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CHEMICAL AND PRODUCT REGULATIONS AFFECTING ELECTRONICS:

TAIWAN

IPC 2020 White Paper

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1. INTRODUCTION

To lower the health and environmental impacts from chemicals, countries and regions around the globe have published various policies and regulations for chemical management. As Taiwan is one of the major markets for manufacture and distribution of chemical products and electrical and electronic products in Asia, its chemical regulations, especially regulations concerning electronics could be of great importance to companies around the globe. This white paper provides a history of chemical regulations applicable to electrical and electronic equipment (EEE), a status of current activity, and trends for the near future.

2. HISTORY OF CHEMICAL REGULATION DEVELOPMENT

1986	**Toxic Chemical Substances Control Act (TCSCA)** was promulgated. It is the most important chemical law in Taiwan, regulating toxic chemicals and establishing a chemical registration system.
2009	Taiwan Ministry of Labor released Existing Chemical Notification Guidance, started to build up Taiwan Existing Chemical Inventory (TCSI).
2013	The Bureau of Standard, Metrology and Inspection (BSMI) published a voluntary national standard **CNS 15663 Guidance** to reduction of the restricted chemical substances in electrical and electronic equipment (EEE). The standard is also referred as **Taiwan RoHS**.
2014	**Occupational Safety and Health Act (OSHA)** was amended from Labor Safety and Health Act. It was promulgated by the Ministry of Labor (MoL), aiming to enhance chemical regulation in workplace.
2014	Under TCSCA, EPA published the **Regulation on New and Existing Chemical Substances Registration.**
2015	Under OSHA, **Regulation on New Chemical Substance Registration and Management** came into effect.
2019	TCSCA was amended and renamed to Toxic and Concerned Chemical Substances of Control Act (TCCSCA), having a broader control over chemicals.

3. CURRENT CHEMICAL REGULATORY SYSTEMS

3.1 REACH-like Regulations

3.1.1 Toxic and Concerned Chemical Substances Control Act (TCCSCA)

Promulgated in 1986, the Toxic Chemical Substances Control Act (TCSCA) is the most important chemical control law in Taiwan and is often referred to as Taiwan REACH, aiming to prevent adverse impact of chemical substances on human health and the environment. Its 7th amendment, Toxic and Concerned Chemical Substances Control Act (TCCSCA) was issued in January 2019 and came into effect in January 2020. Under the Act, anyone who manufactures or imports new substances or existing chemical substances above a certain quantity should register the chemicals with the Environmental Protection Administration (EPA). Anyone who manufactures or imports those chemicals without the approval of the EPA will be liable for penalties. TCCSCA also requires that enterprises who handle certain controlled toxic chemicals should apply for permits, registration or approval and comply with relevant management measures. The flowchart of TCCSCA is shown in the graph below.

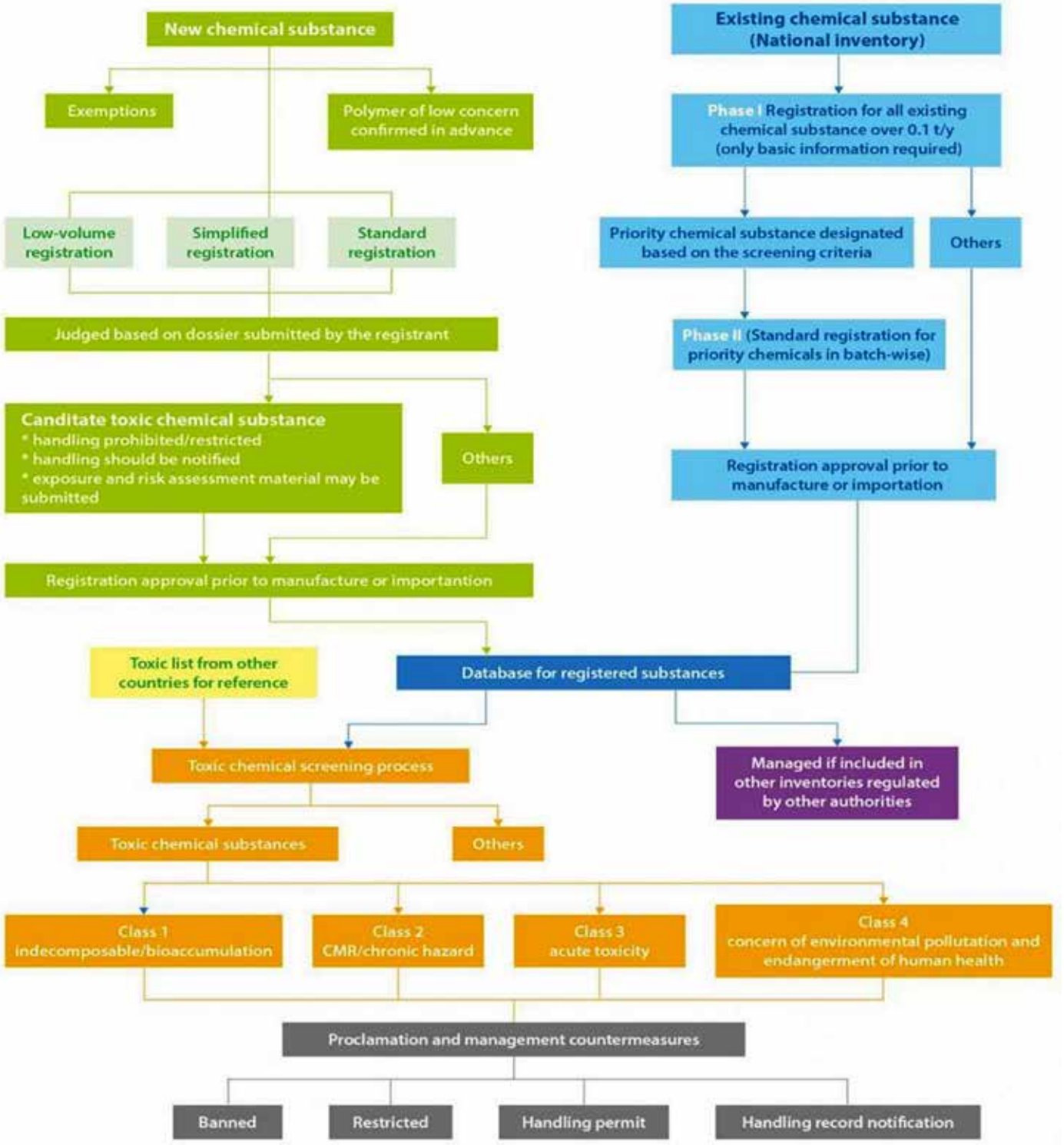
106 substances are listed as the first batch of priority existing chemicals (PEC) subject to standard registration under TCCSCA, the registration deadlines are shown in the table below. New chemicals are defined as the chemicals that are not included in Taiwan's Chemical Substance Inventory (TCSI). Online TCSI search is available through Taiwan Ministry of Labor, Occupational Safety and Health Administrative website: https://csnn.osha.gov.tw/content/home/Substance_Home.aspx

