



# Regulatory Alerts



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# Regulatory Alert

Global Environmental and Chemical Regulations, Policies, and Standards

## Restriction of Hazardous Substances (RoHS) Regulations

Region: Global

### INTENDED AUDIENCE

This Regulatory Alert is intended for IAEG members who manufacture, import, export, and/or use certain hazardous substances contained in electrical and electronic equipment (EEE).

### EXECUTIVE SUMMARY

Hazardous substances are present in certain EEE. These substances may pose risks to human health and the environment. Therefore, it is imperative that legislative action is taken globally—in most cases, action has been taken—to restrict the use of hazardous substances in EEE to effectively manage them and minimize their risks.

The EU RoHS Regulation (Directive 2011/65/EU or RoHS 2) provides a regulatory framework for managing hazardous substances in EEE. Consequently, various countries have implemented or are planning to implement this Regulation to better protect human health and the environment.

This Regulatory Alert provides an overview of the EU RoHS Regulation and its implications. Attachment A, which supplements this Regulatory Alert, compares and takes a deeper look into the key RoHS Regulations in various countries/regions. The following countries/regions are discussed Attachment A:

- China
- India
- Indonesia
- Japan
- South Korea
- Singapore
- Taiwan
- Turkey
- Vietnam
- Saudi Arabia
- United Arab Emirates (UAE)
- Gulf Cooperation Council (GCC)
- United Kingdom
- Eurasian Economic Union (EAEU)
- Brazil

### BACKGROUND ON REGULATION

RoHS 2 restricts the use of certain hazardous substances in EEE. An EEE is defined as equipment that requires electric currents or electromagnetic fields to function properly, and generates, transfers and measures such currents and fields. It is also designed for use with a voltage rating of up to 1,000 volts (V) for alternating current (AC) and 1,500 V for direct current (DC).

RoHS 2 was published on 8 June 2011 and entered into effect on 2 January 2013. It replaced Directive 2002/95/EC (RoHS 1), and made some key changes:

# Regulatory Alert

Global Environmental and Chemical Regulations, Policies, and Standards

- » increased the scope of products covered
- » expanded the list of exemptions for specific applications (Annex III and IV)
- » necessitated technical files (see 'Regulatory Obligations' section for further details)
- » added a requirement for CE marking on EEE (Article 15) to show that the equipment was compliant with RoHS 2 (CE markings signify those products have been assessed to meet high safety, health, and environmental protection requirements)

On 4 June 2015, the European Commission (EC) published Directive (EU) 2015/863 (RoHS 2 Amendment), which amended Annex II of RoHS 2 and added four phthalates (see 'Applicability' section) to the restricted substances list. In addition, there have been recent assessments of or changes to exemptions under the RoHS Regulation (see 'Useful Links' section for further information), including:

- » exemption assessment for Pack 21 [exemption numbers: 1, 1(a), 1(b), 1(c), 2, 3, 5, 11, 13, 14, 15, 17, 26, 29, 31(a) and 39 of Annex IV] (final report published: 16 March 2022)
- » exemption assessment for Pack 22 [exemption numbers: 6(a), 6(a)-I, 6(b), 6(b)-I, 6(b)-II, 6(c), 7(a), 7(c)-I and 7 (c)-II of Annex III] (amendment to final report published: 15 February 2022)
- » exemption assessment for Pack 23 [exemption numbers: 4(f), 8(b), 8(b)-I, 9(a)-II, 13(a), 13(b), 13(b)-1,13(b)-II, 13(b)-II, 15 and 15 (a) of Annex III] (stakeholder consultations ended on 27 May 2021)
- » exemption assessment for Pack 24 [exemption numbers: 5(b), 18(b), 18(b)-I, 24, 29, 32 and 34 of Annex III and 34 of Annex IV] (final report published: 16 February 2022)
- » 12 Commission delegated acts ending a broad range of existing exemptions for the use of mercury in lamps (published: 24 February 2022)

Specific requirements, including substance restrictions, are outlined within the EU RoHS Regulation and below.

## APPLICABILITY

The EU RoHS Regulation restricts the use of the following ten hazardous substances in EEE (italicized substances were newly added in the RoHS 2 Amendment):

- » Cadmium (CAS No. 7440-43-9) and its compounds
- » Mercury (CAS No. 7439-97-6) and its compounds
- » Lead (CAS No. 7439-92-1) and its compounds
- » Hexavalent chromium (CAS No. 18540-29-9) and its compounds
- » Polybrominated biphenyls (PBBs) [CAS No. not available]
- » Polybrominated diphenyl ethers (PBDE) [CAS No. not available]
- » *Di-(2-ethylhexyl) phthalate (DEHP)* [CAS No. 117-81-7]
- » *Benzyl butyl phthalate (BBP)* [CAS No. 85-68-7]
- » *Dibutyl phthalate (DBP)* [CAS No. 84-74-2]
- » *Diisobutyl phthalate (DIBP)* [CAS No. 84-69-5]

There are 11 categories of EEE covered by the EU RoHS Regulation – categories relevant to Aerospace and Defense are in bold:

- » large household appliances (Category 1)
- » small household appliances (Category 2)
- » **IT and telecommunications equipment (Category 3)**
- » **consumer equipment (Category 4)**

# Regulatory Alert

Global Environmental and Chemical Regulations, Policies, and Standards

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- » lighting equipment (Category 5)
  - » electrical and electronic tools (Category 6)
  - » toys, leisure, and sports equipment (Category 7)
  - » medical devices (Category 8)
  - » monitoring and control instruments, including industrial monitoring and control instruments (Category 9)
  - » automatic dispensers (Category 10)
  - » other EEE not covered by any of the 11 categories (Category 11)

Exemptions apply for certain applications (provided in Annexes III and IV of the EU RoHS Regulation). These include:

