

CHEMICAL CONTROL LEGISLATION IN THE MIDDLE EAST: VARIED AND EVOLVING

In the Middle East, the level of sophistication of chemical control regulations varies greatly as a result of different levels of economic and industrial development. This article provides an overview of current chemical control legislation in Turkey, Israel, Saudi Arabia, Oman, and Pakistan, specifically addressing import/export restrictions and classification, packaging, and labeling requirements.

From the outset it is important to note that the Middle East is not unified, either in terms of regulatory aspirations in the field of chemical control law or in terms of the ability to effectively promulgate and enforce these regulatory initiatives. The nations of the region, as may be expected, vary in the comprehensiveness of their respective regulatory regimes and their enforcement capacity.

Turkey's ongoing negotiations for membership in the European Union (EU) have had a significant impact on the development of its chemical control regulations. Developing a new chemical notification scheme and other regulations is part of Turkey's strategy toward integrating and harmonizing itself with EU environment legislation.

In late 2008, Turkey published four new regulations, which will provide the new framework for hazardous substances regulations in the country. At this point, no English translation of the new law exists, but a review of the requirements and legislation in place through early 2009 will shed some light on the regulatory playing field.

Turkey's main chemical control law, the Dangerous Chemicals Regulation (DCR), only makes sparse reference to the import of hazardous substances. Article 5 of DCR mentions that import of chemical substances must be conducted in accordance with published communiqués. Article 8 further stipulates that Turkish authorities may request a declaration for a hazardous substance produced or imported into the country. Such a declaration should identify the substance; the manufacturer/importer; information on production, import, and use; and recycling and destruction information. These minimum requirements are provided in Annex III to the regulation.

In addition, Turkey restricts certain chemicals in the workplace through two separate regulations—Decree on Workplace Security (1973) and Regulation on Protection of Health & Safety Measures from Risks related to Chemical Agents at Work (2003), which was adopted to meet the stricter EU criteria. The labeling of hazardous chemicals is covered in Articles 16, 17, 18, and 20 of DCR.

Until December 2008, Turkey's requirements for safety data sheets were modeled after those of the EU. Initially, the DCR, as amended, transposed Article 27 of EU Directive 67/548/EEC relating to safety data sheets and some provisions of Safety Data Sheet Directive 91/55/EEC. Later the Communiqué on the Procedure for the Filling of the Safety Data Sheet (published in the Official Gazette, No. 24692, 2002) was published to achieve full transposition of Safety Data Sheet Directive 91/55/EEC and its amendment 2001/58/EC. The 16-section Material Safety Data Sheet (MSDS) format must be completed in Turkish.

On Dec. 26, 2008, Turkey published the following four pieces of new regulations to further harmonize its framework with EU:

- Regulation on Classification, Packaging, and Labeling of Hazardous Preparations and Chemicals (transposing 67/548/EEC and 1999/45/EC)
- Regulation on Preparation and Dissemination of Safety Information Forms (to comply with REACH)
- Regulation on Inventory and Control of Chemicals (to introduce risk assessment of new substances)
- Regulation on Restrictions of Production, Placing on the Market, and Use of Certain Hazardous Substances, Preparations, and Goods

CRADLE-TO-GRAVE LAW IN ISRAEL

In Israel, the Ministry of Environmental Protection has been the home of regulations pertaining to hazardous substances since 1993. The main legislation covering the "cradle-to-grave" supervision of dangerous chemicals is the Hazardous Substances Law

promulgated in 1993 (and its subsequent amendments).

According to this law, the Ministry of Environmental Protection has the authority over the comprehensive management of hazardous substances, including the classification of hazardous substances in accordance with usage, toxicity, or risk, and all aspects of the manufacture, import, export, packaging, commerce, issue, transfer, storage maintenance, and use of hazardous substances. Moreover, the law includes provisions for issuing permits and outlines the role of the court in enforcing hazardous material control.

