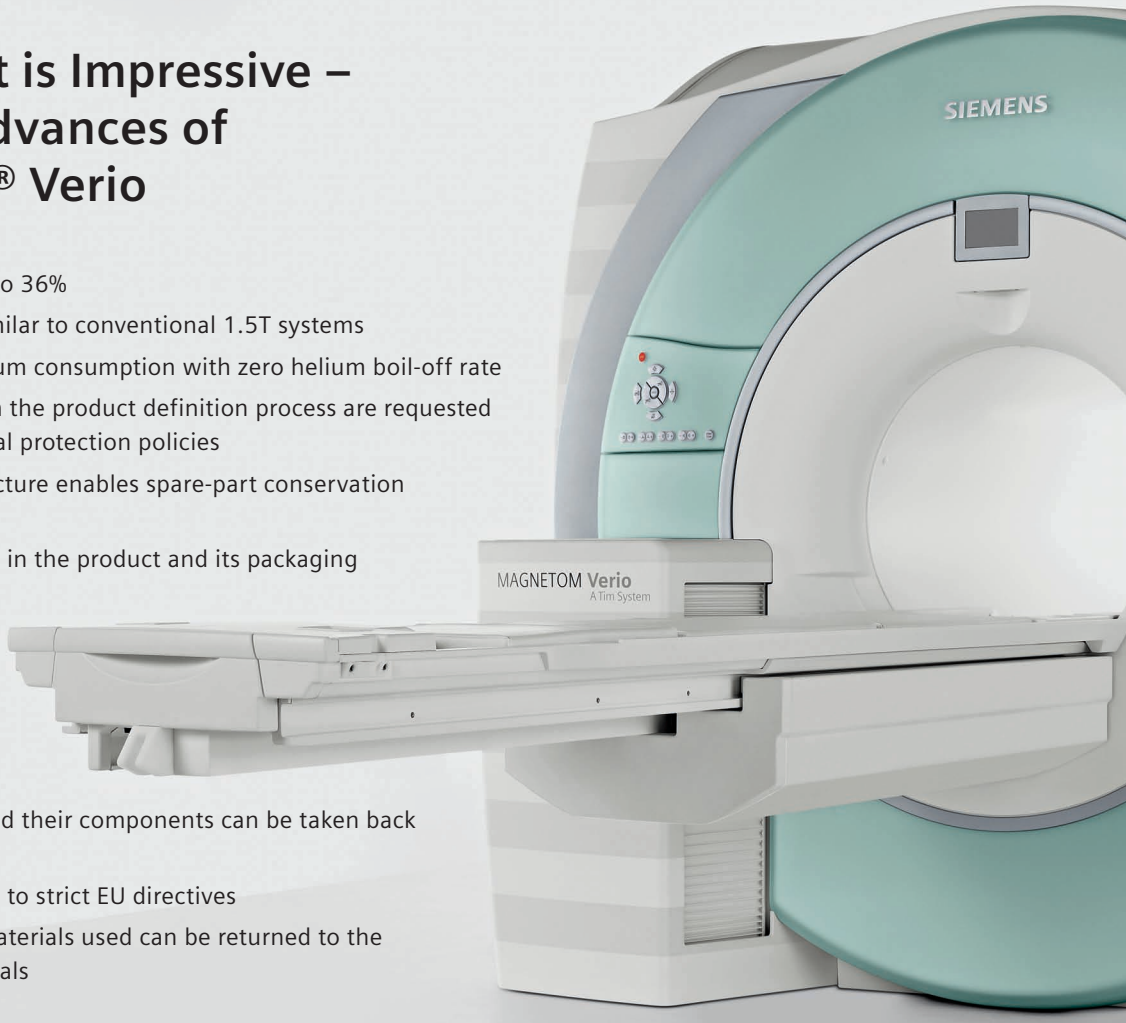
MAGNETOM Verio

Environmental Product Declaration

SIEMENS

Progress that is Impressive – Ecological Advances of MAGNETOM® Verio

- Reduction of weight up to 36%
- Stray field (footprint) similar to conventional 1.5T systems
- Drastic reduction of helium consumption with zero helium boil-off rate
- Suppliers participating in the product definition process are requested to abide to environmental protection policies
- Modular product architecture enables spare-part conservation and efficiency
- All substances contained in the product and its packaging are documented
- Plastic parts are labeled for recycling
- Disassembly instructions for high-quality recycling are available
- Complete MR systems and their components can be taken back and refurbished
- Product return according to strict EU directives
- More than 95% of the materials used can be returned to the flow of recyclable materials



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MAGNETOM Verio: Weight Reduction

MAGNETOM Verio is a lightweight 3T high performance MRI system. The total weight of the system could be reduced by about 4.7 t compared to our existing 3T system. This was possible with a well-balanced development of some main components like magnet, integrated gradient and RF coil systems as well as outer system covers.
The low weight and the short magnet length allow more convenient shipment and an easier installation of the system, particularly in sites which were usually reserved for systems with smaller field strengths.