- » equipment used for defense or national security
- » equipment sent into space, such as satellites, telescopes, and spacecraft
- » vehicles used for transport
- » equipment used for professional research and development
- » large-scale fixed installations
- » large-scale stationary industrial tools
- » fixed-location photovoltaic panel installations
- » compact fluorescent light bulbs/lamps
- » batteries (only cells and not used for external wiring)
- » spare parts for equipment in the market before the RoHS Regulation took effect (applies to all except for Category 11 products)

## RELEVANT DATES

- » Published: 8 June 2011
- » In force: 21 July 2011
- » Effective: 2 January 2013
- » EEE Categories 8 and 9 fully in scope: 22 July 2017
- » EEE Category 11 fully in scope: 22 July 2019<sup>1</sup>
- » DEHP, BBP, DBP and DIBP restricted (for EEE Categories 1-7 and 10-11): 22 July 2019<sup>1</sup>
- » DEHP, BBP, DBP and DIBP restricted (for EEE Categories 8 and 9): 22 July 2021<sup>1</sup>

## REGULATORY OBLIGATIONS

The EU RoHS Regulation prohibits the placing on the market of 11 categories of EEE that contain any of the 10 hazardous substances (see 'Applicability' section). The EEE must not exceed the maximum concentration values tolerated by weight (in homogeneous materials) for the hazardous substances – the maximum limit for **each of the hazardous substances is 0.1%**, except for cadmium which has a limit of 0.01%.

Manufacturers are subject to the requirements listed in Article 7 of the EU RoHS Regulation. Article 7b states that manufacturers must provide a technical document, which outlines the efforts made to ensure RoHS conformity.

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<sup>1</sup> DEHP, BBP, DBP and DIBP were newly added in the RoHS 2 Amendment (see 'Background' and 'Applicability' sections for further information).

# Regulatory Alert

Global Environmental and Chemical Regulations, Policies, and Standards



This document must contain information on testing, design, instructions for use, and health and safety. Article 7c states that a Declaration of Conformity (DoC) must be produced with specific information on the product, the manufacturer's contact details and other essential requirements. This will enable a CE mark to be affixed to the product, which declares that the product has been designed, tested and manufactured to meet the essential requirements. EEE imported into the EU must also be compliant with the aforementioned requirements.

## RISKS TO AEROSPACE AND DEFENSE

Penalties for non-compliance of the EU RoHS Regulation are determined by individual Member States. Violation of the Regulation may result in penalties such as fines and imprisonment as well as damage to the company's reputation (see Attachment A for specific risks for a particular country/region).

## USEFUL LINKS

[Directive 2011/65/EU \(RoHS 2\)](#)

[Directive \(EU\) 2015/863 \(RoHS 2 Amendment\)](#)

[EC Implementation of the RoHS Directive \[for Exemption Assessments for Packs 21, 22, 23 and 24, see 'Assessment studies on exemptions' section\]](#)

[Study to assess requests for a renewal of sixteen Pack 21 exemptions – Final Report \[see pages 23-27\]](#)

[Study to assess requests for a renewal of nine Pack 22 exemptions – Final Report \(Amended Version\) \[see pages 15-18\]](#)

[Stakeholder consultations for Pack 23 exemptions](#)

[Study to assess requests for a renewal of seven Pack 24 exemptions – Final Report \[see pages 13-15\]](#)

[Commission delegated acts ending the use of mercury in lamps \(24 February 2022\)](#)

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**ATTACHMENT A**  
**Key Global Restriction of Hazardous Substances (RoHS) Regulations**