English and Chinese versions of TCSCA can be viewed at https://oaout.epa.gov.tw/law/EngLawContent.aspx?lan=C&id=210

Priority Existing Chemicals Registration Deadlines*

	Annual Tonnage	Registration Deadline
Phase 1 registration code before 31 Dec 2019	1-100t	31 December 2022
	>100t	31 December 2021
Phase 1 registration code after 1 Jan 2020	1-100t	Within 3 years from 1 Jan of the following year
	>100t	Within 2 years from 1 Jan of the following year
Get phase 1 registration code when annual tonnage<1t	Reach 1t before 31 Dec 2019	31 December 2022
	Reach 1t after 1 Jan 2020	Within 3 years from 1 Jan of the following year

*Due to the current pandemic situation, Taiwan authorities are discussing the possibilities of delaying the priority existing chemicals registration deadline to 2023.



TCSCA Management Flow Chart by ChemLinked (https://chemical.chemlinked.com/chempedia/taiwan-tcsca-toxic-and-concerned-chemical-substance-control-act)

3.1.2 Occupational Safety and Health Act (OSHA)

The Taiwan Occupational Safety and Health Act (OSHA) was amended from the previous Labor Safety and Health Act in 2014. Under OSHA, anyone who manufactures or imports new chemicals (same definition as in TCSCA) should submit hazard information and obtain registration approval prior to manufacture or import. OSHA also prohibits the handling or use of certain chemicals in workplace and requires suppliers and employers to provide labels and safety data sheets.

OSHA can be viewed at https://law.moj.gov.tw/LawClass/LawAll.aspx?pcode=N0060001

Enterprise responsibility of chemical registration under TCSCA and OSHA:

TCSCA		OSHA	
Date (from)	**Responsibility**	**Date (from)**	**Responsibility**
11th Dec 2014	New Chemical Registration	1st Jan 2015	New Chemical Registration
1st Apr 2016	Existing Chemical Phase 1 Registration		
1st Jan 2019	Existing Chemical Standard Registration		

3.2 RoHS-like Regulations: CNS 15663

The Bureau of Standard, Metrology and Inspection (BSMI) published standard CNS 15663 “Guidance to reduction of the restricted chemical substances in electrical and electronic equipment (EEE)” that sets the scope of affected EEE products, sets the concentration limits for six hazardous substances, and outlines marking and labeling requirements.

English Version of CNS 15663 can be viewed at https://www.bsmi.gov.tw/wSite/public/Data/f1436161147146.pdf.

3.2.1 Product Scope

Product scope of CNS 15663 includes large and small household appliances, IT and telecommunication equipment, consumer equipment, lighting equipment (including electric light bulbs and household luminaires), electrical and electronic tools (with the exception of large-scale stationary industrial tools), toys, leisure and sports equipment, automatic dispensers and other equipment (equipment covered by CNS 3765, CNS 14408 and CNS 14336-1).

