Natural Stone Council

The United Voice of the Natural Stone Industry

A Life-Cycle Inventory of Limestone Dimension Stone Quarrying and Processing

Version 2

A Report Prepared for:

The Natural Stone Council

Prepared by:

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CENTER FOR CLEAN PRODUCTS

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1 Introduction

The Natural Stone Council (NSC) is a collaboration of businesses and trade associations that have come together to promote the use of Genuine Stone in commercial and residential applications. By pooling resources, their goal is to increase the understanding of, preference for, and consumption of these natural products. Trade associations affiliated with the NSC include Allied Stone Industries, Building Stone Institute, Elberton Granite Association, Indiana Limestone Institute, Marble Institute of America, National Building Granite Quarries Association, and the National Slate Association.

Recognizing that green building was becoming a permanent element of the marketplace, the NSC established a Sustainability Committee made up of key industry members to elevate the issue of sustainability within the industry and provide a body responsible for planning and implementing relevant initiatives. In 2007, the NSC Sustainability Committee engaged in a partnership with the Center for Clean Products (CCP) at the University of Tennessee to assess current industry operations relating to dimensional stone production. Prior to this evaluation, the environmental implications of stone extraction and fabrication processes had received little attention compared to other industries. In particular, life-cycle inventory (LCI) data on natural stone products was limited, not well documented, and out-of-date. This information gap was partially due to the size and varying scale of industry members, the vast diversity of products and materials produced, and the global distribution of stone quarrying activities. As such, this work presents the most comprehensive survey to-date of the natural stone industry's practices.

Provided in the following text are the results of the first phase of a three-year project launched by the NSC to benchmark and improve the environmental profile of the natural stone industry. Specifically, the information that follows is an initial LCI characterizing limestone extraction and production operations in North America. These data will serve as a baseline from which industry best practices can be identified, comparisons to competing products can be made with regard to environmental considerations, and future research can be prioritized. This report replaces a similar report released in August of 2008 as this current version is a more comprehensive representation of the industry.

2 Limestone Quarrying and Processing Operations

2.1 Limestone

Limestone is a sedimentary rock composed primarily of calcium carbonate with the occasional presence of magnesium. Most limestone is biochemical in origin meaning the calcium carbonate in the stone originated from shelled oceanic creatures. Limestone can also be chemical in origin as is the case with travertine. Chemical limestone forms when calcium and carbonate ions suspended in water chemically bond and precipitate from their aquatic sources.

Because of its high calcium content, limestone is usually light in color, although many variations exist. Commercially, the term limestone includes dolomite, dolomitic limestone, oolitic limestone, and travertine (Dolley 2007), a porous calcitic rock that is commonly formed near hot springs.

The production of commercial limestone typically exceeds production of all other stone types, although granite production has surpassed limestone production on occasion (Dolley 2003, 2004, 2005, 2006, 2007a, 2008, 2009). The U.S. Geological Survey estimates that limestone is quarried in at least 10 states with Indiana, Kansas, Minnesota, Texas, and Wisconsin producing the majority of US tonnage (Dolley 2007b). Limestone is most commonly employed as rough block for building and construction. Additionally, it is used as dressed stone in various applications including curbing, paneling, veneer, and tile.

Two general phases of limestone production exist: quarrying and processing. Each of these phases is described below.

2.2 Limestone Quarrying Operations

Extraction (more commonly referred to as quarrying) consists of removing blocks or pieces of stone from an identified and unearthed geologic deposit. Differences in the particular quarrying techniques used often stems from variations in the physical properties of the deposit itself—such as density, fracturing/bedding planes, and depth—financial considerations, and the site owner's preference. Nevertheless, the process is relatively simple: locate or create (minimal) breaks in the stone, remove the stone using heavy machinery, secure the stone on a vehicle for transport, and move the material to storage. A flow diagram of typical quarrying operations is shown in Figure 1.

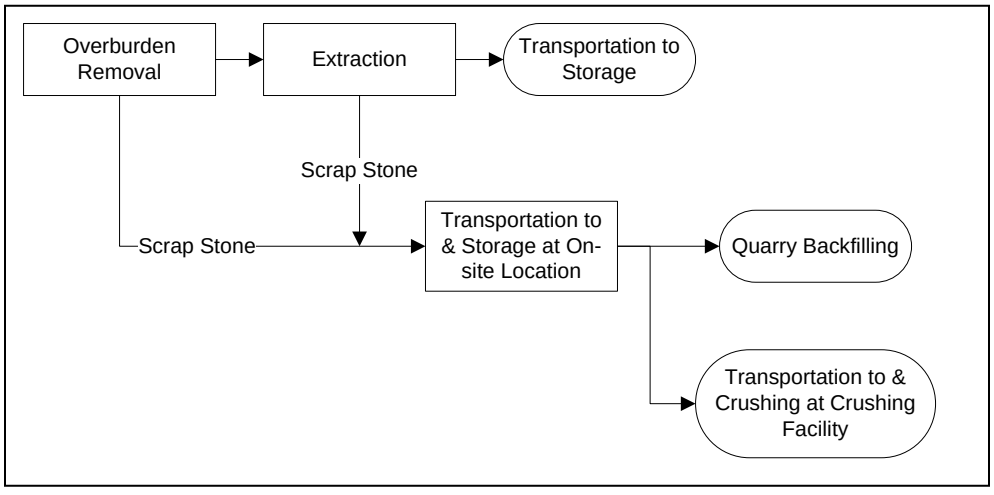

Figure 1. Process flow diagram for limestone quarrying operations.

As shown in Figure 1, the first step in quarrying is to gain access to the limestone deposit. This is achieved by removing the layer of earth, vegetation, and rock unsuitable for product—collectively referred to as overburden—with heavy equipment that is sometimes coupled with small explosive charges. The overburden is then transferred to onsite storage for potential use in later reclamation of the site. After the face of the limestone is exposed, the stone is removed from the quarry in benches using a variety of techniques suitable to the geology and characteristics of the limestone deposit. Benches typically have a height and depth equating to 8-12 feet square and length of 20 feet or more. Quarrying operations typically include drilling holes along the perimeter of the bench followed by cutting the stone out of the deposit using saws equipped with diamond belts, or by splitting the stone using hydraulic splitters. If bedding planes are visible, forklifts can be used to pry up the blocks. Once the bench is cut or split loose from the deposit, heavy equipment is used to lift the limestone bench and transfer it to an inspection area for grading, temporary storage, occasional preprocessing into slabs, and eventual shipment from the site. Limestone of insufficient quality or size for current demand is stored on-site for future use, crushed for use in paving and construction applications, or stored for future site reclamation activities.

2.3 Limestone Processing Operations

Processing operations include much more variation than extraction. Nevertheless, the general procedures begin with initial cutting, followed by application of a finish, and conclude with a second cutting or shaping step. Due to the array of stone products, the second and/or third steps may be eliminated, specifically when the product will have a "natural" appearance. Figure 2 depicts the fabrication process.

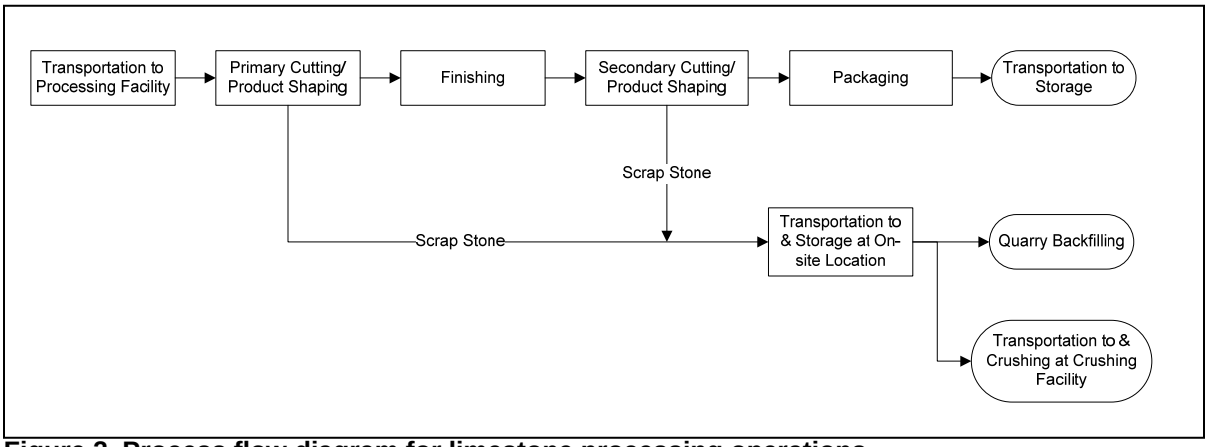

Figure 2. Process flow diagram for limestone processing operations.

Processing commences with transportation of the (raw) stone from the quarry to the processing facility, as depicted by Figure 2. It should be noted that this step may consist of multiple transportation steps; prior to reaching the doors of the facility, the stone may be transferred to a number of vendors or distribution locations worldwide. Additionally, some limestone (blocks) may have been cut into slabs before reaching the main fabrication plant. These are most commonly sliced to a thickness of 3/4 in (2 cm), 1-1/4 in (3 cm), or more in lengths of approximately 10-12 ft and widths around 3-5 ft. The route that the stone takes through the plant therefore depends on its physical state upon arrival, as well as the product to be produced.

The first step of the process is a primary cutting or shaping of the material. This is typically accomplished for limestone using a circular blade saw, diamond wire saw, or a splitter. When operating a circular or diamond wire saw, a continuous stream of water over the saw is required in order to dissipate heat generated by the process; sufficiently-elevated temperature can cause major machine and material damage. Natural-faced products, such as veneer or flooring, may be completed with this step, while other products require a finishing application, secondary cutting, or both.

Limestone is often produced with a natural surface, but finishes can be applied. In such cases, often a polished or honed finishing is given to limestone products, but a variety of other finishes are also common. Polishing and honing are manually and/or mechanically accomplished through the use of polishing pads or bricks.

A secondary shaping step may be necessary if the product includes any features or custom size or shape. For this procedure, a circular blade saw is frequently implemented for limestone, but a variety of hand tools are also common. Cooling water is again necessary for large circular saws.

Once a product is completed, it is packaged and stored for shipment or direct sale. Limestone of insufficient quality or size for current demand is stocked on-site for future use, crushed for use in paving and construction applications, or stored for site reclamation activities.

3 LCI Methodology

3.1 LCI Data Collection

Information for this study was acquired through the distribution of a technical data collection tool. This survey was developed by the Center for Clean Products after touring approximately 15 stone quarries and processing facilities located throughout the United States, and through extensive consultation with industry experts and quarry operators. Choosing a diverse array of facilities was key to this process as a broad understanding of stone industry operations was needed to fashion questions that apply to all members. As such, facilities of diverse magnitudes, locations, and products were toured during the beginning half of 2007.

The survey was distributed to limestone quarries and processing facilities throughout North America in January of 2008. Responses were received, follow-up conducted, and the resulting data aggregated and analyzed in the period from March to July 2008.

3.2 Updates

Further work was conducted in the spring of 2009 to improve the LCI's representation of the stone industry. First, the processing facility inventories have been allocated by stone type. In other words, each fabrication plant's data was divided according to the distribution of its production; if limestone, for instance, comprised 30% of a facility's net production, 30% of the inputs was given to the limestone dataset.

The second modification to the dataset is its units. Energy is now described in MJ, as opposed to BTU, and the functional unit has been changed from 1 net ton of limestone produced to 1 net ft^3 of limestone produced. The data can conveniently be converted to a basis of tons by using the weighted average density of 158 lb/ft^3.

3.3 Quality of LCI Data Set

The dataset presented in this report represents in excess of 7.3 million ft^3 of quarried dimensional limestone and approximately 3.3 million ft^3 of dimensional limestone products generated in North America. Data also reflects a diversity of operations with respect to size and location. Respondents indicated net annual quarry production ranging from approximately 4,300 ft^3 to over 1.4 million ft^3, while processors reported a range of roughly 5-600,000 ft^3 /year. Quarry data were submitted from companies located in 4 states, as well as one Canadian province. Reporting processing facilities are located in 11 states and one Canadian province.

3.4 LCI Boundaries

3.4.1 Limestone Quarry Operations

The LCI for quarry operations includes the inputs and outputs for each of the processes depicted in Figure 1. Specifically, processes and operations represented in the inventory presented in this report include:

- Removal of overburden using heavy equipment (including transport to storage on-site)
- Quarry operations required to remove stone from deposit including drilling, cutting, splitting, and use of explosive charges.
- On-site transport of stone using heavy equipment.
- Transport of scrap stone to on-site storage
- Maintenance activities for heavy equipment
- Capture and treatment of wastewater
- Upstream production of energy, fuels, and ancillary materials (e.g. drill bits, maintenance items)

Air and water emissions generated by quarry sites were not able to be monitored and are excluded from the scope of this inventory. This includes air emissions from equipment exhaust, fugitive dust caused by vehicle operation, and water pollutants from site runoff and discharges.

3.4.2 Limestone Processing Operations

The LCI for limestone processing operations includes the inputs and outputs for each of the processes depicted in Figure 2. Specifically, processes and operations represented in this portion of the inventory include:

- Primary shaping of stone into large, less-refined pieces, such as slabs
- Application of a surface finish or texture
- Secondary shaping, including hand detailing, of stone into specific products
- Packaging of finished limestone products or slabs for shipment
- On-site transport of stone using heavy equipment
- Transport of scrap stone to on-site storage
- Capture and treatment of wastewater
- Maintenance activities for processing machinery and heavy equipment
- Upstream production of energy, fuels, and ancillary materials (e.g. drill bits, maintenance items)

As previously implied, fabrication facilities usually process more than one type of stone. Inputs (i.e., energy, water, and materials) at each facility have been allocated to the limestone LCI according to the percentage of limestone produced at the individual facility.

Air and water emissions generated by processing facilities were not able to be monitored and are excluded from the scope of this inventory. This includes air emissions from equipment exhaust, fugitive dust caused by vehicle operation, and water pollutants from site discharges.

4 LCI Results

Data have been obtained for the quarrying and processing of 7.3 million ft^3 and 3.3 million ft^3 of limestone, respectively. The average energy required to produce one ft^3 of limestone is 16 MJ. Table 1 shows the breakdown of this energy per ft^3 of limestone product produced. Table 2 displays the water required for the same production, and Table 3 presents material inputs. Tables 4 and 5 display the life-cycle inputs and outputs for both quarrying and stone processing operations, as well as the totals across production. Note that values may not sum to the totals reported due to rounding errors.

Note that the abbreviations found in Tables 1-4 imply the following:

- W = Withheld to avoid disclosure of company proprietary information
- N/A = Not applicable; facilities do not generally utilize this item

Table 1. Energy required to produce 1 ft^3 of limestone products.

Energy Type	Energy Consumption[a] (MJ/ft^3)		
	Quarrying	Processing	Total
Electricity	1.0E+00	1.2E+02	1.2E+02
Natural Gas	0.0E+00	5.3E-02	5.3E-02
Propane	1.6E-01	8.7E+00	8.8E+00
Diesel	1.8E+01	1.2E+01	3.0E+01
Gasoline	5.8E-01	2.3E+00	2.9E+00
TOTAL	2.0E+01	1.5E+02	**1.6E+02**

[a]These values represent the total energy consumption at the quarry and processing sites only. See Table 4 for the complete LCI energy data.

Table 2. Water required to produce 1 ft^3 of limestone products.

Water Source	Water Consumption[a] (gal/ft^3)		
	Quarrying	Processing	Total
Groundwater	1.8E+00	2.6E+02	2.6E+02
Surface water	5.8E+01	7.2E+02	7.8E+02
Public supply	6.6E-03	9.7E+02	9.7E+02
TOTAL	5.9E+01	2.0E+03	**2.0E+03**

[a]These values represent the total water consumption at the quarry and processing sites only. See Table 4 for the complete LCI water data.

Table 3. Materials required to produce 1 ft^3 of limestone products.

Material	Product(s) in which Material is Used	Material Consumption[a] (kg/ft^3)		
		Quarrying	Processing	Total
Limestone, scrap[b]	diamond belt	2.0E+00	0.56E+00	2.6E+00
Polyurethane	diamond belt	1.1E-04	N/A	1.1E-04
Steel, industrial	shims and wedges	1.1E-03	N/A	1.1E-03
Steel, stainless	diamond belt	8.6E-05	N/A	8.6E-05
Timber, softwood	pallets	N/A	1.7E-01	1.7E-01

[a]These values represent the total material consumption at the quarry and processing sites only. See Table 4 for the complete LCI materials data.
[b]For every cubic foot of limestone produced, 2.0 ft^3 and 0.56 ft^3 of limestone are scrapped during quarrying and processing operations, respectively, due to breakage, aesthetics, or other undesirable characteristics.

Table 4. LCI inputs for limestone quarrying and processing.

