

Management of Chemical Substances in Products

(Last updated August 2011)

As the EU RoHS Directive representatively exemplifies, there is a global movement to restrict hazardous chemical substances in products. The following introduces our company's initiatives.

■ Compliance with the EU RoHS Directive

The EU established the WEEE Directive and RoHS Directive for the purpose of building a system of classification and collection of waste electrical and electronic equipment differently from general wastes, thereby limiting the use of hazardous substances in electrical and electronic equipment and minimizing the environmental risks and health risks to consumers. Today, environmental protection is considered a common goal of mankind. Oriental Motor offers a wide range of standard products conforming to the RoHS Directive in recognition that limiting the use of hazardous substances in our products and thereby protecting the global environment is our corporate responsibility to society.

● The EU RoHS Directive

DIRECTIVE 2002/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

As of July 1, 2006, the use of lead, mercury, cadmium, hexavalent chromium, PBB and PBDE are prohibited in electrical and electronic equipment.

The RoHS directive was recast in July 2011.

● Maximum Allowable Concentrations in Homogeneous Material

Lead, hexavalent chromium, mercury, PBB, PBDE: 0.1 wt%

Cadmium: 0.01 wt%

Excluding the applications specified in the Annex to the RoHS Directive

● Scope

Electrical and electronic equipment classified under Categories 1, 2, 3, 4, 5, 6, 7 and 10 as specified in Annex IA to the WEEE Directive (Directive on Waste Electrical and Electronic Equipment) 2002/96/EC.

8, 9, 11 are categories that were added under the recast.

Categories	Applicable from
1. Large household appliances	July 1, 2006
2. Small household appliances	
3. IT and telecommunications equipment	
4. Consumer equipment	
5. Lighting equipment	
6. Electrical and electronic tools	
7. Toys, leisure and sports equipment	
8. Medical devices	July 22, 2014
In vitro diagnostic medical devices	July 22, 2016
9. Monitoring and control instruments	July 22, 2014
Industrial monitoring and control instruments	July 22, 2017
10. Automatic dispensers	July 1, 2006
11. Other EEE not covered by any of the categories above	July 22, 2019

● CE Marking

In the RoHS recast directive, products conforming to the RoHS directive require a declaration of conformity and CE Marking.

Application begins 18 months from the time the RoHS recast directive is issued.

● RoHS Directive Product-Compliant Identification

Products that meet the RoHS Directive Requirements are indicated as "RoHS Directive-Compliant." This catalog contains (RoHS) marks in the specifications of the corresponding products. These (RoHS) marks are also displayed on the labels attached to the packages of the products.

■ Compliance with REACH Regulations

The EU established REACH Regulations of which the main aims are to improve human health and conservation of the environment, maintaining the competitive power and strengthening the technical innovation of the EU chemical industry and the free circulation of chemicals in the EU region. Oriental Motor products comply with REACH Regulations Section 3 Article 3 (Article). There are no substances that are released intentionally from those products.

● REACH Regulations

REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals. This law was adopted by the European Council on December 18, 2006, made public on December 30, 2006 and legislated on June 1, 2007.

● Substances of Very High Concern (SVHC)

These substances are designated according to the procedure specified in Article 59 of the Rules on Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), being selected from among those substances having the characteristics specified under Article 57 of REACH (characteristics potentially associated with serious "carcinogenicity, mutagenicity, reproductive toxicity, persistence, bioaccumulation, toxicity, etc."). Once a SVHC is selected from among the aforementioned candidate substances and published, its users are imposed of certain obligations such as "Informing the relevant information, etc., regarding the SVHC to the recipient of an article if the SVHC is contained in the product."

■ Other Laws and Regulations Concerning Chemical Substances in Products

Oriental Motor is cognizant of the existence and content of the chemical substances that are specified in the JIG-101 Ed 2.0 (see Note 1) in its RoHS Directive-Compliant products. For details about environmentally related substances to be controlled, refer to http://www.orientalmotor.co.jp/company_info/pdf/green201004e.pdf.