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Delivering the most exciting equation in MRI

3T + 70 cm + Tim

Siemens is a proven innovator that brings 3T field strength, 70 cm Open Bore and Tim (Total imaging matrix) together in one powerful system, MAGNETOM Verio. The industry trend is clear. The competitive advantage goes to those who can offer the best of all worlds: outstanding diagnostic capabilities, patient comfort, and efficient workflow. MAGNETOM Verio is the answer.

Powerful. Affordable. Comfortable.

Today's market demands MRI systems that deliver high performance and a large application range while also representing a sound investment for the future.

Siemens doesn't just claim to be a leading 3T innovator. We can prove it.

- **More than 10 years of experience in 3T, including the introduction of the world's first 3T whole-body MRI with Open Bore**
- **Unique Tim™ technology that optimizes 3T power**
- **3TCare, the comprehensive solution for Specific Absorption Rate (SAR) enabling maximum efficiency**

MAGNETOM Verio brings new benefits.

- **A unique combination of 3T and 70 cm Open Bore**
- **A new short, ultra-light magnet with zero helium boil-off**
- **Large field of view, which supports a full range of clinical applications**
- **Excellent image quality by reducing unusable edges due to unique cylindrical homogeneity made possible by the TrueForm™ magnet and gradient design**
- **Unique TrueForm design includes innovative techniques in the RF excitation hardware as well as new application features so that there is uniform RF distribution in all body regions**
- **Increased speed and superb image quality powered by the new VQ-engine gradient**

Reduction of Helium Consumption

MAGNETOM Verio is equipped with a zero helium boil-off technology. Only during maintenance minor helium loss may not be completely avoidable. The technology allowed us to increase refill intervals of typically 1 year to over 10 years for new systems operating under normal conditions without any increase in energy consumption for refrigeration.

Depending on the frequency and type of applications used, overall savings amount to between 700 and 1300 liters of liquid helium per year.
Helium is extracted from natural gas which makes it of restricted availability. If helium reaches the atmosphere, it will eventually escape to the universe due to its low weight and be lost forever. To achieve its cooling performance, it must be liquefied at high energy consumption.

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Environmental Management System

Our environmental, health and safety management system conforms to ISO 14001 and aids us putting our policy into practice. Our German manufacturing facilities were among the first to be validated to EMAS (Environmental Management and Audit Scheme).
To find further information about our environmental, health and safety management system, go to siemens.com/healthcare-ehs.

Environmental Product Design

Material supply:
From natural resources to delivery of semi-finished products

Production/delivery:
From production of components to operation startup at the customer site

Use/maintenance:
Includes daily use by our customers as well as maintenance

End of life:
From disassembly at the customer through material and energy recycling

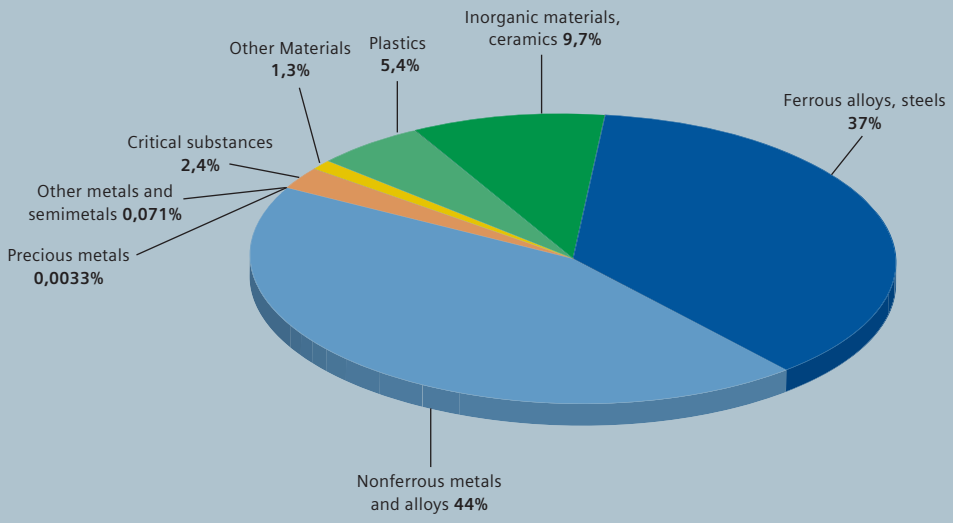
Siemens Healthcare considers environmental aspects in all phases of the product life cycle, including material supply, production/delivery, use/maintenance and end of life.