Region	ASIA				
Country	China	India	Indonesia	Japan	South Korea
Legislation Name	Ministry of Industry and Information Technology (MIIT) Order 32: Administrative Measures for the Restriction of the Use of Hazardous Substances in Electrical and Electronic Product	E-Waste (Management) Rules, 2016	Draft Guidelines for implementation of restriction of hazardous substances (RoHS) in electronic products in Indonesia	Law for Promotion of Effective Utilization of Resources in Japan (Japanese Recycling Law)  JIS C 0950 the marking for presence of the specific chemical substances for electrical and electronic equipment	Act for Resource Recycling of Electrical and Electronic Equipment and Vehicles
Scope	The MIIT's Order for EEE is similar to the EU RoHS Regulation. The Order restricts hazardous substances in products listed under the Compliance Management Catalogue. There are 12 categories of products specified in the Catalogue (relevant to A&D): <ul style="list-style-type: none"> <li>refrigerators;</li> <li>air conditioners;</li> <li>monitors;</li> <li>microcomputers;</li> <li>mobile communication devices; and</li> <li>telephones.</li> </ul> All EEE placed on the market must be labelled with details of hazardous substances contained in the product, components containing the hazardous substances, whether or not they can be recycled and the impact of disposal on the environment. Producers and importers must also ensure that packaging of EEE complies with mandatory laws and standards (packaging should be non-hazardous, easily degradable and able to be recycled).	India's Ministry of Environment, Forests and Climate Change (MoEF) E-Waste (Management) Rules apply to the following product categories (relevant to A&D): <ul style="list-style-type: none"> <li>refrigerators;</li> <li>air conditioners; and</li> <li>IT and telecommunications equipment.</li> </ul> The Rules apply to any company involved in the manufacture, sale, transfer, purchase, collection, storage and processing of EEE (or e-waste), and their components and parts, listed in Schedule I. These Rules combine regulations for the RoHS and waste (WEEE) of EEE.	The Indonesian Ministry of Industry's Draft Guidelines for RoHS in EEE will implement the EU RoHS Regulation. There are 11 categories of EEE that will be subject to the RoHS in Indonesia. These include (relevant to A&D): <ul style="list-style-type: none"> <li>IT and telecommunication equipment;</li> <li>consumer equipment;</li> <li>lighting equipment; and</li> <li>other electric and electronic equipment (e.g., sprays)</li> </ul>	The Japanese RoHS refers to the Japanese Recycling Law and the mandatory industry standard JIS C 0950 (collectively called J-MOSS). J-MOSS is similar to the EU RoHS Regulation, and covers 7 categories of EEE, including (relevant to A&D): <ul style="list-style-type: none"> <li>personal computers;</li> <li>unit-type air conditioners; and</li> <li>refrigerators.</li> </ul> The Japanese Recycling Law requires companies to mark the presence of specific hazardous substances in certain types of EEE. JIS C 0950 sets the concentration limits for the six hazardous substances and provides detailed guidance on the marking of those hazardous substances.	South Korea's Ministry of Environment (MoE) Act on EEE is similar to the EU RoHS Regulation. The following product categories are specified for EEE (relevant to A&D): <ul style="list-style-type: none"> <li>refrigerators;</li> <li>air conditioners;</li> <li>IT and telecommunications equipment;</li> <li>computers; and</li> <li>audio equipment.</li> </ul>
Regulatory Timeline	<ul style="list-style-type: none"> <li>Published: 21 January 2016</li> <li>In force: 1 July 2016</li> <li>Published (Compliance Management Catalogue): 15 March 2018</li> <li>In force (Compliance Management Catalogue): 15 March 2019</li> </ul>	<ul style="list-style-type: none"> <li>Published: 23 March 2016</li> <li>Effective: 1 October 2016</li> </ul>	<ul style="list-style-type: none"> <li>Published: 1 January 2016</li> </ul>	<b>Japanese Recycling Law:</b> <ul style="list-style-type: none"> <li>Adopted: 7 June 2000</li> <li>In force: 1 April 2001</li> </ul> <b>JIS C 0950:</b> <ul style="list-style-type: none"> <li>In force: 20 December 2005</li> </ul>	<ul style="list-style-type: none"> <li>Adopted: 2 April 2007</li> <li>In force: 1 January 2008</li> <li>In force (substance restrictions): 1 July 2008</li> <li>In force (amendment): 1 January 2021</li> <li>In force (phthalate restrictions): 1 July 2021</li> </ul>
Substance Restrictions	<p>The substance restrictions and limits are aligned with the EU RoHS Regulation:</p> <ul style="list-style-type: none"> <li>Cadmium and its compounds: 0.01%;</li> <li>Mercury and its compounds: 0.1%;</li> <li>Lead and its compounds: 0.1%;</li> <li>Hexavalent chromium and its compounds: 0.1%;</li> <li>PBB: 0.1%;</li> <li>PBDE: 0.1%;</li> <li>DEHP: 0.1%;</li> <li>BBP: 0.1%;</li> <li>DBP: 0.1%; and</li> <li>DIBP: 0.1%.</li> </ul> <p>The MIIT announced proposals in March 2022 to include DEHP, BBP, DBP and DIBP in its restricted substance list for EEE (<a href="http://www.cesi.cn/rohs/202203/8327.html">http://www.cesi.cn/rohs/202203/8327.html</a>). The revision to China's RoHS Regulation will likely be finalized in November 2022.</p>	India's substance restrictions for 6 hazardous substances in EEE are aligned with the EU RoHS Regulation: <ul style="list-style-type: none"> <li>Cadmium and its compounds: 0.01%;</li> <li>Mercury and its compounds: 0.1%;</li> <li>Lead and its compounds: 0.1%;</li> <li>Hexavalent chromium and its compounds: 0.1%;</li> <li>PBB: 0.1%; and</li> <li>PBDE: 0.1%.</li> </ul>	Indonesia will implement the substance restrictions under the EU RoHS Regulation for six hazardous substances: <ul style="list-style-type: none"> <li>Cadmium and its compounds: 0.01%;</li> <li>Mercury and its compounds: 0.1%;</li> <li>Lead and its compounds: 0.1%;</li> <li>Hexavalent chromium and its compounds: 0.1%;</li> <li>PBB: 0.1%; and</li> <li>PBDE: 0.1%.</li> </ul>	<p>Japan restricts the same six hazardous substances as the EU RoHS Regulation:</p> <ul style="list-style-type: none"> <li>Cadmium and its compounds: 0.01%;</li> <li>Mercury and its compounds: 0.1%;</li> <li>Lead and its compounds: 0.1%;</li> <li>Hexavalent chromium and its compounds: 0.1%;</li> <li>PBB: 0.1%;</li> <li>PBDE: 0.1%;</li> <li>DEHP: 0.1%;</li> <li>BBP: 0.1%;</li> <li>DBP: 0.1%; and</li> <li>DIBP: 0.1%.