3.2.2 Substance Requirements

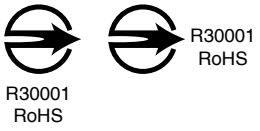
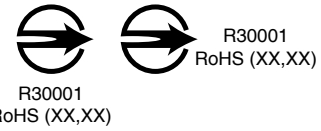
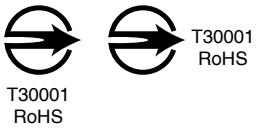
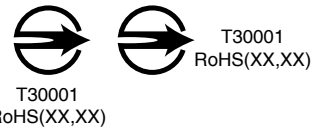
Substances	Limitation (%)
Cadmium	0.01
Lead	0.1
Mercury	0.1
Hexavalent chromium	0.1
PBB	0.1
PBDE	0.1

3.2.3 Marking & Labeling Requirements

Under the standard, EEE are subject to appropriate conformity inspection modules as determined by the BSMI. There are three modules, including: RPC (Registration of Product), TABI (Type Approved Batch Inspection) and DOC (Declaration of Confirmation).

EEE that passed the BSMI inspection will be certified and a BSMI Commodity Inspection Mark should be labeled on the products:

- A 5-digit identification number starts with R, T or D. The identification number and “RoHS” shall be placed below or to the right of the mark;
- “RoHS” indicates that six restricted substances do not exceed concentration limits;
- “RoHS (XX, XX)” indicates that the product contains certain restricted substances exceeding concentration limits.

Inspection methods	Does not exceed limit	Exceed limit
RPC		
TABI		
DOC		

EEE should also follow the requirement in Section 5 of CNS 15663 and mark the presence conditions of the restricted substance on the body, packages, stickers, or the instruction books of the commodities. An example of Marking of Presence Table is shown below.

Equipment name: Television receiver, Type designation: XXX						
Unit	Restricted substances and its chemical symbols					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent chromium (Cr^{+6})	Polybrominated biphenyls (PBB)	Polybrominated diphenyl ethers (PBDE)
Printed circuit board	Exceeding 0.1 wt %	○	○	○	○	○
Cabinet	○	○	Exceeding 0.01 wt %	○	○	Exceeding 0.1 wt %
Glass panel	–	○	○	○	○	○
Speaker	○	○	○	Exceeding 0.1 wt %	○	○
Accessory (example: remote controller)	–	○	○	○	○	○
Note 1: "Exceeding 0.1 wt %" and "exceeding 0.01 wt %" indicate that the percentage content of the restricted substance exceeds the reference percentage value of presence condition. **Note 2:** "○" indicates that the percentage content of the restrictedsubstance does not exceed the percentage of reference value of presence. **Note 3:** The "–" indicates that the restricted substance corresponds to the exemption.						

Table from BSMI (https://www.bsmi.gov.tw/wSite/public/Data/f1436161147146.pdf)

4. RECENT REGULATORY UPDATES AND REGULATION TRENDS FOR THE FUTURE

4.1 TCSCA Amendment

TSCSA, promulgated in 1986, was most recently amended in 2019 and renamed the TCCSCA and includes seven key changes:

- A new category "Concerned Chemical Substances" was introduced: chemicals other than toxic chemicals determined by the authority as posing the risk of polluting the environment or endangering human health based on their characteristics or public concern. Requirement for chemical registration also changed accordingly.
- A new chapter "Accident Prevention and Emergency Response" was added, operators are required to submit accident prevention and contingency plan.
- Creation of a "National Chemical Substances Management Board."
- The government will set up a fund for toxic and concerned chemicals, EPA can collect chemical operating fees from the operators of certain chemical substances.
- Reducing the accident notification time from one hour to 30 minutes.
- Prohibit online purchase of toxic and concerned chemicals.
- Introduction of new provisions to protect and reward whistleblowers and to recover illegal income.

4.2 Regulation on New and Existing Chemical Substances Registration Amendment

On 11 March 2019, Taiwan EPA published the first amendment of Regulation on New and Existing Chemical Substances Registration. The key changes of this amendment are:

- Enterprises can go through phase 1 registration for existing chemicals with annual import/manufacture quantity less than 100kg.
- Amended 2% rule: new chemicals following 2% rule will not be exempted.
- Information required for hazard and exposure assessment adjusted: chemicals with annual tonnage of 10t should submit hazard assessment report. If the substances are harmful to human health and the environment, registrants also need to submit exposure assessment.
- Annual report should be submitted between 1 April and 30 September each year.
- The confidentiality period for PLC small quantity registration extends to five years.

Regarding the recent amendments, there are some follow-up actions that are worthy of attention. First, Regulation on New and Existing Chemical Substances Registration Amendment released a list of 106 existing chemicals as the first batch of existing chemicals that requires standard registration. A second batch may be released soon. Second, in September 2019, Taiwan EPA issued the draft of Guidance for Standard Registration of Designated Chemical Substances to assist industries in complying with the new regulation, the official version of the Guidance should be expected soon.

Taiwan chemical regulations are currently subject to major amendments. Therefore, it is highly recommended that affected companies should monitor and track updated information regarding new requirements and deadlines.

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