



# HDD and SSD Regulatory Compliance and Safety

## **Abstract**

This document describes regulatory compliance, safety, and disposal guidelines for Seagate HDDs, 2.5-inch SSDs, M.2 SSDs, and Add-in Cards.

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## Revision History

Version and Date	Description of Changes
Rev C, October 2019	Metadata changes only.
Rev B, July 2019	Added regulation details to the following sections: <ul style="list-style-type: none"><li>■ <a href="#">Section 2.1, Safety Certification</a></li><li>■ <a href="#">Section 2.1.1, Laser Products</a></li><li>■ <a href="#">Section 2.3, European Union (EU) CE Marking Requirements</a></li><li>■ <a href="#">Section 2.3.1, Product Environmental Compliance, EU/China RoHS Declaration of Conformity</a></li><li>■ <a href="#">Section 3.3.3, Product Environmental Compliance, EU/China RoHS Declaration of Conformity</a></li></ul>
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When referring to drive capacity, one gigabyte, or GB, equals one billion bytes and one terabyte, or TB, equals one trillion bytes. Your computer's operating system may use a different standard of measurement and report a lower capacity. In addition, some of the listed capacity is used for formatting and other functions, and thus will not be available for data storage. Actual quantities will vary based on various factors, including file size, file format, features and application software. Actual data rates may vary depending on operating environment and other factors. The export or re-export of hardware or software containing encryption may be regulated by the U.S. Department of Commerce, Bureau of Industry and Security (for more information, visit [www.bis.doc.gov](http://www.bis.doc.gov)), and controlled for import and use outside of the U.S. Seagate reserves the right to change, without notice, product offerings or specifications.

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## Seagate Technology Support Services

For product support, visit: <https://www.seagate.com/support/by-product/ssd-and-pcie-flash/>

For Firmware Download and Tools Download for Secure Erase, visit: <https://www.seagate.com/support/downloads/>

For online support and services, visit: <https://www.seagate.com/contacts/>

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For data recovery services, visit: <https://www.seagate.com/services-software/recover/>

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# 1. Introduction

This document describes applicable safety, certification, and compliance requirements for Seagate hard disk drives (HDDs) and solid state devices (SSDs).

## 2. Agency and Safety Certifications

Each HDD and SSD has a product label that includes certifications that apply to that specific device. The following information provides an overview of requirements and compliance that may apply to these devices.

### 2.1 Safety Certification

All Seagate HDD and SSDs are certified to meet the requirements of UL/cUL 60950-1, EN 60950-1, and may also include, IEC 62368, UL 62368, and EN 62368.

Seagate laser products also comply with IEC 60825.1:2014 and 21 CFR 1010.2/1040.10.

#### 2.1.1 Laser Products

Devices that display the CE mark comply with the European Union (EU) requirements specified in the Electromagnetic Compatibility Directive (2014/ 30/ EU) put into force on 20 April 2016. Testing is performed to the levels specified by the product standards for Information Technology Equipment (ITE).

Emission levels for these devices are defined by EN 5 5032:20 1 2, Class B, and the immunity levels are defined by EN 55024.

These Seagate devices also meet the requirements of The Low Voltage Directive (LVD) 20 14/35/ EU.

Seagate devices are tested in representative end-user systems. Although CE-marked Seagate devices comply with all relevant regulatory requirements and standards for the devices, Seagate cannot guarantee that all system-level products into which the devices are installed comply with all regulatory requirements and standards applicable to the system-level products. These devices are designed for operation inside a properly designed system (for example, enclosure designed for the device), with properly shielded I/O cable (if necessary) and terminators on all unused I/O ports. Computer manufacturers and system integrators should confirm EMC compliance and provide CE marking for the system-level products.

For compliance with the RoHS "Recast" Directive 2011/65/EU (RoHS 2) as amended by Directive (EU) 2015/863

[Section 3.1.1, Restriction of Hazardous Substances in Electrical and Electronic Equipment.](#)

### 2.2 Regulatory Model

Regulatory model numbers for HDDs and SSDs are published in the product manuals for each device.