</li> </ul> <p>Specific concentration limits are provided in JIS C 0950.</p>	<p>The substance restrictions and limits are aligned with the EU RoHS Regulation:</p> <ul style="list-style-type: none"> <li>Cadmium and its compounds: 0.01%;</li> <li>Mercury and its compounds: 0.1%;</li> <li>Lead and its compounds: 0.1%;</li> <li>Hexavalent chromium and its compounds: 0.1%;</li> <li>PBB: 0.1%;</li> <li>PBDE: 0.1%;</li> <li>DEHP: 0.1%;</li> <li>BBP: 0.1%;</li> <li>DBP: 0.1%; and</li> <li>DIBP: 0.1%.</li> </ul> <p>The Korean MoE published a Draft Amendment to the Act on July 2020, which added DEHP, BBP, DBP and DIBP in its restricted substance list for EEE (<a href="http://www.men.go.kr/home/web/board/read.do?boardMasterId=1&amp;boardId=1383490&amp;menuId=286">http://www.men.go.kr/home/web/board/read.do?boardMasterId=1&amp;boardId=1383490&amp;menuId=286</a>). The addition of the four phthalates came into force on 1 July 2021.</p>
Exemption	Exemptions apply to products specified in the exemption list under the Compliance Management Catalogue (see 'Additional Source 3').	<ul style="list-style-type: none"> <li>products for military and national defense;</li> <li>products where electricity is not the primary power source;</li> <li>products where the primary function does not require electricity;</li> <li>sub-assembly or component of exempted product category;</li> <li>products that serve small manufacturing and service businesses;</li> <li>batteries; and</li> <li>radioactive waste.</li> </ul>	Exemptions are likely to apply for spare parts for repair or reuse of electronic equipment, filament bulbs (Category 5) and large scale industrial electronic equipment (Category 6).	Exemptions are listed in Annex B of JIS C 0950 (see 'Additional Source 1').	Exemptions are listed in Annex 2, which includes exemptions for batteries, and products for military and national defense purposes.
How to Show Compliance	<p>Compliance of EEE with MIIT Order 32 can be shown by two methods by producers:</p> <ul style="list-style-type: none"> <li>voluntary certification with a third-party certification body, where the certified products are published on the Public Service Platform; or</li> <li>self-declaration - DoC and technical files must be submitted on the Public Service Platform.</li> </ul> <p>A mark will be applied for compliant products depending on the method (specified above) chosen. This may be a voluntary certification or SDoC (self-declaration DoC) mark.</p> <p>EEE must also have an Environmentally Friendly Use Period (EFUP) label and have a RoHS table in Chinese, which identifies if any hazardous substances exceed the threshold/limit (see 'Substance Restrictions' section).</p>	Although there are no specific ways to show RoHS compliance for EEE under the E-Waste (Management) Rules, producers must obtain Extended Producer Responsibility authorization. Additionally, the Central Pollution Control Board will conduct random sampling of EEE placed on the market to monitor and verify compliance with RoHS provisions.	Manufacturers, importers and distributors must ensure that all products on the market meet the requirements. For each product, technical documentation, internal production controls, self-declaration documentation, proof of conformity and a mark/label of conformity must be present.	<p>Manufacturers and importers can show RoHS compliance of EEE on the market by labelling such products according to the standard:</p> <ul style="list-style-type: none"> <li>products that contain no hazardous substances (above the concentration limits stated in Annex A) may be voluntarily marked with the green "G" symbol (the J-MOSS mark) on the product, packaging and/or catalogue;</li> <li>products that fall under an exemption listed in Annex B of JIS C 0950 are not required to be marked with the "R", even if hazardous substance concentration limits are exceeded, and may voluntarily be marked with the "G" (presence of hazardous substances must still be disclosed, in Japanese, on the website);</li> <li>products with no applicable JIS C 0950 Annex B exemption that contain at least one of the hazardous substances above their concentration limits must be marked with the orange "R" symbol on the product, packaging and catalogue (presence of hazardous substances must be disclosed on the company's website in Japanese); and</li> <li>substance content information should also be published on the manufacturer's website.</li> </ul>	Manufacturers and importers are required to make a self-declaration to the authorities when any product in scope is placed on the market. The declaration must show whether or not the product complies with the substance restrictions and recyclability rates.
Concerned Actors	Manufacturers, importers and exporters	Manufacturers, importers and exporters	Manufacturers, importers and exporters	Manufacturers, importers and exporters	Manufacturers, importers and exporters
Risk	There are no penalty provisions provided for non-compliance.	Penalties for non-compliance include fines.	There are no penalty provisions provided for non-compliance.	Penalties for non-compliance include fines of up to 500,000 Yen.	Penalties for non-compliance include fines up to 10 million Won and imprisonment up to 2 years.
Official Source	<a href="#">RoHS Regulation_english</a>	<a href="#">E-waste Regulation</a>	<a href="#">Draft RoHS Regulation</a>	<a href="https://www.japaneselawtranslation.go.jp/en/laws/view/3819/en">https://www.japaneselawtranslation.go.jp/en/laws/view/3819/en</a>	<a href="https://www.law.go.kr/LSW/lSc.do?p1=&amp;nwYn=1&amp;menuId=0&amp;query=%EC%9E%90%EC%9B%90%EC%88%9C%ED%99%98%EB%B2%95&amp;subMenu=1&amp;y=0&amp;x=0#">https://www.law.go.kr/LSW/lSc.do?p1=&amp;nwYn=1&amp;menuId=0&amp;query=%EC%9E%90%EC%9B%90%EC%88%9C%ED%99%98%EB%B2%95&amp;subMenu=1&amp;y=0&amp;x=0#</a>
Additional Source 1	<a href="http://www.cii.com.cn/zhylm/zhylmHangYeziXun/201803/t20180316_3918754.html">http://www.cii.com.cn/zhylm/zhylmHangYeziXun/201803/t20180316_3918754.html</a>	N/A	<a href="#">Draft RoHS Regulation_english</a>	<a href="#">RoHS Regulation_JIS-C-0950_english</a>	<a href="#">RoHS Regulation_english</a>
Additional Source 2	<a href="#">RoHS Regulation Catalogue_english</a>	N/A	N/A	N/A	N/A
Additional Source 3	<a href="#">RoHS Regulation Exemptions_english</a>	N/A	N/A	N/A	N/A

