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CHEMICAL AND PRODUCT REGULATIONS AFFECTING ELECTRONICS:

CHINA

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. China started its chemical legislation in the 1970s and has under undergone major regulation updates in recent years. Among those regulations, China's current REACH and RoHS like regulations and their amendments could have significant impact on importers and manufacturers of chemical products and electronic/ electrical products.

2. HISTORY OF CHEMICAL REGULATION DEVELOPMENT

1979	China started its chemical legislation with **Environmental Protection Law** issued by the standing committee of National People's congress, setting up the basic structure of general environmental protection measures.
1987	**Chemical Substances Safety Management Regulation** was issued by the State Council, where manufacture, use, storage and transit of chemicals were regulated.
1994	State Environmental Protection Administration issued **Chemical First-time Import and Toxic Chemical Import and Export Environmental Management Regulation**, toxic chemical import and export registration started.
2003	**New Chemical Substances Environmental Management Measures (MEP Order 17)** was issued by Ministry of Environmental Protection, starting the new chemical substances registration. This Measure was updated to MEP Order 7 in 2010 and then to MEE Order 12 in 2020 and is sometimes referred to as "China REACH".
2005	**Waste Hazardous Chemical Pollution Prevention Measures** released, regulating the lifecycle of waste hazardous chemicals.
2006	**Administrative Measure on the Control of Pollution Caused by Electronic Information Products (China RoHS)** released, limiting the concentration of certain chemicals in electronic information products.
2016	China RoHS was replaced by China RoHS2, **Measures for the Control of the Restricted Use of Harmful Substances in Electrical and Electronic Products.**
2019	**Chemical Substance Environmental Risk Assessment and Management Regulation (draft)** released which aims to be the new China REACH.

3. CURRENT CHEMICAL REGULATORY SYSTEMS

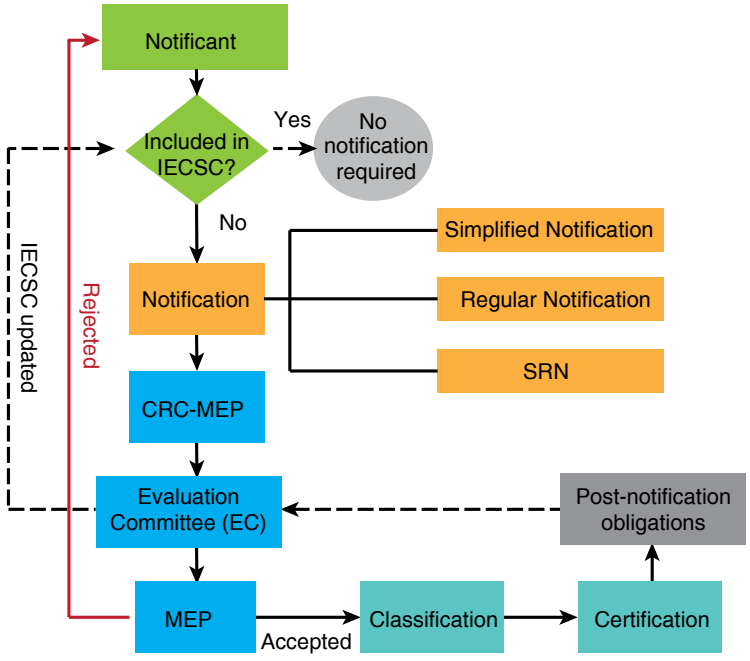
3.1 REACH-like Regulations

3.1.1 MEP Order 7

The Measures for Environmental Administration of New Chemical Substances (MEP Order 7), it was issued in January 2010 by China Ministry of Environmental Protection (MEP) and came into force on 15 October 2010. It is often referred to as **China REACH.** It requires manufacturers and importers to submit new substance notification and obtain approvals from the Solid Waste and Chemical Management Centre of China MEP prior to production or importation. New chemicals are defined as the chemicals that are not in the Inventory of Existing Chemical Substances in China (IECSC). If a chemical is not in the IECSC, then it should be entered into the notification process. There are three levels of notification: simplified notification, regular notification and scientific record notification. Which level of notification to apply is determined based on the chemical's tonnage, chemical type or purpose of use.