Input	Units	*Quarrying*	*Processing*	*Total*
Air [Renewable resources]	kg	2.3E+00	1.4E+02	1.4E+02
Aluminum [Non renewable elements]	kg	8.7E-07	3.8E-03	3.8E-03
Antimonite [Non renewable resources]	kg	4.2E-15	1.4E-10	1.4E-10
Barium sulphate [Non renewable resources]	kg	9.5E-07	9.7E-03	9.7E-03
Basalt [Non renewable resources]	kg	2.2E-04	1.0E-02	1.0E-02
Bauxite [Non renewable resources]	kg	1.3E-05	1.3E-04	1.4E-04
Bentonite [Non renewable resources]	kg	9.4E-03	5.0E-02	5.9E-02
Biomass [Renewable energy resources]	kg	5.4E-06	0.0E+00	5.4E-06
Borax [Non renewable resources]	kg	4.8E-12	2.2E-08	2.2E-08
Cadmium [Non renewable elements]	kg	4.7E-11	5.6E-06	5.6E-06
Calcium chloride [Non renewable resources]	kg	8.5E-12	5.7E-10	5.7E-10
Carbon dioxide [Renewable resources]	kg	1.0E-02	1.4E+02	1.4E+02
Carbon, in organic matter, in soil [Non renewable resources]	kg	1.4E-08	1.0E-05	1.0E-05
Carcass meal [Hazardous waste for recovery]	kg	3.0E-15	0.0E+00	3.0E-15
Cerium [Non renewable elements]	kg	5.1E-22	-1.5E-18	-1.5E-18
Chalk (Calciumcarbonate) [Non renewable resources]	kg	6.0E-37	0.0E+00	6.0E-37
Chromium ore [Non renewable resources]	kg	3.1E-06	2.2E-03	2.2E-03
Chrysotile [Non renewable resources]	kg	2.1E-10	1.1E-07	1.1E-07
Cinnabar [Non renewable resources]	kg	2.0E-11	9.8E-09	9.8E-09
Clay [Non renewable resources]	kg	6.5E-04	1.2E-01	1.2E-01
Cobalt [Non renewable elements]	kg	2.8E-12	4.2E-08	4.2E-08
Colemanite ore [Non renewable resources]	kg	4.3E-08	7.7E-06	7.7E-06
Cooling water [Operating materials]	kg	0.0E+00	0.0E+00	0.0E+00
Copper [Non renewable elements]	kg	7.7E-07	9.0E-04	9.0E-04
Copper - Gold - Silver - ore (1,0% Cu; 0,4 g/t Au; 66 g/t Ag) [Non renewable resources]	kg	9.5E-07	1.1E-04	1.1E-04
Copper - Gold - Silver - ore (1,1% Cu; 0,01 g/t Au; 2,86 g/t Ag) [Non renewable resources]	kg	5.8E-07	6.9E-05	6.9E-05
Copper - Gold - Silver - ore (1,16% Cu; 0,002 g/t Au; 1,06 g/t Ag) [Non renewable resources]	kg	3.3E-07	3.9E-05	3.9E-05
Copper - Molybdenum - Gold - Silver - ore (1,13% Cu; 0,02% Mo; 0,01 g/t Au; 2,86 g/t Ag) [Non renewable resources]	kg	8.0E-07	9.4E-05	9.5E-05
Copper ore (0.14%) [Non renewable resources]	kg	1.3E-05	5.4E-04	5.5E-04

Input (cont.)	Units	*Quarrying*	*Processing*	*Total*
Copper ore (1.2%) [Non renewable resources]	kg	9.9E-08	1.2E-05	1.2E-05
Copper ore (4%) [Non renewable resources]	kg	3.4E-15	2.4E-14	2.8E-14
Copper ore (sulphidic) [Non renewable resources]	kg	4.1E-12	2.9E-11	3.3E-11
Crude oil [Crude oil (resource)]	kg	2.4E-04	2.0E+00	2.0E+00
Crude oil Algeria [Crude oil (resource)]	kg	4.2E-03	1.7E-02	2.1E-02
Crude oil Angola [Crude oil (resource)]	kg	4.6E-02	1.6E-01	2.1E-01
Crude oil Argentina [Crude oil (resource)]	kg	1.1E-02	3.6E-02	4.7E-02
Crude oil Australia [Crude oil (resource)]	kg	6.4E-03	2.3E-02	3.0E-02
Crude oil Austria [Crude oil (resource)]	kg	2.9E-05	1.9E-04	2.2E-04
Crude oil Bolivia [Crude oil (resource)]	kg	3.3E-10	1.5E-09	1.8E-09
Crude oil Brazil [Crude oil (resource)]	kg	8.3E-03	2.9E-02	3.7E-02
Crude oil Brunei [Crude oil (resource)]	kg	1.4E-09	2.6E-08	2.7E-08
Crude oil Bulgaria [Crude oil (resource)]	kg	2.8E-10	1.9E-08	1.9E-08
Crude oil Cameroon [Crude oil (resource)]	kg	1.8E-03	6.4E-03	8.2E-03
Crude oil Canada [Crude oil (resource)]	kg	2.0E-01	6.9E-01	8.9E-01
Crude oil Chile [Crude oil (resource)]	kg	3.7E-08	1.8E-07	2.2E-07
Crude oil China [Crude oil (resource)]	kg	2.7E-03	9.2E-03	1.2E-02
Crude oil CIS [Crude oil (resource)]	kg	1.6E-02	7.0E-02	8.6E-02
Crude oil Colombia [Crude oil (resource)]	kg	3.4E-02	1.2E-01	1.5E-01
Crude oil Czech Republic [Crude oil (resource)]	kg	1.9E-06	1.3E-05	1.5E-05
Crude oil Denmark [Crude oil (resource)]	kg	1.3E-03	7.4E-03	8.7E-03
Crude oil Ecuador [Crude oil (resource)]	kg	1.5E-02	5.3E-02	6.9E-02
Crude oil Egypt [Crude oil (resource)]	kg	1.2E-04	7.7E-04	8.9E-04
Crude oil France [Crude oil (resource)]	kg	4.2E-05	2.9E-04	3.3E-04
Crude oil Gabon [Crude oil (resource)]	kg	2.5E-02	8.4E-02	1.1E-01
Crude oil Germany [Crude oil (resource)]	kg	1.3E-04	1.2E-03	1.3E-03
Crude oil Greece [Crude oil (resource)]	kg	5.8E-06	3.8E-05	4.4E-05
Crude oil Hungary [Crude oil (resource)]	kg	8.3E-09	1.4E-07	1.5E-07
Crude oil India [Crude oil (resource)]	kg	1.6E-10	1.5E-08	1.5E-08
Crude oil Indonesia [Crude oil (resource)]	kg	6.8E-03	2.4E-02	3.1E-02
Crude oil Iran [Crude oil (resource)]	kg	8.1E-04	5.5E-03	6.3E-03
Crude oil Iraq [Crude oil (resource)]	kg	6.8E-02	2.4E-01	3.0E-01
Crude oil Ireland [Crude oil (resource)]	kg	1.5E-10	9.8E-10	1.1E-09
Crude oil Italy [Crude oil (resource)]	kg	1.9E-04	1.2E-03	1.4E-03
Crude oil Kuwait [Crude oil (resource)]	kg	3.0E-02	1.0E-01	1.3E-01
Crude oil Libya [Crude oil (resource)]	kg	1.3E-03	9.0E-03	1.0E-02
Crude oil Malaysia [Crude oil (resource)]	kg	7.5E-10	1.9E-08	1.9E-08
Crude oil Mexico [Crude oil (resource)]	kg	2.1E-01	7.2E-01	9.3E-01
Crude oil Netherlands [Crude oil (resource)]	kg	1.1E-04	8.1E-04	9.2E-04
Crude oil New Zealand [Crude oil (resource)]	kg	2.2E-06	7.7E-05	7.9E-05
Crude oil Nigeria [Crude oil (resource)]	kg	8.3E-02	2.9E-01	3.7E-01
Crude oil Norway [Crude oil (resource)]	kg	5.5E-02	2.0E-01	2.6E-01
Crude oil Oman [Crude oil (resource)]	kg	2.3E-03	7.8E-03	1.0E-02
Crude oil Poland [Crude oil (resource)]	kg	6.4E-06	5.3E-05	6.0E-05
Crude oil Qatar [Crude oil (resource)]	kg	1.2E-03	4.3E-03	5.5E-03
Crude oil Romania [Crude oil (resource)]	kg	1.2E-05	7.6E-05	8.8E-05
Crude oil Saudi Arabia [Crude oil (resource)]	kg	2.1E-01	7.3E-01	9.4E-01
Crude oil Slovakia [Crude oil (resource)]	kg	3.0E-11	1.1E-09	1.1E-09
Crude oil South Africa [Crude oil (resource)]	kg	1.5E-10	1.0E-09	1.2E-09

Input (cont.)	Units	*Quarrying*	*Processing*	*Total*
Crude oil Spain [Crude oil (resource)]	kg	9.7E-06	6.3E-05	7.3E-05
Crude oil Syria [Crude oil (resource)]	kg	1.6E-09	1.1E-07	1.1E-07
Crude oil Trinidad and Tobago [Crude oil (resource)]	kg	9.3E-03	3.2E-02	4.1E-02
Crude oil Tunisia [Crude oil (resource)]	kg	5.2E-05	3.6E-04	4.2E-04
Crude oil Turkey [Crude oil (resource)]	kg	5.3E-15	4.5E-13	4.5E-13
Crude oil United Arab Emirates [Crude oil (resource)]	kg	1.2E-03	4.4E-03	5.7E-03
Crude oil United Kingdom [Crude oil (resource)]	kg	6.0E-02	2.2E-01	2.8E-01
Crude oil USA [Crude oil (resource)]	kg	7.6E-01	2.6E+00	3.4E+00
Crude oil Venezuela [Crude oil (resource)]	kg	2.1E-01	7.1E-01	9.2E-01
Diatomite [Non renewable resources]	kg	4.0E-14	1.3E-09	1.3E-09
Dolomite [Non renewable resources]	kg	6.2E-07	6.3E-04	6.3E-04
Energy, calorific value, in organic substance [Renewable energy resources]	MJ	4.2E-04	1.6E+03	1.6E+03
Energy, gross calorific value, in biomass, primary forest [Renewable energy resources]	MJ	9.6E-07	7.2E-04	7.2E-04
Energy, kinetic (in wind), converted [Renewable energy resources]	MJ	1.5E-04	5.3E-01	5.3E-01
Energy, potential (in hydropower reservoir), converted [Renewable energy resources]	MJ	1.0E-03	4.0E+00	4.0E+00
Energy (recovered) [Thermal energy]	MJ	-2.7E-04	0.0E+00	-2.7E-04
Energy, solar, converted [Renewable energy resources]	MJ	2.1E-06	7.8E-03	7.8E-03
Feldspar (aluminum silicates) [Non renewable resources]	kg	3.2E-08	2.9E-10	3.2E-08
Ferro manganese [Non renewable resources]	kg	8.0E-11	2.7E-14	8.0E-11
Fluorine [Non renewable elements]	kg	4.7E-09	7.4E-05	7.4E-05
Fluorspar (calcium fluoride; fluorite) [Non renewable resources]	kg	1.1E-07	2.8E-04	2.8E-04
Gallium [Non renewable elements]	kg	5.9E-15	2.2E-11	2.2E-11
Gold [Non renewable elements]	kg	1.5E-12	3.6E-08	3.6E-08
Granite [Non renewable resources]	kg	1.2E-15	8.7E-12	8.7E-12
Gypsum (natural gypsum) [Non renewable resources]	kg	3.4E-04	2.1E-03	2.5E-03
Hard coal [Hard coal (resource)]	kg	4.2E-04	9.8E-01	9.8E-01
Hard coal Australia [Hard coal (resource)]	kg	3.1E-04	8.9E-03	9.2E-03
Hard coal Belgium [Hard coal (resource)]	kg	1.5E-07	8.5E-06	8.7E-06
Hard coal Bosnia and Herzegovina [Hard coal (resource)]	kg	2.3E-08	1.7E-06	1.7E-06
Hard coal Brazil [Hard coal (resource)]	kg	1.1E-06	9.1E-06	1.0E-05
Hard coal Canada [Hard coal (resource)]	kg	1.7E-03	2.5E-02	2.7E-02
Hard coal Chile [Hard coal (resource)]	kg	3.9E-06	1.9E-05	2.3E-05
Hard coal China [Hard coal (resource)]	kg	7.5E-05	1.2E-03	1.3E-03
Hard coal CIS [Hard coal (resource)]	kg	7.3E-05	1.7E-03	1.7E-03
Hard coal Colombia [Hard coal (resource)]	kg	1.2E-03	6.7E-02	6.8E-02
Hard coal Czech Republic [Hard coal (resource)]	kg	1.7E-05	3.9E-04	4.0E-04
Hard coal France [Hard coal (resource)]	kg	2.8E-06	1.8E-04	1.8E-04
Hard coal Germany [Hard coal (resource)]	kg	3.8E-04	9.7E-03	1.0E-02
Hard coal India [Hard coal (resource)]	kg	8.8E-09	1.0E-06	1.1E-06
Hard coal Indonesia [Hard coal (resource)]	kg	2.2E-04	1.4E-02	1.4E-02
Hard coal Italy [Hard coal (resource)]	kg	2.7E-09	2.1E-07	2.1E-07
Hard coal Japan [Hard coal (resource)]	kg	2.3E-10	1.5E-08	1.5E-08
Hard coal Malaysia [Hard coal (resource)]	kg	3.0E-11	1.0E-09	1.1E-09
Hard coal Mexico [Hard coal (resource)]	kg	1.8E-04	6.2E-04	8.0E-04
Hard coal New Zealand [Hard coal (resource)]	kg	3.2E-06	1.5E-05	1.9E-05
Hard coal Poland [Hard coal (resource)]	kg	1.1E-04	2.8E-03	3.0E-03
Hard coal Portugal [Hard coal (resource)]	kg	1.6E-09	8.2E-09	9.8E-09

Input (cont.)	Units	*Quarrying*	*Processing*	*Total*
Hard coal South Africa [Hard coal (resource)]	kg	2.3E-04	6.8E-03	7.0E-03
Hard coal Spain [Hard coal (resource)]	kg	1.1E-05	6.1E-05	7.2E-05
Hard coal Turkey [Hard coal (resource)]	kg	3.1E-11	2.0E-09	2.0E-09
Hard coal United Kingdom [Hard coal (resource)]	kg	5.8E-05	2.1E-03	2.2E-03
Hard coal USA [Hard coal (resource)]	kg	1.0E-01	7.0E+00	7.1E+00
Hard coal Venezuela [Hard coal (resource)]	kg	4.0E-04	2.4E-02	2.5E-02
Hard coal Vietnam [Hard coal (resource)]	kg	1.7E-06	3.5E-05	3.7E-05
Heavy spar (barytes) [Non renewable resources]	kg	2.3E-02	1.1E-01	1.3E-01
Helium, 0.08% in natural gas [Natural gas (resource)]	kg	3.0E-14	1.1E-10	1.1E-10
Hydrogen [Inorganic intermediate products]	kg	4.9E-07	0.0E+00	4.9E-07
Indium [Non renewable elements]	kg	1.1E-12	9.4E-08	9.4E-08
Industrial waste (incineration) [Waste for recovery]	MJ	6.4E-06	0.0E+00	6.4E-06
Inert rock [Non renewable resources]	kg	1.1E+00	4.7E+01	4.8E+01
Iron [Non renewable elements]	kg	3.0E-12	1.1E-10	1.2E-10
Iron ore [Non renewable resources]	kg	1.5E-03	1.5E-02	1.6E-02
Iron ore (65%) [Non renewable resources]	kg	5.4E-03	2.2E-02	2.7E-02
Kaolin ore [Non renewable resources]	kg	6.6E-08	4.5E-06	4.5E-06
Kaolinite (24% in ore as mined) [Non renewable resources]	kg	1.0E-08	3.6E-05	3.6E-05
Kieserite (25% in ore as mined) [Non renewable resources]	kg	3.4E-11	3.8E-07	3.8E-07
Lanthanides [Non renewable elements]	kg	9.5E-23	-1.9E-19	-1.9E-19
Lead [Non renewable elements]	kg	1.4E-03	5.7E-03	7.2E-03
Lead - zinc ore (4.6%-0.6%) [Non renewable resources]	kg	3.9E-04	3.0E-03	3.4E-03
Lignite [Lignite (resource)]	kg	3.6E-04	1.3E+00	1.3E+00
Lignite Australia [Lignite (resource)]	kg	1.1E-04	1.3E-03	1.4E-03
Lignite Austria [Lignite (resource)]	kg	1.8E-06	1.0E-05	1.2E-05
Lignite Bosnia and Herzegovina [Lignite (resource)]	kg	5.3E-08	3.8E-06	3.9E-06
Lignite Bulgaria [Lignite (resource)]	kg	3.1E-08	2.4E-06	2.4E-06
Lignite Canada [Lignite (resource)]	kg	7.3E-04	2.2E-02	2.3E-02
Lignite CIS [Lignite (resource)]	kg	1.6E-05	6.5E-05	8.1E-05
Lignite Czech Republic [Lignite (resource)]	kg	7.9E-06	1.3E-04	1.4E-04
Lignite France [Lignite (resource)]	kg	7.1E-07	4.7E-05	4.7E-05
Lignite Germany [Lignite (resource)]	kg	0.0E+00	0.0E+00	0.0E+00
Lignite Germany (Central Germany) [Lignite (resource)]	kg	1.3E-03	1.1E-02	1.3E-02
Lignite Germany (Lausitz) [Lignite (resource)]	kg	2.6E-04	9.0E-03	9.3E-03
Lignite Germany (Rheinisch) [Lignite (resource)]	kg	4.9E-04	1.7E-02	1.8E-02
Lignite Greece [Lignite (resource)]	kg	2.9E-06	6.8E-05	7.1E-05
Lignite Hungary [Lignite (resource)]	kg	1.7E-07	1.1E-05	1.1E-05
Lignite India [Lignite (resource)]	kg	1.8E-09	2.1E-07	2.1E-07
Lignite Macedonia [Lignite (resource)]	kg	7.3E-08	5.1E-06	5.2E-06
Lignite Poland [Lignite (resource)]	kg	3.6E-06	9.5E-05	9.9E-05
Lignite Romania [Lignite (resource)]	kg	6.2E-09	6.5E-07	6.6E-07
Lignite Serbia and Montenegro [Lignite (resource)]	kg	4.3E-07	2.9E-05	3.0E-05
Lignite Slovakia [Lignite (resource)]	kg	2.6E-08	1.7E-06	1.8E-06
Lignite Slovenia [Lignite (resource)]	kg	1.3E-07	1.0E-05	1.0E-05
Lignite Spain [Lignite (resource)]	kg	2.3E-05	1.3E-04	1.5E-04
Lignite Turkey [Lignite (resource)]	kg	6.6E-13	5.6E-11	5.6E-11
Lignite USA [Lignite (resource)]	kg	1.0E-02	7.3E-01	7.4E-01
Limestone (calcium carbonate) [Non renewable resources]	kg	2.1E-02	6.7E-01	7.0E-01
Magnesit (Magnesium carbonate) [Non renewable resources]	kg	3.0E-06	5.3E-03	5.3E-03