Israel does not publish an inventory of existing or recognized chemicals, and the legislation does not specify a new chemical notification regime either. However, in addition to the Hazardous Substances Law, regulations such as the Safety at Work Law; the Hazardous Substances Regulations (Classifications and Exemptions); the Hazardous Substances Regulations (Standards for Determining the Validity of Permits); the Licensing of Business Regulations; and Israeli Standard IS 2302-1 on the Classification, Packaging, Labeling, and Marking of Dangerous Materials all affect the handling of chemical substances within Israel.

For instance, the Hazardous Substances Law requires a permit for any business dealing with hazardous substances. The law states that no person may handle toxins unless he or she possesses a toxin permit from a supervisor. The supervisor should be a person who has been authorized by the Ministry of Environmental Protection to dispense such permits. Moreover, the holder of a toxins permit, as it is called, is required to maintain a toxic substances register in which details of all sales and purchases of hazardous substances are recorded.

Other provisions of the law relate to the storage of toxic substances and to other restrictions on the sale of toxic substances by manufacturers, wholesalers, and retailers. Detailed licensing and permitting requirements are set out in the Licensing of Business Regulations as well as the above-noted Hazardous Substances Regulations (Classifications and Exemptions) and the Hazardous Substances Regulations (Standards for Determining the Validity of Permits).

In terms of specific substance restrictions, as of early 2009, the Israeli Environmental Protection Ministry is promoting a bill that will, for the first time, formalize regulations to prevent asbestos exposure. Until recently, there was no Israeli law explicitly banning the manufacture and use of asbestos products. The proposed bill is currently under review.

The Israeli Institute of Standards is legally binding standard (SI No. 2302) pertaining to the classification, packaging, and labeling of dangerous substances. The standard classifies dangerous materials according to hazard groups, packaging size, and packaging type, and outlines requirements for marketing, packaging, and labeling of these substances. The standard provides risk and safety phrases in Hebrew and U.N. Orange Book definitions on the transportation of dangerous goods, and it lists the applicable danger symbols. The standard is based on EU Directive 67/548/EEC and is designed to be updated for technical progress at least every five years. Standard 2302 is currently up for review.

In addition to the standard, the 1993 Hazardous Substances Law provides lists of substances that are considered hazardous. Annex I to the Law lists 29 harmful substances and mixtures, while Annex II lists 219 toxic chemicals. There are also 289 chemicals listed in Annex I to the 1996 Hazardous Substances Ordinance (classification and exemption).

A safety data sheet for regulated chemicals is mandatory for producers, importers, distributors, and sellers in Israel under the Safety at Work Regulations (promulgated in 1998 and amended in 2000). Maintenance of an MSDS in the factory or business is required in order to inform users about workplace hazards. Moreover, the regulations mandate that any manufacturer, importer, agent or marketer of a dangerous substance must package said substance in accordance with Israeli Standard No. 2302 and attach a safety data sheet. The format and types of information required on this document follows the EU as it contains 16 sections.

The MSDS must be written in either Hebrew or English. Finally, the following declaration must appear at the end of every data sheet: "The information in the sheet was written on the best knowledge and experience currently available." The MSDS

must be updated when there is new, relevant information available sent to the recipient of the relevant substance in the 12-month period preceding the update.

GCC COUNTRIES WORK TOGETHER

The Gulf Cooperation Council (GCC) was established in 1981 as a trade bloc for the Arab nations surrounding the Persian Gulf: Saudi Arabia, Kuwait, Bahrain, Oman, Qatar, and United Arab Emirates. It's important to briefly address the achievements of GCC as a single body that aims to create inter-connectivity through unified regulations in a number of fields, including the environment, the economy, and political affairs.

Over the last couple of decades, the GCC member states have experienced rapid industrial growth. The recognition that economic and industrial growth go hand in hand with environmental pollution, etc., resulted in publishing of the 1997 General Regulations of Environment in the GCC states. The General Regulations provide a framework for establishing wider-reaching rules and regulations on environmentally related topics. As a result, GCC put forth the Common System for the Management of Hazardous Chemicals in 2002, which establishes minimum legislation for the member states in dealing with hazardous chemicals.