It should be noted that, on 29 April 2020, China's Ministry of Ecology and Environment (MEE) published the Measures of Environmental Management and Registration of New Chemical Substances (MEE Order 12), which will replace MEP Order 7 in 2021. MEE Order 12 will take effect on 1 January 2021, its content will be introduced in section 4 of this whitepaper.

MEP Order 7 can be viewed at http://www.mee.gov.cn/xxgk2018/xxgk/xxgk06/201907/t20190711_709145.html



New Chemical Notification Process (EU SME Centre)

3.1.2 SAWS Order 53

Another REACH-like regulation that requires chemical registration in China is SAWS Order 53: The Measures for the Administration of Registration of Hazardous Chemicals. Whereas MEP Order 7 focuses on new chemicals, SAWS Order 53 focuses on hazardous chemicals, defined by the China's Catalog of Hazardous Chemicals. Issued in July 2012, this order requires domestic manufacturers and importers to register hazardous chemicals with the National Registration Center of Chemicals (NRCC) of SAWS prior to manufacturing or importation.

SAWS Order 53 can be viewed at http://www.gov.cn/gongbao/content/2012/content_2251664.htm

3.2 RoHS-like Regulations: China RoHS2

China RoHS2 was published on 6 January 2016 by The Chinese Ministry of Industry and Information Technology (MIIT) and formally implemented on 1 July 2016. It replaced the original China RoHS that was released in 2006. The original China RoHS only impacted electronic information products (EIP), with China RoHS2, electrical and electronic products (EEP) are impacted, similar to EU RoHS. A list of EEP is added to the catalogue of electrical and electronic products subject to compliance management (China RoHS compliance management catalogue). EEP listed in the Catalogue are subject to mandatory compliance with hazardous substance restriction limits. Non-listed products which contain certain hazardous substances exceeding the limits can still be sold in China. However, the affected products need to be marked.

China RoHS2 can be viewed at http://www.miit.gov.cn/n1146285/n1146352/n3054355/n3057254/n3057260/c4608532/content.html

3.2.1 Product Scope

The product scope of China RoHS2, also called China RoHS compliance management catalogue, includes 12 catalogues (listed products): refrigerators, air conditioners, washing machines, printers, copiers, fax machines, tv sets, personal computers, mobile communication handsets, monitors, telephones, water heaters.

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

China RoHS2 requires that all EEP that are sold in China be marked with one of the following two logos depending on whether if they contain any hazardous substances exceeding official concentration limits. If a product contains no restricted hazardous substances or if the concentration is below the limit, then it will be marked with a green mark, indicating the product is in compliance with China RoHS2 and is environmentally friendly and recyclable. Otherwise the product will be marked with an orange mark with a number in the circle. This number is called Environmentally Friendly Use Period (EFUP) with years as unit. Also, along with the orange mark, a hazardous substance table must also be supplied with the product that lists each part that is out of compliance.

China RoHS Mark:

- **Contains no restricted substances or restricted substances below the limit**
- **Environmentally friendly**
- **Recyclable after being abandoned**

- **Environmentally Friendly Use Period (EFUP)**
- **Contains restricted substances (exceed limit)**
- **Use safely during EFUP (e.g. 10 years)**
- **Should enter into the recycle system after EPUP**
- **Must be companied by hazardous substances table**

Hazardous Substances Table example (must be in Chinese):

VIPRION C2400 机箱危害物质表

VIPRION C2400 Chassis Hazardous Substance Table

部件名称 Part Name	有毒有害物质 Hazardous Substance					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	铬 6+ (Cr^{6+})	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
金属部件 Metal Parts	o	o	o	o	o	o
印刷电路板 Printed Circuit Boards	x	o	o	o	o	o
风扇组件 Fan Assembly	o	o	o	o	o	o
电源 Power Supplies	x	o	o	o	o	o

o: 表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T 11363-2006标准规定的限量要求以下
Expresses that this hazardous substance is below the specified limits as described in SJ/T 11363-2006.

x: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T 11363-2006标准规定的限量要求（企业可在此处，根据实际情况对上表中打"×"的技术原因进行进一步说明）
Expresses that this hazardous substance is above the specified limits as described in SJ/T 11363-2006.