Input (cont.)	Units	*Quarrying*	*Processing*	*Total*
Magnesium [Non renewable elements]	kg	1.5E-11	3.5E-05	3.5E-05
Magnesium chloride leach (40%) [Non renewable resources]	kg	3.2E-04	1.4E-02	1.4E-02
Manganese ore [Non renewable resources]	kg	5.9E-05	2.4E-03	2.5E-03
Manganese ore (R.O.M.) [Non renewable resources]	kg	1.5E-05	1.2E-04	1.4E-04
Mercury [Non renewable elements]	kg	2.3E-10	0.0E+00	2.3E-10
Metamorphic stone, containing graphite [Non renewable resources]	kg	9.6E-10	5.1E-06	5.1E-06
Molybdenite (Mo 0,24%) [Non renewable resources]	kg	5.2E-07	6.0E-05	6.0E-05
Molybdenum [Non renewable elements]	kg	3.4E-06	2.4E-03	2.4E-03
Municipal waste [Consumer waste]	kg	1.5E-06	0.0E+00	1.5E-06
Natural Aggregate [Non renewable resources]	kg	2.3E-03	1.1E-01	1.1E-01
Natural gas [Natural gas (resource)]	kg	2.8E-04	4.0E-01	4.0E-01
Natural gas Algeria [Natural gas (resource)]	kg	5.3E-04	4.7E-03	5.2E-03
Natural gas Angola [Natural gas (resource)]	kg	5.6E-03	2.0E-02	2.5E-02
Natural gas Argentina [Natural gas (resource)]	kg	4.5E-04	1.7E-03	2.1E-03
Natural gas Australia [Natural gas (resource)]	kg	4.1E-04	1.6E-03	2.0E-03
Natural gas Austria [Natural gas (resource)]	kg	3.1E-06	2.0E-05	2.3E-05
Natural gas Bolivia [Natural gas (resource)]	kg	6.6E-07	3.0E-06	3.6E-06
Natural gas Brazil [Natural gas (resource)]	kg	4.7E-04	1.7E-03	2.2E-03
Natural gas Brunei [Natural gas (resource)]	kg	1.2E-05	2.3E-04	2.5E-04
Natural gas Bulgaria [Natural gas (resource)]	kg	2.3E-11	1.6E-09	1.7E-09
Natural gas Cameroon [Natural gas (resource)]	kg	4.4E-04	1.6E-03	2.0E-03
Natural gas Canada [Natural gas (resource)]	kg	3.3E-02	3.9E-01	4.2E-01
Natural gas Chile [Natural gas (resource)]	kg	8.8E-06	4.3E-05	5.2E-05
Natural gas China [Natural gas (resource)]	kg	1.4E-04	5.0E-04	6.5E-04
Natural gas CIS [Natural gas (resource)]	kg	1.0E-03	1.1E-02	1.3E-02
Natural gas Colombia [Natural gas (resource)]	kg	1.6E-03	5.7E-03	7.2E-03
Natural gas Czech Republic [Natural gas (resource)]	kg	1.4E-07	9.5E-07	1.1E-06
Natural gas Denmark [Natural gas (resource)]	kg	8.1E-05	7.6E-04	8.4E-04
Natural gas Ecuador [Natural gas (resource)]	kg	9.5E-04	3.3E-03	4.3E-03
Natural gas Egypt [Natural gas (resource)]	kg	1.2E-05	7.8E-05	9.0E-05
Natural gas France [Natural gas (resource)]	kg	4.3E-06	7.6E-05	8.1E-05
Natural gas Gabon [Natural gas (resource)]	kg	3.5E-03	1.2E-02	1.6E-02
Natural gas Germany [Natural gas (resource)]	kg	2.0E-04	5.1E-03	5.3E-03
Natural gas Greece [Natural gas (resource)]	kg	3.8E-07	2.5E-06	2.9E-06
Natural gas Hungary [Natural gas (resource)]	kg	1.1E-08	5.5E-07	5.6E-07
Natural gas India [Natural gas (resource)]	kg	6.8E-10	8.0E-08	8.1E-08
Natural gas Indonesia [Natural gas (resource)]	kg	4.3E-04	1.5E-03	1.9E-03
Natural gas Iran [Natural gas (resource)]	kg	9.4E-05	6.3E-04	7.2E-04
Natural gas Iraq [Natural gas (resource)]	kg	2.8E-03	1.0E-02	1.3E-02
Natural gas Ireland [Natural gas (resource)]	kg	3.3E-07	2.2E-06	2.5E-06
Natural gas Italy [Natural gas (resource)]	kg	1.9E-05	1.7E-04	1.9E-04
Natural gas Japan [Natural gas (resource)]	kg	7.3E-11	4.9E-09	5.0E-09
Natural gas Kuwait [Natural gas (resource)]	kg	1.1E-03	4.1E-03	5.2E-03
Natural gas Libyan [Natural gas (resource)]	kg	3.3E-05	2.5E-04	2.8E-04
Natural gas Malaysia [Natural gas (resource)]	kg	1.2E-05	2.2E-04	2.3E-04
Natural gas Mexico [Natural gas (resource)]	kg	1.2E-02	4.3E-02	5.5E-02
Natural gas Netherlands [Natural gas (resource)]	kg	1.2E-02	5.4E-02	6.6E-02
Natural gas New Zealand [Natural gas (resource)]	kg	1.5E-07	5.1E-06	5.2E-06
Natural gas Nigeria [Natural gas (resource)]	kg	1.5E-02	5.3E-02	6.8E-02

Input (cont.)	Units	*Quarrying*	*Processing*	*Total*
Natural gas Norway [Natural gas (resource)]	kg	1.5E-03	1.0E-02	1.1E-02
Natural gas Oman [Natural gas (resource)]	kg	1.2E-04	6.3E-04	7.5E-04
Natural gas Poland [Natural gas (resource)]	kg	4.2E-07	3.7E-06	4.2E-06
Natural gas Qatar [Natural gas (resource)]	kg	2.3E-04	3.7E-03	3.9E-03
Natural gas Romania [Natural gas (resource)]	kg	7.4E-07	4.9E-06	5.6E-06
Natural gas Saudi Arabia [Natural gas (resource)]	kg	7.2E-03	2.7E-02	3.4E-02
Natural gas Slovakia [Natural gas (resource)]	kg	3.0E-10	1.2E-08	1.2E-08
Natural gas South Africa [Natural gas (resource)]	kg	2.8E-08	1.7E-06	1.7E-06
Natural gas Spain [Natural gas (resource)]	kg	1.0E-06	6.5E-06	7.5E-06
Natural gas Syria [Natural gas (resource)]	kg	1.7E-10	1.2E-08	1.2E-08
Natural gas Trinidad and Tobago [Natural gas (resource)]	kg	1.7E-03	1.8E-02	2.0E-02
Natural gas Tunisia [Natural gas (resource)]	kg	6.8E-06	4.7E-05	5.4E-05
Natural gas Turkey [Natural gas (resource)]	kg	5.4E-16	4.5E-14	4.6E-14
Natural gas United Arab Emirates [Natural gas (resource)]	kg	4.7E-05	1.9E-04	2.4E-04
Natural gas United Kingdom [Natural gas (resource)]	kg	1.8E-03	1.0E-02	1.2E-02
Natural gas USA [Natural gas (resource)]	kg	1.2E-01	1.8E+00	2.0E+00
Natural gas Venezuela [Natural gas (resource)]	kg	9.0E-03	3.2E-02	4.1E-02
Neodymium [Non renewable elements]	kg	-1.5E-22	-1.4E-18	-1.4E-18
Nickel ore [Non renewable resources]	kg	2.0E-04	7.9E-04	9.9E-04
Nickel ore (1.6%) [Non renewable resources]	kg	5.4E-05	4.5E-04	5.0E-04
Nitrogen [Renewable resources]	kg	1.8E-10	1.0E-08	1.0E-08
Nuclear energy [Uranium (resource)]	MJ	8.1E-04	0.0E+00	8.1E-04
Occupation, arable, non-irrigated [Hemerobie ecoinvent]	m2*yr	4.3E-08	2.3E-01	2.3E-01
Occupation, construction site [Hemerobie ecoinvent]	m2*yr	1.3E-07	5.4E-04	5.4E-04
Occupation, dump site [Hemerobie ecoinvent]	m2*yr	1.4E-05	1.5E-02	1.5E-02
Occupation, dump site, benthos [Hemerobie ecoinvent]	m2*yr	9.9E-08	7.4E-04	7.4E-04
Occupation, forest, intensive [Hemerobie ecoinvent]	m2*yr	1.1E-06	4.5E-03	4.5E-03
Occupation, forest, intensive, normal [Hemerobie ecoinvent]	m2*yr	4.4E-05	4.0E+02	4.0E+02
Occupation, forest, intensive, short-cycle [Hemerobie ecoinvent]	m2*yr	2.4E-07	1.8E-04	1.8E-04
Occupation, industrial area [Hemerobie ecoinvent]	m2*yr	1.9E-06	8.3E-02	8.3E-02
Occupation, industrial area, benthos [Hemerobie ecoinvent]	m2*yr	8.8E-10	6.0E-06	6.0E-06
Occupation, industrial area, built up [Hemerobie ecoinvent]	m2*yr	8.0E-06	3.2E-02	3.2E-02
Occupation, industrial area, vegetation [Hemerobie ecoinvent]	m2*yr	1.1E-05	3.2E-01	3.2E-01
Occupation, mineral extraction site [Hemerobie ecoinvent]	m2*yr	1.8E-06	6.5E-03	6.5E-03
Occupation, permanent crop, fruit, intensive [Hemerobie ecoinvent]	m2*yr	3.5E-07	2.6E-04	2.6E-04
Occupation, shrub land, sclerophyllous [Hemerobie ecoinvent]	m2*yr	9.6E-08	2.7E-04	2.7E-04
Occupation, traffic area, rail embankment [Hemerobie ecoinvent]	m2*yr	1.6E-07	4.3E-04	4.3E-04
Occupation, traffic area, rail network [Hemerobie ecoinvent]	m2*yr	1.8E-07	4.8E-04	4.8E-04
Occupation, traffic area, road embankment [Hemerobie ecoinvent]	m2*yr	4.7E-07	3.9E+00	3.9E+00
Occupation, traffic area, road network [Hemerobie ecoinvent]	m2*yr	9.3E-06	2.0E-02	2.0E-02
Occupation, urban, discontinuously built [Hemerobie ecoinvent]	m2*yr	4.3E-10	1.6E-04	1.6E-04
Occupation, water bodies, artificial [Hemerobie ecoinvent]	m2*yr	2.1E-06	2.4E-02	2.4E-02
Occupation, water courses, artificial [Hemerobie ecoinvent]	m2*yr	1.0E-06	4.1E-03	4.1E-03
Olivine [Non renewable resources]	kg	8.6E-10	3.4E-08	3.5E-08
Oxygen [Renewable resources]	kg	1.5E-05	3.7E-14	1.5E-05
Palladium [Non renewable elements]	kg	6.4E-13	2.9E-08	2.9E-08
Peat [Non renewable resources]	kg	1.2E-05	1.0E-04	1.2E-04
Phosphate ore [Non renewable resources]	kg	0.0E+00	0.0E+00	0.0E+00
Phosphorus [Non renewable elements]	kg	6.5E-08	3.0E-04	3.0E-04

Input (cont.)	Units	*Quarrying*	*Processing*	*Total*
Phosphorus minerals [Non renewable resources]	kg	0.0E+00	0.0E+00	0.0E+00
Phosphorus ore (29% P2O5) [Non renewable resources]	kg	4.1E-04	2.8E-02	2.8E-02
Pit gas [Natural gas (resource)]	kg	3.1E-09	2.0E-08	2.3E-08
Pit Methane [Natural gas (resource)]	kg	4.4E-08	2.6E-06	2.6E-06
Platinum [Non renewable elements]	kg	8.8E-14	1.1E-09	1.1E-09
Potassium chloride [Non renewable resources]	kg	6.9E-07	2.0E-08	7.1E-07
Precious metal ore (R.O.M) [Non renewable resources]	kg	4.4E-08	2.6E-06	2.6E-06
Primary energy from geothermics [Renewable energy resources]	MJ	3.5E-02	2.3E+00	2.4E+00
Primary energy from hydro power [Renewable energy resources]	MJ	2.0E-01	1.2E+01	1.2E+01
Primary energy from solar energy [Renewable energy resources]	MJ	9.8E-02	6.8E+00	6.9E+00
Primary energy from waves [Renewable energy resources]	MJ	9.7E-08	0.0E+00	9.7E-08
Primary energy from wind power [Renewable energy resources]	MJ	1.4E-02	9.4E-01	9.5E-01
Praseodymium [Non renewable elements]	kg	0.0E+00	-5.4E-20	-5.4E-20
Quartz sand (silica sand; silicon dioxide) [Non renewable resources]	kg	2.5E-04	1.1E-03	1.3E-03
Raw pumice [Non renewable resources]	kg	6.4E-09	4.3E-07	4.4E-07
Renewable fuels [Renewable energy resources]	kg	0.0E+00	0.0E+00	0.0E+00
Rhenium [Non renewable elements]	kg	5.5E-15	8.1E-10	8.1E-10
Rhodium [Non renewable elements]	kg	2.5E-14	8.0E-10	8.0E-10
Rutile (titanium ore) [Non renewable resources]	kg	1.0E-13	0.0E+00	1.0E-13
Samarium [Non renewable elements]	kg	0.0E+00	-2.3E-20	-2.3E-20
sand [Non renewable resources]	kg	1.5E-07	1.3E-05	1.3E-05
Silver [Non renewable elements]	kg	5.3E-12	1.0E-07	1.0E-07
Slate [Non renewable resources]	kg	2.1E-09	2.4E-07	2.4E-07
Sodium chloride (rock salt) [Non renewable resources]	kg	1.4E-04	1.3E-02	1.3E-02
Sodium nitrate [Non renewable resources]	kg	1.6E-15	8.4E-12	8.4E-12
Sodium sulphate [Non renewable resources]	kg	2.1E-08	6.0E-05	6.0E-05
Soil [Non renewable resources]	kg	7.9E-04	2.6E-02	2.7E-02
Sulphur [Non renewable elements]	kg	3.3E-07	3.1E-06	3.4E-06
Sulphur (bonded) [Non renewable resources]	kg	8.9E-11	1.9E-09	2.0E-09
Sylvite (25% in Sylvinite) [Non renewable resources]	kg	1.0E-08	9.7E-04	9.7E-04
Talc [Non renewable resources]	kg	5.2E-09	2.8E-06	2.8E-06
Tantalum [Non renewable elements]	kg	1.8E-12	3.7E-08	3.7E-08
Tellurium [Non renewable elements]	kg	2.6E-13	5.0E-09	5.0E-09
Tin ore [Non renewable resources]	kg	3.8E-10	4.8E-06	4.8E-06
Titanium ore [Non renewable resources]	kg	2.4E-05	1.7E-04	1.9E-04
TiO2, 54% in ilmenite, 2.6% [Non renewable resources]	kg	7.2E-08	3.5E-04	3.5E-04
TiO2, 95% in rutile, 0.40% [Non renewable resources]	kg	4.3E-14	3.1E-09	3.1E-09
Transformation, from arable [Hemerobie ecoinvent]	sqm	1.4E-09	4.1E-06	4.1E-06
Transformation, from arable, non-irrigated [Hemerobie ecoinvent]	sqm	7.9E-08	4.2E-01	4.2E-01
Transformation, from arable, non-irrigated, fallow [Hemerobie ecoinvent]	sqm	1.1E-10	4.6E-07	4.6E-07
Transformation, from dump site, inert material landfill [Hemerobie ecoinvent]	sqm	7.5E-09	4.1E-05	4.1E-05
Transformation, from dump site, residual material landfill [Hemerobie ecoinvent]	sqm	9.7E-09	1.1E-05	1.1E-05
Transformation, from dump site, sanitary landfill [Hemerobie ecoinvent]	sqm	6.3E-10	1.4E-07	1.4E-07
Transformation, from dump site, slag compartment [Hemerobie ecoinvent]	sqm	1.4E-09	3.9E-07	3.9E-07
Transformation, from forest [Hemerobie ecoinvent]	sqm	2.3E-07	2.5E-03	2.5E-03
Transformation, from forest, extensive [Hemerobie ecoinvent]	sqm	3.5E-07	3.3E+00	3.3E+00

