

Apple Product Environmental Specification

Product: PowerMac G5

Model Numbers: M9590 – Dual 2.0GHz
M9591 – Dual 2.3GHz
M9592 – Quad 2.5GHz

Date: 2/22/06

This list of environmental attributes can be used as a guide to determine product compliance with various regional, country, and industry sector product environmental criteria. The environmental criteria listed is based on programs such as ECMA, IT ECO (formerly SITO), Blue Angel, ENERGY STAR®, and TCO.

Each criteria listed includes a reference to the section of the Eco-label specification where it is described.

Note: Not all environmental criteria apply to all products.

This environmental specification is provided for informational purposes only. Nothing contained within shall be construed as a warranty, expressed or implied, with respect to the product.

| Table of Contents: | Page |
|--|-------------|
| 1.0 Environmental policy & environmental management | 2 |
| An environmental policy and environmental management system (EMS) demonstrates the commitment, purpose, objective and mission of a company. Apple has established an internal EMS, and has certified its facilities in Sacramento, CA, Ireland, and Singapore to ISO 14001. | |
| 2.0 Environmentally conscious design | 2 |
| Environmentally conscious design is the systematic approach of identifying and incorporating product features and functions with respect to environmental, health and safety objectives throughout all stages of a product's life. Apple has established a process where we address these issues in the design, development, manufacture, use, and end-of-life of our products. | |
| 3.0 Banned/restricted materials | 3 |
| Some materials that have traditionally been used in electronic products have been determined to be environmental or health hazards. The use of these materials has been banned or restricted by legislation or eco-labels. | |
| 4.0 Batteries | 3 |
| Apple uses rechargeable batteries to provide power for notebooks, develops power management software and energy saving features to obtain maximum efficiency, and avoids batteries that contain lead, cadmium or mercury. | |
| 5.0 Energy consumption | 4 |
| The use of energy-efficient products results in savings in energy costs and the reduction of pollution resulting from the generation of electricity. Apple promotes energy conservation in its product design and performance including our participation in the ENERGY STAR® program and no-load power consumption programs such as the EU Code of Conduct for external power supplies, and the U.S. Federal Energy Management Program. The energy data listed reflects standard configurations only. Other configurations may yield different energy values. | |
| 6.0 Emissions | 4 |
| Apple products are tested and certified to international standards to assure the safe use of our products. | |
| 7.0 Electrical Safety, EMC, and connection to telephone network | 4 |
| The safe use of Apple products is of foremost concern. Therefore, Apple tests and certifies our products to international standards to assure their safe use. | |
| 8.0 Noise characteristics | 4 |
| Acoustical noise is becoming an increasingly important concern to computer users. It affects user comfort and performance, and it may become disruptive and annoying to the user or others in the work environment. For these reasons, Apple is concerned and designs our products to generate acoustical noise levels as low as possible. | |
| 9.0 Ergonomics | 5 |
| Visual ergonomics is an important concern to computer users. It affects user comfort and performance. Apple designs, tests and certifies our displays to meet stringent visual ergonomics (front of screen) criteria. In addition, our displays have the capability of tilting and swiveling to adjust to user needs. | |
| 10.0 Packaging and documentation | 5 |
| Apple evaluates the environmental attributes of our packaging for hazardous materials as well as the minimization of the quantity and weight of the packaging materials. These considerations enable and promote recycling of packaging materials for our customers. | |
| 11.0 Recycling | 5 |
| Apple designs its products with specific features and functions that promote the ease of recyclables. In addition, in specific countries, Apple has established takeback/recycling programs to assist customers. | |
| 12.0 Additional Attributes | 5 |
| 13.0 Additional Information/Notes | 5 |

