



EUROPEAN COMMISSION  
DIRECTORATE-GENERAL  
ENVIRONMENT  
The Director-General

## Frequently Asked Questions on

**Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) and**

**Directive 2002/96/EC on Waste Electrical and Electronic Equipment Directive (WEEE)**



## *Foreword*

*Directive 2002/95/EC on the Restriction of the use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) and Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE) entered into force on 13 February 2003. Both directives require Member States to transpose their provisions into national law by 13 August 2004.*

*These Frequently Asked Questions (FAQ) are intended to help the competent authorities in the Member States to interpret both directives. They could also be used as a reference by the economic operators concerned, as they will have to comply with the national laws transposing the Directives.*

*These FAQ only reflect the views of the Commission services, and as such are not legally binding; a binding interpretation of Community legislation is the exclusive competence of the European Court of Justice.*

*They also cannot go beyond or substitute the requirements of the WEEE and RoHS directives. The WEEE and RoHS directives are binding on the Member States as regards the objectives to be achieved but leave them to decide on how the agreed Community objective is to be incorporated into their legal system(s).*

*The WEEE and RoHS directives addressed to the Member States do not, as a rule, confer rights or impose obligations on the Community citizen. They are only addressed to the Member States and the rights and obligations for the citizen flow only from the measures enacted by the authorities of the Member States to implement them.*

*The FAQ are a living document and so may be revised in the future, according to experience with the further implementation in the Member States and the further development of European waste management policy in general.*

*They are split into two sections: Scope and Definitions.*

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## 1. SCOPE

### 1.1. What is the legal base of the WEEE and the RoHS Directives?

The WEEE Directive is based on Article 175 of the Treaty. Member States can adopt stricter measures for environmental protection, as long as these measures comply with Community law (such as the principle of free movement of goods laid down in Articles 28-30 of the Treaty). Annex IA of the WEEE Directive contains a list of categories of products covered. Annex IB contains a non-exhaustive list of products falling under the categories. Therefore, Member States could in principle include other products in their national legislation implementing the WEEE Directive. If a Member State should choose to do so, the purpose of this Directive is, as a first priority, the prevention of WEEE, and in addition, to promote the reuse, recycling and other forms of recovery of such wastes so as to reduce the disposal of waste. It also seeks to improve the environmental performance of all operators involved in the life cycle of electrical and electronic equipment, e.g. producers, distributors and consumers and in particular those operators directly involved in the treatment of waste electrical and electronic equipment.

The RoHS Directive is based on Article 95 of the Treaty. The purpose of this Directive is to approximate the laws of the Member States on the restrictions of the use of hazardous substances in electrical and electronic equipment and to contribute to the protection of human health and the environmentally sound recovery and disposal of waste electrical and electronic equipment.

### 1.2. What are the criteria for determining whether a product falls under the RoHS Directive?

Nr.	Criteria for equipment, which is considered as being covered by Directive 2002/95/EC (RoHS)	Interpretations RoHS	Products out of the scope (examples) RoHS
1	Equipment, "which is <b>dependent</b> on electric current or electromagnetic fields in order to work properly, and equipment for the generation, transfer and measurement of such currents and fields" [ [RoHS Art, 3 (a)]	For the purpose of this directive to be " <b>dependent</b> " means the equipment to be dependent on electric current or electromagnetic fields. That means that electricity is the (e. g. not petrol or gas) <b>primary</b> energy. It also means that when the electric current is off duty, the appliance cannot fulfil the basic (primary) function. If electrical energy is used only for support or control functions (e. g.) this type of equipment is to be considered as being <u>not</u> covered by Directive 2002/96/EC.	<ul style="list-style-type: none"> <li>- Piezo-electric ignition</li> <li>- Combustion engine with an ignition</li> <li>- Petrol driven lawnmower</li> <li>- Pneumatic tools</li> <li>- Gas cooker with electric clock</li> <li>- Teddy bear with battery</li> </ul>
2	Equipment which is "designed for use with a voltage rating not exceeding 1000 Volt for alternating current and 1500 Volt for direct current" [RoHS Art, 3 (a)]		<ul style="list-style-type: none"> <li>- Piezo-electric ignition (&gt; 1500 V)</li> <li>- High voltage switchgear</li> </ul>

