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1. INTRODUCTION

To lower the health and environmental impact from chemicals, countries and regions around the globe have published various chemical regulations for chemical management. Thailand established the Hazardous Substances Act in 1992 and has been making amendments to the Act with a focus on hazard management. However, Thailand is gradually shifting the focus to risk management and is planning to establish their own REACH-like regulations which could have significant impact on importers and manufacturers of chemical products and electrical and electronic equipment (EEE).
2. HISTORY OF CHEMICAL REGULATION DEVELOPMENT

<table>
<thead>
<tr>
<th>Year</th>
<th>Regulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td><strong>Hazardous Substances Act</strong> B.E. 2535 was issued to protect human health and the environment from hazardous chemical substances. The Act regulates hazardous chemicals in importation, production, exportation and possession.</td>
</tr>
<tr>
<td>2001</td>
<td><strong>Hazardous Substances Act</strong> first amendment B.E. 2544. The amendment provides for supervision of any action relating to a hazardous substance as a toxic chemical or as a substance used to produce a toxic chemical as stipulated in Chemical Weapons Convention.</td>
</tr>
<tr>
<td>2008</td>
<td><strong>Hazardous Substances Act</strong> second amendment B.E. 2551.</td>
</tr>
<tr>
<td>2008</td>
<td><strong>TIS 2368-2551 (Thailand RoHS)</strong>, regulates the concentration of certain hazardous chemical substances in EEE.</td>
</tr>
<tr>
<td>2019</td>
<td><strong>Hazardous Substances Act</strong> third amendment B.E. 2562 came into effect.</td>
</tr>
<tr>
<td>2019</td>
<td><strong>Chemical Substance Act (Draft)</strong> issued in April 2019, the second draft issued in September 2019, aiming to build up REACH-like regulation system in Thailand.</td>
</tr>
<tr>
<td>2020</td>
<td>The first <strong>Existing Chemicals Inventory</strong> issued.</td>
</tr>
</tbody>
</table>
3. CURRENT CHEMICAL REGULATORY SYSTEMS

3.1 REACH-like Regulations: Hazardous Substances Act

Thailand Hazardous Substances Act B.E. 2535 was issued in 1992, regulating the importation/exportation, production and possession of hazardous chemicals to protect human health and the environment. It is the most important chemical control law in Thailand. The Act divides hazardous chemical substances into six annexes by corresponding authorities and has notification, registration or license requirements based on risk levels. The flowchart of the current management of hazardous chemicals is shown below.

3.1.1 Hazardous Substances List

- explosives
- inflammable substances
- oxidizing agents and peroxide substances
- toxic substances
- infectious substances
- radioactive substances
- mutagens
- corrosive substances
- irritating substances
- other substances, whether chemical or else, which may be harmful to person, animal, plant, property or environment.

<table>
<thead>
<tr>
<th>Annexes</th>
<th>Authorities</th>
<th>Chemicals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annex 1</td>
<td>Department of Agriculture</td>
<td>Pesticide active ingredients</td>
</tr>
<tr>
<td>Annex 2</td>
<td>Department of Fisheries</td>
<td>Biocides</td>
</tr>
<tr>
<td>Annex 3</td>
<td>Department of Livestock Development</td>
<td>Veterinary drugs, animal related disinfectant</td>
</tr>
<tr>
<td>Annex 4</td>
<td>Food and Drug Administration</td>
<td>Chemicals used in household or public health activities</td>
</tr>
<tr>
<td>Annex 5</td>
<td>Department of Industrial Works</td>
<td>Controlled substances; chemical waste; used electrical and electronic appliance; chemical weapons etc.</td>
</tr>
<tr>
<td>Annex 6</td>
<td>Department of Energy Business</td>
<td>Natural and liquified petroleum gas</td>
</tr>
</tbody>
</table>

3.1.2 Requirements

Compliance is based on types of hazardous substances. Hazard types are determined by online consultation by importers.