**ATTACHMENT A**  
**Key Global Restriction of Hazardous Substances (RoHS) Regulations**

Region	ASIA				SOUTH AMERICA
Country	Singapore	Taiwan	Turkey	Vietnam	Brazil
Legislation Name	Environmental Protection and Management Act (Amendment of Second Schedule) Order 2016	CNS15663: Guidance for the reduction of restricted chemical substances in electrical and electronic equipment	Regulation on the Control of Waste Electrical and Electronic Goods	Circular No. 30/2011/TT-BCT - Temporary Regulation on permission limits of some hazardous chemicals in electrical and electronic products*	Draft Resolution establishing restrictions on the use of certain hazardous substances in electric and electronic equipment commercialized in the national territory, and making other provisions  (*Regulation is still valid*)
Scope	The Ministry of the Environment and Water Resources (MEWR) in Singapore published the amendment of the Second Schedule of Environmental Protection and Management Act, commonly known as Singapore RoHS. There are 6 categories subject to the RoHS in Singapore. These include (relevant to A&D): <ul style="list-style-type: none"><li>• refrigerators;</li><li>• air conditioners;</li><li>• monitors;</li><li>• computers; and</li><li>• mobile communication devices.</li></ul> All other products, including spare parts for the products listed above, are out of scope.	The Bureau of Standard, Metrology and Inspection (BSMI) published the National Standard CNS 15663 for RoHS of EEE, initially as a voluntary standard. The Standard applies to the following product categories (relevant to A&D): <ul style="list-style-type: none"><li>• consumer equipment;</li><li>• IT and telecommunications equipment;</li><li>• lighting equipment; and</li><li>• electronic and electronic tools.</li></ul> Although the CN15663 is a voluntary standard, certain product categories have, and may in the future, become mandatory, as announced by the BSMI (see 'Regulatory Timeline' section for relevant compliance dates/deadlines).  EEE products and their parts exceeding the prescribed limits for the 6 hazardous substances (see 'Substance Restrictions' section) may still be sold in Taiwan provided that the presence of hazardous substances is marked on the product(s). The names and content of the hazardous substances, and affected components must be disclosed (in a hazardous substance content table).	The Ministry of Environment and Urbanization published the Regulation, which is aligned with the EU RoHS Regulation. There are 10 categories subject to the RoHS in Turkey. These include (relevant to A&D): <ul style="list-style-type: none"><li>• information and telecommunications equipment;</li><li>• consumer equipment;</li><li>• lighting equipment;</li><li>• electrical and electronic equipment; and</li><li>• monitoring and control instruments.</li></ul>	The Ministry of Industry and Trade published the Circular, which is integrated with the EU RoHS Regulation. There are 8 categories subject to the RoHS in Vietnam. These include (relevant to A&D): <ul style="list-style-type: none"><li>• IT and telecommunications equipment;</li><li>• consumer equipment;</li><li>• lighting equipment; and</li><li>• electrical and electronic tools.</li></ul> Once a product complies with the Circular with regards to the permitted limits of hazardous substances, the information must be disclosed by the manufacturer.	Brazil's Ministry of the Environment (MMA) published a Draft Resolution, which proposes to mirror the EU RoHS Regulation, and prohibit the placing on the market of certain categories of EEE. These categories are likely to be similar to the 11 categories from the EU RoHS Regulation.
Regulatory Timeline	• Published: 1 June 2016 • In force: 1 June 2017	• Promulgation: 30 July 2013 • In force: 1 December 2016 • Mandatory compliance for IT equipment: 1 July 2017 • Mandatory compliance for batteries, power supplies, electronic and electrical products, electrical interfaces and mechanical products: 1 January 2018 • Mandatory compliance for air conditioners and lighting: 1 July 2018	• Published: 22 May 2012 • In force: 22 May 2012	• Published: 10 August 2011 • In force: 23 September 2011 • Effective: 23 September 2011 • Effective (disclosure of compliance requirement): 1 December 2012	• Published: 24 August 2018
Substance Restrictions	The substance restrictions and limits are the same as the EU RoHS Regulation for the following six hazardous substances: <ul style="list-style-type: none"><li>• Cadmium and its compounds: 0.01%;</li><li>• Mercury and its compounds: 0.1%;</li><li>• Lead and its compounds: 0.1%;</li><li>• Hexavalent chromium and its compounds: 0.1%;</li><li>• PBB: 0.1%; and</li><li>• PBDE: 0.1%.</li></ul>	Taiwan's hazardous substance restrictions and limits for EEE mirrors the EU RoHS Regulation for the following six hazardous substances: <ul style="list-style-type: none"><li>• Cadmium and its compounds: 0.01%;</li><li>• Mercury and its compounds: 0.1%;</li><li>• Lead and its compounds: 0.1%;</li><li>• Hexavalent chromium and its compounds: 0.1%;</li><li>• PBB: 0.1%; and</li><li>• PBDE: 0.1%.</li></ul>	The substance restrictions and limits are the same as the EU RoHS Regulation for the following six hazardous substances: <ul style="list-style-type: none"><li>• Cadmium and its compounds: 0.01%;</li><li>• Mercury and its compounds: 0.1%;</li><li>• Lead and its compounds: 0.1%;</li><li>• Hexavalent chromium and its compounds: 0.1%;</li><li>• PBB: 0.1%; and</li><li>• PBDE: 0.1%.</li></ul> The materials and parts used for the EEE must facilitate easy disintegration, separation, reuse, recycling and recovery.	Vietnam's substance restrictions and limits for hazardous substances in EEE are the same as the EU RoHS Regulation. These restrictions and limits apply to the following six hazardous substances: <ul style="list-style-type: none"><li>• Cadmium and its compounds: 0.01%;</li><li>• Mercury and its compounds: 0.1%;</li><li>• Lead and its compounds: 0.1%;</li><li>• Hexavalent chromium and its compounds: 0.1%;</li><li>• PBB: 0.1%; and</li><li>• PBDE: 0.1%.</li></ul>	Brazil's draft RoHS Regulation proposes substance restrictions and limits that are in line with the EU RoHS Regulation for the following ten hazardous substances: <ul style="list-style-type: none"><li>• Cadmium and its compounds: 0.01%;</li><li>• Mercury and its compounds: 0.1%;</li><li>• Lead and its compounds: 0.1%;</li><li>• Hexavalent chromium and its compounds: 0.1%;</li><li>• PBB: 0.1%;</li><li>• PBDE: 0.1%;</li><li>• DEHP: 0.1%;</li><li>• BBP: 0.1%;</li><li>• DBP: 0.1%; and</li><li>• DiBP: 0.1%.</li></ul>