## 2.3 European Union (EU) CE Marking Requirements

Devices that display the CE mark comply with the European Union (EU) requirements specified in the Electromagnetic Compatibility Directive (2014/30/EU) put into force on 20 April 2016. Testing is performed to the levels specified by the product standards for Information Technology Equipment (ITE).

Emission levels for these devices are defined by EN 55032:2012, Class B, and the immunity levels are defined by EN 55024.

These Seagate devices also meet the requirements of The Low Voltage Directive (LVD) 2014/35/EU.

Seagate devices are tested in representative end-user systems. Although CE-marked Seagate devices comply with all relevant regulatory requirements and standards for the devices, Seagate cannot guarantee that all system-level products into which the devices are installed comply with all regulatory requirements and standards applicable to the system-level products. These devices are designed for operation inside a properly designed system (for example, enclosure designed for the device), with properly shielded I/O cable (if necessary) and terminators on all unused I/O ports. Computer manufacturers and system integrators should confirm EMC compliance and provide CE marking for the system-level products.

For compliance with the RoHS "Recast" Directive 2011/65/EU (RoHS 2) as amended by Directive (EU) 2015/863, [Section 3.1.1, Restriction of Hazardous Substances in Electrical and Electronic Equipment](#).

## 2.3.1 Product Environmental Compliance, EU/China RoHS Declaration of Conformity

### Conformity with Harmonized Standards/Technical Specifications:

1. Directive 2011/65/EU RoHS "Recast" (RoHS 2) as amended by Directive (EU) 2015/863 and further amended by Directive 2018/739 and Directive 2018/740 EN 50581:2012
2. Management Methods for Controlling Pollution by Electronic Information Products, Ministry of Information Industry Order No. 39 (China RoHS)
3. Management Methods for the Restriction of the Use of Hazardous Substances in electrical and Electronic Products, Ministry of Industry and Information Technology Order No. 32 effective July 1, 2016 (China RoHS 2)
4. Joint JEDEC/ECA Standard, Definition of "Low-Halogen" for Electronic Products, JS709B

### Seagate products rely on the following RoHS 2 exemptions for compliance:

**Table 1 RoHS 2 Exemptions for Compliance**

6(a)-I	Lead as an alloying element in steel for machining purposes containing up to 0.35% lead by weight and in batch hot dip galvanized steel components containing up to 0.2% lead by weight
6(b)-II	Lead as an alloying element in aluminum for machining purposes up to 0.4% lead by weight
6c	Copper alloy up to 4% lead by weight
7a	Lead in high melting temperature type solders (i.e. lead-based solder alloys containing 85 % by weight or more lead
7(c)-1	Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors (e.g. piezoelectronic devices) or in a glass or ceramic matrix compound

## 2.4 Dodd-Frank Wall Street Reform and Consumer Protection Act, July 2010

### Section 1502

As one of the world's leading producers of high-performance RAID (redundant array of independent disks) storage products for the Open Systems computing environment, we work with our vendors to determine if their supplies of tin, tungsten, tantalum and gold (3TG) come from Conflict Regions.

Seagate has manufactured and contracted to manufacture products in which 3TG are necessary to the functionality or production of such products. Seagate communicates its policy regarding conflict minerals to all suppliers. If a supplier is found to be purchasing 3TG which directly or indirectly finances or benefits armed groups in the Democratic Republic of Congo or adjoining countries (DRC), Seagate will take actions, up to and including discontinuing doing business with that supplier.

## 2.5 Australian RCM Compliance Mark

Devices that display the RCM marking, comply with the Australia/New Zealand Standard AS/NZ CISPR32 and meet the Electromagnetic Compatibility (EMC) Framework requirements of the Australian Communication and Media Authority (ACMA).

## 2.6 Canada ICES-003

Devices that display the ICES-003:2016 marking comply with requirements of ICES tested per ANSI C63.4-2014.