Input (cont.)	Units	*Quarrying*	*Processing*	*Total*
Transformation, from forest, intensive, clear-cutting [Hemerobie ecoinvent]	sqm	8.6E-09	6.5E-06	6.5E-06
Transformation, from industrial area [Hemerobie ecoinvent]	sqm	2.7E-09	8.9E-06	8.9E-06
Transformation, from industrial area, benthos [Hemerobie ecoinvent]	sqm	6.8E-12	1.2E-08	1.2E-08
Transformation, from industrial area, built up [Hemerobie ecoinvent]	sqm	4.6E-12	1.2E-08	1.2E-08
Transformation, from industrial area, vegetation [Hemerobie ecoinvent]	sqm	7.8E-12	2.0E-08	2.0E-08
Transformation, from mineral extraction site [Hemerobie ecoinvent]	sqm	3.7E-08	4.8E-04	4.9E-04
Transformation, from pasture and meadow [Hemerobie ecoinvent]	sqm	3.8E-08	1.2E-04	1.2E-04
Transformation, from pasture and meadow, intensive [Hemerobie ecoinvent]	sqm	6.5E-11	3.4E-04	3.4E-04
Transformation, from sea and ocean [Hemerobie ecoinvent]	sqm	9.9E-08	7.4E-04	7.4E-04
Transformation, from shrub land, sclerophyllous [Hemerobie ecoinvent]	sqm	2.4E-08	7.2E-05	7.2E-05
Transformation, from tropical rain forest [Hemerobie ecoinvent]	sqm	8.6E-09	6.5E-06	6.5E-06
Transformation, from unknown [Hemerobie ecoinvent]	sqm	7.9E-07	1.7E-02	1.7E-02
Transformation, to arable [Hemerobie ecoinvent]	sqm	2.8E-08	7.9E-05	7.9E-05
Transformation, to arable, non-irrigated [Hemerobie ecoinvent]	sqm	7.9E-08	4.2E-01	4.2E-01
Transformation, to arable, non-irrigated, fallow [Hemerobie ecoinvent]	sqm	2.2E-10	9.4E-07	9.4E-07
Transformation, to dump site [Hemerobie ecoinvent]	sqm	1.0E-07	1.1E-04	1.1E-04
Transformation, to dump site, benthos [Hemerobie ecoinvent]	sqm	9.9E-08	7.4E-04	7.4E-04
Transformation, to dump site, inert material landfill [Hemerobie ecoinvent]	sqm	7.5E-09	4.1E-05	4.1E-05
Transformation, to dump site, residual material landfill [Hemerobie ecoinvent]	sqm	9.7E-09	1.1E-05	1.1E-05
Transformation, to dump site, sanitary landfill [Hemerobie ecoinvent]	sqm	6.3E-10	1.4E-07	1.4E-07
Transformation, to dump site, slag compartment [Hemerobie ecoinvent]	sqm	1.4E-09	3.9E-07	3.9E-07
Transformation, to forest [Hemerobie ecoinvent]	sqm	3.8E-08	4.7E-04	4.7E-04
Transformation, to forest, intensive [Hemerobie ecoinvent]	sqm	7.3E-09	3.0E-05	3.0E-05
Transformation, to forest, intensive, clear-cutting [Hemerobie ecoinvent]	sqm	8.6E-09	6.5E-06	6.5E-06
Transformation, to forest, intensive, normal [Hemerobie ecoinvent]	sqm	3.4E-07	3.3E+00	3.3E+00
Transformation, to forest, intensive, short-cycle [Hemerobie ecoinvent]	sqm	8.6E-09	6.5E-06	6.5E-06
Transformation, to heterogeneous, agricultural [Hemerobie ecoinvent]	sqm	1.1E-08	1.2E-04	1.2E-04
Transformation, to industrial area [Hemerobie ecoinvent]	sqm	3.3E-08	1.6E-03	1.6E-03
Transformation, to industrial area, benthos [Hemerobie ecoinvent]	sqm	4.9E-11	4.9E-07	4.9E-07
Transformation, to industrial area, built up [Hemerobie ecoinvent]	sqm	1.6E-07	6.1E-04	6.1E-04
Transformation, to industrial area, vegetation [Hemerobie ecoinvent]	sqm	2.2E-07	5.0E-03	5.0E-03
Transformation, to mineral extraction site [Hemerobie ecoinvent]	sqm	3.6E-07	1.0E-02	1.0E-02
Transformation, to pasture and meadow [Hemerobie ecoinvent]	sqm	1.1E-09	2.4E-06	2.4E-06
Transformation, to permanent crop, fruit, intensive [Hemerobie ecoinvent]	sqm	4.9E-09	3.6E-06	3.7E-06
Transformation, to sea and ocean [Hemerobie ecoinvent]	sqm	6.8E-12	1.2E-08	1.2E-08
Transformation, to shrub land, sclerophyllous [Hemerobie ecoinvent]	sqm	1.9E-08	5.3E-05	5.3E-05
Transformation, to traffic area, rail embankment [Hemerobie ecoinvent]	sqm	3.8E-10	1.0E-06	1.0E-06
Transformation, to traffic area, rail network [Hemerobie ecoinvent]	sqm	4.2E-10	1.1E-06	1.1E-06
Transformation, to traffic area, road embankment [Hemerobie ecoinvent]	sqm	3.5E-09	3.3E-02	3.3E-02
Transformation, to traffic area, road network [Hemerobie ecoinvent]	sqm	9.8E-08	1.1E-04	1.1E-04

Input (cont.)	Units	*Quarrying*	*Processing*	*Total*
Transformation, to unknown [Hemerobie ecoinvent]	sqm	3.9E-09	1.6E-05	1.6E-05
Transformation, to urban, discontinuously built [Hemerobie ecoinvent]	sqm	8.6E-12	3.1E-06	3.1E-06
Transformation, to water bodies, artificial [Hemerobie ecoinvent]	sqm	3.6E-08	1.8E-03	1.8E-03
Transformation, to water courses, artificial [Hemerobie ecoinvent]	sqm	1.2E-08	4.7E-05	4.7E-05
Ulexite [Non renewable resources]	kg	2.7E-10	9.9E-07	9.9E-07
Uranium natural [Uranium (resource)]	kg	2.6E-06	2.4E-04	2.4E-04
Vermiculite [Non renewable resources]	kg	2.8E-09	1.8E-07	1.8E-07
Volume occupied, final repository for low-active radioactive waste [Hemerobie ecoinvent]	m3	2.9E-11	1.1E-07	1.1E-07
Volume occupied, final repository for radioactive waste [Hemerobie ecoinvent]	m3	7.4E-12	2.9E-08	2.9E-08
Volume occupied, reservoir [Hemerobie ecoinvent]	m3a	1.7E-05	7.2E-02	7.2E-02
Volume occupied, underground deposit [Hemerobie ecoinvent]	m3	9.9E-11	2.2E-07	2.2E-07
Water [Water]	kg	4.9E-02	1.7E+02	1.7E+02
Water (feed water) [Water]	kg	5.3E-03	0.0E+00	5.3E-03
Water (ground water) [Water]	kg	7.0E+00	9.8E+02	9.9E+02
Water (lake water) [Water]	kg	2.9E-03	1.8E-01	1.9E-01
Water (river water) [Water]	kg	3.4E-02	2.7E+01	2.7E+01
Water (sea water) [Water]	kg	2.2E-02	4.4E+00	4.4E+00
Water (surface water) [Water]	kg	2.2E+02	6.6E+03	6.8E+03
Water (well water) [Water]	kg	6.3E-06	0.0E+00	6.3E-06
Water (with river silt) [Water]	kg	0.0E+00	0.0E+00	0.0E+00
Water, salt, sole [Water]	m3	1.1E-07	1.5E-03	1.5E-03
Water,turbine use, unspecified natural origin [Water]	m3	8.7E-03	3.1E+01	3.1E+01
Wood [Renewable energy resources]	kg	4.8E-06	9.0E-05	9.5E-05
Wood, hard, standing [Renewable energy resources]	m3	1.0E-08	3.5E-05	3.5E-05
Wood, primary forest, standing [Renewable energy resources]	m3	8.9E-11	6.7E-08	6.7E-08
Wood, soft, standing [Renewable energy resources]	m3	3.0E-08	1.7E-01	1.7E-01
Zinc [Non renewable elements]	kg	6.6E-07	3.2E-03	3.2E-03
Zinc - copper ore (4.07%-2.59%) [Non renewable resources]	kg	3.1E-04	1.5E-03	1.9E-03
Zinc - lead - copper ore (12%-3%-2%) [Non renewable resources]	kg	1.3E-04	6.4E-04	7.7E-04
Zinc - lead ore (4.21%-4.96%) [Non renewable resources]	kg	1.2E-15	8.3E-15	9.5E-15
Zinc ore (sulphide) [Non renewable resources]	kg	8.4E-15	9.7E-14	1.1E-13
Zirconium [Non renewable elements]	kg	2.0E-12	4.9E-08	4.9E-08

Table 5. LCI outputs for limestone quarrying and processing.

Output	Units	*Quarrying*	*Processing*	*Total*
1,1,1-Trichloroethane [Halogenated organic emissions to air]	kg	2.5E-15	1.0E-11	1.0E-11
1,2-Dibromoethane [Halogenated organic emissions to fresh water]	kg	2.9E-14	1.3E-13	1.6E-13
1-Butanol [Group NMVOC to air]	kg	1.7E-18	3.7E-14	3.7E-14
1-Butanol [Organic emissions to fresh water]	kg	1.6E-13	3.7E-09	3.7E-09
2,4-Dichlorophenoxyacetic acid (2,4-D) [Pesticides to agricultural soil]	kg	3.1E-12	2.4E-09	2.4E-09
Acenaphthene [Hydrocarbons to fresh water]	kg	2.7E-10	1.4E-09	1.7E-09
Acenaphthene [Hydrocarbons to sea water]	kg	3.4E-09	1.2E-08	1.5E-08
Acenaphthylene [Hydrocarbons to fresh water]	kg	1.1E-10	4.0E-10	5.1E-10
Acenaphthylene [Hydrocarbons to sea water]	kg	1.3E-09	4.4E-09	5.7E-09
Acentaphthene [Group NMVOC to air]	kg	2.5E-15	9.0E-12	9.0E-12
Acetaldehyde (Ethanal) [Group NMVOC to air]	kg	1.2E-07	1.7E-05	1.8E-05
Acetaldehyde (Ethanal) [Organic emissions to fresh water]	kg	2.9E-13	6.8E-09	6.8E-09
Acetic acid [Group NMVOC to air]	kg	4.4E-07	1.0E-05	1.1E-05
Acetic acid [Hydrocarbons to fresh water]	kg	1.2E-08	3.2E-07	3.3E-07
Acetic acid [Hydrocarbons to sea water]	kg	6.9E-10	2.5E-09	3.2E-09
Acetone (dimethylcetone) [Group NMVOC to air]	kg	1.1E-07	1.9E-06	2.0E-06
Acetone (dimethylcetone) [Organic emissions to fresh water]	kg	1.6E-15	7.9E-12	7.9E-12
Acetonitrile [Group NMVOC to air]	kg	9.3E-12	7.0E-09	7.0E-09
Acid (calculated as H+) [Inorganic emissions to fresh water]	kg	1.8E-08	2.5E-07	2.7E-07
Aclonifen [Pesticides to agricultural soil]	kg	1.2E-13	9.0E-07	9.0E-07
Acrolein [Group NMVOC to air]	kg	2.4E-09	1.1E-08	1.3E-08
Acrylic acid [Group NMVOC to air]	kg	2.3E-14	5.7E-10	5.7E-10
Acrylic acid [Organic emissions to fresh water]	kg	5.4E-14	1.3E-09	1.3E-09
Acrylonitrile [Hydrocarbons to fresh water]	kg	9.1E-12	4.6E-11	5.5E-11
Adsorbable organic halogen compounds (AOX) [Analytical measures to fresh water]	kg	4.8E-07	1.8E-06	2.2E-06
Adsorbable organic halogen compounds (AOX) [Analytical measures to sea water]	kg	4.6E-12	1.5E-08	1.5E-08
Aktinide (general) [Radioactive emissions to air]	Bq	2.6E-07	1.1E-03	1.1E-03
Aktinide (general) [Radioactive emissions to sea water]	Bq	4.2E-05	1.6E-01	1.6E-01
Aldehyde (unspecified) [Group NMVOC to air]	kg	8.5E-08	4.9E-07	5.7E-07
Aldrin [Pesticides to agricultural soil]	kg	6.0E-16	1.5E-11	1.5E-11
Alkane (unspecified) [Group NMVOC to air]	kg	5.3E-06	1.4E-04	1.5E-04
Alkane (unspecified) [Hydrocarbons to fresh water]	kg	8.1E-10	1.1E-05	1.1E-05
Alkane (unspecified) [Hydrocarbons to sea water]	kg	3.8E-10	5.0E-06	5.0E-06
Alkene (unspecified) [Group NMVOC to air]	kg	4.4E-06	4.1E-05	4.6E-05
Alkene (unspecified) [Hydrocarbons to fresh water]	kg	7.4E-11	1.0E-06	1.0E-06
Alkene (unspecified) [Hydrocarbons to sea water]	kg	3.5E-11	4.6E-07	4.6E-07
Aluminum (+III) [Fresh water]	kg	3.0E-06	4.6E-03	4.6E-03
Aluminium (3+) [Inorganic emissions to industrial soil]	kg	6.8E-08	2.3E-07	3.0E-07
Aluminum (+III) [Inorganic emissions to fresh water]	kg	2.7E-08	2.8E-05	2.8E-05
Aluminum (+III) [Inorganic emissions to sea water]	kg	1.2E-09	8.3E-06	8.3E-06
Aluminum [Inorganic emissions to fresh water]	kg	5.6E-06	2.8E-05	3.4E-05
Aluminum [Inorganic emissions to sea water]	kg	3.6E-08	1.2E-07	1.6E-07
Aluminum [Inorganic emissions to agricultural soil]	kg	6.4E-09	2.5E-06	2.5E-06
Aluminum [Inorganic emissions to industrial soil]	kg	5.1E-09	5.7E-05	5.7E-05

Output (cont.)	Units	*Quarrying*	*Processing*	*Total*
Aluminum [Particles to air]	kg	1.7E-07	2.2E-04	2.2E-04
Americium (Am241) [Radioactive emissions to fresh water]	Bq	9.5E-03	4.7E-02	5.7E-02
Ammonia [Inorganic emissions to air]	kg	1.8E-07	7.1E-04	7.1E-04
Ammonia [Inorganic emissions to fresh water]	kg	1.4E-06	4.7E-06	6.1E-06
Ammonia [Inorganic emissions to industrial soil]	kg	3.6E-05	1.2E-04	1.6E-04
Ammonia [Inorganic emissions to sea water]	kg	1.1E-06	3.6E-06	4.6E-06
Ammonium / ammonia [Fresh water]	kg	4.5E-09	5.6E-07	5.7E-07
Ammonium / ammonia [Inorganic emissions to fresh water]	kg	7.0E-06	4.6E-05	5.3E-05
Ammonium / ammonia [Inorganic emissions to sea water]	kg	3.4E-10	5.0E-06	5.0E-06
Ammonium [Inorganic emissions to air]	kg	2.7E-12	1.6E-09	1.6E-09
Ammonium carbonate [Inorganic emissions to air]	kg	2.6E-12	2.1E-09	2.1E-09
Ammonium nitrate [Inorganic emissions to air]	kg	5.9E-13	2.7E-12	3.3E-12
Anthracene [Group PAH to air]	kg	3.4E-10	1.1E-09	1.5E-09
Anthracene [Hydrocarbons to fresh water]	kg	2.7E-10	9.1E-10	1.2E-09
Anthracene [Hydrocarbons to sea water]	kg	1.4E-09	4.5E-09	5.9E-09
Antimony (Sb122) [Radioactive emissions to fresh water]	Bq	1.2E-08	9.4E-05	9.4E-05
Antimony (Sb124) [Radioactive emissions to air]	Bq	3.3E-06	1.7E-05	2.0E-05
Antimony (Sb124) [Radioactive emissions to fresh water]	Bq	9.9E-05	4.9E-04	5.9E-04
Antimony (Sb125) [Radioactive emissions to air]	Bq	3.2E-10	2.4E-06	2.4E-06
Antimony (Sb125) [Radioactive emissions to fresh water]	Bq	9.7E-03	7.4E-02	8.4E-02
Antimony [Fresh water]	kg	1.9E-09	1.3E-06	1.3E-06
Antimony [Heavy metals to agricultural soil]	kg	1.1E-15	1.8E-12	1.8E-12
Antimony [Heavy metals to air]	kg	1.0E-08	1.0E-07	1.1E-07
Antimony [Heavy metals to fresh water]	kg	9.5E-10	7.0E-07	7.0E-07
Argon (Ar41) [Radioactive emissions to air]	Bq	2.1E+01	1.2E+02	1.4E+02
Aromatic hydrocarbons (unspecified) [Group NMVOC to air]	kg	3.5E-08	1.2E-05	1.2E-05
Aromatic hydrocarbons (unspecified) [Hydrocarbons to fresh water]	kg	4.3E-07	4.6E-05	4.6E-05
Aromatic hydrocarbons (unspecified) [Hydrocarbons to sea water]	kg	4.0E-08	2.1E-05	2.1E-05
Arsenic (+V) [Fresh water]	kg	8.9E-11	5.9E-08	5.9E-08
Arsenic (+V) [Heavy metals to agricultural soil]	kg	9.7E-13	8.5E-10	8.6E-10
Arsenic (+V) [Heavy metals to air]	kg	3.5E-10	5.2E-07	5.2E-07
Arsenic (+V) [Heavy metals to fresh water]	kg	1.8E-09	4.6E-06	4.6E-06
Arsenic (+V) [Heavy metals to industrial soil]	kg	2.1E-12	2.3E-08	2.3E-08
Arsenic (+V) [Heavy metals to sea water]	kg	3.4E-12	4.3E-08	4.3E-08
Arsenic [Heavy metals to air]	kg	1.1E-07	5.4E-07	6.5E-07
Arsenic [Heavy metals to fresh water]	kg	1.6E-07	6.0E-07	7.7E-07
Arsenic [Heavy metals to industrial soil]	kg	2.6E-11	1.4E-10	1.6E-10
Arsenic [Heavy metals to sea water]	kg	2.7E-07	9.0E-07	1.2E-06
Arsenic trioxide [Heavy metals to air]	kg	1.3E-12	4.5E-12	5.9E-12
Atrazine [Pesticides to agricultural soil]	kg	1.6E-16	3.9E-12	3.9E-12
Barium (Ba140) [Radioactive emissions to air]	Bq	2.1E-08	1.6E-04	1.6E-04
Barium (Ba140) [Radioactive emissions to fresh water]	Bq	5.4E-08	4.1E-04	4.1E-04
Barium [Fresh water]	kg	4.1E-08	6.4E-05	6.4E-05
Barium [Inorganic emissions to agricultural soil]	kg	9.8E-14	1.5E-09	1.5E-09
Barium [Inorganic emissions to air]	kg	1.5E-05	5.3E-05	6.8E-05
Barium [Inorganic emissions to fresh water]	kg	1.2E-06	7.9E-05	8.0E-05
Barium [Inorganic emissions to industrial soil]	kg	2.6E-09	2.8E-05	2.8E-05
Barium [Inorganic emissions to sea water]	kg	4.7E-06	1.6E-05	2.0E-05