除非另外特别的标注，此标志为针对所涉及产品的环保使用期标志. 某些零部件会有一个不同的环保使用期（例如，电池单元模块）贴在其产品上.
此环保使用期限只适用于产品是在产品手册中所规定的条件下工作.
The Environmentally Friendly Use Period (EFUP) for all enclosed products and their parts is per the symbol shown here, unless otherwise marked. Certain parts may have a different EFUP (for example, battery modules) and so are marked to reflect such. The Environmentally Friendly Use Period is valid only when the product is operated under the conditions defined in the product manual.

Table from https://techdocs.f5.com/kb/en-us/products/big-ip_ltm/manuals/product/pg_viprion2400/6.html

4. RECENT REGULATORY UPDATES AND REGULATION TRENDS FOR THE FUTURE

4.1 China RoHS2 Implementation

China RoHS2 came into force in 2016 and replaced the original China RoHS. Compared to the original China RoHS, China RoHS2 made two major changes:

- It expanded the product scope from electronic information products (EIP) to electrical and electronic products (EEP). The definition of EIP is products produced with electronic information technologies, like TVs, computers and radios etc., and EEP covers every product that are dependent on electric currents or electromagnetic fields in order to work properly (EEP is the same term as EEE in EU RoHS).
- A Catalogue of Restricted Use of Hazardous Substances in EEP was added in 2019, the 12 categories of products in this catalogue are mandatory to meet the limitation requirements.

The changes show that China is leaning toward EU RoHS in terms of regulation structure and being stricter on hazardous chemicals control in EEPs. Though at the moment, China has not indicated any possibility of including certain phthalates into China RoHS, and considering China RoHS2 just had a major update in 2019, it may not be updated or adjusted again soon, but adding in phthalates should still be possible in the future.

4.2 MEE Order 12

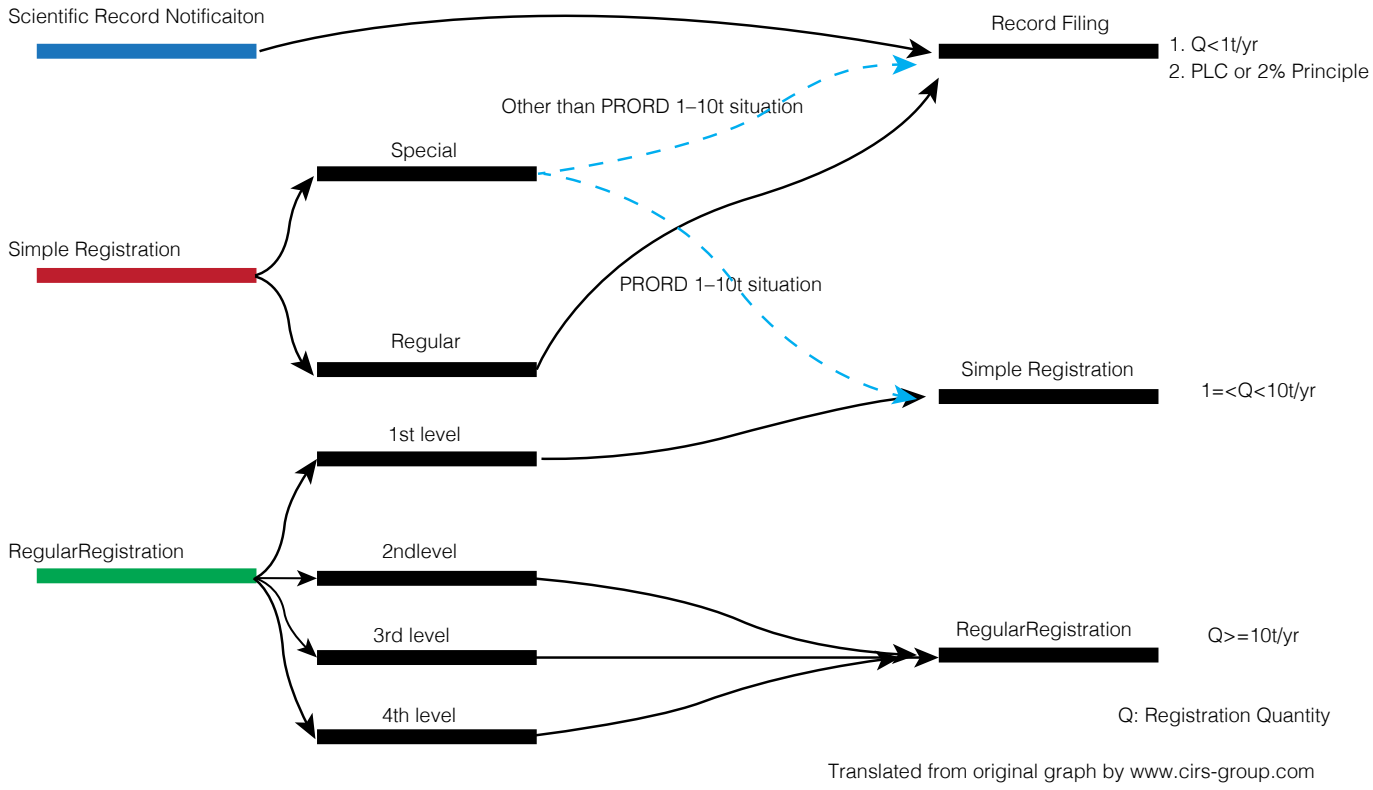
On 29 April 2020, China's Ministry of Ecology and Environment (MEE) published the Measures of Environmental Management and Registration of New Chemical Substances (MEE Order 12), replacing the current new chemical registration regulation MEP Order 7. MEE Order 12 will adjust the registration classification and simplify the new chemical registration process. The new Order will take effect on 1 January 2021, meanwhile MEP Order 7 will be terminated. The major updates of this order include:

- New chemical substances used for research with annual production or import volumes of less than 100kg are exempted.
- New chemicals with annual production or import volumes of less than one ton and polymers with less than two percent of new chemical monomer or polymers of low concern (PLC) will only require a record filing.
- Regular registration is required only for new chemicals with annual production or import volumes for more than ten tons. New chemicals with annual production or import volumes of one to ten metric tons will only file a simplified registration, which does not require that toxicological tests related to health hazards be conducted. PBT substances will not be eligible for the simplified registration.

- New chemical substances with regular registration will be included in the IECSC after five years and PBT substances will include a use restriction.
- PBT substances on the IECSC with a use restriction will require new use registration.
- Annual reporting will only be required for regular registration.

(From National Law Review)

Previous New Chemical Registration Classification



The amendment adjusted the registration classification and simplifies the new chemical registration process, shifting the focus of new chemical registration to new chemicals with higher risk to environment or human health, this indicates that China wants to focus on the environmental or health impact of chemicals rather than chemical itself.

MEE Order 12 can be viewed at: http://www.mee.gov.cn/xxgk2018/xxgk/xxgk02/202005/t20200507_777913.html

4.3 Chemical Substance Environmental Risk Assessment and Management Regulation (New China REACH)

The draft for soliciting opinions of Chemical Substance Environmental Risk Assessment and Management Regulation came out in January 2019, and China notified WTO of the regulation draft on September 2019. The regulation applies to chemical substances environmental risk assessment and risk management activities. The goal is to include all existing chemicals into one environmental management system, which is why this regulation is often referred as the new China REACH.

Unlike chemical management system in many other countries, chemical management in China is addressed under separate Orders and do not have an overall regulation. If passed, the new China REACH will be the first chemical regulation in China that builds a general regulatory system and will become a milestone in China's chemical regulatory development.

Draft of Chemical Substance Environmental Risk Assessment and Management Regulation can be viewed at http://www.mee.gov.cn/xxgk2018/xxgk/xxgk06/201901/t20190111_689258.html

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3000 Lakeside Drive, Suite 105 N
Bannockburn, IL 60015 USA
+1 847-615-7100 **tel**
+1 847-615-7105 **fax**
www.**ipc**.org

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