## 2.7 South Korean KC Certification Mark

For devices that display the South Korean KC Certification Mark, this means the devices comply with paragraph 1 of Article 11 of the Electromagnetic Compatibility control Regulation and meet the Electromagnetic Compatibility (EMC) Framework requirements of the Radio Research Agency (RRA) Communications Commission, Republic of Korea. These devices have been tested and comply with the Electromagnetic Interference/Electromagnetic Susceptibility (EMI/EMS) for Class B products. Devices are tested in a representative, end-user system by a Korean-recognized lab.

기종별	사용자안내문
B급 기기 (가정용 방송통신기자재)	이 기기는 가정용(B급) 전자파적합기기로서 주로 가정에서 사용하는 것을 목적으로 하며, 모든 지역에서 사용할 수 있습니다.

## 2.8 Morocco Commodity Mark

Seagate devices are tested for compliance and complies with the European Union (EU) Electromagnetic Compatibility (EMC) Directive 2014/30/EU and the Low Voltage Directive (LVD) 2014/35/EU. Accordingly, these devices also meet the requirements of Morocco's Order of the Minister of Industry, Trade, Investment and Digital Economy No. 2574-14 of 29 Ramadan 1436 (16 July 2015) on electromagnetic compatibility of equipment.

For devices that display the Morocco Mark, Seagate has added the Moroccan Commodity Mark to the devices provided to the OEM for the sale of Customer Kits produced by our OEM customers that are intended to be incorporated into the OEM's finished system-level product by an end user. The Customer Kits are considered 'devices' under Morocco's Order of the Minister of Industry, Trade, Investment and Digital Economy No. 2574-14 of 29 Ramadan 1436 (16 July 2015) on electromagnetic compatibility of equipment.

## 2.9 Taiwanese BSMI

Devices that display the Taiwanese certification mark comply with Chinese National Standard, CNS13438.

For compliance with the Taiwan Bureau of Standards, Metrology and Inspection's (BSMI) requirements, [Section 3.3, Taiwan Requirements — Taiwan RoHS](#).



## 2.10 FCC Verification

For devices that display the FCC mark, these devices are intended to be contained solely within a personal computer, server, or similar enclosure (not attached as an external device). As such, each device is considered to be a subassembly even when it is individually marketed to the customer. As a subassembly, no Federal Communications Commission verification or certification of the device is required.

Seagate has tested these devices in enclosures as described above to ensure that the total assembly (enclosure, disk drive, motherboard, power supply, and so on.) does comply with the limits for a Class B computing device, pursuant to Subpart J, Part 15 of the FCC rules. Operation with noncertified assemblies is likely to result in interference to radio and television reception.

**Radio and television interference.** This device generates and uses radio frequency energy and if not installed and used in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception.

This device is designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause interference to radio or television, which can be determined by turning the equipment on and off, users are encouraged to try one or more of the following corrective measures:

- Reorient the receiving antenna.
- Move the device to one side or the other of the radio or TV.
- Move the device farther away from the radio or TV.
- Plug the computer into a different outlet so that the receiver and computer are on different branch outlets.

If necessary, users should consult a dealer or an experienced radio/television technician for additional suggestions. Users may find helpful the following booklet prepared by the Federal Communications Commission: *How to Identify and Resolve Radio-Television Interference Problems*. This booklet is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. Refer to publication number 004-000-00345-4.

## 2.11 Japan VCCI

All Seagate HDD and SSDs are Class B products based on the standard of the Voluntary Control Council for Interference from Information Technology Equipment (VCCI). If these devices are used near a radio or television receiver in a domestic environment, they may cause radio interference. Install and use the device according to the instruction guide.

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラス B 情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。  
取扱説明書に従って正しい取り扱いをして下さい。

## 3. Environmental Protection

Seagate designs its products to meet environmental protection requirements worldwide, including regulations restricting certain chemical substances.

### 3.1 European Union Restriction of Hazardous Substance Law

#### 3.1.1 Restriction of Hazardous Substances in Electrical and Electronic Equipment

All Seagate HDD and SSDs are compliant with the European Union RoHS "Recast" Directive 2011/65/EU (RoHS 2) as amended by Directive (EU) 2015/863. The RoHS2 restricts the use of certain hazardous substances such as Lead, Cadmium, Mercury, Hexavalent Chromium, Polybrominated Biphenyls (PBB) and Polybrominated Diphenyl Ether (PBDE), BisBis(2-Ethylhexyl) phthalate (DEHP), Benzyl butyl phthalate (BBP), Dibutyl phthalate (DBP), and Diisobutyl phthalate (DIBP) in electrical and electronic equipment (EEE).

