard on GHS, currently out for comment. Completion of the standard is expected in 2007.</p>
Taiwan	<p>Laws The laws of 6 agencies will be affected: Council of Labor Affairs [CLA]- Workplace; Ministry of Transportation and Communication [MOTC]- Transport; Environmental Protection Administration [EPA]- Emergency Response and Environmental Agents/Pesticides; National Fire Agency [NFA]- Emergency Response; Ministry of Economic Affairs [MOEA]- Consumers; Council of Agriculture [COA]- Consumers and Environmental Agents/Pesticides. The Ministry of Education [MOE] and Department of Health [DOH] are also competent authorities.</p>
	<p>Web link http://ghs.cla.gov.tw/en/ghstaiwan.php?item=ghstaiwan</p>
	<p>Timing and key information Implementation in 2008 with a two-year transition period from 2006 to 2008. In 2006, Taiwan had planned to enact a regulatory amendment, establish an information system and raise awareness. The plan for 2007 is to provide education and training, establish a classification and labelling system, and to serve as a transition period. In 2008, enforcement, inspection, review and improvement activities are scheduled.</p>
Thailand	<p>Laws Hazardous Substances Act; Factory Act</p>
	<p>Web link www.unece.org/trans/danger/publi/ghs/implementation_e.html#Thailand</p>
	<p>Timing and key information GHS implementation has been identified as a national priority and has been integrated into the 3rd National Strategic Plan on Chemicals Management for the period 2007-2011. During 2005-2007, Thailand is participating as a pilot country in the UNITAR/ILO Global GHS Capacity Building Programme, with support from the European Union and the Government of Switzerland. SDS and labels to be required. Single chemicals and technical grades of insecticides implemented first. GHS translated into Thai.</p>
United States	<p>Laws <i>Occupational Safety and Health Act (OSHA)</i>; <i>Federal Insecticide, Fungicide and Rodenticide Act (EPA)</i>; Hazardous Materials Transportation regulations (DOT); Consumer Products Safety Commission (CPSC) regulations.</p>
	<p>Web link OSHA: www.osha.gov/dsg/hazcom/ghs.html EPA: www.epa.gov/oppfead1/international/globalharmon.htm DOT: http://hazmat.dot.gov/regs/intl/globalharm.htm CPSC: www.cpsc.gov/phth/GHSpolicy.html</p>
	<p>Timing and key information The US GHS classification system follows the UN's GHS scheme closely for the human health endpoints. However, the Environmental GHS regulations continue to be debated by the US EPA. Under OSHA, the ANPR was submitted and the comment period closed for GHS legislation. OSHA is currently analysing the comments and preparing the notice of proposed rulemaking. The GHS system applies differently depending on the stage in the life cycle of the product (i.e. CPSC uses a risk based approach to label chronic effects, OSHA uses a hazard approach and DOT does not require chronic effects labelling).</p>
Vietnam	<p>Timing and key information Implementation in 2008. Chemical law expected approval in late 2007. Need to translate GHS into Vietnamese.</p>

References and further resources

For further information on GHS development and implementation visit:

www.unece.org/trans/danger/publi/ghs/ghs_welcome_e.html

Eurofer

www.eurofer.org

Eurometaux

www.eurometaux.org

ICMM

www.icmm.com

For further information on industry initiatives on hazard and risk assessment, including MERAG and HERAG, visit:

www.metalsriskassessment.org

www.icmm.com

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