Our product design procedure fulfills the requirements of IEC60601-1-9:2007 "Environmental product design for medical electrical equipment".

This standard supports the effort to improve the environmental performance of our products.

Identification of Product Components

MAGNETOM Verio is mainly build out of metals. This ensures a high recyclability.



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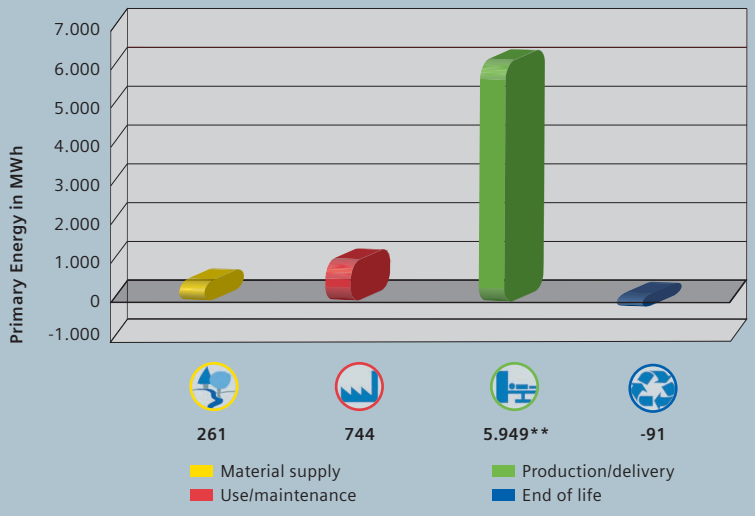
Cumulative Energy Demand

Energy consumption is the most important environmental aspect of medical devices. This is why we use cumulative energy demand to assess environmental performance. Cumulative energy demand is the total primary energy* that is necessary to produce, use and dispose of a device – including all transportation. Our medical devices can be recycled almost completely for materials or energy. With an appropriate end-of-life treatment, it is possible to return 91 MWh in form of secondary raw materials or thermal energy to the economic cycle.

** Primary energy is the energy contained in natural resources prior to undergoing any man made conversions (e.g. oil, solar).*
*** Based on 10 years usage*



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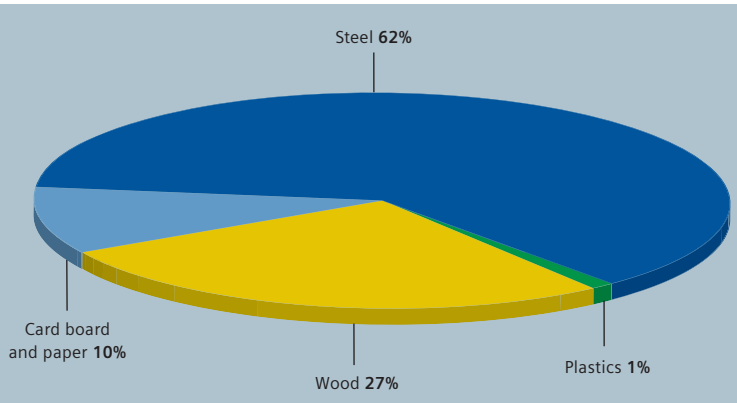
Packaging

Our Magnetic Resonance Imaging systems are transported within Europe in open packaging. The magnet is only protected by a light dust protective cover.
A closed packaging is required for overseas transports. Here the magnet is delivered on a reusable steel pallet.
The values shown on the chart are average values from overseas transport. The packaging reuse ratio is more than 60%. Most of the rest is supplied to material recycling. Only an insignificant amount (< 1%) has to be recycled for energy.



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Product Return

Most of the materials used to produce MAGNETOM Verio are recyclable.
97% (by weight) can be materially and 3% energetically recycled.