<table>
<thead>
<tr>
<th>Types</th>
<th>Classification</th>
<th>Obligation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
<td>Low risk, requires monitoring</td>
<td>Compliance with rules by responsible ministry</td>
</tr>
<tr>
<td>Type 2</td>
<td>Requires monitoring and controlling</td>
<td>Registration, notification</td>
</tr>
<tr>
<td>Type 3</td>
<td>High risk, requires strict control</td>
<td>Registration, notification, license</td>
</tr>
<tr>
<td>Type 4</td>
<td>Vital risk, prohibited</td>
<td>Prohibited (can be used as lab standard)</td>
</tr>
</tbody>
</table>

English version of Hazardous Substances Act can be viewed at https://www.jetro.go.jp/ext_images/thailand/pdf/HazSubAct_20190201NLAapproved.pdf

3.2 RoHS-like Regulations: TIS 2368-2551

RoHS-like regulation in Thailand usually refers to Thailand Restrictions on the Use of Hazardous Substances, Standard TIS 2368-2551, 2008. The standard came into effect on 6 February 2009, restricting the use of certain hazardous chemical substances in EEE. Manufacturers and importers can apply for compliance verification to Thai Industrial Standard Institute (TISI) voluntarily.
4. RECENT REGULATORY UPDATES AND REGULATION TRENDS FOR THE FUTURE

4.1 Hazardous Substances Act Amendment

On 27 October 2019, the Hazardous Substances Act (HSA No. 4) amendment (B.E. 2562) came into effect. The major changes of this amendment include:

- Introduced terminologies: transit, reimport and reexport. The commodity must leave the country within five days after passing through custom inspection.
- Liability is established for damages caused by the commodity.
- The provisions aimed at exemption for unitizations of hazardous substances under the purposes of the study, analysis, research, and development are established, which will help reduce the undue burden and make the practice of the Act more efficient.

4.2 Draft of Chemical Substance Act

A draft of a new chemical regulation Chemical Substance Act was released on April 2019, and the second draft was released on September 2019. The draft covers the full life cycle of chemical substances, mixtures and articles: (re)import/(re)export, manufacturing, transit, use, sales, disposal and recycling.

One of the major changes in the draft compared to Hazardous Substances Act is that unlike the Hazardous Substances Act, which categorized chemicals into type 1-4, the draft classifies chemical substances in to three lists based on their risk level and combined with the upcoming Existing Chemicals Inventory. The lists are:

**List 1 (Low risk):** Enterprises shall comply with the standards in import/export, manufacturing, transit, sales, storage, disposal and recycling.

**List 2 (High risk):** Enterprises must obtain license/permission from the competent authority before conducting any activities with the chemicals.

**List 3 (Prohibited):** All activities are prohibited, but chemicals for Research and Development purposes or where contamination is unavoidable but not that dangerous can be exempted.

All chemicals will be required for registration under the draft. For any chemicals that are not listed in the Existing Chemicals Inventory, a request of chemical evaluation must be submitted before any activities can be conducted.

The Thai version of the Chemical Substance Act can be viewed at: [http://files.chemicalwatch.com/Thai%20document.pdf](http://files.chemicalwatch.com/Thai%20document.pdf)
4.3 Existing Chemicals Inventory

The Thailand Department of Industrial Works (DIW) published the first Existing Chemicals Inventory in July 2020, consisting of 11,474 chemicals. Chemicals in the inventory are searchable through the official online inventory by chemical name, Chemical Abstracts Service registry number, molecular formula or chemical code. The release of existing chemical inventory will be associated with the upcoming Chemical Substance Act.

Online Existing Chemicals inventory is here [http://inventory.diw.go.th/hazardous61/](http://inventory.diw.go.th/hazardous61/)

With the establishment of the Existing Chemicals Inventory and the draft of Chemical Substance Act with new chemical and existing chemical management, Thailand is developing a REACH-like regulation system, and changing the focus of chemical management from hazard to risk management. The upcoming Chemical Substance Act will be of great importance to Thailand’s chemical regulation development and is worth monitoring.

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