The Common System for the Management of Hazardous Chemicals contains no provisions for a new chemical notification regime for the GCC. Articles 3 and 5, however, do address licensing requirements for introducing hazardous substances into any of the GCC member states. In summary, the manufacturing, import or export, sale, storage, and so forth of any hazardous chemicals is prohibited unless a license has been obtained from the national competent authority—that is, the regulating agency. The regulation further states that the competent regulatory authority has the right to suspend or revoke the license if there are proven irregularities or non-compliance with the requirements.

Import issues are addressed in Article 6, stipulating that the necessary application material—license and MSDS—for import should be submitted 30 days prior to the start of the import process. The Article itemizes the required entries of the MSDS.

Classification requirements, which are based on U.N. guidelines, are provided in Supplement I to the Common System for the Management of Hazardous Chemicals, and packaging and labeling requirements are addressed in Article 7.

MSDS requirements are listed in Article 6, which provides detailed requirements: the scientific and trade name of the chemical and chemical composition, the U.N. serial number and Chemical Abstracts Service (CAS) number, hazard evaluation and health and environmental effects, the weight of the hazardous chemical to be imported, and the date and time of the expected transfer. The MSDS must also include information on the purpose of the import: storage and disposal guidelines; actions to be taken in case of leakage of hazardous material; the full name and correct address and contact number of the forwarding agent and consignee; a certificate of origin and testing; and the chemical's date of validity. Supplement 2 of the Common System for the Management of Hazardous Chemicals provides a sample MSDS, which, it should be noted, has several discrepancies from the requirements given above.

It is important to keep in mind that the GCC regulations provide minimum guidance on the management of hazardous substances among its members. Each state may impose stricter regulations and requirements than those set forth in the GCC common regulations.

Saudi Arabia is one of the Gulf countries that has experienced significant industrial and economic growth in recent years. The general structure for environmental regulations is set out by the Public Environment Law (2001) and its Implementing Regulations (2003). Pursuant to these regulations, the Saudi Presidency of Meteorology and Environment (PME) is responsible for the development and production of environmental policies—for example, the administration of the above law, and the development of relevant environmental standards.

Saudi Arabia does not publish an inventory of chemicals and does not have a new chemical notification regime. However, certain restrictions do exist under the Public Environment Law, which stipulate that it is prohibited to bring hazardous materials or waste into Saudi Arabia, including Saudi Arabia's regional waters and economic areas.

Interestingly, the more sophisticated legislative and regulatory requirements pertaining to the chemical industry exist on a local level in Saudi Arabia. Following the boom of the 1970s, the industrial cities of Jubail and Yanbu were established as a venue for further industrial growth and downstream diversification. So in addition to the restrictions mentioned above, The Royal Commission for Jubail and Yanbu 2004 Environment Regulations require all facilities to obtain an Environmental Permit to Operate (EPO).

The Royal Commission for Jubail and Yanbu 2004 Environment Regulations define a hazardous material as any material in a quantity or concentration that, if improperly managed, may pose a hazard to public health or the environment. Containers holding hazardous materials must be individually labeled to reflect the actual contents of the container, and the label should include the contents and associated hazards (U.N.-based) or a unique identification that is cross-referenced to a document that lists the contents and hazards. Hazardous materials may be solids, semi-solids, liquids, or gases and include hazardous wastes. The 2004 Regulations further classify these materials as ignitable, corrosive, reactive, toxic, radioactive, or bio-hazardous.

In addition, operators of a facility in Jubail and Yanbu are subject to various information gathering and reporting requirements. For instance, operators must retain on file copies of current safety data sheets in Arabic and English for all hazardous materials present at the facility. The Royal Commission Environmental Regulations do not specify the data sheet form or sections required therein.

Operators must also develop and maintain an inventory of hazardous materials stored, although the inventory requirement depends upon the nature and quantity of the substance being stored; and they must provide an annual hazardous material inventory to the Royal Commission for the preceding year by the end of January of the following year.