Output (cont.)	Units	*Quarrying*	*Processing*	*Total*
Barytes [Inorganic emissions to sea water]	kg	6.2E-08	4.6E-04	4.6E-04
Benomyl [Pesticides to agricultural soil]	kg	2.0E-14	1.5E-11	1.5E-11
Bentazone [Pesticides to agricultural soil]	kg	6.0E-14	4.6E-07	4.6E-07
Benzal chloride [Halogenated organic emissions to air]	kg	1.1E-19	5.6E-16	5.6E-16
Benzaldehyde [Group NMVOC to air]	kg	1.0E-12	1.0E-09	1.0E-09
Benzene [Group NMVOC to air]	kg	3.2E-06	4.4E-05	4.7E-05
Benzene [Hydrocarbons to fresh water]	kg	4.7E-07	8.4E-06	8.9E-06
Benzene [Hydrocarbons to sea water]	kg	1.4E-06	7.7E-06	9.0E-06
Benzo{a}anthracene [Group PAH to air]	kg	1.7E-10	5.7E-10	7.4E-10
Benzo{a}anthracene [Hydrocarbons to fresh water]	kg	4.8E-11	1.6E-10	2.1E-10
Benzo{a}anthracene [Hydrocarbons to sea water]	kg	7.2E-10	2.4E-09	3.1E-09
Benzo{a}pyrene [Group PAH to air]	kg	2.0E-10	1.1E-07	1.1E-07
Benzo{ghi}perylene [Group PAH to air]	kg	1.5E-10	5.1E-10	6.6E-10
Benzofluoranthene [Group PAH to air]	kg	3.0E-10	1.0E-09	1.3E-09
Benzofluoranthene [Hydrocarbons to fresh water]	kg	3.9E-11	1.3E-10	1.7E-10
Benzofluoranthene [Hydrocarbons to sea water]	kg	7.7E-10	2.6E-09	3.3E-09
Beryllium [Fresh water]	kg	1.5E-10	5.3E-07	5.3E-07
Beryllium [Inorganic emissions to air]	kg	1.4E-09	8.8E-09	1.0E-08
Beryllium [Inorganic emissions to fresh water]	kg	2.1E-10	2.6E-09	2.8E-09
Beryllium [Inorganic emissions to sea water]	kg	3.6E-09	1.2E-08	1.6E-08
Biological oxygen demand (BOD) [Analytical measures to fresh water]	kg	3.3E-05	2.1E-02	2.1E-02
Biological oxygen demand (BOD) [Analytical measures to sea water]	kg	5.9E-06	5.1E-03	5.1E-03
Boron [Fresh water]	kg	1.9E-08	6.7E-05	6.7E-05
Boron [Inorganic emissions to air]	kg	9.4E-09	3.3E-05	3.3E-05
Boron [Inorganic emissions to fresh water]	kg	2.7E-06	1.2E-05	1.5E-05
Boron [Inorganic emissions to sea water]	kg	5.8E-07	1.9E-06	2.5E-06
Boron compounds (unspecified) [Inorganic emissions to air]	kg	2.0E-06	1.0E-05	1.2E-05
Boron trifluoride [Inorganic emissions to air]	kg	2.0E-21	5.0E-17	5.0E-17
Bromate [Inorganic emissions to fresh water]	kg	1.1E-09	5.5E-07	5.6E-07
Bromide [Inorganic emissions to industrial soil]	kg	9.5E-09	3.2E-08	4.2E-08
Bromine [Fresh water]	kg	1.5E-09	4.5E-06	4.5E-06
Bromine [Inorganic emissions to air]	kg	8.4E-07	7.9E-06	8.8E-06
Bromine [Inorganic emissions to fresh water]	kg	1.1E-08	8.1E-05	8.1E-05
Bromine [Inorganic emissions to sea water]	kg	2.0E-09	2.7E-05	2.7E-05
Butadiene [Group NMVOC to air]	kg	2.6E-12	2.1E-11	2.4E-11
Butane (n-butane) [Group NMVOC to air]	kg	1.5E-06	7.3E-06	8.8E-06
Butane [Group NMVOC to air]	kg	1.4E-04	6.0E-04	7.4E-04
Butanone (methyl ethyl ketone) [Group NMVOC to air]	kg	4.4E-11	1.0E-06	1.0E-06
Butene [Group NMVOC to air]	kg	3.7E-10	2.7E-06	2.7E-06
Butene [Hydrocarbons to fresh water]	kg	4.1E-10	2.7E-09	3.1E-09
Butylene glycol (butane diol) [Group NMVOC to air]	kg	5.4E-16	1.2E-11	1.2E-11
Butylene glycol (butane diol) [Hydrocarbons to fresh water]	kg	2.1E-16	4.8E-12	4.8E-12
butyrolactone [Group NMVOC to air]	kg	1.6E-16	3.5E-12	3.5E-12
butyrolactone [Hydrocarbons to fresh water]	kg	3.7E-16	8.3E-12	8.3E-12
Cadmium (+II) [Fresh water]	kg	2.6E-10	3.5E-07	3.5E-07
Cadmium (+II) [Heavy metals to agricultural soil]	kg	9.9E-13	4.7E-08	4.7E-08
Cadmium (+II) [Heavy metals to air]	kg	9.0E-11	2.1E-07	2.1E-07
Cadmium (+II) [Heavy metals to fresh water]	kg	1.0E-10	1.6E-07	1.6E-07

Output (cont.)	Units	*Quarrying*	*Processing*	*Total*
Cadmium (+II) [Heavy metals to industrial soil]	kg	2.2E-14	2.5E-09	2.5E-09
Cadmium (+II) [Heavy metals to sea water]	kg	1.1E-12	1.7E-08	1.7E-08
Cadmium [Heavy metals to air]	kg	6.6E-09	3.3E-08	3.9E-08
Cadmium [Heavy metals to fresh water]	kg	3.6E-07	1.3E-06	1.7E-06
Cadmium [Heavy metals to industrial soil]	kg	2.7E-10	9.6E-10	1.2E-09
Cadmium [Heavy metals to sea water]	kg	1.6E-07	5.5E-07	7.1E-07
CaF2 (low radioactice) [Radioactive waste]	kg	9.1E-07	4.6E-06	5.5E-06
Calcium (+II) [Fresh water]	kg	7.4E-06	1.4E-02	1.4E-02
Calcium (+II) [Inorganic emissions to fresh water]	kg	7.5E-06	3.3E-03	3.3E-03
Calcium (2+) [Inorganic emissions to industrial soil]	kg	2.7E-07	2.3E-04	2.3E-04
Calcium (+II) [Inorganic emissions to sea water]	kg	1.0E-07	1.5E-03	1.5E-03
Calcium [Inorganic emissions to fresh water]	kg	3.9E-04	1.8E-03	2.2E-03
Calcium [Inorganic emissions to sea water]	kg	6.4E-05	2.1E-04	2.7E-04
Carbetamide [Pesticides to agricultural soil]	kg	2.5E-14	1.6E-07	1.6E-07
Carbofuran [Pesticides to agricultural soil]	kg	1.1E-11	8.2E-09	8.2E-09
Carbon (C14) [Radioactive emissions to air]	Bq	9.6E+00	1.5E+02	1.6E+02
Carbon (C14) [Radioactive emissions to fresh water]	Bq	4.8E-01	2.4E+00	2.9E+00
Carbon (unspecified) [Organic emissions to agricultural soil]	kg	6.8E-08	2.9E-06	3.0E-06
Carbon (unspecified) [Organic emissions to industrial soil]	kg	1.5E-08	1.7E-04	1.7E-04
Carbon dioxide (biotic) [Inorganic emissions to air]	kg	1.6E-04	1.5E-01	1.5E-01
Carbon dioxide [Inorganic emissions to air]	kg	2.1E+00	1.9E+01	2.1E+01
Carbon dioxide, land transformation [Inorganic emissions to air]	kg	2.0E-07	3.5E-04	3.5E-04
Carbon disulphide [Inorganic emissions to air]	kg	6.2E-08	4.7E-05	4.7E-05
Carbon monoxide (biotic) [Inorganic emissions to air]	kg	9.1E-08	2.9E-04	2.9E-04
Carbon monoxide [Inorganic emissions to air]	kg	1.7E-03	1.8E-01	1.8E-01
Carbon tetrachloride (tetrachloromethane) [Halogenated organic emissions to air]	kg	3.6E-12	5.7E-09	5.7E-09
Carbon, organically bound [Organic emissions to fresh water]	kg	3.0E-05	1.0E-04	1.3E-04
Carbonate [Inorganic emissions to fresh water]	kg	7.4E-05	2.5E-04	3.3E-04
Carbonate [Inorganic emissions to sea water]	kg	3.0E-04	9.9E-04	1.3E-03
Cerium (Ce141) [Radioactive emissions to air]	Bq	5.0E-09	3.8E-05	3.8E-05
Cerium (Ce141) [Radioactive emissions to fresh water]	Bq	2.1E-08	1.6E-04	1.6E-04
Cerium (Ce144) [Radioactive emissions to fresh water]	Bq	6.5E-09	5.0E-05	5.0E-05
Cesium (Cs134) [Radioactive emissions to air]	Bq	2.6E-03	1.3E-02	1.6E-02
Cesium (Cs134) [Radioactive emissions to fresh water]	Bq	4.8E-01	2.4E+00	2.9E+00
Cesium (Cs136) [Radioactive emissions to fresh water]	Bq	3.8E-09	2.9E-05	2.9E-05
Cesium (Cs137) [Radioactive emissions to air]	Bq	5.4E-03	2.7E-02	3.2E-02
Cesium (Cs137) [Radioactive emissions to fresh water]	Bq	4.5E+00	2.2E+01	2.7E+01
Cesium (Cs137) [Radioactive emissions to sea water]	Bq	4.8E-03	1.8E+01	1.8E+01
Cesium [Heavy metals to fresh water]	kg	6.2E-12	8.4E-08	8.4E-08
Cesium [Heavy metals to sea water]	kg	2.9E-12	3.8E-08	3.8E-08
Chemical oxygen demand (COD) [Analytical measures to fresh water]	kg	7.8E-04	2.7E-02	2.8E-02
Chemical oxygen demand (COD) [Analytical measures to sea water]	kg	6.2E-05	4.3E-03	4.3E-03
Chemicals (unspecified) [Waste for recovery]	kg	7.2E-07	0.0E+00	7.2E-07
Chlorate [Inorganic emissions to fresh water]	kg	2.3E-08	4.4E-06	4.5E-06
Chloride [Fresh water]	kg	1.8E-07	1.0E-03	1.0E-03
Chloride (unspecified) [Inorganic emissions to air]	kg	2.3E-06	9.2E-06	1.2E-05

Output (cont.)	Units	*Quarrying*	*Processing*	*Total*
Chloride [Inorganic emissions to fresh water]	kg	1.0E-02	1.6E-01	1.7E-01
Chloride [Inorganic emissions to industrial soil]	kg	1.1E-05	3.7E-05	4.9E-05
Chloride [Inorganic emissions to sea water]	kg	2.3E-02	9.8E-02	1.2E-01
Chlorinated hydrocarbons (unspecified) [Halogenated organic emissions to fresh water]	kg	1.6E-09	5.0E-07	5.0E-07
Chlorine (dissolved) [Inorganic emissions to fresh water]	kg	7.5E-06	3.8E-05	4.5E-05
Chlorine [Inorganic emissions to agricultural soil]	kg	9.9E-11	3.6E-07	3.6E-07
Chlorine [Inorganic emissions to air]	kg	3.7E-08	4.0E-06	4.0E-06
Chlorine [Inorganic emissions to industrial soil]	kg	1.5E-06	3.8E-03	3.8E-03
Chlorobenzene [Halogenated organic emissions to fresh water]	kg	1.5E-12	3.3E-08	3.3E-08
Chloromethane (methyl chloride) [Halogenated organic emissions to air]	kg	7.3E-14	2.8E-10	2.8E-10
Chloromethane (methyl chloride) [Halogenated organic emissions to fresh water]	kg	1.3E-09	5.3E-09	6.6E-09
Chlorosilane, trimethyl- [Group NMVOC to air]	kg	4.1E-16	1.0E-11	1.0E-11
Chlorothalonil [Pesticides to agricultural soil]	kg	4.0E-12	7.6E-09	7.6E-09
Chlorous dissolvent [Halogenated organic emissions to fresh water]	kg	1.5E-11	3.5E-09	3.5E-09
Chlorous dissolvent [Halogenated organic emissions to sea water]	kg	4.7E-19	1.2E-12	1.2E-12
Chromium +III [Heavy metals to air]	kg	2.9E-10	1.0E-09	1.3E-09
Chromium +III [Heavy metals to fresh water]	kg	1.6E-08	7.8E-08	9.4E-08
Chromium +III [Heavy metals to industrial soil]	kg	2.8E-12	1.0E-11	1.3E-11
Chromium (+VI) [Fresh water]	kg	3.2E-08	4.8E-05	4.9E-05
Chromium (+VI) [Heavy metals to air]	kg	2.1E-10	1.9E-07	1.9E-07
Chromium +VI [Heavy metals to fresh water]	kg	2.6E-08	1.8E-05	1.8E-05
Chromium (+VI) [Heavy metals to industrial soil]	kg	2.0E-09	1.4E-06	1.4E-06
Chromium (Cr51) [Radioactive emissions to air]	Bq	3.2E-10	2.5E-06	2.5E-06
Chromium (Cr51) [Radioactive emissions to fresh water]	Bq	7.0E-06	4.1E-02	4.1E-02
Chromium (unspecified) [Heavy metals to agricultural soil]	kg	3.0E-11	3.9E-07	3.9E-07
Chromium (unspecified) [Heavy metals to air]	kg	3.2E-08	8.0E-06	8.0E-06
Chromium (unspecified) [Heavy metals to fresh water]	kg	1.8E-07	6.2E-07	8.0E-07
Chromium (unspecified) [Heavy metals to industrial soil]	kg	6.2E-08	5.1E-07	5.7E-07
Chromium (unspecified) [Heavy metals to sea water]	kg	4.3E-07	1.4E-06	1.9E-06
Chrysene [Group PAH to air]	kg	4.1E-10	1.4E-09	1.8E-09
Chrysene [Hydrocarbons to fresh water]	kg	2.4E-10	8.1E-10	1.1E-09
Chrysene [Hydrocarbons to sea water]	kg	4.0E-09	1.3E-08	1.7E-08
Cobalt (Co57) [Radioactive emissions to fresh water]	Bq	1.2E-07	9.3E-04	9.3E-04
Cobalt (Co58) [Radioactive emissions to air]	Bq	1.6E-05	8.6E-05	1.0E-04
Cobalt (Co58) [Radioactive emissions to fresh water]	Bq	3.7E-03	2.8E-01	2.9E-01
Cobalt (Co60) [Radioactive emissions to air]	Bq	4.2E-04	2.1E-03	2.5E-03
Cobalt (Co60) [Radioactive emissions to fresh water]	Bq	2.1E+00	1.1E+01	1.3E+01
Cobalt [Fresh water]	kg	1.8E-08	1.9E-05	1.9E-05
Cobalt [Heavy metals to agricultural soil]	kg	3.7E-12	2.1E-09	2.1E-09
Cobalt [Heavy metals to air]	kg	7.8E-09	1.2E-06	1.2E-06
Cobalt [Heavy metals to fresh water]	kg	6.1E-09	1.7E-07	1.7E-07
Cobalt [Heavy metals to industrial soil]	kg	1.1E-09	7.1E-09	8.3E-09
Cobalt [Heavy metals to sea water]	kg	6.6E-08	4.3E-04	4.3E-04
Cooling water [Waste for recovery]	kg	0.0E+00	0.0E+00	0.0E+00

Output (cont.)	Units	*Quarrying*	*Processing*	*Total*
Copper (+II) [Fresh water]	kg	1.8E-07	8.6E-05	8.6E-05
Copper (+II) [Heavy metals to agricultural soil]	kg	1.1E-10	-2.6E-07	-2.6E-07
Copper (+II) [Heavy metals to air]	kg	3.9E-09	5.1E-06	5.1E-06
Copper (+II) [Heavy metals to fresh water]	kg	8.6E-10	1.1E-06	1.1E-06
Copper (+II) [Heavy metals to industrial soil]	kg	1.3E-09	1.1E-06	1.1E-06
Copper (+II) [Heavy metals to sea water]	kg	6.1E-12	7.8E-08	7.8E-08
Copper [Heavy metals to air]	kg	3.0E-08	1.3E-07	1.6E-07
Copper [Heavy metals to fresh water]	kg	1.6E-06	5.6E-06	7.2E-06
Copper [Heavy metals to industrial soil]	kg	6.0E-10	3.4E-09	4.0E-09
Copper [Heavy metals to sea water]	kg	6.0E-07	2.0E-06	2.6E-06
Cresol (methyl phenol) [Hydrocarbons to fresh water]	kg	1.0E-08	3.5E-08	4.5E-08
Cresol (methyl phenol) [Hydrocarbons to sea water]	kg	8.1E-09	2.7E-08	3.5E-08
Cumene (isopropylbenzene) [Group NMVOC to air]	kg	3.2E-10	8.9E-07	8.9E-07
Cumene (isopropylbenzene) [Organic emissions to fresh water]	kg	7.7E-10	2.1E-06	2.1E-06
Curium (Cm alpha) [Radioactive emissions to fresh water]	Bq	1.3E-02	6.3E-02	7.5E-02
Cyanide (unspecified) [Inorganic emissions to air]	kg	2.4E-07	1.1E-06	1.4E-06
Cyanide [Inorganic emissions to fresh water]	kg	7.7E-09	2.7E-06	2.7E-06
Cyanide [Inorganic emissions to sea water]	kg	1.3E-11	2.0E-07	2.0E-07
Cycloalkanes (unspec.) [Group NMVOC to air]	kg	1.4E-11	3.1E-08	3.1E-08
Cyclohexane (hexahydro benzene) [Group NMVOC to air]	kg	1.2E-10	5.6E-10	6.9E-10
Cypermethrin [Pesticides to agricultural soil]	kg	1.5E-12	4.7E-09	4.7E-09
Demolition waste (deposited) [Stockpile goods]	kg	3.2E-03	1.6E-02	1.9E-02
Dichlorobenzene (o-DCB; 1,2-dichlorobenzene) [Halogenated organic emissions to air]	kg	7.2E-14	1.6E-09	1.6E-09
Dichloroethane (1,2-Dichloroethane) [Halogenated organic emissions to air]	kg	6.3E-10	4.5E-08	4.6E-08
Dichloroethane (ethylene dichloride) [Halogenated organic emissions to air]	kg	4.4E-12	0.0E+00	4.4E-12
Dichloroethane (ethylene dichloride) [Halogenated organic emissions to fresh water]	kg	3.7E-12	1.1E-08	1.1E-08
Dichloromethane (methylene chloride) [Halogenated organic emissions to air]	kg	9.3E-12	2.2E-10	2.3E-10
Dichloromethane (methylene chloride) [Halogenated organic emissions to fresh water]	kg	1.3E-10	1.4E-06	1.4E-06
Dibenz(a)anthracene [Group PAH to air]	kg	9.4E-11	3.2E-10	4.1E-10
Dichloromethane (methylene chloride) [Halogenated organic emissions to air]	kg	9.8E-15	4.9E-14	5.9E-14
Dichloropropane [Halogenated organic emissions to fresh water]	kg	1.2E-16	6.2E-16	7.5E-16
Diethyl amine (ethylene ethane amine) [Group NMVOC to air]	kg	6.7E-17	3.4E-16	4.0E-16
Dioxins (unspec.) [Halogenated organic emissions to air]	kg	1.1E-14	3.7E-14	4.7E-14
Dichromate [Inorganic emissions to fresh water]	kg	5.3E-11	3.7E-08	3.7E-08
Different pollutants [Other emissions to agricultural soil]	kg	4.7E-08	5.2E-05	5.2E-05
Different pollutants [Other emissions to industrial soil]	kg	9.3E-10	6.5E-06	6.5E-06
Dissolved organic carbon, DOC (Ecoinvent) [Fresh water]	kg	2.2E-06	1.1E-03	1.1E-03
Dust (PM10) [Particles to air]	kg	7.9E-05	4.8E-03	4.9E-03
Dust (PM2,5 - PM10) [Particles to air]	kg	9.8E-07	1.8E-03	1.8E-03
Dust (PM2.5) [Particles to air]	kg	8.1E-05	6.3E-03	6.4E-03
Dust (unspecified) [Particles to air]	kg	1.5E-04	7.1E-04	8.7E-04
Ethane [Group NMVOC to air]	kg	3.8E-04	1.4E-03	1.8E-03