#### 3.1.2 Substances of Very High Concern (SVHC)

All Seagate HDDs and SSDs are compliant with the European Union REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) Regulation (EC) 1907/2006, which regulates chemicals shipped into and used in Europe. A number of parts and materials in Seagate products are procured from external suppliers. We rely on the representations of our suppliers regarding the presence of REACH substances in these articles and materials. Our supplier contracts require compliance with our chemical substance restrictions, and our suppliers document their compliance with our requirements by providing full-disclosure material content declarations that disclose inclusion of any REACH-regulated substance in such articles or materials. Product-specific REACH declarations are available upon request through your Seagate Sales Representative.

## 3.2 China Requirements — China RoHS 2



All Seagate HDDs and SSDs are China RoHS 2-compliant. China RoHS 2 refers to the Ministry of Industry and Information Technology Order No. 32, effective July 1, 2016, titled Management Methods for the Restriction of the Use of Hazardous Substances in Electrical and Electronic Products. To comply with China RoHS 2, Seagate determines this device's Environmental Protection Use Period (EPUP) to be 20 years in accordance with the *Marking for the Restricted Use of Hazardous Substances in Electronic and Electrical Products*, SJ/T 11364-2014.

**Table 2 China - Hazardous Substances**

部件名称 Part Name	有害物质 Hazardous Substances					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr <sup>+6</sup> )	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
硬盘驱动器 PCBA	X	O	O	O	O	O
印刷电路板组装 Chassis	X	O	O	O	O	O

本表格依据 SJ/T 11364 的规定编制。

This table is prepared in accordance with the provisions of SJ/T 11364-2014

O: 表示该有害物质在该部件所有均质材料中的含量均在 GB/T 26572 规定的限量要求以下。

O: Indicates that the hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement of GB/T26572.

X: 表示该有害物质至少在该部件的某一均质材料中的含量超出 GB/T 26572 规定的限量要求。

X: Indicates that the hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement of GB/T26572.

## 3.3 Taiwan Requirements — Taiwan RoHS

All Seagate HDDs and SSDs are Taiwan RoHS-compliant. Taiwan RoHS refers to the Taiwan Bureau of Standards, Metrology, and Inspection's (BSMI) requirements in standard CNS 15663, Guidance to reduction of the restricted chemical substances in electrical and electronic equipment. Seagate devices must comply with the "Marking of presence" requirements in Section 5 of CNS 15663, effective January 1, 2018.

### 3.3.1 Taiwan RoHS for HDDs

The following table meets the Section 5 "Marking of presence" requirements for 2.5-inch HDDs.

**Table 3 Taiwan - Restricted Substances for HDDs**

設備名稱：硬碟設備，型號： Equipment Name: Hard Disk Device, Type Designation:						
單元 Unit	限用物質及其化學符號 Restricted Substance and its chemical symbol					
	鉛 Lead (Pb)	汞 Mercury (Hg)	鎘 Cadmium (Cd)	六價鉻 Hexavalent Chromium (Cr <sup>+6</sup> )	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
頂蓋 Top Cover	○	○	○	○	○	○
磁碟 Magnetic disk	○	○	○	○	○	○
電機底座組件 Motor Base Assembly	—	○	○	○	○	○
印刷電路板總成 PCB Assembly	—	○	○	○	○	○
備考1. "○"係指該項限用物質之百分比含量未超出百分比含量基準值 Note 1. "○" indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence. 備考2. "—"係指該項限用物質為排除項目。 Note 2. "—" indicates that the restricted substance corresponds to the exemption.						

### 3.3.2 Taiwan RoHS for 2.5-inch SSDs

The following table meets the Section 5 "Marking of presence" requirements for 2.5-inch SSDs.