Finally, the Saudi Ministry of Commerce and Industry is the responsible agency for issuing import licenses for commercial chemicals, with the exception of (a) dangerous explosives and chemicals approved by the Ministry of Interior and (b)

Predicted Sales Growth, Next Two-Three Years, by Region

	Very Strong	Strong	Good	Slow Growth	Flat	Modest Decline	Big Decline
Middle East	11.1%	26.7%	24.4%	15.6%	20.0%	0.0%	2.2%
China	7.5%	17.0%	43.4%	17.0%	13.2%	0.0%	1.9%
All Non-USA	7.0%	14.0%	38.6%	26.3%	14.0%	0.0%	0.0%
United States	6.7%	12.5%	27.5%	33.3%	14.2%	5.0%	0.8%
India	6.4%	19.1%	36.2%	23.4%	14.9%	0.0%	0.0%
Central & South America	6.3%	14.6%	39.6%	14.6%	25.0%	0.0%	0.0%
Eastern Europe	5.0%	10.0%	30.0%	32.5%	22.5%	0.0%	0.0%
Canada	4.7%	15.6%	29.7%	29.7%	18.8%	1.6%	0.0%
Australia/New Zealand	4.7%	16.3%	25.6%	34.9%	14.0%	4.7%	0.0%
Western Europe	3.8%	15.1%	34.0%	26.4%	17.0%	3.8%	0.0%
Russia	3.2%	16.1%	16.1%	29.0%	32.3%	3.2%	0.0%
Rest of Asia	2.7%	16.2%	27.0%	29.7%	21.6%	0.0%	2.7%
Mexico	2.1%	8.5%	36.2%	31.9%	21.3%	0.0%	0.0%
Japan	0.0%	10.5%	18.4%	39.5%	28.9%	2.6%	0.0%
Africa	0.0%	24.2%	3.0%	33.3%	30.3%	9.1%	0.0%

Source: Environmental Business Journal 2009 Snapshot Survey responses to the question "Please rate the following regions in terms of prospects for sales growth in the next two to three years."

chemicals legalized and approved by the Ministry of Health. Chemicals imported by the national industries require approval and import license from the Ministry of Industry & Electricity. In order to receive the requisite license forms to do business in Saudi Arabia, interested parties must agree to comply with the provisions set forth in the Environment Law and related regulations.

Oman is also country that, following the oil boom, has seen a rise in industrial activity. Oman's Ministry of Regional Municipalities, Environment, and Water Resources' Department of Chemicals is the responsible authority for the sound management of chemicals in the Sultanate. The Ministry itself administers laws and regulations regarding hazardous chemicals and the environment.

Oman has neither an inventory nor a new chemical notification regime in place. Royal Decree No. 46/95, Issuing the Procedures for Handling and Use of Chemicals, refers to the manufacture, import, export, storage, handling, and use of any chemical substance. These activities shall comply with the Procedures, Regulations and Decisions issued for implementation and coordinated by the Minister for the Ministry of Regional Municipalities, Environment and Water Resources.

Licensing and permit requirements are addressed through Ministerial Decree 248/1997, Regulation for the Registration of Chemical Substances and the Relevant Permits, which requires that any person intending to deal with hazardous chemicals through manufacture, export, transport, storage, handling, use, or disposal shall apply to the ministry for a permit. Moreover, the Department of Chemical Substances maintains a list of hazardous chemicals according to international classifications. The list includes both restricted and banned chemicals as well as substances regulated by the Rotterdam (PIC) and Stockholm (POPs) Conventions.

Ministerial Decree 248/1997, Annex 1, provides classification corresponding to the U.N. transportation classification system. Explosives listed in the explosives classification category differ from those covered by Royal Decree 82/77, Concerning the Law of the Use and Handling of Explosives in the Sultanate. Ministerial Decree 317/2001 provides labeling instructions and requirements for containers.

Labels must include the following: scientific and commercial names of the content plus quantity; physical and chemical properties of the contained substance; the degree of risk of the contained substance plus its international hazard classification in both Arabic and English; chemical safety guidelines for handling or dealing with

chemicals, especially during an emergency; the purpose of the use of the contents and expiry date; the full name and address of manufacturer or producer; and storage instructions relating to temperature, pressure, light, etc. Finally, labels should be clearly written, easily readable, and firmly fixed. They should also be damage resistant, nonflammable and shall not be easily removed.