Note 1

Published as a result of discussions among the U.S. Consumer Electronics Association (CEA), Digital Europe (former EICTA) and Japan Green Procurement Survey Standardization Initiative (JGPSSI), the JIG is an industry guideline for disclosure of contained substances aimed at promoting the reporting, by the supply chain of electrotechnical products around the world, of information regarding substances contained in their products.

Compliance with the Measures for Administration of the Pollution Control of Electronic Information Products (People's Republic of China)

In the People's Republic of China, the Measures for Administration of the Pollution Control of Electronic Information Products (Ministry of Information Industry Order No. 39) was established to protect the health of people and the environment through sales promotion activities and production of electronic information products with few hazardous substances and prevent environmental pollution from electronic information product waste.

This law has been legislated in two steps, the first being the demand for labeling of information of hazardous substances. Oriental Motor provides the following information in accordance with its B to B business.

- Disclosure table of toxic and hazardous substances in products
- Environmentally friendly use period

For more details refer to the website "http://www.orientalmotor.com.cn/" (Chinese)

The Measures for Administration of the Pollution Control of Electronic Information Products

The Measures for Administration of the Pollution Control of Electronic Information Products was made public on February 28, 2006, then legislated on March 1, 2007. Lead, mercury, cadmium, hexavalent chromium, PBB, PBDE and other poisonous, hazardous substances or elements (that are not currently stipulated) in electronic information products are treated as hazardous substances. In the first step, information labeling of hazardous substances is required and in the second step, a detailed control list used for compulsory certificate control is planned.

Maximum Allowable Concentrations

The below information is taken from table 2 in SJ/T 11363-2006 "Requirements for Concentration Limits for Certain Hazardous Substances in Electronic Information Products":

Inhomogeneous material

Lead, hexavalent chromium, mercury, PBB, PBDE 0.1 wt%
Cadmium 0.01 wt%

Scope

- Electronic information products that are manufactured and sold in the People's Republic of China
- Electronic information products that are imported and sold in the People's Republic of China

(Details of electronic information products depends on the "electronic information products classification and explanations")

Hazardous Substances Information Display Requirements

- Disclosure table of toxic and hazardous substances in products
- Environmentally friendly use period

Quality Management Systems

ISO 9001

Oriental Motor has put in place a quality management system to ensure our products satisfy the quality needs of all customers. Our quality management system consists of four components: a forward-thinking product development system for creating new products that meet the anticipated needs of our customers in the future; an immediate delivery system that is flexible to meet the demands for multi-product, small-lot production; a responsive sales system for answering all customer inquiries in a timely manner; and a comprehensive after-sales service system. We at Oriental Motor are continually improving these key components of our quality management system.

Environmental Management Systems

ISO 14001

Protecting the global environment is a major task for all humankind. There is an urgent call for companies to reduce the environmental impact in all aspects of corporate activity.

Oriental Motor is utilizing to all possible avenues, such as driving green purchasing initiatives and implementing various measures to reduce hazardous substances and waste materials, so that we can help preserve the environment.

Plants that Have Acquired Certification for ISO 9001 and ISO 14001

Plant	Product
Tsuruoka-Chuo Plant	AC motors
Tsuruoka-Nishi Plant	brushless motors
Tsuruoka-Higashi Plant	stepping motors
Tsukuba Plant	servo motors
Tsuchiura Plant	fan motors
Takamatsu-Kozai Plant	controllers
Takamatsu-Tarumi Plant	electric actuators
Soma Plant	gearheads
Kofu Plant*	related parts
U.S.A. Plant*	

*Kofu Plant and U.S.A. Plant have only ISO 9001 certification.

Safety Standards

Management of Chemical Substances In Products

ISO 9001, ISO 14001

Global Power Supply Voltages

Oriental Motor Corporate Overview

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Global Power Supply Voltages

Power Supply Voltage in Major Countries

Power Supply Voltage Specifications are shown below.