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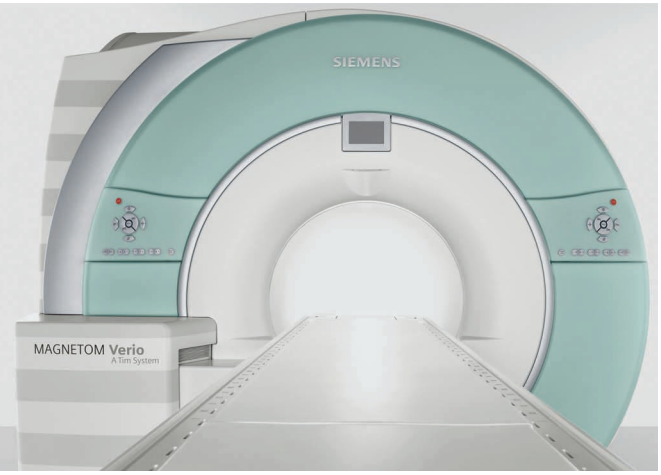
Our product return program ensures that we address the environmental aspects of our products – even in the end-of-life phase. As part of this program, we refurbish systems and reuse components and replacement parts whenever possible through our Refurbished Systems business. We reuse components and subsystems for non-medical products. We also recycle for material or energy value. Disassembly instructions for disposal and recycling are available for all our products.



Operating Data	
Heat emissions of the device	
– basic load[1]	≤ 20 kW
– full load[2]	30 kW
Allowed room temperature[3]	18°C - 22°C
Allowed relative humidity[3]	40 - 60 %
Noise level	
– full load[2]	≤ 115 dB (A)[6]
Energy consumption:	
– during ramp up[4]	13 - 20 kW
– basic load[1]	≤ 22 kW
– full load[2]	≤ 56 kW
Power-on time[4]	15 min
Power-off time[5]	7 min

[1)] Device is in operation but no patient examination takes place
[2)] Average value for energy consumption at examination of patients
[3)] Within examination room
[4)] From off-mode to operating state
[5)] From operating state to off-mode
[6)] Measured according to NEMA

syngo®, the unique software platform for medical applications and systems, integrates all patient-related information, physiological, and imaging data across your entire clinical workflow. In every workplace *syngo's* innovative user interface allows you to know intuitively what to do.
Its intelligent automation features accelerate your exam, enabling smooth, efficient workflow, across modalities, departments, and people. With *syngo*, your workplace is uniquely customized to the way you work. The "program" concept in *syngo* MR enables scanning patients with a minimum of mouse clicks. This speeds up the total examination time.

Technical Specifications	
Interface for heat recovery	√
Possible type of cooling	Water-cooling
Complete switch-off is possible	⊘
Device is adjustable for the user in terms of height	√
Uniform operating symbols for device families	√

The combination of our world-class gradients together with Tim (Total imaging matrix) enables the most demanding applications.

Other features involve:
- Actively shielded (AS), compact, full-body gradient system
- Extremely low eddy currents
- Coil and amplifier water-cooled for maximum energy efficiency

Radiation	
Measures/techniques to minimize ionizing radiation exposure	not applicable
Measures/techniques to minimize the exposure to electromagnetic radiation	actively shielded magnet actively shielded gradients if necessary magnetic shielding HF-cabine with 90 dB damping
Minimization compared to the limit value for users	individual

Replacement Parts and Consumables

Item	Life cycle*
Absorber	every 2 years
Accu (Patient trolley)	optional
ERDU-battery	every 2 years
Cold head	every 2 years
Vacuum pump filter	every 2 years
EKG-Electrodes	disposable material

* Recommended exchange interval

Disposal / Substance Information

Waste management concept for the end of product life	√
Recycling information for the device	√
List of hazardous substances (not contained in the device)	√

Cleaning

Not permissible cleaning modes	
– total device	⦸
– restrictions for particular device components	⦸
List of incompatible substance classes	
– total device	alcoholic/etheric disinfections sprays organic solvents scouring solvents products containing phenolalcylamin/lye
– restrictions for particular device components	⦸
Suitability of the device for sterile areas	⦸
Size of the surface to be cleaned*	approx. 5 m^2

* Body Coil (inside), patient table overlay, local-coil, control element, console, keypad, intercom, mouse

Further Ecologically Relevant Information

Elements of instruction are:	
– recommendations for saving energy	√
– recommendations for efficient cleaning	⦸
– recommendations for appropriate use of consumables	√

This declaration is for information purposes only, it is not part of the specification and does not represent any warranty or guarantee.

The information in this document contains general descriptions of the technical options available, which do not always have to be present in individual cases. The required features should therefore be specified in each individual case at the time of closing the contract.

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Please find our environmental declarations:
siemens.com/healthcare-ehs-mgmtsys

Siemens Healthcare
Headquarters

Siemens Healthcare GmbH
Henkestr. 127
91052 Erlangen
Germany
Phone: +49 9131 84-0
siemens.com/healthcare

siemens.com/healthcare

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