Ministerial Decree 248/1997, Annex 2, provides guidelines for so-called Chemical Safety Sheets. The Omani safety sheets lists 13 categories which must be completed: scientific name; commercial or common name; CAS number; chemical and physical properties; chemical composition; stability and reactivity; toxicity, and hazard to man and environment (cf. Annex 1 of the same Decree); safety precautions; first aid and accidental release measures; packing, handling, and storage measures; transport information; disposal considerations; other information (sample expiry date, etc.). This information must be certified by the exporter, the manufacturer, the producer or by a laboratory recognized by the Ministry.

Pakistan is on the very outskirts of what is normally considered the Middle East. In Pakistan, regulations pertaining to the management of chemicals, occupational health, and safety reside in a number of different ministries and agencies: the Ministry of Environment, the Environment Protection Agency (PEPA), and the Ministry of Industries, Production and Special Initiatives. Like many other developing countries, Pakistan does not have comprehensive occupational health and safety laws.

The topic of the environment has received increased attention in Pakistan since the promulgation of the Environmental Protection Ordinance in 1983. The ordinance was replaced in 1997 by the Environment Protection Act, which was promulgated by the Ministry of Environment and Pakistan's EPA (the Ministry's policy arm). The most important of the ordinance's rules and procedures are the Hazardous Substances Rules, 1999 (amended in 2003).

General licensing requirements for hazardous substances are described in the Hazardous Substances Rules. Articles 4 through 8 address application for a license and submission of an Environment Impact

Assessment, and Articles 13 through 15 the validity, renewal, and cancellation of a license. Information pertaining to import of hazardous substances can be found in Article 20. Form A of Schedule II must be submitted along with the following details: port of entry into Pakistan; transport content; the quality of the imported substance; complete information detailing safety precautions; and the proposed usage of imported substance.

A list of hazardous substances as prescribed by the Hazardous Substances Rules is provided in Schedule I of that regulation. Article 9 provides information on packaging and labeling. A label should include the name of the hazardous substance; the name, address, and license number of the licensee; contents (volume or weight); manufacture and expiration date; a warning statement consisting of the word DANGER! in red on contrasting background; pictures of a skull and cross-bones and instructions for use, storage, and handling; and instructions regarding the disposal or return of the empty container. In addition, basic emergency instructions should be provided, preferably in local language.

There is neither a regulation nor a specific provision governing the use of safety data sheets in Pakistan. EU data sheets are accepted either in Urdu or English. While not legally binding, International Chemical Safety Cards can also be used. The Centre for the Improvement of Working Conditions and the Environment (CIWCE) maintains a database of these safety cards in an effort to improve the chemical hazard communication system in Pakistan. Urdu International Chemical Safety Cards are available upon request from CIWCE.

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BLACK & VEATCH SEES CONTINUED STRENGTH IN DRIVERS FOR GLOBAL WATER MARKET

Black & Veatch (Overland Park, KS; www.2.bv.com) is a global consulting, engineering, and construction company employing more than 9,600 people at approximately 100 offices around the world. The company provides a broad range of services to the energy, environmental, telecommunications, water, and federal markets in 70 countries on six continents.

Black & Veatch Water, the company's global water business, specializes in technology-based solutions to the water and wastewater management issues faced by utilities, governments, and industrial companies. A recipient of many design and engineering awards over the years, the unit recently was recognized in two categories of the Institution of Civil Engineers' (ICE) London Merit Awards for civil engineering excellence in connection with the design, construction, and commissioning of the Hampton Advance Water Treatment Works Rapid Gravity Filtration Remodeling Project in London.

Christy Cooper, director of global strategic planning and market research in the Cincinnati, Ohio, office of Black & Veatch Water, spoke to Environmental Business Journal (EBJ) about the company's global water business.

EBJ: What percentage of your firm's 2008 environmental services revenue was derived from non-U.S. business? What growth do you project in your non-U.S. environmental services revenue for 2009 and for 2010?

Christy Cooper: "Black & Veatch earned \$3.2 billion in revenue in 2008. Of this, about 40% was from environmental revenue, primarily in municipal water and wastewater services, air quality control projects for power generators, and remediation services. Outside the U.S., our environmental revenue is primarily water-related.

"The water market has enjoyed strong, double-digit growth prior to 2008. Last year, we saw a reduced growth rate overall, but that was to be expected after such a