Output (cont.)	Units	*Quarrying*	*Processing*	*Total*
Ethanol [Group NMVOC to air]	kg	1.9E-07	2.6E-06	2.8E-06
Ethanol [Hydrocarbons to fresh water]	kg	3.6E-13	8.6E-09	8.6E-09
Ethene (ethylene) [Group NMVOC to air]	kg	1.8E-08	1.3E-05	1.3E-05
Ethene (ethylene) [Hydrocarbons to fresh water]	kg	2.8E-10	9.6E-07	9.6E-07
Ethine (acetylene) [Group NMVOC to air]	kg	3.2E-10	4.0E-07	4.0E-07
Ethyl benzene [Group NMVOC to air]	kg	4.3E-06	2.7E-05	3.1E-05
Ethyl benzene [Hydrocarbons to fresh water]	kg	2.0E-08	2.1E-06	2.1E-06
Ethyl benzene [Hydrocarbons to sea water]	kg	9.5E-08	1.2E-06	1.3E-06
Ethyl cellulose [Particles to air]	kg	8.3E-14	2.1E-09	2.1E-09
Ethylene acetate (ethyl acetate) [Group NMVOC to air]	kg	4.4E-11	1.0E-06	1.0E-06
Ethylene acetate (ethyl acetate) [Hydrocarbons to fresh water]	kg	2.5E-17	5.9E-13	5.9E-13
Ethylene oxide [Group NMVOC to air]	kg	2.7E-12	6.6E-09	6.6E-09
Ethylene oxide [Hydrocarbons to fresh water]	kg	5.6E-14	7.7E-10	7.7E-10
Ethylenediamine [Group NMVOC to air]	kg	9.8E-16	8.0E-12	8.0E-12
Ethylenediamine [Organic emissions to fresh water]	kg	2.4E-15	1.9E-11	1.9E-11
Exhaust [Other emissions to air]	kg	5.4E+00	2.7E+01	3.2E+01
Fatty acids (calculated as total carbon) [Hydrocarbons to fresh water]	kg	2.3E-08	3.1E-04	3.1E-04
Fatty acids (calculated as total carbon) [Hydrocarbons to sea water]	kg	1.7E-08	2.2E-04	2.2E-04
Fenpiclonil [Pesticides to agricultural soil]	kg	1.6E-13	3.1E-08	3.1E-08
Fluoranthene [Group NMVOC to air]	kg	1.1E-09	3.7E-09	4.8E-09
Fluoranthene [Hydrocarbons to fresh water]	kg	5.5E-11	1.8E-10	2.4E-10
Fluoranthene [Hydrocarbons to sea water]	kg	8.4E-10	2.8E-09	3.7E-09
Fluorene [Group NMVOC to air]	kg	3.5E-09	1.2E-08	1.5E-08
Fluoride [Fresh water]	kg	2.3E-08	1.2E-04	1.2E-04
Fluoride (unspecified) [Inorganic emissions to air]	kg	2.1E-07	1.0E-06	1.2E-06
Fluoride [Inorganic emissions to fresh water]	kg	8.9E-04	4.5E-03	5.4E-03
Fluoride [Inorganic emissions to industrial soil]	kg	3.2E-07	5.0E-06	5.4E-06
Fluorides [Inorganic emissions to air]	kg	1.9E-07	6.9E-07	8.8E-07
Fluoride [Inorganic emissions to sea water]	kg	4.5E-10	7.0E-06	7.0E-06
Fluorine [Inorganic emissions to air]	kg	3.8E-10	2.9E-07	2.9E-07
Fluorine [Inorganic emissions to fresh water]	kg	1.5E-08	5.3E-08	6.8E-08
Formaldehyde (methanal) [Group NMVOC to air]	kg	2.4E-06	4.9E-05	5.2E-05
Formaldehyde (methanal) [Hydrocarbons to fresh water]	kg	4.1E-11	3.6E-07	3.6E-07
Formic acid (methane acid) [Group NMVOC to air]	kg	6.2E-11	4.8E-08	4.8E-08
Furan [Group NMVOC to air]	kg	1.8E-11	1.3E-08	1.3E-08
Glutaraldehyde [Hydrocarbons to sea water]	kg	7.6E-12	5.7E-08	5.7E-08
Glyphosate [Pesticides to agricultural soil]	kg	2.2E-11	1.0E-07	1.0E-07
Glyphosate [Pesticides to industrial soil]	kg	1.1E-11	2.9E-08	2.9E-08
Halogenated hydrocarbons (unspecified) [Halogenated organic emissions to air]	kg	7.9E-10	2.4E-14	7.9E-10
Halon (1211) [Halogenated organic emissions to air]	kg	1.1E-11	2.0E-08	2.0E-08
Halon (1301) [Halogenated organic emissions to air]	kg	5.3E-12	7.3E-08	7.3E-08
Hazardous waste (unspec.) [Hazardous waste]	kg	0.0E+00	0.0E+00	0.0E+00
Heavy metals to air (unspecified) [Heavy metals to air]	kg	5.4E-11	2.5E-10	3.1E-10
Heavy metals to water (unspecified) [Heavy metals to fresh water]	kg	8.9E-10	4.2E-09	5.1E-09
Helium [Inorganic emissions to air]	kg	9.6E-09	6.4E-06	6.4E-06
Heptane (isomers) [Group NMVOC to air]	kg	4.6E-06	4.2E-05	4.7E-05

Output (cont.)	Units	*Quarrying*	*Processing*	*Total*
Hexachlorobenzene (Perchlorobenzene) [Halogenated organic emissions to air]	kg	2.2E-12	3.6E-09	3.6E-09
Hexaflourosilicates [Inorganic emissions to air]	kg	1.8E-11	9.3E-08	9.3E-08
Hexaflourosilicates [Inorganic emissions to fresh water]	kg	3.2E-11	1.7E-07	1.7E-07
Hexamethylene diamine (HMDA) [Group NMVOC to air]	kg	1.6E-13	7.8E-13	9.3E-13
Hexane (isomers) [Group NMVOC to air]	kg	6.9E-06	1.4E-04	1.4E-04
Hexane (isomers) [Hydrocarbons to fresh water]	kg	1.1E-09	3.9E-09	5.0E-09
Hexane (isomers) [Hydrocarbons to sea water]	kg	8.8E-10	2.9E-09	3.8E-09
Highly radioactive waste [Radioactive waste]	kg	2.7E-06	1.4E-05	1.6E-05
Hydrocarbons (unspecified) [Hydrocarbons to fresh water]	kg	7.9E-08	2.6E-06	2.7E-06
Hydrocarbons (unspecified) [Hydrocarbons to sea water]	kg	1.2E-09	8.6E-06	8.6E-06
Hydrocarbons, aromatic [Group NMVOC to air]	kg	8.9E-09	1.6E-05	1.6E-05
Hydrocarbons (unspecified) [Organic emissions to air (group VOC)]	kg	6.5E-07	0.0E+00	6.5E-07
Hydrocarbons, chlorinated [Halogenated organic emissions to air]	kg	7.1E-10	4.9E-07	4.9E-07
Hydrogen (H3) [Radioactive emissions to air]	Bq	4.1E+01	7.7E+02	8.1E+02
Hydrogen (H3) [Radioactive emissions to fresh water]	Bq	1.4E+04	7.4E+04	8.8E+04
Hydrogen (H3) [Radioactive emissions to sea water]	Bq	1.0E+01	3.8E+04	3.8E+04
Hydrogen [Inorganic emissions to air]	kg	1.5E-06	8.5E-03	8.5E-03
Hydrogen arsenic (arsine) [Heavy metals to air]	kg	1.1E-10	3.8E-10	4.9E-10
Hydrogen bromine (hydrobromic acid) [Inorganic emissions to air]	kg	2.1E-09	1.0E-08	1.2E-08
Hydrogen chloride [Inorganic emissions to air]	kg	1.8E-05	5.3E-04	5.4E-04
Hydrogen chloride [Inorganic emissions to fresh water]	kg	2.9E-10	1.0E-09	1.3E-09
Hydrogen cyanide (prussic acid) [Inorganic emissions to air]	kg	2.1E-10	8.6E-10	1.1E-09
Hydrogen fluoride (hydrofluoric acid) [Inorganic emissions to fresh water]	kg	1.5E-10	1.1E-09	1.2E-09
Hydrogen fluoride [Inorganic emissions to air]	kg	2.9E-06	6.7E-05	7.0E-05
Hydrogen iodide [Inorganic emissions to air]	kg	2.0E-12	1.0E-11	1.2E-11
Hydrogen peroxide [Inorganic emissions to fresh water]	kg	1.1E-11	1.6E-08	1.6E-08
Hydrogen phosphorous [Inorganic emissions to air]	kg	2.4E-13	1.6E-12	1.9E-12
Hydrogen sulphide [Fresh water]	kg	2.6E-09	1.5E-06	1.5E-06
Hydrogen sulphide [Inorganic emissions to air]	kg	5.8E-05	2.7E-04	3.3E-04
Hydrogen sulphide [Inorganic emissions to fresh water]	kg	5.8E-05	2.6E-04	3.1E-04
Hydroxide [Inorganic emissions to fresh water]	kg	8.5E-09	7.6E-08	8.5E-08
Hypochlorite [Inorganic emissions to fresh water]	kg	2.9E-10	1.1E-06	1.1E-06
Hypochlorite [Inorganic emissions to sea water]	kg	3.0E-10	1.1E-06	1.1E-06
Incineration good [Waste for disposal]	kg	6.8E-07	0.0E+00	6.8E-07
Indeno[1,2,3-cd]pyrene [Group PAH to air]	kg	1.1E-10	3.8E-10	4.9E-10
Industrial waste for municipal disposal [Consumer waste]	kg	1.4E-06	0.0E+00	1.4E-06
Inert chemical waste [Hazardous waste]	kg	4.6E-07	0.0E+00	4.6E-07
Inert gases [Radioactive emissions to air]	Bq	2.5E+02	9.5E+05	9.5E+05
Inorganic salts and acids (unspecified) [Inorganic emissions to fresh water]	kg	0.0E+00	0.0E+00	0.0E+00
Iodide [Fresh water]	kg	2.7E-14	1.3E-12	1.3E-12
Iodide [Inorganic emissions to fresh water]	kg	6.8E-10	8.6E-06	8.6E-06
Iodide [Inorganic emissions to sea water]	kg	2.9E-10	3.8E-06	3.8E-06
Iodine (I129) [Radioactive emissions to air]	Bq	2.1E-02	2.0E-01	2.2E-01
Iodine (I129) [Radioactive emissions to fresh water]	Bq	1.4E+00	6.9E+00	8.2E+00

Output (cont.)	Units	*Quarrying*	*Processing*	*Total*
Iodine (I131) [Radioactive emissions to air]	Bq	4.4E-03	4.8E+00	4.8E+00
Iodine (I131) [Radioactive emissions to fresh water]	Bq	7.2E-05	5.6E-03	5.6E-03
Iodine (I133) [Radioactive emissions to air]	Bq	5.4E-08	3.1E-04	3.1E-04
Iodine (I133) [Radioactive emissions to fresh water]	Bq	3.4E-08	2.6E-04	2.6E-04
Iodine [Inorganic emissions to air]	kg	5.4E-10	1.9E-06	1.9E-06
Iodine-135 [Radioactive emissions to air]	Bq	6.4E-08	2.6E-04	2.6E-04
Iron (Fe59) [Radioactive emissions to fresh water]	Bq	9.3E-09	7.1E-05	7.1E-05
Iron [Fresh water]	kg	2.5E-06	3.7E-03	3.7E-03
Iron [Heavy metals to agricultural soil]	kg	5.2E-08	3.6E-06	3.6E-06
Iron [Heavy metals to air]	kg	4.0E-07	6.6E-06	7.0E-06
Iron [Heavy metals to fresh water]	kg	8.6E-04	6.4E-03	7.3E-03
Iron [Heavy metals to industrial soil]	kg	1.3E-07	2.1E-04	2.1E-04
Iron [Heavy metals to sea water]	kg	1.2E-06	6.3E-06	7.5E-06
Isocyanide acid [Inorganic emissions to air]	kg	1.2E-11	4.1E-08	4.2E-08
Isoprene [Group NMVOC to air]	kg	8.2E-13	6.2E-10	6.2E-10
Krypton (Kr85) [Radioactive emissions to air]	Bq	3.5E+05	1.8E+06	2.1E+06
Krypton (Kr85m) [Radioactive emissions to air]	Bq	3.6E-01	4.7E+00	5.1E+00
Krypton (Kr87) [Radioactive emissions to air]	Bq	1.9E-04	9.7E-01	9.7E-01
Krypton (Kr88) [Radioactive emissions to air]	Bq	1.9E-04	1.0E+00	1.0E+00
Krypton (Kr89) [Radioactive emissions to air]	Bq	4.5E-05	3.1E-01	3.1E-01
Lanthanides [Heavy metals to air]	kg	9.9E-13	4.3E-12	5.2E-12
Lanthanum (La140) [Radioactive emissions to fresh water]	Bq	5.7E-08	4.4E-04	4.4E-04
Lanthanum (La141) [Radioactive emissions to air]	Bq	1.8E-09	1.4E-05	1.4E-05
Lead (+II) [Fresh water]	kg	3.9E-08	5.6E-06	5.7E-06
Lead (+II) [Heavy metals to agricultural soil]	kg	3.2E-11	7.8E-08	7.8E-08
Lead (+II) [Heavy metals to air]	kg	2.2E-09	2.0E-05	2.0E-05
Lead (+II) [Heavy metals to fresh water]	kg	4.8E-10	1.6E-06	1.6E-06
Lead (+II) [Heavy metals to industrial soil]	kg	9.0E-13	1.0E-07	1.0E-07
Lead (+II) [Heavy metals to sea water]	kg	2.4E-11	2.9E-07	2.9E-07
Lead (Pb210) [Radioactive emissions to air]	Bq	1.5E-04	5.2E-01	5.2E-01
Lead (Pb210) [Radioactive emissions to fresh water]	Bq	6.0E-05	2.2E-01	2.2E-01
Lead (Pb210) [Radioactive emissions to sea water]	Bq	3.9E-05	8.0E-01	8.0E-01
Lead [Heavy metals to air]	kg	1.1E-07	4.8E-07	5.8E-07
Lead [Heavy metals to fresh water]	kg	5.3E-07	2.1E-06	2.6E-06
Lead [Heavy metals to industrial soil]	kg	2.0E-11	4.1E-10	4.3E-10
Lead [Heavy metals to sea water]	kg	1.4E-07	4.7E-07	6.2E-07
Lead dioxide [Inorganic emissions to air]	kg	2.4E-13	1.2E-12	1.4E-12
Limestone, scrap stone	kg	2.0E+00	0.56E+00	2.6E+00
Linuron [Pesticides to agricultural soil]	kg	9.0E-13	7.0E-06	7.0E-06
Lithium [Inorganic emissions to fresh water]	kg	1.7E-10	8.5E-07	8.5E-07
Magnesium (2+) [Inorganic emissions to industrial soil]	kg	3.5E-08	1.7E-07	2.1E-07
Magnesium (+III) [Fresh water]	kg	1.1E-06	1.9E-03	1.9E-03
Magnesium (+III) [Inorganic emissions to fresh water]	kg	1.3E-07	5.0E-04	5.0E-04
Magnesium (+III) [Inorganic emissions to industrial soil]	kg	4.1E-09	4.5E-05	4.5E-05
Magnesium [Inorganic emissions to air]	kg	3.4E-15	1.6E-11	1.6E-11
Magnesium [Inorganic emissions to fresh water]	kg	8.5E-05	3.8E-04	4.7E-04
Magnesium [Inorganic emissions to sea water]	kg	1.6E-05	2.6E-04	2.8E-04
Magnesium chloride [Inorganic emissions to fresh water]	kg	1.9E-10	9.5E-10	1.1E-09
Mancozeb [Pesticides to agricultural soil]	kg	5.2E-12	9.9E-09	9.9E-09