**Table 4 Taiwan - Restricted Substances for 2.5-inch SSDs**

設備名稱：固態硬碟， Equipment Name: 2.5 inch SSDs		型號（型式） Type Designation (Type)				
單元 Unit	限用物質及其化學符號 Restricted Substance and its chemical symbol					
	鉛 Lead (Pb)	汞 Mercury (Hg)	鎘 Cadmium (Cd)	六價鉻 Hexavalent Chromium (Cr <sup>+6</sup> )	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
快閃記憶體 Flash Memory	○	○	○	○	○	○
連接器 Connector	○	○	○	○	○	○
頂蓋 Product Cover	○	○	○	○	○	○
印刷電路板總成 PCB Assembly	—	○	○	○	○	○
<p>備考1. "超出0.1 wt %" 及 "超出0.01 wt %" 係指限用物質之百分比含量超出百分比含量基準值。            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.</p> <p>備考2. "○" 係指該項限用物質之百分比含量未超出百分比含量基準值。            Note 2. "○" indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.</p> <p>備考3. "—" 係指該項限用物質為排除項目。            Note 3. "—" indicates that the restricted substance corresponds to the exemption.</p>						

### 3.3.3 Product Environmental Compliance, EU/China RoHS Declaration of Conformity

[Section 2.3.1, Product Environmental Compliance, EU/China RoHS Declaration of Conformity](#)

### 3.3.4 Taiwan RoHS for M.2 SSDs

The following table meets the Section 5 "Marking of presence" requirements for M.2 SSDs.

**Table 5 Taiwan - Restricted Substances for M.2 SSDs**

設備名稱：固態硬碟， Equipment Name: M.2 SSDs		型號（型式） Type Designation (Type)				
單元 Unit	限用物質及其化學符號 Restricted Substance and its chemical symbol					
	鉛 Lead (Pb)	汞 Mercury (Hg)	鎘 Cadmium (Cd)	六價鉻 Hexavalent Chromium (Cr <sup>+6</sup> )	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
電容 Capacitor	○	○	○	○	○	○
動態隨機存取記憶體 DRAM	○	○	○	○	○	○
接口控制器 Interface Controller	○	○	○	○	○	○
印刷電路板總成 PCB Assembly	—	○	○	○	○	○
<p>備考1. "超出0.1 wt %" 及 "超出0.01 wt %" 係指限用物質之百分比含量超出百分比含量基準值。 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.</p> <p>備考2. "○" 係指該項限用物質之百分比含量未超出百分比含量基準值。 Note 2. "O" indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.</p> <p>備考3. "—" 係指該項限用物質為排除項目。 Note 3. "-" indicates that the restricted substance corresponds to the exemption.</p>						

### 3.3.5 Taiwan RoHS for Add-in Card SSDs

The following table meets the Section 5 "Marking of presence" requirements for Add-in Card SSDs.

**Table 6 Taiwan - Restricted Substances for Add-in Card SSDs**

設備名稱：固態硬碟， Equipment Name: Add-in Cards		型號（型式） Type Designation (Type)				
單元 Unit	限用物質及其化學符號 Restricted Substance and its chemical symbol					
	鉛 Lead (Pb)	汞 Mercury (Hg)	鎘 Cadmium (Cd)	六價鉻 Hexavalent Chromium (Cr <sup>+6</sup> )	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
連接器 Connector	○	○	○	○	○	○
快閃記憶體 Flash Memory	○	○	○	○	○	○
散熱片 Heat Sink	○	○	○	○	○	○
印刷電路板總成 PCB Assembly	—	○	○	○	○	○
<p>備考1. "超出0.1 wt %" 及 "超出0.01 wt %" 係指限用物質之百分比含量超出百分比含量基準值。            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.</p> <p>備考2. "○" 係指該項限用物質之百分比含量未超出百分比含量基準值。            Note 2. "O" indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.</p> <p>備考3. "—" 係指該項限用物質為排除項目。            Note 3. "-" indicates that the restricted substance corresponds to the exemption.</p>						



**Seagate Technology LLC**

AMERICAS Seagate Technology LLC 10200 South De Anza Boulevard, Cupertino, California 95014, United States, 408-658-1000

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