| Apple Product Environmental Specification | | Requirement met | | | IT ECO | Blue Angel | TCO '99 | ECMA |
|---|--|-----------------|----|-----|------------------|--------------|-----------------|--------|
| | | Yes | No | N/A | ('02) | Desktop CPUs | Desktop Display | (6/99) |
| 1 | Environmental policy & environmental management | | | | | | | |
| 1.1 | The manufacturer has a documented environmental policy approved by the management | X | | | C3.1 | | 1.1.1 | 5.1 |
| 1.2 | The manufacturer has an environmental management system according to: ISO 14001 ____, EMAS ____ or internal system <u>X</u> | X | | | C3.2 | | 1.1.3 | 5.1 |
| 1.3 | The manufacturer regularly publishes an environmental report | | X | | C3.3 | | | |
| 1.4 | The manufacturer and the manufacturer's representative market its products in accordance with environmental rules in applicable marketing legislation | X | | | | | 1.1.4 | |
| 2 | Environmentally conscious design | | | | | | | |
| 2.1 | Large mechanical plastic parts consist of one material or of materials that are easy to separate | X | | | P6.3 | | | 5.9 |
| 2.2 | All plastic components that weigh >100g shall be made from no more than 2 types of plastics | X | | | P6.3 | | 1.4.2 | |
| 2.3 | The variety of materials forming components of comparable functions are limited to one material | X | | | | B.1 | | |
| 2.4 | The proportional use of recycle is permitted | | X | | | B.5 | | |
| 2.5 | Mechanical plastic parts, heavier than 25 g are marked with plastic identification code according to ISO 11469 and ISO 1043, parts 1-4 Plastics - Symbols and abbreviated terms | X | | | P6.4, 6.5, P6.15 | 3.1.3 | 1.4.1 | 5.9 |
| 2.6 | The coating of plastic components is limited to a minimum | X | | | | B.3 | | |
| 2.7 | Paints, lacquers or varnishes do not increase the weight of any plastic component weighing >25 g by more than 1%. In-mold decoration is not allowed in any plastic components weighing >25 g. Metallic paint (particles > 10 microns) is not allowed | X | | | | | 1.4.3 | |
| 2.8 | No internal or external metallization or molded in metal parts or glued parts in plastic housing for CRT or LCD | | | X | | | 1.4.4(a) | |
| 2.9 | Plastic parts are free from metal inlays that cannot be removed by one person alone with a standard tool | X | | | P6.6 | | | |
| 2.10 | Labels should be inherent and separable for recycling | X | | | P6.7 | | | |
| 2.11 | Components made of incompatible materials can be removed separately or via separation aids | X | | | | A.1 | | |
| 2.12 | Connections to be separated during disassembly are easily traceable | X | | | | A.3 | | |
| 2.13 | The product is designed for easy dismantling during recycling; gluing/welding of different materials has been avoided | X | | | P6.1 | 3.1.1 | | |
| 2.14 | Disassembly can be done exclusively with all-purpose tools | X | | | | A.4 | | |
| 2.15 | Disassembly can be done by a single person | X | | | | A.9 | | |
| 2.16 | All screwed connections between modules can be separated with no more than three tools | X | | | | A.7 | | |
| 2.17 | Large-size plastic case parts are so designed as to ensure the reutilization of the plastics on the basis of existing technologies for the production of high-quality and long-lived plastic products | X | | | | 3.1 | | |
| 2.18 | Materials and material compounds can be recycled on an industrial scale (technologically and economically useful) | X | | | | B.4 | | |
| 2.19 | Future recycling and material utilization processes are taken into account | X | | | | 3.1 | | |
| 2.20 | Electronic modules containing harmful substances are easily traceable and removable for recycling | X | | | | A.2 | | |
| 2.21 | The case parts are free from electronic modules | X | | | | A.11 | | |
| 2.22 | The product has a modular design and no special tools are needed to upgrade the product | X | | | P6.8 | 4.4, C.1 | | |
| 2.23 | Processor, memory and cards of various types can be changed/upgraded | X | | | P6.9 | 4.4, C.2 | | 5.2 |
| 2.24 | Information on the ability to change/upgrade components is included in the product documentation | X | | | | 4.5 | | 5.2 |
| 2.25 | Design allows for installation, expansion exchange, upgrade, or attachment of a mass storage unit | X | | | P6.10 | 4.4, C.3 | | 5.2 |