Nr.	Criteria for equipment, which is considered as being covered by Directive 2002/95/EC (RoHS)	Interpretations RoHS	Products out of the scope (examples) RoHS
3	<p>- <b>WEEE Annex IA Excluded:</b> categories 8 and 9</p> <p>- <b>Additionally included</b> are electric light bulbs and luminaires in households [RoHS Art. 2.1]</p>		<p>– Medical Equipment</p> <p>– Measurement and Control Equipment (categories 8 and 9 of the WEEE Directive)</p>
4	<p>Equipment which is not covered by “specific Community waste management legislation.” [ROHS Art. 2.2]</p>		<p>Car radios</p>
5	<p>Spare parts for the repair, or the reuse, of electrical and electronic equipment put on the market from 1 July 2006. [RoHS Art. 2.3]</p>	<p>The directive does not apply to parts used in equipment put on the market before 1/07/2006, with the purpose of extending its life by updating its functionalities or upgrading its capacity.</p>	
6	<p>Military equipment [WEEE Art. 2.3]</p>	<p>Military equipment is excluded from the categories of Annex IA of the WEEE directive and therefore, not covered by the RoHS directive.</p>	<p>Arms, munitions, war material</p>

The opinion of the Commission services is that excluded from the scope of the RoHS Directive is the equipment which part of another type of equipment that does not fall within the scope of this Directive. Therefore, equipment that is specifically designed to be installed in airplanes, boats and other means of transport is considered to fall outside the scope of the RoHS Directive.

### 1.3. What is the criteria for the determination whether a product falls under the WEEE Directive

Nr.	Criteria for equipment, which is considered as being covered by Directive 2002/96/EC (WEEE)	Interpretations WEEE	Products out of the scope (examples)
1	Equipment, "which is dependent on electric current or electromagnetic fields in order to work properly, and equipment for the generation, transfer and measurement of such currents and fields" [WEEE Art, 3 (a)]	To be " <b>dependent</b> " means that the equipment needs electricity (e. g. not petrol or gas) as its <b>primary</b> energy to fulfil its basic functions.  It also means that when the electric current is off duty, the appliance cannot fulfil the basic (primary) function. If electrical energy is used only for support or control functions (e. g.) this type of equipment is to be considered as being <u>not</u> covered by Directive 2002/96/EC.	<ul style="list-style-type: none"> <li>- Piezo-electric ignition</li> <li>- Combustion engine with an ignition</li> <li>- Petrol driven lawnmower</li> <li>- Pneumatic tools</li> <li>- Teddy bear with battery</li> </ul>
2	Equipment which is "designed for use with a voltage rating not exceeding 1000 Volt for alternating current and 1500 Volt for direct current" [WEEE Art, 3 (a)]		<ul style="list-style-type: none"> <li>- Piezo-electric ignition (&gt; 1500 V)</li> <li>- High voltage switchgear</li> </ul>
3	Equipment which falls "under the categories set out in annex I A" [WEEE Art 2.1 and Annex I]  <b>Excluded from category 6:</b> large-scale stationary industrial tools	Large-scale stationary industrial tool:  Machine or system, consisting of a combination of equipments, systems, finished products and/or components, each of which (parts), manufactured to be used in industry only, permanently fixed and installed by professionals at a given place in an industrial machinery or in an industrial building to perform a specific task.  <b>Not intended to be placed on the market as a single functional or commercial unit".<sup>1</sup></b>	<ul style="list-style-type: none"> <li>- Oil-platforms</li> <li>- For commercial catering equipment there is no general exemption. Criteria is not related to the size but to whether the equipment is fixed or not.</li> </ul>

<sup>1</sup> Interpretations according to the Guidelines on the application of Council Directive 89/336/EEC of 3 May 1989 on Electromagnetic Compatibility (Directive 89/336/EEC amended by Directives 91/263/EEC, 92/31/EEC, 93/68/EEC, 93/97/EEC) [http://europa.eu.int/comm/enterprise/electr\\_equipment/emc/guides/emcguide.htm](http://europa.eu.int/comm/enterprise/electr_equipment/emc/guides/emcguide.htm), the directives to be amended [http://europa.eu.int/comm/enterprise/electr\\_equipment/emc/revision/proposal.htm](http://europa.eu.int/comm/enterprise/electr_equipment/emc/revision/proposal.htm)

(3.7) A finished product in these guidance notes is any device, or unit of equipment that has a direct function, its own enclosure and - if applicable - ports and connections intended for end users."

