Standards for Calculating Environmental Data(CO_2 Emissions)

Boundary and Standards for Calculation

Stage		Methods of Calculation
1.Procurement	1) Boundary	Office equipment and consumable supplies, optical products, equipment for healthcare system manufactured and sold by Konica Minolta, Inc.
	2) Standards	Calculated by multiplying the sales amount or production amount of office equipment and consumables by a cradle-to-gate CO_2 emission factor for each of the materials that make up a product; and for other products, multiplying the amount of material used by a cradle-to-gate CO_2 emission factor for that material.
2.Production / R&D	1) Boundary	All production and R&D sites around the world
	2) Standards	CO_2 emissions are calculated by multiplying the amount of energy used at each site by the following Fuel: Coefficients stipulated in Japan's Act on Promotion of Global Warming Countermeasures Electricity in Japan: Fiscal 2005 average value of all electrical power sources, as specified by the Federation of Electric Power Companies of Japan Electricity outside Japan: Fiscal 2005 emissions coefficients applicable to each country, as specified by the GHG Protocol
3.Distribution	1) Boundary	Japanese domestic distribution, Chinese production distribution (from factory to port), and international distribution of office equipment, optical products, equipment for healthcare system
	2) Standards	CO_2 emissions are calculated by multiplying transport distance by cargo weight, and then multiplying that value by the CO_2emissions coefficient of each means of transportation. Chinese production distribution and international distribution: Coefficients specified by the GHG Protocol Japanese domestic distribution: Coefficients stipulated in Japan's CO_2 Emissions Calculation Method for Logistics Operations—Joint Guidelines Ver.3.0
4.Sales and service	1) Boundary	Major sales companies around the world
	2) Standards	Offices: CO_2 emissions are calculated by multiplying the amount of energy used at main sites (including estimated values for some sites) by the following coefficients. Fuel: Coefficients stipulated in Japan's Act on Promotion of Global Warming Countermeasures Electricity in Japan: 2005 average value of all electrical power sources, as specified by the Federation of Electric Power Companies of Japan Electricity outside Japan: 2005 emissions coefficients applicable to each country, as specified by the GHG Protocol Vehicles: CO_2 emissions are calculated by multiplying the amount of vehicle fuel used by the following Fuel: Coefficients stipulated in Japan's Act on Promotion of Global Warming Countermeasures
5.Usage	1) Boundary	Office equipment and equipment for healthcare system * Optical products are excluded since they are used as parts of other companies' products
	2) Standards	CO_2 emissions are calculated by multiplying the number of units operating in the market (inferred from sales units each year and the life of the product) by the estimated annual amount of electrical consumption*1 for each model and the CO_2 coefficient equal to the fiscal 2005 world average value specified by the GHG Protocol.

Notes

*1 The annual amount of electrical consumption for office equipment is estimated based on the Typical Electricity Consumption (TEC) value set by the International Energy Star Program, and for equipment for healthcare system it is estimated based on each product's specifications.

* Figures in graphs may not add up to totals due to rounding.

Standards for Calculating Environmental Data (Emissions Other Than CO_2)

Boundary and Standards for Calculation

Item		Methods of Calculation
1. Petroleum-based resource usage in products	1) Boundary	Office equipment and consumable supplies, optical products, equipment for healthcare system *1manufactured and sold by Konica Minolta, Inc.
	2) Standards	Calculated by multiplying the raw material or part weight by content percentage of petroleum-based resources set for each material, based on the product specification
2. Packaging materials usage	1) Boundary	Raw materials and parts used in packaging for office equipment and consumable supplies, optical products and equipment for healthcare system
	2) Standards	Calculated by multiplying the weight of packaging material per single product (based on product specifications, etc.) by the number of units of the product sold, based on sales results
3. Waste discharged Externally from manufacturing	1) Boundary	All production and R&D sites around the world
	2) Standards	The total actual weight of waste discharged externally from production*2
4. Final disposal	1) Boundary	All production and R&D sites around the world
	2) Standards	The total weight of final disposal*3 (Weight of waste discharged externally from production × Percentage of final disposal*4)
5. Atmospheric emissions of VOCs	1) Boundary	Production sites around the world with ten or more environmental impact index*5 points, when points are added for every compound that is rated of one point or more.
	2) Standards	The sum of the environmental impact index for atmospheric emissions of VOCs*6
6. Water consumption	1) Boundary	All production and R&D sites around the world
	2) Standards	The total amount of water intake (city water, ground water, industrial water)

Notes

*1 The boundaries for some figures are slightly different between those shown in the Overall Picture of Environmental Impact and those used in the calculation of the petroleumbased resource usage.

*2 Of the waste (refuse, etc.) generated at production and research and development sites for which Konica Minolta has responsibility as generator of waste, the amount discharged outside the Konica Minolta site. However, some wastes unrelated to production are excluded.

*3 Except for residues after recycling.

*4 Percentage of final disposal are calculated based on the value from industrial waste disposal companies.

*5 Environmental impact index: An index unique to Konica Minolta.

Environmental impact index (point) = Atmospheric emissions of VOCs [t] × Hazard coefficient × Location coefficient

Hazard coefficient: Set at 1-fold, 10-fold, or 100-fold depending on the severity of the impact on human health and the environment (set independently by Konica Minolta based on the coefficient used in the safety evaluations conducted by Kanagawa Prefecture in Japan)

Location coefficient: Outside the industrial estate 5, inside the industrial estate 1

*6 The overall picture of environmental impact does not take into account the hazard coefficient and location coefficient, and the atmospheric emissions are shown as is.

* The petroleum-based resource usage, for which reduction targets are set in the Medium-Term Environmental Plan, is calculated bytaking the total amount of (1) petroleum-based resource usage in products; (2) petroleum-based resource waste in waste discharged externally from manufacturing; and (3) fuel consumption of sales and service vehicles.

* Figures in graphs may not add up to totals due to rounding.