



BUILD ELECTRONICS BETTER

CHEMICAL AND PRODUCT REGULATIONS AFFECTING ELECTRONICS:

CHINA



IPC 2021 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 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



3. CURRENT CHEMICAL REGULATORY SYSTEMS

3.1 REACH-like Regulations

3.1.1 MEE Order 12

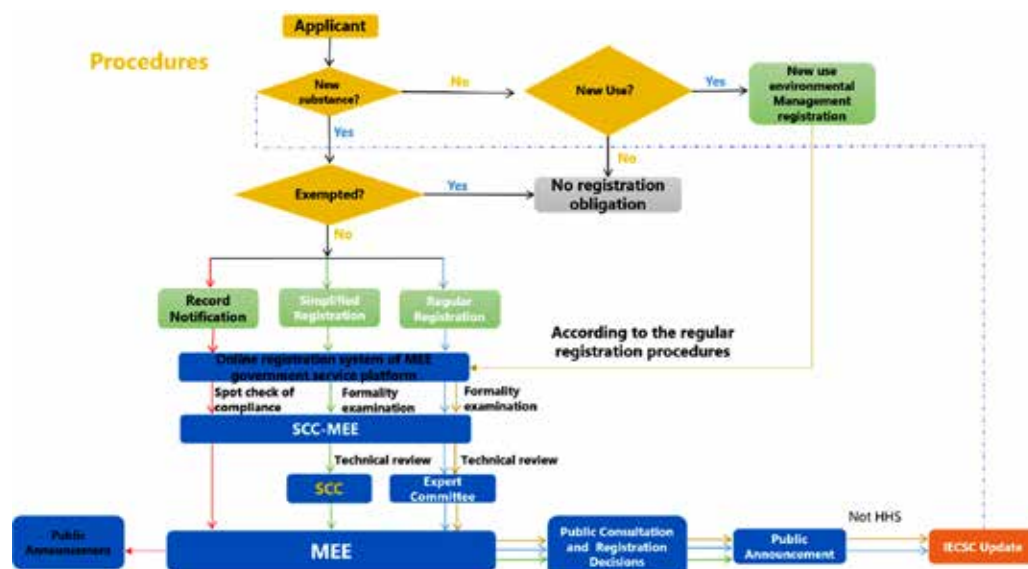
[Measures of Environmental Management and Registration of New Chemical Substances \(MEE Order 12\)](#) was issued in April 2020 by China Ministry of Ecology and Environment (MEE) and came into force on 1 January 2021. It replaced the previous Measures for Environmental Administration of New Chemical Substances (MEP Order 7) which have been effective since 2010, and became the new China REACH. It requires manufacturers and importers to submit new substance registration and obtain approvals from the Solid Waste and Chemical Management Centre of China MEE (SCC-MEE) prior to manufacture or importation of new chemicals or certain chemicals with new use. New chemicals are defined as the chemicals that are not included in the [Inventory of Existing Chemical Substances in China \(IECSC\)](#).

There are three levels of registration, which level of notification to apply is determined based on the chemical's tonnage, chemical type or purpose of use:

1. Regular registration: new substances manufactured/imported ≥ 10 t/y.
2. Simple registration: new substances manufactured/imported between 1-10t/y.
3. Record filling: new substances manufactured/imported < 1 t/y, polymer meeting 2% rule and polymer of lower concern.

An official [MEE Order 12 guidance](#) was published in November 2020 by MEE. Business could refer to the guidance for detailed compliance requirement.

MEE Order 12 flowchart. Image from ChemLinked



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.

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.

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 accompanied 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
<p>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.</p> <p>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“x”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.</p>						


<p>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.</p>	
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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 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.

4.3 GB/T 39498-2020: Guidelines for the Use and Control of Key Chemical Substances in Consumer Products

On 19 November 2020, the National Standardization Administration issued the voluntarily national standard GB/T 39498-2020: Guidelines for the Control of the Use of Key Chemical Substances in Consumer Products, which was implemented on 1 June 2021.

GB/T 39498-2020 applies to consumer products, including product components, parts, accessories, packaging and instructions for use. Exceptions include products under special supervision such as food, medicine, cosmetics, tobacco, special equipment, aircraft, ships and military products.

The standard sets out 10 chemical substances to be restricted in electric and electronic products:

Chemical Substance	Limitation (by weight)
Lead	0.1%
Mercury	0.1%
Hexavalent Chromium	0.1%
Cadmium	0.01%
Polybrominated Biphenyls (PBB)	0.1%
Polybrominated Diphenyl Ethers (PBDE)	0.1%
Bis (2-Ethylhexyl) phthalate (DEHP)	0.1%
Benzyl butyl phthalate (BBP)	0.1%
Dibutyl phthalate (DBP)	0.1%
Diisobutyl phthalate (DIBP)	0.1%

It should be noted that except for six chemical substances that have been restricted under China RoHS, four phthalates (DEHP, BBP, DBP, DIBP) are added to this standard, akin to EU RoHS requirements. Although being voluntarily, the standard shows a possibility of amendment to China RoHS in the near future, therefore its implementation is worth paying attention to by electric and electronic industry.



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