(3.8) 'Direct function' is defined as any function of a component or a finished product which fulfils the intended use specified by the manufacturer in the instructions for use for an end-user. This function can be available without further adjustment or connections other than simple ones which can be performed by any person not fully aware of the EMC implications."

(6.5.2.1) "Fixed Installation", in the broadest sense, is defined as "a combination of several equipment, systems, finished products and/or components (hereinafter called "parts") assembled and/or erected by an assembler/installer at a given place to operate together in an expected environment to perform a specific task, but not intended to be placed on the market as a single functional or commercial unit".

Nr.	Criteria for equipment, which is considered as being covered by Directive 2002/96/EC (WEEE)	Interpretations WEEE	Products out of the scope (examples)
4	Equipment which is listed in annex I B which “contains a list of products which fall under the categories set out in Annex IA” [WEEE Art. 2.1 and Annex I B]	At least the specific type of equipment quoted in Annex I B falls within the scope. Luminaires in households covers all types of luminaires in households	<b>Explicitly Excluded:</b> - Luminaires in households - Filament lamps
5	Equipment which is <u>not</u> part of another type of equipment that does not fall within the scope of this Directive. [WEEE Art 2.1]	With reference to Directive 89/336/EEC and the Official Guidelines for the Implementation of this Directive the decision criteria are „Finished Product“ or „Fixed Installation“.  Equipment which is <b>part of another type of equipment</b> is to be considered <b>not</b> to be a <i>finished product</i> . A finished product is any device or unit of equipment that has a <b>direct function</b> , its own enclosure and - if applicable - ports and connections intended for end users.” <b>‘Direct function’</b> is defined as any function of a component or a finished product which fulfils the intended use specified by the manufacturer in the instructions for use for an end-user. This function can be available without further adjustment or connections other than simple ones which can be performed by any person. <b>If the “other type of equipment” is a fixed installation it will not fall under the scope of the WEEE-directive.</b> <b>“Fixed installation”</b> , in the broadest sense, is defined as "a combination of several equipment, systems, finished products and/or components (hereinafter called "parts") assembled and/or erected by an assembler/installer	- Fixed installations like heating plants, industrial installations - Lifts - Control and monitoring equipment used in oil and gas electronics: permanent gauges and measurement while-drilling instrumentation - Frequency converters: components are covered only when they are part of product that is covered. The inclusion or exclusion will depend on the application of these components. This should be evaluated case by case. - Car radio and other equipment

<sup>2</sup> Interpretations according to the Guidelines on the application of Council Directive 89/336/EEC of 3 May 1989 on Electromagnetic Compatibility (Directive 89/336/EEC amended by Directives 91/263/EEC, 92/31/EEC, 93/68/EEC, 93/97/EEC) [http://europa.eu.int/comm/enterprise/electr\\_equipment/emc/guides/emcguide.htm](http://europa.eu.int/comm/enterprise/electr_equipment/emc/guides/emcguide.htm), the directives to be amended [http://europa.eu.int/comm/enterprise/electr\\_equipment/emc/revision/proposal.htm](http://europa.eu.int/comm/enterprise/electr_equipment/emc/revision/proposal.htm)

(3.7) A finished product in these guidance notes is any device, or unit of equipment that has a direct function, its own enclosure and - if applicable - ports and connections intended for end users.”

(3.8) ‘Direct function’ is defined as any function of a component or a finished product which fulfils the intended use specified by the manufacturer in the instructions for use for an end-user. This function can be available without further adjustment or connections other than simple ones which can be performed by any person not fully aware of the EMC implications.”

(6.5.2.1) "Fixed Installation", in the broadest sense, is defined as "a combination of several equipment, systems, finished products and/or components (hereinafter called "parts") assembled and/or erected by an assembler/installer at a given place to operate together in an expected environment to perform a specific task, but not intended to be placed on the market as a single functional or commercial unit".

Nr.	Criteria for equipment, which is considered as being covered by Directive 2002/96/EC (WEEE)	Interpretations WEEE	Products out of the scope (examples)
		at a given place to operate together in an expected environment to perform a specific task, but <b>not intended to be placed on the market as a single functional or commercial unit</b> ". <sup>2</sup>	designed for being used in a product covered by the ELV - Radio Frequency Identification (RFID) <sup>3</sup>
6	Equipment which is not covered by "specific Community waste management legislation." [WEEE Art 2.2]		
7	Equipment which is not a product which is intended for specifically military purposes [WEEE Art 2.3]	This does not, however, apply to products which are not intended for specifically military purposes. [WEEE Art 2.3]	Arms, munitions, war material

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<sup>3</sup> If the RFID is put in the packaging of the product they are considered to be excluded from the WEEE Directive. If they are put on the appliance they are considered to be covered by the WEEE Directive and therefore will have to be recycled by the producer of the appliance.