Exemption	The exemptions under the Singapore RoHS Regulation are in line with the EU RoHS Regulation.	• products for military and national defense; • products where electricity is not the primary power source; • products where the primary function does not require electricity; • component of exempted product category (e.g. lighting in aircrafts); and • batteries.	• military equipment; • spare parts; • products that have been reused or recycled; • products on the market prior to 30 May 2009; and • batteries.	• spare parts for repair or reuse; • goods that are temporarily imported for re-export; • goods in transit; • products made before August 2011; and • batteries.	Exemptions under the EU RoHS Regulation are likely to apply.
How to Show Compliance	manufacturers and importers are required to submit a DoC for controlled EEE to the National Environmental Agency (NEA); and a technical file also needs to be prepared and kept in accordance with the standard EU BS EN 50581:2012, or an equivalent standard.	Products compliant to CNS15663 are required to be labelled where: <ul style="list-style-type: none"><li>• the chemical symbols and weight percent of the restricted substance are in English;</li><li>• the presence of each chemical substance in each individual part is displayed in a table; and</li><li>• the marking method should not easily disappear until removed from the package container.</li></ul> A commodity inspection mark (Taiwan RoHS Inspection Mark) will be applied by the BSMI following a mandatory inspection of the product(s). The following letters may be supplemented on the mark to denote different approaches for conformity assessment: <ul style="list-style-type: none"><li>• "R" is for commodities subject to registration of product certification;</li><li>• "D" is for products subject to a declaration of conformity (technical files are needed); and</li><li>• "T" is for products subject to type approval (technical files are not needed but experimental testing is required).</li></ul>	manufacturers must submit to the Ministry a DoC Form by the end of February every year - information must be documented and filed proving their products are compliant with the Regulation; and manufacturers must mark all EEE with the symbol shown in Annex 6.	Conformity with the Circular No. 30/2011/TT-BCT can be shown in a similar manner to the EU RoHS - via a self-declaration process. If a product complies with the Circular No. 30/2011/TT-BCT, the manufacturer must disclose information regarding the EEE by: <ul style="list-style-type: none"><li>• posting information on the websites of organizations or individuals;</li><li>• providing information on the product manual;</li><li>• providing information in an electronic form (e.g., provision of a CD containing the information); or</li><li>• directly marking the product or its packaging.</li></ul>	• manufacturers must prepare a DoC in accordance with Chapter IV, and provide accompanying technical documentation for verification of the DoC; • importers for obtaining a DoC and supporting technical documentation; • EEE must be labelled with all necessary information (e.g., model, batch or serial number; and registered trade name or trademark); and • EEE must be marked with a symbol indicating the product must be disposed of separately.
Concerned Actors	Manufacturers, importers and distributors	Manufacturers, importers and distributors	Manufacturers, importers and distributors	Manufacturers, importers and distributors	Manufacturers, importers and distributors
Risk	Penalties for non-compliance include fines of up to \$50,000 (Singapore dollar) and/or imprisonment up to 2 years. A further fine of up to \$2,000 (for every day) may be given if the offence continues after conviction.	Penalties for non-compliance include fines.	There are no penalty provisions provided for non-compliance.	There are no penalty provisions provided for non-compliance.	Penalties for non-compliance may include fines.
Official Source	<a href="https://sso.agc.gov.sg/S1-Supp/S263-2016/Published/20160601?DocDate=20160601">https://sso.agc.gov.sg/S1-Supp/S263-2016/Published/20160601?DocDate=20160601</a>	<a href="https://www.cnsonline.com.tw/?node=detail_&amp;generalno=15663&amp;locale=zh_TW">https://www.cnsonline.com.tw/?node=detail_&amp;generalno=15663&amp;locale=zh_TW</a>	<a href="https://www.resmigazete.gov.tr/eskiler/2012/05/20120522-5.htm">https://www.resmigazete.gov.tr/eskiler/2012/05/20120522-5.htm</a>	<a href="https://thuvienphapluat.vn/van-ban/Thuong-mai/Thong-tu-30-2011-TT-BCT-Quy-dinh-tam-thoi-gioi-han-ham-luong-cho-phep-hoa-chat-127827.aspx">https://thuvienphapluat.vn/van-ban/Thuong-mai/Thong-tu-30-2011-TT-BCT-Quy-dinh-tam-thoi-gioi-han-ham-luong-cho-phep-hoa-chat-127827.aspx</a>	<a href="#">Draft RoHS Regulation_english</a>
Additional Source 1	N/A	N/A	N/A	N/A	N/A
Additional Source 2	N/A	N/A	N/A	N/A	N/A
Additional Source 3	N/A	N/A	N/A	N/A	N/A