| Apple Product Environmental Specification | | Requirement met | | | IT ECO | Blue Angel | TCO '99 | ECMA |
|---|---|-----------------|----|-----|--------|--------------|-----------------|--------|
| | | Yes | No | N/A | ('02) | Desktop CPUs | Desktop Display | (6/99) |
| 3 | Banned/restricted materials | | | | | | | |
| 3.1 | No CFCs or HCFCs present in the product | X | | | P1.1 | | | |
| 3.2 | No substances included in annex A, B or C of the Montreal Protocol on Substances that Deplete the Ozone Layer are used in the manufacture of the printed wiring boards, assembly of the PWBs and final assembly of the product | X | | | | | 1.2.1 | 5.8 |
| 3.3 | No asbestos, PCB (polychlorinated biphenyls) or PCT (polychlorinated terphenyls) present in the product | X | | | | | | 5.8 |
| 3.4 | No mercury present in the product (exception: mercury in flat panel display lamps for backlighting) | X | | | P1.2 | | | 5.8 |
| 3.5 | Mercury (Hg) content in flat panel display backlight lamp(s): Number of backlight bulbs in display: 0 | | | X | P6.17 | | 1.3.2 | |
| 3.6 | No brominated or chlorinated flame retardants, PBB or PBDEs present in mechanical plastic parts heavier than 25 g | X | | | P6.12 | | 1.3.5(a) | 5.8 |
| 3.7 | The base material of PWB must not contain any PBB (polybrominated biphenyls), PBDE (polybrominated diphenyl ethers) or chlorinated paraffins | X | | | | 3.1.2.2 | | |
| 3.8 | Plastic components that weigh >25 g shall not contain flame retardants that contain organically bound chlorine or bromine. PVC is inherently flame retardant with organically bound chlorine and not allowed, with the exception of cables enclosures | X | | | | | 1.3.5 | |
| 3.9 | No Antimony Trioxide (Sb ₂ O ₃) flame retardants in plastic enclosures | X | | | | | | |
| 3.10 | No polyvinyl chloride (PVC) is used in plastic resins with the exception of cable enclosures | X | | | | | 1.4.2 | |
| 3.11 | No cadmium (Cd), cadmium compounds, lead (Pb), or lead compounds are intentionally added to cable enclosures | X | | | | | | 5.8 |
| 3.12 | No cadmium (Cd) or lead (Pb) present in mechanical plastic parts heavier than 25 g | X | | | | | | 5.8 |
| 3.13 | No cadmium (Cd) in the CRT (Cathode Ray Tube) | | | X | | | 1.3.1 | 5.8 |
| 3.14 | No mercury (Hg) or cadmium (Cd) in electronic components | X | | | | | 1.3.4 | 5.8 |
| 3.15 | No cadmium (Cd) or lead (Pb) in paints and inks used in the product | X | | | P1.4 | | | 5.8 |
| 3.16 | No chloroparaffins with chain length 10-13 carbon atoms and chlorinated greater than 50% are present in mechanical plastic parts heavier than 25 g | X | | | | | | 5.8 |
| 4 | Batteries | | | | | | | |
| 4.1 | Batteries defined as hazardous in the EU Directive 91/157/EEC and amendments 98/101/EC are not used in the product | X | | | | 3.1.4 | | 5.10 |
| 4.2 | Battery handling information is provided in the product documentation | X | | | | 3.1.4 | | 5.10 |
| 4.3 | No mercury (Hg) or cadmium (Cd) in batteries | X | | | P2.2 | 3.1.4 | 1.3.3(a) | 5.8 |
| 4.4 | Backup battery chemical composition: Lithium Ion Power battery chemical composition: N/A | ← See Values | | | | | | |