#### **1.4. Do the WEEE and the RoHS Directives apply to electrical and electronic products for professional use?**

The WEEE Directive contains provisions that cover WEEE coming from households and for WEEE coming from users other than private households. Financing provisions in respect of WEEE from private households are laid down in Article 8 and provisions for the financing of WEEE from users other than private households are provided for in Article 9. In addition, Article 10(3) does not specifically limit the marking obligation to electrical and electronic equipment (EEE) for private households because in some cases it is difficult to distinguish between households and professional electrical and electronic equipment. Therefore, the marking obligation also applies to EEE for professional use.

The RoHS Directive does not differentiate between households or professional use EEE, therefore products used for professional use are covered by the RoHS Directive.

#### **1.5. Do the WEEE and the RoHS Directives apply to batteries?**

The RoHS Directive restricts the use of heavy metals in electrical and electronic equipment, but does not apply to batteries.

The WEEE Directive applies to batteries incorporated in electrical and electronic equipment when the equipment becomes waste. In this case, they will be collected together with the equipment on the basis of the WEEE Directive. This has consequences for the producer responsibility. For batteries incorporated in electrical and electronic equipment, battery producers will only become responsible for further treatment after those batteries are removed from the collected WEEE. – Therefore, the batteries which are collected together with the WEEE are included in the WEEE collection target and, after removal, for the collection rate of the battery directive.

For batteries which are incorporated in other products (such as cars or electrical and electronic equipment), at the moment those other products become waste, then the batteries will be collected automatically together with those other products. On the basis of Directive 2000/53/EC on End of Life Vehicles (ELV) - WEEE Directive, it is the producer of the car/electrical equipment, who covers the costs of the collection. On the basis of those Directives, the collected car/appliances should be handed over to an authorised treatment facility. On the basis of the minimum treatment requirements of those Directives, the batteries should be removed from the collected ELV appliance as a minimum treatment requirement. At this moment, the battery producer will become responsible to cover the costs of the further treatment of the battery. The interface would be between the battery producer and the treatment facility, who removes the battery from the car/appliance.

## **1.6. Do the WEEE and the RoHS Directives apply to ink cartridges?**

Article 3(a) of the WEEE Directive defines electrical and electronic equipment (EEE) as “equipment which is dependent on electric currents or electronic-magnetic fields in order to work properly and equipment for the generation, transfer and measurement of such currents and files falling under the categories set out in Annex IA and designed for use with a voltage rating not exceeding 1000 Volt for alternating current and 1500 Volt for direct current.” The WEEE Directive defines WEEE as “electrical or electronic equipment which is waste within the meaning of Article 1(a) of Directive 75/442/EEC on waste, including all components, subassemblies and consumables which are part of the product at the time of discarding”. According to the definition of EEE the printer itself is EEE because it falls under category 3 of Annex IB to the WEEE Directive. If a printer is discarded, it becomes WEEE. This means that if an ink cartridge is inside a discarded printer, the cartridge becomes part of the WEEE because it is a consumable which is part of the printer at the time of discarding. Article 4 of the WEEE Directive requires Member States to "encourage the design and production of electrical and electronic equipment which take into account and facilitate dismantling and recovery, in particular the reuse and recycling of WEEE, their components and materials. However, the cartridge itself does not fall under the definition of EEE but it is considered as a consumable. Therefore the RoHS Directive does not apply to the ink cartridges.

## **1.7. Do electrical or electronic devices such as car radios fall under the scope of the RoHS Directive or under the scope of the Directive 2000/53/EC on end of life vehicles (ELV) Directive?**

Some electrical and electronic devices such as radios, CD players, navigation systems etc. can be bought separately in repair shops, supermarkets or specialized shops and installed and used in their vehicles. The question is whether these devices are subject to the RoHS or to Directive 2000/53/EC on end of life vehicles (ELV) Directives.

Article 2(2) of the RoHS Directive stipulates: “*This Directive shall apply without prejudice to Community legislation on safety and health requirements and specific Community waste management legislation*”.