**ATTACHMENT A**  
**Key Global Restriction of Hazardous Substances (RoHS) Regulations**

Region	AFRICA/MIDDLE EAST			EUROPE/EURASIA	
Country	Saudi Arabia	UAE	Gulf Cooperation Council (GCC)	UK	EAEU
Legislation Name	Technical Regulation for Limiting Hazardous Materials in Electrical and Electronic Equipment	Emirates control scheme to restrict the use of hazardous materials in electronic and electrical devices	Draft Technical Regulations for the Restriction of the use of certain Hazardous Substances in electrical and electronic equipment	The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations	On technical regulations of the Eurasian Economic Union "On restricting the use of hazardous substances in electrical engineering and radio electronic products"
Scope	<p>Saudi Arabia's Saudi Standards, Metrology, and Quality Organization (SASO) RoHS Regulation is aligned with the EU RoHS Regulation, and prohibits the placing on the market of 6 categories of EEE. These include (relevant to A&amp;D):</p> <ul style="list-style-type: none"> <li>• IT and telecommunications equipment;</li> <li>• lighting equipment;</li> <li>• electrical and electronic tools; and</li> <li>• monitoring and control instruments.</li> </ul> <p>Each category of EEE has a specified implementation date, from which the manufacturers, importers and distributors must comply.</p> <p>*Category 1 refers to cadmium and its compounds, mercury and its compounds, lead and its compounds, hexavalent chromium and its compounds, PBB and PBDE. Category 2 refers to DEHP, BBP, DBP and DIBP.</p>	<p>UAE's Emirates Authority for Standardization &amp; Metrology (ESMA) RoHS Regulation is aligned with the EU RoHS Regulation, and prohibits the placing on the market of 11 categories of EEE. These include (relevant to A&amp;D):</p> <ul style="list-style-type: none"> <li>• IT and telecommunications equipment tools (<b>categories 1C and 2C</b>);*</li> <li>• consumer equipment tools (<b>categories 1C and 2C</b>);*</li> <li>• lighting equipment tools (<b>categories 1C and 2C</b>);*</li> <li>• electrical and electronic tools (<b>categories 1C and 2C</b>);*</li> <li>• monitoring and control instruments including industrial monitoring and control instruments (<b>categories 1A and 2A</b>);*</li> <li>• Cables and spare parts for products mentioned for the above point (<b>categories 1B and 2B</b>);* and</li> <li>• other EEE not covered by any of the 11 categories (<b>categories 1D and 2D</b>).*</li> </ul>	<p>The GCC's RoHS Regulation proposes to mirror the EU RoHS Regulation, and prohibit the placing on the market of 11 categories of EEE. These include (relevant to A&amp;D):</p> <ul style="list-style-type: none"> <li>• IT and telecommunications equipment;</li> <li>• consumer equipment;</li> <li>• lighting equipment;</li> <li>• electrical and electronic tools;</li> <li>• monitoring and control instruments including industrial monitoring and control instruments; and</li> <li>• other EEE not covered by any of the 11 categories.</li> </ul>	<p>The UK Department for Environment, Food &amp; Rural Affairs' RoHS Regulation implements the EU RoHS Regulation, and prohibits the placing on the market of 11 categories of EEE. These include (relevant to A&amp;D):</p> <ul style="list-style-type: none"> <li>• IT and telecommunications equipment;</li> <li>• consumer equipment;</li> <li>• lighting equipment;</li> <li>• electrical and electronic tools;</li> <li>• monitoring and control instruments including industrial monitoring and control instruments; and</li> <li>• other EEE not covered by any of the 11 categories.</li> </ul>	<p>The EAEU Technical Regulations (TR) for RoHS of EEE is similar to the EU RoHS Regulation. The TR restricts the use of hazardous substances in 12 categories of EEE. These include (relevant to A&amp;D):</p> <ul style="list-style-type: none"> <li>• electronic computers and devices connected to them, including their combinations;</li> <li>• terminal telecommunication devices;</li> <li>• electronic tools (manual and portable electric machines);</li> <li>• light and lighting equipment;</li> <li>• cables, wires and cords intended for use at a rated voltage of below 500 V AC/DC, except for fiber optic cables;</li> <li>• automatic switches and residual current devices; and</li> <li>• fire security and fire-security alarms/detectors.</li> </ul>
Regulatory Timeline	<ul style="list-style-type: none"> <li>• Published: 9 July 2021</li> <li>• In force: 9 July 2021</li> <li>• Effective (Telecommunication &amp; Information Technology Equipment): 31 December 2022</li> <li>• Effective (lighting equipment): 31 March 2023</li> <li>• Effective (electrical and electronic equipment and tools): 29 June 2022</li> <li>• Effective (monitoring and control tools): 26 December 2023</li> </ul>	<ul style="list-style-type: none"> <li>• Published: 27 April 2017</li> <li>• In force: 1 January 2018</li> <li>• Implementation of 1C: 1 January 2018</li> <li>• Implementation of 1A, 1D, 2C and 2D: 1 January 2020</li> <li>• Implementation of 1B, 2A and 2B: 1 January 2022</li> </ul>	<ul style="list-style-type: none"> <li>• Published: 28 March 2018</li> </ul>	<ul style="list-style-type: none"> <li>• Published: 4 December 2012</li> <li>• In force: 2 January 2013</li> <li>• Published (Amendment): 4 March 2019</li> <li>• In force (Amendment): 12 June 2019</li> </ul>	<ul style="list-style-type: none"> <li>• Published: 23 December 2016</li> <li>• In force: 1 March 2018</li> <li>• End of transitional period: 1 March 2020</li> </ul>