Output (cont.)	Units	*Quarrying*	*Processing*	*Total*
Manganese (+II) [Fresh water]	kg	5.4E-08	6.4E-05	6.4E-05
Manganese (+II) [Heavy metals to agricultural soil]	kg	7.2E-10	2.3E-06	2.3E-06
Manganese (+II) [Heavy metals to air]	kg	7.3E-10	9.6E-07	9.6E-07
Manganese (+II) [Heavy metals to fresh water]	kg	1.9E-09	7.4E-06	7.4E-06
Manganese (+II) [Heavy metals to industrial soil]	kg	2.1E-10	2.3E-06	2.3E-06
Manganese (+II) [Heavy metals to sea water]	kg	1.3E-10	1.7E-06	1.7E-06
Manganese (Mn54) [Radioactive emissions to air]	Bq	1.6E-10	1.3E-06	1.3E-06
Manganese (Mn54) [Radioactive emissions to fresh water]	Bq	3.2E-01	1.6E+00	1.9E+00
Manganese [Heavy metals to air]	kg	3.2E-08	1.5E-07	1.8E-07
Manganese [Heavy metals to fresh water]	kg	9.5E-07	7.1E-05	7.2E-05
Manganese [Heavy metals to industrial soil]	kg	1.4E-08	4.6E-08	6.0E-08
Manganese [Heavy metals to sea water]	kg	1.2E-07	4.1E-07	5.4E-07
Medium and low radioactive wastes [Radioactive waste]	kg	3.2E-06	1.6E-05	1.9E-05
Mercaptan (unspecified) [Group NMVOC to air]	kg	4.7E-08	1.6E-07	2.1E-07
Mercury (+II) [Fresh water]	kg	1.3E-10	1.0E-07	1.0E-07
Mercury (+II) [Heavy metals to agricultural soil]	kg	5.4E-13	6.0E-09	6.0E-09
Mercury (+II) [Heavy metals to air]	kg	3.4E-10	7.1E-07	7.1E-07
Mercury (+II) [Heavy metals to fresh water]	kg	5.2E-11	2.5E-08	2.5E-08
Mercury (+II) [Heavy metals to sea water]	kg	1.1E-13	8.8E-10	8.8E-10
Mercury [Heavy metals to air]	kg	1.5E-08	7.3E-08	8.8E-08
Mercury [Heavy metals to fresh water]	kg	1.0E-08	3.7E-08	4.7E-08
Mercury [Heavy metals to industrial soil]	kg	1.2E-12	4.1E-12	5.3E-12
Mercury [Heavy metals to sea water]	kg	2.0E-09	7.0E-09	9.0E-09
Metal ions (unspecific) [Fresh water]	kg	4.8E-08	1.8E-04	1.8E-04
Metals (unspecified) [Particles to air]	kg	3.6E-10	6.9E-12	3.7E-10
Metals (unspecified) [Particles to fresh water]	kg	6.4E-09	3.6E-11	6.4E-09
Metaldehyde [Organic emissions to agricultural soil]	kg	5.8E-15	3.1E-08	3.1E-08
Methacrylate [Group NMVOC to air]	kg	2.6E-14	6.5E-10	6.5E-10
Methane (biotic) [Organic emissions to air (group VOC)]	kg	1.8E-07	8.5E-05	8.5E-05
Methane [Organic emissions to air (group VOC)]	kg	9.2E-03	4.6E-02	5.5E-02
Methanol [Group NMVOC to air]	kg	1.5E-07	6.8E-06	6.9E-06
Methanol [Hydrocarbons to fresh water]	kg	1.1E-06	5.7E-06	6.8E-06
Methanol [Hydrocarbons to sea water]	kg	1.5E-10	2.6E-07	2.6E-07
Methyl acrylate [Organic emissions to fresh water]	kg	5.1E-13	1.3E-08	1.3E-08
Methyl amine [Group NMVOC to air]	kg	5.6E-17	1.3E-12	1.3E-12
Methyl amine [Organic emissions to fresh water]	kg	1.3E-16	3.0E-12	3.0E-12
Methyl borate [Group NMVOC to air]	kg	8.8E-21	2.2E-16	2.2E-16
Methyl bromide [Halogenated organic emissions to air]	kg	2.6E-20	1.3E-16	1.3E-16
Methyl formate [Group NMVOC to air]	kg	1.0E-16	2.5E-12	2.5E-12
Methyl formate [Organic emissions to fresh water]	kg	4.0E-17	1.0E-12	1.0E-12
Methyl isobutyl ketone [Organic emissions to fresh water]	kg	6.8E-16	3.3E-12	3.3E-12
Methyl tert-butylether [Group NMVOC to air]	kg	7.6E-13	5.6E-06	5.6E-06
Methyl tert-butylether [Hydrocarbons to fresh water]	kg	1.3E-14	8.7E-08	8.7E-08
Methyl tert-butylether [Hydrocarbons to sea water]	kg	1.9E-11	2.5E-07	2.5E-07
Metolachlor [Pesticides to agricultural soil]	kg	6.5E-12	5.0E-05	5.0E-05
Metribuzin [Pesticides to agricultural soil]	kg	1.8E-13	3.5E-10	3.5E-10
Mineral waste [Consumer waste]	kg	8.5E-06	0.0E+00	8.5E-06
Molybdenum (Mo99) [Radioactive emissions to fresh water]	Bq	2.0E-08	1.5E-04	1.5E-04
Molybdenum [Fresh water]	kg	2.7E-10	2.6E-08	2.6E-08

Output (cont.)	Units	*Quarrying*	*Processing*	*Total*
Molybdenum [Heavy metals to agricultural soil]	kg	1.9E-12	4.4E-10	4.5E-10
Molybdenum [Heavy metals to air]	kg	3.1E-08	2.2E-07	2.5E-07
Molybdenum [Heavy metals to fresh water]	kg	1.8E-07	4.7E-06	4.9E-06
Molybdenum [Heavy metals to sea water]	kg	3.1E-09	1.8E-08	2.1E-08
Monoethanolamine [Group NMVOC to air]	kg	2.2E-11	1.2E-07	1.2E-07
Municipal waste [Consumer waste]	kg	-1.4E-06	0.0E+00	-1.4E-06
Naphthalene [Group PAH to air]	kg	3.5E-08	1.2E-07	1.6E-07
Naphthalene [Organic emissions to fresh water]	kg	1.5E-08	5.1E-08	6.7E-08
Naphthalene [Organic emissions to sea water]	kg	1.2E-07	4.2E-07	5.4E-07
Napropamide [Pesticides to agricultural soil]	kg	1.0E-14	5.4E-08	5.4E-08
n-Butyl acetate [Organic emissions to fresh water]	kg	2.1E-13	4.9E-09	4.9E-09
Neutral salts [Inorganic emissions to fresh water]	kg	4.9E-11	2.6E-10	3.0E-10
Nickel (+II) [Fresh water]	kg	1.0E-07	9.3E-05	9.3E-05
Nickel (+II) [Heavy metals to agricultural soil]	kg	1.2E-11	-4.8E-08	-4.8E-08
Nickel (+II) [Heavy metals to air]	kg	1.5E-09	3.8E-06	3.8E-06
Nickel (+II) [Heavy metals to fresh water]	kg	2.0E-09	1.2E-06	1.2E-06
Nickel (+II) [Heavy metals to industrial soil]	kg	2.8E-13	3.2E-08	3.2E-08
Nickel (+II) [Heavy metals to sea water]	kg	2.1E-12	3.1E-08	3.1E-08
Nickel [Heavy metals to air]	kg	2.5E-07	9.4E-07	1.2E-06
Nickel [Heavy metals to fresh water]	kg	4.9E-07	1.8E-06	2.3E-06
Nickel [Heavy metals to industrial soil]	kg	1.9E-08	6.7E-08	8.6E-08
Nickel [Heavy metals to sea water]	kg	2.3E-07	7.6E-07	9.9E-07
Niobium (Nb95) [Radioactive emissions to air]	Bq	5.1E-07	2.1E-03	2.1E-03
Nitrate [Fresh water]	kg	2.8E-08	5.0E-06	5.0E-06
Nitrate [Inorganic emissions to air]	kg	7.2E-12	9.9E-09	9.9E-09
Nitrate [Inorganic emissions to fresh water]	kg	1.5E-06	7.1E-03	7.1E-03
Nitrate [Inorganic emissions to sea water]	kg	2.3E-08	1.9E-05	1.9E-05
Nitrite [Fresh water]	kg	2.5E-10	3.1E-08	3.1E-08
Nitrite [Inorganic emissions to fresh water]	kg	8.9E-09	1.0E-07	1.1E-07
Nitrite [Inorganic emissions to sea water]	kg	6.5E-11	2.5E-07	2.5E-07
Nitrogen (atmospheric nitrogen) [Inorganic emissions to air]	kg	3.3E-04	1.5E-03	1.8E-03
Nitrogen [Inorganic emissions to fresh water]	kg	1.2E-07	3.1E-05	3.1E-05
Nitrogen [Inorganic emissions to sea water]	kg	6.5E-11	2.5E-07	2.5E-07
Nitrogen dioxide [Inorganic emissions to air]	kg	8.8E-07	1.2E-12	8.8E-07
Nitrogen monoxide [Inorganic emissions to air]	kg	5.1E-11	1.9E-10	2.4E-10
Nitrogen organic bounded [Fresh water]	kg	7.4E-09	9.2E-07	9.3E-07
Nitrogen organic bounded [Inorganic emissions to fresh water]	kg	2.3E-05	1.0E-04	1.3E-04
Nitrogen organic bounded [Inorganic emissions to sea water]	kg	5.2E-10	6.6E-06	6.6E-06
Nitrogen oxides [Inorganic emissions to air]	kg	4.5E-03	8.5E-02	8.9E-02
Nitrous oxide (laughing gas) [Inorganic emissions to air]	kg	3.0E-05	6.7E-04	7.0E-04
NMVOC (unspecified) [Group NMVOC to air]	kg	2.8E-04	7.1E-02	7.1E-02
non used primary energy from water power [Other emissions to fresh water]	MJ	8.6E-02	4.2E-01	5.1E-01
non used primary energy from wind power [Other emissions to air]	MJ	5.0E-05	2.3E-04	2.8E-04
Octane [Group NMVOC to air]	kg	2.5E-06	8.5E-06	1.1E-05
Oil (unspecified) [Hydrocarbons to fresh water]	kg	3.9E-06	6.6E-03	6.6E-03
Oil (unspecified) [Hydrocarbons to sea water]	kg	9.7E-06	1.3E-03	1.3E-03
Oil (unspecified) [Organic emissions to agricultural soil]	kg	6.2E-07	1.4E-02	1.4E-02
Oil (unspecified) [Organic emissions to industrial soil]	kg	1.8E-06	5.2E-05	5.4E-05

Output (cont.)	Units	*Quarrying*	*Processing*	*Total*
Orbencarb [Pesticides to agricultural soil]	kg	9.9E-13	1.9E-09	1.9E-09
Organic chlorine compounds (unspecified) [Organic emissions to fresh water]	kg	3.5E-10	3.8E-12	3.5E-10
Organic chlorine compounds [Organic emissions to air (group VOC)]	kg	1.7E-09	2.7E-23	1.7E-09
Organic compounds (dissolved) [Organic emissions to fresh water]	kg	4.1E-08	0.0E+00	4.1E-08
Organic compounds (unspecified) [Organic emissions to fresh water]	kg	2.4E+00	1.1E+01	1.4E+01
Organic waste [Consumer waste]	kg	3.9E-03	1.4E-02	1.8E-02
Overburden (deposited) [Stockpile goods]	kg	2.0E-02	1.0E-01	1.2E-01
Oxygen [Inorganic emissions to air]	kg	1.1E-15	3.5E-15	4.5E-15
Oxygen [Renewable resources]	kg	2.0E-02	1.0E-01	1.2E-01
Ozone [Inorganic emissions to air]	kg	8.9E-09	3.4E-05	3.4E-05
Packaging waste (metal) [Consumer waste]	kg	4.6E-09	0.0E+00	4.6E-09
Packaging waste (plastic) [Consumer waste]	kg	9.8E-16	0.0E+00	9.8E-16
Palladium [Heavy metals to air]	kg	7.0E-16	3.5E-15	4.2E-15
Paper (unspecified) [Consumer waste]	kg	0.0E+00	0.0E+00	0.0E+00
Pentachlorobenzene [Halogenated organic emissions to air]	kg	4.1E-13	1.4E-10	1.4E-10
Pentachlorophenol (PCP) [Halogenated organic emissions to air]	kg	7.1E-12	2.6E-08	2.6E-08
Pentane (n-pentane) [Group NMVOC to air]	kg	5.2E-05	4.0E-04	4.5E-04
Phenanthrene [Group PAH to air]	kg	1.1E-08	3.8E-08	4.9E-08
Phenol (hydroxy benzene) [Group NMVOC to air]	kg	4.0E-10	9.9E-07	9.9E-07
Phenol (hydroxy benzene) [Hydrocarbons to fresh water]	kg	4.1E-07	8.4E-06	8.8E-06
Phenol (hydroxy benzene) [Hydrocarbons to sea water]	kg	1.9E-06	1.1E-05	1.3E-05
Phosphate [Fresh water]	kg	2.4E-07	2.6E-04	2.6E-04
Phosphate [Inorganic emissions to fresh water]	kg	2.1E-06	3.3E-05	3.5E-05
Phosphate [Inorganic emissions to sea water]	kg	6.5E-10	1.3E-05	1.3E-05
Phosphorus [Inorganic emissions to agricultural soil]	kg	3.0E-10	1.1E-06	1.1E-06
Phosphorus [Inorganic emissions to air]	kg	3.1E-10	3.1E-07	3.1E-07
Phosphorus [Inorganic emissions to fresh water]	kg	2.7E-07	7.4E-06	7.7E-06
Phosphorus [Inorganic emissions to industrial soil]	kg	3.8E-06	1.6E-05	1.9E-05
Phosphorus [Inorganic emissions to sea water]	kg	2.4E-11	3.1E-07	3.1E-07
Pirimicarb [Pesticides to agricultural soil]	kg	5.7E-15	4.4E-08	4.4E-08
Plastic (unspecified) [Waste for recovery]	kg	2.2E-06	0.0E+00	2.2E-06
Platinum [Heavy metals to air]	kg	3.5E-16	1.3E-12	1.3E-12
Plutonium (Pu alpha) [Radioactive emissions to air]	Bq	7.7E-07	1.1E-05	1.2E-05
Plutonium (Pu alpha) [Radioactive emissions to fresh water]	Bq	3.8E-02	1.9E-01	2.3E-01
Plutonium (Pu238) [Radioactive emissions to air]	Bq	3.5E-12	1.4E-08	1.4E-08
Plutonium as residual product [Radioactive waste]	kg	5.4E-09	2.7E-08	3.2E-08
Polonium (Po210) [Radioactive emissions to air]	Bq	2.7E-04	9.2E-01	9.2E-01
Polonium (Po210) [Radioactive emissions to fresh water]	Bq	6.0E-05	2.2E-01	2.2E-01
Polonium (Po210) [Radioactive emissions to sea water]	Bq	5.9E-05	1.2E+00	1.2E+00
Polychlorinated biphenyls (PCB unspecified) [Halogenated organic emissions to air]	kg	2.4E-10	6.7E-09	6.9E-09
Polychlorinated dibenzo-p-dioxins (2,3,7,8 - TCDD) [Halogenated organic emissions to air]	kg	7.4E-14	4.2E-12	4.3E-12
Polychlorinated dibenzo-p-dioxins (2,3,7,8 - TCDD) [Halogenated organic emissions to fresh water]	kg	1.6E-17	2.2E-17	3.7E-17
Polycyclic aromatic hydrocarbons (PAH) [Group PAH to air]	kg	2.0E-06	1.1E-05	1.3E-05

Output (cont.)	Units	*Quarrying*	*Processing*	*Total*
Polycyclic aromatic hydrocarbons (PAH, unspec.) [Hydrocarbons to fresh water]	kg	8.5E-08	9.1E-07	9.9E-07
Polycyclic aromatic hydrocarbons (PAH, unspec.) [Hydrocarbons to sea water]	kg	2.3E-11	3.0E-07	3.0E-07
Potassium (+) [Inorganic emissions to industrial soil]	kg	7.5E-06	4.5E-05	5.3E-05
Potassium (K40) [Radioactive emissions to air]	Bq	3.5E-05	1.2E-01	1.2E-01
Potassium (K40) [Radioactive emissions to fresh water]	Bq	7.6E-05	2.8E-01	2.8E-01
Potassium (K40) [Radioactive emissions to sea water]	Bq	4.7E-06	9.7E-02	9.7E-02
Potassium [Fresh water]	kg	3.9E-07	4.0E-04	4.0E-04
Potassium [Inorganic emissions to fresh water]	kg	2.9E-07	6.7E-04	6.7E-04
Potassium [Inorganic emissions to sea water]	kg	1.2E-08	1.6E-04	1.6E-04
Production residues (unspecified) [Waste for recovery]	kg	3.2E-08	0.0E+00	3.2E-08
Propane [Group NMVOC to air]	kg	2.4E-08	1.5E-04	1.5E-04
Propane [Group NMVOC to air]	kg	7.0E-04	2.5E-03	3.2E-03
Propene (propylene) [Group NMVOC to air]	kg	3.9E-07	2.2E-06	2.6E-06
Propene [Hydrocarbons to fresh water]	kg	8.5E-10	1.2E-06	1.2E-06
Propionaldehyde [Group NMVOC to air]	kg	1.0E-12	1.1E-09	1.1E-09
Propionic acid (propane acid) [Group NMVOC to air]	kg	1.8E-10	2.2E-07	2.2E-07
Propylene oxide [Group NMVOC to air]	kg	2.3E-12	2.3E-07	2.3E-07
Propylene oxide [Hydrocarbons to fresh water]	kg	5.4E-12	5.5E-07	5.5E-07
Protactinium (Pa234m) [Radioactive emissions to air]	Bq	3.5E-06	1.4E-02	1.4E-02
Protactinium (Pa234m) [Radioactive emissions to fresh water]	Bq	6.5E-05	2.5E-01	2.5E-01
R 11 (trichlorofluoromethane) [Halogenated organic emissions to air]	kg	5.9E-08	3.0E-07	3.5E-07
R 113 (trichlorofluoroethane) [Halogenated organic emissions to air]	kg	1.1E-15	2.7E-11	2.7E-11
R 114 (dichlorotetrafluoroethane) [Halogenated organic emissions to air]	kg	6.0E-08	3.4E-07	4.0E-07
R 116 (hexafluoroethane) [Halogenated organic emissions to air]	kg	1.5E-11	8.1E-08	8.1E-08
R 12 (dichlorodifluoromethane) [Halogenated organic emissions to air]	kg	1.3E-08	6.4E-08	7.6E-08
R 134a (tetrafluoroethane) [Halogenated organic emissions to air]	kg	6.0E-13	2.4E-09	2.4E-09
R 13 (chlorotrifluoromethane) [Halogenated organic emissions to air]	kg	8.0E-09	4.0E-08	4.8E-08
R 152a (difluoroethane) [Halogenated organic emissions to air]	kg	7.7E-13	2.9E-09	2.9E-09
R 21 (Dichlorofluoromethane) [Halogenated organic emissions to air]	kg	2.3E-17	2.2E-13	2.2E-13
R 22 (chlorodifluoromethane) [Halogenated organic emissions to air]	kg	1.4E-08	1.7E-07	1.8E-07
R 23 (trifluoromethane) [Halogenated organic emissions to air]	kg	7.3E-15	6.9E-11	6.9E-11
Radioactive emissions (general) [Radioactive emissions to air]	Bq	6.3E-06	2.4E-02	2.4E-02
Radioactive isotopes (unspecific) [Radioactive emissions to air]	Bq	6.5E-05	2.1E+00	2.1E+00
Radioactive isotopes (unspecific) [Radioactive emissions to fresh water]	Bq	2.5E-02	9.7E+01	9.7E+01
Radioactive tailings [Radioactive waste]	kg	1.6E-03	8.0E-03	9.6E-03
Radium (Ra224) [Radioactive emissions to fresh water]	Bq	3.1E-04	4.2E+00	4.2E+00
Radium (Ra224) [Radioactive emissions to sea water]	Bq	1.4E-04	1.9E+00	1.9E+00
Radium (Ra226) [Radioactive emissions to air]	Bq	1.5E-04	5.7E-01	5.7E-01