Therefore, if the devices are not specifically designed to be used in vehicles, those devices would be covered by the RoHS Directive. If the devices are designed with the primary purpose to be used in vehicles (such as car radios), the ELV Directive applies.

## **1.8. Does the RoHS Directive apply to spare parts installed in new equipment?**

The RoHS Directive provides that new electrical and electronic equipment put on the market for the first time from 1 July 2006, should not contain lead, cadmium, mercury, hexavalent chromium, Polybrominated biphenyls (PBB) or Polybrominated diphenyl ethers (PBDE) (Article 4(1)). The directive provides for two sets of derogations:

- the Directive does not apply to the applications listed in the Annex,
- the Directive does not apply to spare parts for the repair, or to the reuse, of electrical and electronic equipment put on the market before 1 July 2006 ( Article 2(3)). This aims to allow old equipment to be maintained with spare parts and to ensure that old electrical

and electronic equipment is reused. This derogation is explicitly limited to old equipment, i.e. put on the market before 1 July 2006.

Therefore, it is allowed to put on the market spare parts - containing the hazardous substances - for the repair of old equipment (meaning put on the market before 1 July 2006) and not to repair new equipment (put on the market after 1 July 2006). In fact, the market of spare parts containing banned substances for the repair of new equipment would prolong the existence of hazardous substances in the waste stream and limit increased recycling efforts.

**1.9. Is the use of non-RoHS compliant material allowed for capacity expansion and/or upgrade in electrical and electronic products put on the market before 1 July 2006 allowed?**

The use of non-RoHS compliant material in electrical and electronic (EEE) products put on the market before 1 July 2006 for the purposes of capacity expansion and/or upgrade is in principle allowed provided that the EEE is not put on the market as a new product. If after the capacity expansion and/or upgrade the EEE is put on the market as a new product it should comply with the RoHS directive.

However, if after capacity expansion and/or upgrade the EEE is put on the market as a reused product, the ROHS Directive does not apply.

**1.10. Does the substance ban under the RoHS Directive apply to the production process?**

Pursuant to Article 4(1) of the RoHS Directive, “Member States shall ensure that, from 1 July 2006, new electrical and electronic equipment put on the market does not contain lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE). National measures restricting or prohibiting the use of these substances in electrical and electronic equipment which were adopted in line with Community legislation before the adoption of this Directive may be maintained until 1 July 2006.” It is understood that the substance ban refers to the final product and not the production process.

**1.11. Does the substance ban under the RoHS Directive apply to products built for own use?**

The RoHS Directive applies only to products that are put on the market. Products manufactured for own use are excluded from the scope of the directive. If subsequently put on the market, they have to comply with the Directive.

### **1.12. Are Radio Frequency Identification (RFID) chips included in the scope of the WEEE and RoHS Directives?**

RFIDs fulfil the definition of electrical and electronic equipment provided for in the WEEE and RoHS Directives and can be considered to fall under category 3 “IT and telecommunication equipment”. RFIDs are covered by the RoHS Directive.

Concerning the WEEE Directive, if RFIDs are put on the packaging of the electrical and electronic equipment they would be considered to fall outside the scope of the Directive because they are part of a product that is not covered by the WEEE Directive. If they are put on the equipment, the producer of the equipment is responsible for the recycling operations.

### **1.13. Are antennas, cables, fiber optics and waveguides covered by the WEEE and RoHS Directives?**

Antennas and cables fulfil the definition of electrical and electronic equipment (EEE) under the WEEE and RoHS Directives. The difference between electrical and fibre-optic relates to the material not of function (electrical cables as well can be and have been used for the transmission of information, sound, image etc.). All cables inside and/or as extension or connections which are part of the equipments at the time of discarding are considered WEEE. All cables used for fixed installations fall outside of the scope of WEEE.

Masts and pylons do not fulfil the definition of EEE. If the products are integrated in a fixed installation they are not considered WEEE. Modular cabling systems for voice, data and video application fall under category 3 “IT and telecommunication equipment” of the WEEE Directive and are covered by the RoHS Directive.

### **1.14. What is meant by “infected products”?**

The WEEE Directive applies to the categories listed under Annex IA of the Directive. Annex IB contains a non-exhaustive list of products falling under the categories. Category 8 covers, "medical devices with the exception of all implanted and infected products". Infected products are understood as products that have come into contact with blood or other biological contaminants prior to the end-of-life.