Substance Restrictions	<p>The substance restrictions and limits are aligned with the EU RoHS Regulation for the following six hazardous substances:</p> <ul style="list-style-type: none"> <li>• Cadmium and its compounds: 0.01%;</li> <li>• Mercury and its compounds: 0.1%;</li> <li>• Lead and its compounds: 0.1%;</li> <li>• Hexavalent chromium and its compounds: 0.1%;</li> <li>• PBB: 0.1%;</li> <li>• PBDE: 0.1%;</li> <li>• DEHP: 0.1%;</li> <li>• BBP: 0.1%;</li> <li>• DBP: 0.1%; and</li> <li>• DIBP: 0.1%.</li> </ul>	<p>The substance restrictions and limits are aligned with the EU RoHS Regulation for the following ten hazardous substances:</p> <ul style="list-style-type: none"> <li>• Cadmium and its compounds: 0.01%;</li> <li>• Mercury and its compounds: 0.1%;</li> <li>• Lead and its compounds: 0.1%;</li> <li>• Hexavalent chromium and its compounds: 0.1%;</li> <li>• PBB: 0.1%;</li> <li>• PBDE: 0.1%;</li> <li>• DEHP: 0.1%;</li> <li>• BBP: 0.1%;</li> <li>• DBP: 0.1%; and</li> <li>• DIBP: 0.1%.</li> </ul> <p>The restriction of DEHP, BBP, DBP and DIBP does not apply to cables or spare parts for the repair, the reuse, the updating of functionalities or upgrading of capacity of EEE placed on the market before 22nd July 2019.</p>	<p>The substance restrictions and limits are the same as the EU RoHS Regulation for the following ten hazardous substances:</p> <ul style="list-style-type: none"> <li>• Cadmium and its compounds: 0.01%;</li> <li>• Mercury and its compounds: 0.1%;</li> <li>• Lead and its compounds: 0.1%;</li> <li>• Hexavalent chromium and its compounds: 0.1%;</li> <li>• PBB: 0.1%;</li> <li>• PBDE: 0.1%;</li> <li>• DEHP: 0.1%;</li> <li>• BBP: 0.1%;</li> <li>• DBP: 0.1%; and</li> <li>• DIBP: 0.1%.</li> </ul>	<p>The substance restrictions and limits are aligned with the EU RoHS Regulation for the following six hazardous substances:</p> <ul style="list-style-type: none"> <li>• Cadmium and its compounds: 0.01%;</li> <li>• Mercury and its compounds: 0.1%;</li> <li>• Lead and its compounds: 0.1%;</li> <li>• Hexavalent chromium and its compounds: 0.1%;</li> <li>• PBB: 0.1%;</li> <li>• PBDE: 0.1%;</li> <li>• DEHP: 0.1%;</li> <li>• BBP: 0.1%;</li> <li>• DBP: 0.1%; and</li> <li>• DIBP: 0.1%.</li> </ul> <p>A draft amendment to the TR was published on 25 October 2021. This proposes to add DEHP, BBP, DBP and DIBP in its restricted substance list for EEE, in line with the EU RoHS Regulation.</p>	
Exemption	<ul style="list-style-type: none"> <li>• weapons and military equipment;</li> <li>• aerospace products;</li> <li>• large-scale stationary industrial tools; and</li> <li>• large-scale fixed installations.</li> </ul>	<p>Exemptions under the EU RoHS Regulation apply. Specific exemptions are listed on Annex III and IV of the UAE RoHS Regulation.</p>	<p>Exemptions under the EU RoHS Regulation apply. Specific exemptions are listed on Annex III of the GCC RoHS Regulation.</p>	<p>Exemptions under the EU RoHS Regulation apply. Specific exemptions are listed on Schedule 1 Part 2 of the UK RoHS Regulation.</p>	<ul style="list-style-type: none"> <li>• photovoltaic panels;</li> <li>• products designed to be used in land-based and orbiting space objects;</li> <li>• products intended solely for the use of air, water, land and underground transport;</li> <li>• batteries and accumulators;</li> <li>• used electrical and electronic equipment; and</li> <li>• measurement instruments.</li> </ul>
How to Show Compliance	<p>All products in scope must:</p> <ul style="list-style-type: none"> <li>• pass the conformity assessment procedures and obtain a Certificate of Compliance;</li> <li>• have a DoC (for manufacturers and importers); and</li> <li>• have supporting technical documentation to demonstrate compliance.</li> </ul>	<p>Two methods exist for showing RoHS compliance in the UAE (see below).</p> <p><b>Registration Scheme Method:</b></p> <ul style="list-style-type: none"> <li>• Emirates Conformity Assessment Scheme (ECAS);</li> <li>• combines conformity assessments and certification of products;</li> <li>• test reports of critical components must be provided; and</li> <li>• valid for 1 year.</li> </ul> <p><b>Product Certification Scheme Method:</b></p> <ul style="list-style-type: none"> <li>• products must be marked with the Emirates Quality Mark (EQM);</li> <li>• self-conformity statement and comprehensive risk assessment documentation must be submitted;</li> <li>• annual audits will be conducted to check compliance; and</li> <li>• valid for 3 years.</li> </ul>	<ul style="list-style-type: none"> <li>• products must be marked with the Gulf Conformity Marking;</li> <li>• manufacturers and importers must produce a DoC; and</li> <li>• technical files and any other documentation demonstrating conformity with the RoHS Regulation must be kept;</li> </ul>	<ul style="list-style-type: none"> <li>• products must be marked with the UKCA (United Kingdom Conformity Assessed) from 1 January 2023;</li> <li>• products may be marked with the CE until 1 January 2023 after which the UKCA must be used;</li> <li>• from 1 January 2024, the UKCA mark should be directly affixed to products;</li> <li>• manufacturers and importers must show evidence of a comprehensive technical file, similar to the EU; and</li> <li>• DoC is required, similar to the EU.</li> </ul>	<ul style="list-style-type: none"> <li>• products must be marked with the EAC (Eurasian Conformity Mark);</li> <li>• manufacturers and importers must show evidence of a comprehensive technical file, similar to the EU; and</li> <li>• DoC must be signed by a local representative and submitted to an accredited Certification Body in an EAEU Member State country.</li> </ul>
Concerned Actors	Manufacturers, importers and distributors	Manufacturers, importers and distributors	Manufacturers, importers and distributors	Manufacturers, importers and distributors	Manufacturers, importers and distributors
Risk	Penalties for non-compliance include fines.	Penalties for non-compliance include fines of at least AED 30,000 and/or imprisonment.	Penalties for non-compliance are determined by individual countries in the GCC.	Penalties for non-compliance include fines.	Penalties for non-compliance are determined by individual countries.
Official Source	<a href="#">RoHS Regulation</a>	<a href="#">RoHS Regulation</a>	<a href="https://ec.europa.eu/growth/tools-databases/tbt/en/search/?tbtaction=search_detail&amp;Country_ID=ARE&amp;num=407&amp;dsplang=en&amp;bardatedeb=25/03/2018&amp;basdatefin=05/04/2018&amp;baspay=&amp;basnotifnum=&amp;basnotifnum2=&amp;bastypepays=ANY&amp;baskeywords=">https://ec.europa.eu/growth/tools-databases/tbt/en/search/?tbtaction=search_detail&amp;Country_ID=ARE&amp;num=407&amp;dsplang=en&amp;bardatedeb=25/03/2018&amp;basdatefin=05/04/2018&amp;baspay=&amp;basnotifnum=&amp;basnotifnum2=&amp;bastypepays=ANY&amp;baskeywords=</a>	<a href="https://www.legislation.gov.uk/uksi/2012/3032/contents">https://www.legislation.gov.uk/uksi/2012/3032/contents</a>	<a href="https://docs.eaeunion.org/docs/en-us/01512363/cncl_23122016_113">https://docs.eaeunion.org/docs/en-us/01512363/cncl_23122016_113</a>
Additional Source 1	<a href="#">RoHS Regulation English</a>	N/A	N/A	N/A	<a href="#">RoHS Regulation English</a>
Additional Source 2	N/A	N/A	N/A	N/A	N/A
Additional Source 3	N/A	N/A	N/A	N/A	N/A