Region/Country	Frequency	Voltage
North America	U.S.A.	60 Hz Single-Phase 115/230 VAC, Three-Phase 230 VAC
	Canada	60 Hz Single-Phase 120/347 VAC, Three-Phase 208/240/600 VAC
Europe	Austria	50 Hz Single-Phase 230 VAC, Three-Phase 400 VAC
	Belgium	50 Hz Single-Phase 230 VAC, Three-Phase 400 VAC
	Bulgaria	50 Hz Single-Phase 220 VAC, Three-Phase 380 VAC
	Denmark	50 Hz Single-Phase 230 VAC, Three-Phase 400 VAC
	Finland	50 Hz Single-Phase 230 VAC, Three-Phase 400 VAC
	France	50 Hz Single-Phase 230 VAC, Three-Phase 400 VAC
	Germany	50 Hz Single-Phase 230 VAC, Three-Phase 400 VAC
	Greece	50 Hz Single-Phase 230 VAC, Three-Phase 400 VAC
	Hungary	50 Hz Single-Phase 220 VAC, Three-Phase 380 VAC
	Italy	50 Hz Single-Phase 220 VAC, Three-Phase 380 VAC
	Luxembourg	50 Hz Single-Phase 230 VAC, Three-Phase 400 VAC
	Netherlands	50 Hz Single-Phase 230 VAC, Three-Phase 400 VAC
	Norway	50 Hz Single-Phase 220/230 VAC, Three-Phase 380 VAC
	Poland	50 Hz Single-Phase 220 VAC, Three-Phase 380 VAC
	Portugal	50 Hz Single-Phase 230 VAC, Three-Phase 400/480 VAC
	Romania	50 Hz Single-Phase 220 VAC, Three-Phase 380 VAC
	Spain	50 Hz Single-Phase 127/220 VAC, Three-Phase 220/380 VAC
	Sweden	50 Hz Single-Phase 230/400 VAC, Three-Phase 400/690 VAC
	Switzerland	50 Hz Single-Phase 230 VAC, Three-Phase 400 VAC
United Kingdom	50 Hz Single-Phase 230 VAC, Three-Phase 400 VAC	
Czech	50 Hz Single-Phase 220 VAC, Three-Phase 380 VAC	
Japan	50/60 Hz Single-Phase 100/200 VAC, Three-Phase 200 VAC	
Asia	Korea	60 Hz Single-Phase 220 VAC, Three-Phase 200/220/380 VAC
	China	50 Hz Single-Phase 220 VAC, Three-Phase 380 VAC
	Taiwan	60 Hz Single-Phase 110/220 VAC, Three-Phase 220/380 VAC
	Hong Kong	50 Hz Single-Phase 200/220 VAC, Three-Phase 346/380 VAC
	Singapore	50 Hz Single-Phase 230/240 VAC, Three-Phase 400/415 VAC
	Malaysia	50 Hz Single-Phase 240 VAC, Three-Phase 415 VAC
	Thailand	50 Hz Single-Phase 220 VAC, Three-Phase 380 VAC
	India	50 Hz Single-Phase 230/240 VAC, Three-Phase 400/415 VAC
	Indonesia	50 Hz Single-Phase 220 VAC, Three-Phase 380 VAC
	Philippines	60 Hz Single-Phase 220 VAC, Three-Phase 380 VAC
	Viet Num	50 Hz Single-Phase 220 VAC, Three-Phase 380 VAC
Oceania	Australia	50 Hz Single-Phase 240 VAC, Three-Phase 415 VAC
	New Zealand	50 Hz Single-Phase 230 VAC, Three-Phase 230/415 VAC

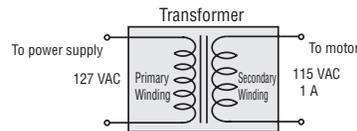
Note

- Depending on countries or cities, voltages other than those shown above may be used.

Power Supply Voltage and Our Products

Power supply voltage varies from country to country and, in some places, from city to city. The power supply voltages and frequencies of many countries are shown in the table to the left. Oriental Motor offers motors and fans for worldwide use. Our wide range of products includes those that meet North American voltage specifications, as well as European and Asian voltage specifications. If a motor is to be used with a different power supply voltage than specified, a transformer must be connected between the power supply and the motor.

- The primary winding of the transformer should be of the same voltage as the power supply and the secondary winding voltage should be the same as the voltage rating of the motor.



The transformer should be rated for a current of at least twice the rated motor current to allow for the current peak at motor start.