| Apple Product Environmental Specification | | | | Requirement met | | | IT ECO | Blue Angel | TCO '99 | ECMA |
|---|--|-------------------------|-------------------------|-----------------|--|------|---|--------------|----------------------|--------|
| | | | | Yes | No | N/A | ('02) | Desktop CPUs | Desktop Display | (6/99) |
| 5 | Energy consumption | | | | | | | | | |
| 5.1 | <u>Maximum Power Use</u> | | | | ← See Values | P8.1 | 4.1.1.6 | 4.5 | 5.3 | |
| | <u>Input Power Source</u> | <u>On (idle)</u> | <u>Sleep</u> | <u>Off</u> | | | | | | |
| | 100V, 50 and 60 Hz | <185 W | <16 W | <2 W | | | | | | |
| | 115V, 60 Hz | <185 W | <16 W | <2 W | | | | | | |
| | 230V, 50 Hz | <180 W | <16 W | <2.5 W | | | | | | |
| 5.2 | External power supply (AC adaptor) no-load power consumption | | | | | | | | | |
| 5.3 | Product meets ENERGY STAR® criteria | | | | | | | | | |
| 5.4 | External power supply meets ENERGY STAR® criteria | | | | | | | | | |
| 5.5 | External power supply/AC Adaptor meets European Code of Conduct (2003) criteria | | | | | | | | | |
| 5.6 | Product meets US FEMP (Federal Energy Management Program) criteria | | | | | | | | | |
| 5.7 | Information about the energy save function is given in the user manual | | | | | | | | | |
| 5.8 | Sleep mode is activated automatically | | | | | | | | | |
| 5.9 | Product shall not be damaged if separated from power source for at least 4 weeks | | | | | | | | | |
| 5.10 | The computer supports an operating system allowing the implementation of power-saving functions. Unit must offer at least one power-saving rest mode which activates automatically after a factory pre-set interval | | | | | | | | | |
| 6 | Emissions | | | | | | | | | |
| 6.1 | External alternating magnetic fields: ≤ 0.10 mT at a field of 200 nT RMS with a frequency of 80 Hz (Products with CRTs Only) | | | | | | | | | |
| 6.2 | X-Ray Radiation: ≤ 5000 nGy/h (Products with CRTs Only) | | | | | | | | | |
| 6.3 | Electrostatic Potential: surface potential within ±0.5 kV (Products with CRTs Only) | | | | | | | | | |
| 6.4 | Alternating Electric Field: Band I: 5 Hz to 2 kHz, < 10 V/m, measured 30 cm & 50 cm in front of display; Band II: 2 kHz to 400 kHz, < 1 V/m, measured at 50 cm around display & at 30 cm in front (Products with CRTs and Flat Panels) | | | | | | | | | |
| 6.5 | Alternating Magnetic Fields: Band I: 5 Hz to 2 kHz, ≤ 200 nT, measured at 50 cm around & at 30 cm in front; Band II: 2 kHz to 400 kHz, ≤ 25 nT measured at 50 cm around display (Products with CRTs and Flat Panels) | | | | | | | | | |
| 7 | Electrical safety, EMC and connection to the telephone network | | | | | | | | | |
| 7.1 | The product is CE-marked and a CE certificate of conformity is available | | | | | | | | | |
| 7.2 | The product meets applicable EMC Directives | | | | | | | | | |
| 7.3 | The product is to be connected to the PTT network and meets the EU telecommunications Directive | | | | | | | | | |
| 7.4 | Product meets the Low Voltage Directive (LVD) regarding electrical safety (73/23/EEC and 93/68/EEC) | | | | | | | | | |
| 7.5 | The product meets the requirements of EN 60950 for electrical safety | | | | | | | | | |
| 8 | Noise Characteristics | | | | | | | | | |
| 8.1 | Declared Noise Emissions in accordance with ISO 9296 | | | | | | | | | |
| | Product | | Condition | | Sound Power Level L _{Wad} (B) 1B = 10dB | | Sound Pressure Level, Operator Position | | | |
| | | | | | | | L _{pAm} (dB) | | | |
| | | | | | | | <i>Unit on Table</i> | | <i>Unit on Floor</i> | |
| | Power Mac G5 M9590 – Dual 2.0GHz | | Idle | | 4.2 | | 30 | | 26 | |
| | | | Hard drive accessing | | 4.4 | | 31 | | 27 | |
| | | | Optical drive accessing | | 5.3 | | 46 | | 38 | |
| | Power Mac G5 M9591 – Dual 2.3GHz | | Idle | | 4.1 | | 31 | | 26 | |
| | | | Hard drive accessing | | 4.2 | | 31 | | 26 | |
| | | | Optical drive accessing | | 5.4 | | 45 | | 38 | |
| Power Mac G5 M9592 – Quad 2.5GHz | | Idle | | 4.1 | | 30 | | 25 | | |
| | | Hard drive accessing | | 4.2 | | 31 | | 25 | | |
| | | Optical drive accessing | | 5.3 | | 45 | | 37 | | |