### **1.15. What is meant by “video games”?**

"Video games" are listed under category 7, Annex IB of the WEEE Directive. Video games are to be interpreted in the sense of hardware equipment. The hardware equipment fulfils the definition of electrical and electronic equipment under the WEEE Directive. Software equipment (such as cards, CD-roms, etc) does not fulfil the definition of electronic equipment and can be considered as a consumable.

## 2. DEFINITIONS

### 2.1. What does “put on the market” mean?

The words 'put on the market' of Article 10 (3) of the WEEE Directive and Article 4 (1) of the RoHS Directive refer to the initial action of making a product available for the first time on the Community market. This will take place when the product is transferred (eg physical hand-over or transfer of ownership) from the producer to a distributor or final consumer or user on the Community market.

“Making a product available for the first time...” refers to each individual piece of equipment put on the market after the date for the substances restrictions (that is 1 July 2006) and not to the launch of a new product or product line. Moreover the concept of putting on the market refers to each individual product, not to a type of product, and irrespective of whether it was manufactured as an individual unit or in series.

The same or a similar term is used in many directives, such as internal market directives based on the New Approach and the Global Approach. The Guide to the implementation of directives based on the New Approach and the Global Approach defines "placing on the market" as follows:

*"Placing on the market is the initial action of making a product available for the first time on the Community market, with a view to distribution or use in the Community. Making available can be either for payment or free of charge [...] A product is placed on the Community market when it is made available for the first time. This is considered to take place when a product is transferred from the stage of manufacture with the intention of distribution or use on the Community market. [...] The transfer of the product takes place either from the manufacturer, or the manufacturer's authorised representative in the Community, to the importer established in the Community or to the person responsible for distributing the product on the Community market.<sup>4</sup> The transfer may also take place directly from the manufacturer, or authorised representative in the Community, to the final consumer or user. The product is considered to be transferred either when the physical hand-over or the transfer of ownership has taken place. This transfer can be for payment or free of charge, and it can be based on any type of legal instrument. Thus, a transfer of a product is considered to have taken place, for instance, in the circumstances of sale, loan, hire, leasing and gift."*

See <http://europa.eu.int/comm/enterprise/newapproach/legislation/guide/legislation.htm>.

### 2.2. Are there Maximum Concentration values set in the RoHS Directive?

For the purposes of Article 5(1)(a) the Commission services have proposed a draft decision fixing<sup>5</sup>: a maximum concentration value of 0.1% by weight in homogeneous materials for lead, mercury, hexavalent chromium, polybrominated biphenyls (PBB) and

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<sup>5</sup> This Draft decision will be legally binding only when adopted by the Commission and published on the OJ.

polybrominated diphenyl ethers (PBDE) and of 0.01% weight in homogeneous materials for cadmium shall be tolerated.

Homogeneous material means a material that can not be mechanically disjointed into different materials.

*Definitions:*

The term "homogeneous" is understood as "of uniform composition throughout". Examples of "homogeneous materials" are individual types of: plastics, ceramics, glass, metals, alloys, paper, board, resins, coatings.

The term "mechanically disjointed" means that the materials can be, in principle, separated by mechanical actions such as for example: unscrewing, cutting, crushing, grinding and abrasive processes.

*Examples:*

- A plastic cover is a "homogeneous material" if it consists of one type of plastic that is not coated with or has attached to it or inside it any other kinds of materials. In this case the limit values of the Directive would apply to the plastic.
- An electric cable that consists of metal wires surrounded by non-metallic insulation materials is an example of a "non homogeneous material" because the different materials could be separated by mechanical processes. In this case the limit values of the Directive would apply to each of the separated materials individually.
- A semi-conductor package contains many homogeneous materials which include; plastic moulding material, tin-electroplating coatings on the lead frame, the lead frame alloy and gold-bonding wires.

### **2.3. Is the re-use of the appliance covered by the targets?**

The targets set in Article 7 of the WEEE Directive can be attained by recovery, recycling and re-use of components, materials or substances and relate to WEEE sent for treatment. The reuse of whole equipment is not covered by these targets.

Treatment is defined in Article 3(h) as 'any activity after the WEEE has been handed over to a facility for de-pollution, disassembly, shredding, recovery or preparation for disposal and any other operation carried out for the recovery and/or the disposal of the WEEE.' If the equipment is sorted out for reuse before going to the treatment facility it doesn't count for the reference basis of the targets. The repair of whole equipment should not be considered treatment in the sense of Article 3(h). However, the re-use of components has to be counted for the achievement of the targets.