Output (cont.)	Units	*Quarrying*	*Processing*	*Total*
Radium (Ra226) [Radioactive emissions to fresh water]	kg	1.6E+02	9.5E+02	1.1E+03
Radium (Ra226) [Radioactive emissions to sea water]	Bq	2.7E-04	4.0E+00	4.0E+00
Radium (Ra228) [Radioactive emissions to air]	Bq	3.4E-05	6.6E-02	6.6E-02
Radium (Ra228) [Radioactive emissions to fresh water]	Bq	6.2E-04	8.4E+00	8.4E+00
Radium (Ra228) [Radioactive emissions to sea water]	Bq	2.9E-04	3.8E+00	3.8E+00
Radon (Rn220) [Radioactive emissions to air]	Bq	1.4E-03	5.1E+00	5.1E+00
Radon (Rn222) [Air]	kg	4.5E+02	1.8E+06	1.8E+06
Radon (Rn222) [Radioactive emissions to air]	Bq	5.2E+03	6.8E+04	7.3E+04
Rhodium [Heavy metals to air]	kg	6.8E-16	3.4E-15	4.0E-15
Rubidium [Inorganic emissions to fresh water]	kg	9.3E-11	1.2E-06	1.2E-06
Ruthenium (Ru103) [Radioactive emissions to air]	Bq	4.3E-12	3.3E-08	3.3E-08
Ruthenium (Ru103) [Radioactive emissions to fresh water]	Bq	4.2E-09	3.2E-05	3.2E-05
Ruthenium (Ru106) [Radioactive emissions to fresh water]	Bq	9.5E-03	4.7E-02	5.7E-02
Scandium [Fresh water]	kg	2.7E-10	9.3E-07	9.3E-07
Scandium [Inorganic emissions to air]	kg	1.2E-12	9.4E-10	9.4E-10
Scandium [Inorganic emissions to fresh water]	kg	6.5E-11	2.3E-07	2.3E-07
Selenium [Fresh water]	kg	2.0E-10	5.9E-07	5.9E-07
Selenium [Heavy metals to air]	kg	2.8E-07	1.7E-06	2.0E-06
Selenium [Heavy metals to fresh water]	kg	3.8E-08	6.5E-07	6.9E-07
Selenium [Heavy metals to sea water]	kg	8.9E-13	1.2E-08	1.2E-08
Silicate particles [Inorganic emissions to fresh water]	kg	5.9E-11	2.1E-10	2.7E-10
Silicium tetrafluoride [Inorganic emissions to air]	kg	9.7E-14	2.5E-10	2.5E-10
Silicon dioxide (silica) [Particles to fresh water]	kg	3.8E-14	0.0E+00	3.8E-14
Silver (Ag110m) [Radioactive emissions to air]	Bq	4.2E-11	3.2E-07	3.2E-07
Silver (Ag110m) [Radioactive emissions to fresh water]	Bq	5.3E-05	2.0E-01	2.0E-01
Silver [Fresh water]	kg	7.5E-11	8.7E-10	9.4E-10
Silver [Heavy metals to air]	kg	1.3E-13	3.4E-09	3.4E-09
Silver [Heavy metals to fresh water]	kg	1.2E-08	1.2E-07	1.3E-07
Silver [Heavy metals to sea water]	kg	9.2E-09	5.3E-08	6.3E-08
Slag (deposited) [Stockpile goods]	kg	3.6E-04	1.8E-03	2.1E-03
Slag (Uranium conversion) [Radioactive waste]	kg	6.0E-06	3.0E-05	3.6E-05
Sludge [Hazardous waste]	kg	0.0E+00	0.0E+00	0.0E+00
Sodium (+I) [Fresh water]	kg	9.6E-07	1.1E-03	1.1E-03
Sodium (+I) [Inorganic emissions to fresh water]	kg	3.3E-05	2.9E-02	2.9E-02
Sodium (+) [Inorganic emissions to industrial soil]	kg	1.0E-06	1.2E-04	1.2E-04
Sodium (+I) [Inorganic emissions to sea water]	kg	8.8E-07	1.2E-02	1.2E-02
Sodium (Na24) [Radioactive emissions to fresh water]	Bq	1.5E-07	1.1E-03	1.1E-03
Sodium [Inorganic emissions to fresh water]	kg	6.8E-04	2.6E-03	3.3E-03
Sodium [Inorganic emissions to sea water]	kg	7.7E-05	2.7E-04	3.4E-04
Sodium chlorate [Inorganic emissions to air]	kg	1.1E-12	3.6E-09	3.6E-09
Sodium chloride (rock salt) [Inorganic emissions to fresh water]	kg	8.8E-11	4.6E-10	5.5E-10
Sodium hypochlorite [Inorganic emissions to fresh water]	kg	1.8E-11	8.3E-11	1.0E-10
Sodium dichromate [Inorganic emissions to air]	kg	1.4E-11	1.0E-08	1.0E-08
Sodium formate [Hydrocarbons to fresh water]	kg	3.5E-13	1.1E-09	1.1E-09
Sodium formate [Inorganic emissions to air]	kg	1.5E-13	4.4E-10	4.4E-10
Sodium hydro [Inorganic emissions to air]	kg	2.5E-13	5.7E-09	5.7E-09
Soil loss by erosion into water [Particles to fresh water]	kg	2.7E-09	8.9E-09	1.2E-08
Solids (dissolved) [Analytical measures to fresh water]	kg	1.3E-05	5.5E-03	5.5E-03

Output (cont.)	Units	*Quarrying*	*Processing*	*Total*
Solids (suspended) [Fresh water]	kg	2.6E-05	4.0E-02	4.0E-02
Solids (suspended) [Particles to fresh water]	kg	2.1E-02	7.3E-02	9.4E-02
Solids (suspended) [Particles to sea water]	kg	3.1E-03	1.2E-02	1.5E-02
Spoil (deposited) [Stockpile goods]	kg	1.8E-02	6.4E-02	8.2E-02
Steam [Inorganic emissions to air]	kg	2.8E+00	1.4E+01	1.7E+01
Strontium (Sr89) [Radioactive emissions to fresh water]	Bq	6.9E-07	3.8E-03	3.8E-03
Strontium (Sr90) [Radioactive emissions to fresh water]	Bq	4.9E-01	1.3E+02	1.3E+02
Strontium (Sr90) [Radioactive emissions to sea water]	Bq	5.3E-04	2.1E+00	2.1E+00
Strontium [Fresh water]	kg	1.7E-08	6.0E-05	6.0E-05
Strontium [Heavy metals to agricultural soil]	kg	2.9E-13	5.4E-09	5.4E-09
Strontium [Heavy metals to fresh water]	kg	1.5E-05	2.1E-04	2.3E-04
Strontium [Heavy metals to industrial soil]	kg	2.3E-05	8.0E-05	1.0E-04
Strontium [Heavy metals to sea water]	kg	7.4E-06	9.4E-05	1.0E-04
Strontium [Inorganic emissions to air]	kg	2.2E-10	9.5E-05	9.5E-05
Styrene [Group NMVOC to air]	kg	4.2E-11	1.7E-07	1.7E-07
Sulphate [Fresh water]	kg	3.8E-06	1.1E-02	1.1E-02
Sulphate [Inorganic emissions to air]	kg	6.1E-15	2.5E-11	2.5E-11
Sulphate [Inorganic emissions to fresh water]	kg	2.1E-03	2.1E-02	2.3E-02
Sulphate [Inorganic emissions to industrial soil]	kg	1.1E-06	3.6E-06	4.7E-06
Sulphate [Inorganic emissions to sea water]	kg	1.2E-04	1.2E-03	1.3E-03
Sulphide [Inorganic emissions to fresh water]	kg	1.4E-05	4.5E-05	5.9E-05
Sulphide [Inorganic emissions to industrial soil]	kg	6.4E-06	2.2E-05	2.8E-05
Sulphide [Inorganic emissions to sea water]	kg	5.4E-05	1.8E-04	2.3E-04
Sulphite [Inorganic emissions to fresh water]	kg	5.9E-07	8.8E-06	9.4E-06
Sulphur [Inorganic emissions to agricultural soil]	kg	6.3E-09	1.1E-06	1.1E-06
Sulphur [Inorganic emissions to fresh water]	kg	4.1E-07	2.8E-05	2.9E-05
Sulphur [Inorganic emissions to industrial soil]	kg	3.1E-09	3.4E-05	3.4E-05
Sulphur [Inorganic emissions to sea water]	kg	3.1E-07	1.6E-06	1.9E-06
Sulphur dioxide [Inorganic emissions to air]	kg	8.8E-03	6.0E-02	6.9E-02
Sulphur hexafluoride [Inorganic emissions to air]	kg	1.5E-10	6.6E-07	6.6E-07
Sulphuric acid [Inorganic emissions to agricultural soil]	kg	6.3E-09	1.1E-06	1.1E-06
Sulphuric acid [Inorganic emissions to air]	kg	8.7E-09	2.6E-08	3.5E-08
Sulphuric acid [Inorganic emissions to fresh water]	kg	3.8E-08	1.3E-07	1.7E-07
Tailings [Stockpile goods]	kg	1.8E-08	0.0E+00	1.8E-08
Tebutam [Pesticides to agricultural soil]	kg	2.4E-14	1.3E-07	1.3E-07
Technetium (Tc99m) [Radioactive emissions to fresh water]	Bq	4.6E-07	3.5E-03	3.5E-03
Teflubenzuron [Pesticides to agricultural soil]	kg	1.2E-14	2.3E-11	2.3E-11
Tellurium (Te123m) [Radioactive emissions to fresh water]	Bq	7.4E-07	2.9E-03	2.9E-03
Tellurium (Te132) [Radioactive emissions to fresh water]	Bq	1.1E-09	8.7E-06	8.7E-06
Tellurium [Heavy metals to air]	kg	3.9E-11	1.4E-10	1.8E-10
Terpenes [Group NMVOC to air]	kg	7.8E-12	5.8E-09	5.9E-09
Tetrachloroethene (perchloroethylene) [Halogenated organic emissions to air]	kg	8.5E-08	2.5E-11	8.5E-08
Tetrafluoromethane [Halogenated organic emissions to air]	kg	4.2E-10	7.1E-07	7.1E-07
Thallium [Fresh water]	kg	2.2E-11	7.0E-08	7.0E-08
Thallium [Heavy metals to air]	kg	2.9E-10	3.0E-09	3.2E-09
Thallium [Heavy metals to fresh water]	kg	4.9E-11	1.1E-08	1.1E-08
Thiram [Pesticides to agricultural soil]	kg	3.5E-14	2.7E-11	2.7E-11
Thorium (Th228) [Radioactive emissions to air]	Bq	8.1E-06	2.5E-02	2.5E-02

Output (cont.)	Units	*Quarrying*	*Processing*	*Total*
Thorium (Th228) [Radioactive emissions to fresh water]	Bq	1.2E-03	1.7E+01	1.7E+01
Thorium (Th228) [Radioactive emissions to sea water]	Bq	5.8E-04	7.7E+00	7.7E+00
Thorium (Th230) [Radioactive emissions to air]	Bq	2.3E+00	3.4E+03	3.4E+03
Thorium (Th230) [Radioactive emissions to fresh water]	Bq	8.8E-03	3.4E+01	3.4E+01
Thorium (Th232) [Radioactive emissions to air]	Bq	1.1E-05	3.7E-02	3.7E-02
Thorium (Th232) [Radioactive emissions to fresh water]	Bq	1.4E-05	5.1E-02	5.1E-02
Thorium (Th234) [Radioactive emissions to air]	Bq	3.5E-06	1.4E-02	1.4E-02
Thorium (Th234) [Radioactive emissions to fresh water]	Bq	6.5E-05	2.5E-01	2.5E-01
Tin (+IV) [Fresh water]	kg	7.9E-09	4.7E-06	4.8E-06
Tin (+IV) [Heavy metals to agricultural soil]	kg	7.7E-12	1.2E-10	1.3E-10
Tin (+IV) [Heavy metals to air]	kg	1.5E-10	1.6E-07	1.6E-07
Tin (+IV) [Heavy metals to fresh water]	kg	2.6E-11	1.7E-08	1.7E-08
Tin [Heavy metals to air]	kg	1.0E-07	5.1E-07	6.2E-07
Tin [Heavy metals to fresh water]	kg	1.4E-08	4.7E-08	6.2E-08
Tin [Heavy metals to sea water]	kg	1.1E-08	3.6E-08	4.7E-08
Tin oxide [Inorganic emissions to air]	kg	2.1E-14	1.0E-13	1.3E-13
Titanium [Heavy metals to agricultural soil]	kg	4.3E-11	1.6E-07	1.6E-07
Titanium [Heavy metals to air]	kg	2.5E-10	2.6E-07	2.6E-07
Titanium [Heavy metals to fresh water]	kg	2.0E-08	8.3E-07	8.5E-07
Titanium [Heavy metals to sea water]	kg	1.1E-09	5.7E-09	6.9E-09
Toluene (methyl benzene) [Group NMVOC to air]	kg	2.1E-06	3.7E-05	3.9E-05
Toluene (methyl benzene) [Hydrocarbons to fresh water]	kg	3.3E-07	1.1E-05	1.1E-05
Toluene (methyl benzene) [Hydrocarbons to sea water]	kg	8.3E-07	8.6E-06	9.4E-06
Total dissolved organic bounded carbon [Analytical measures to fresh water]	kg	7.0E-07	6.3E-03	6.3E-03
Total dissolved organic bounded carbon [Analytical measures to sea water]	kg	7.0E-07	6.3E-03	6.3E-03
Total organic bounded carbon [Analytical measures to fresh water]	kg	7.0E-07	6.3E-03	6.3E-03
Total organic bounded carbon [Analytical measures to sea water]	kg	2.8E-05	1.4E-03	1.4E-03
Toxic chemicals (unspecified) [Hazardous waste for disposal]	kg	2.3E-06	0.0E+00	2.3E-06
Tributyltinoxide [Pesticides to sea water]	kg	3.0E-11	1.6E-07	1.6E-07
Trichloromethane (chloroform) [Halogenated organic emissions to air]	kg	3.2E-13	1.7E-09	1.7E-09
Trichloromethane (chloroform) [Halogenated organic emissions to fresh water]	kg	3.1E-15	7.5E-11	7.5E-11
Triethylene glycol [Hydrocarbons to sea water]	kg	1.2E-10	2.2E-07	2.2E-07
Trimethylbenzene [Group NMVOC to air]	kg	2.1E-13	1.0E-12	1.2E-12
Tungsten [Fresh water]	kg	1.5E-10	5.2E-07	5.2E-07
Tungsten [Heavy metals to fresh water]	kg	8.9E-11	3.2E-07	3.2E-07
Unused primary energy from geothermal [Other emissions to fresh water]	MJ	5.7E-02	2.9E-01	3.4E-01
Unused primary energy from solar energy [Other emissions to air]	MJ	2.2E-03	1.1E-02	1.3E-02
Uranium (total) [Radioactive emissions to air]	Bq	8.6E-02	1.2E+00	1.3E+00
Uranium (U234) [Radioactive emissions to air]	Bq	2.2E-02	2.7E-01	3.0E-01
Uranium (U234) [Radioactive emissions to fresh water]	Bq	7.7E-05	3.0E-01	3.0E-01
Uranium (U235) [Radioactive emissions to air]	Bq	1.1E-03	1.3E-02	1.4E-02
Uranium (U235) [Radioactive emissions to fresh water]	Bq	1.3E-04	5.0E-01	5.0E-01
Uranium (U238) [Radioactive emissions to air]	Bq	3.5E-02	4.3E-01	4.6E-01

Output (cont.)	Units	*Quarrying*	*Processing*	*Total*
Uranium (U238) [Radioactive emissions to fresh water]	Bq	2.2E-04	8.7E-01	8.7E-01
Uranium (U238) [Radioactive emissions to sea water]	Bq	2.0E-05	4.1E-01	4.1E-01
Uranium [Radioactive emissions to fresh water]	Bq	2.9E+00	2.9E+01	3.2E+01
Uranium depleted [Radioactive waste]	kg	6.2E-06	3.1E-05	3.7E-05
Used air [Other emissions to air]	kg	5.1E-03	2.3E-02	2.8E-02
Used oil [Hazardous waste for recovery]	kg	0.0E+00	0.0E+00	0.0E+00
Vanadium (+III) [Fresh water]	kg	1.2E-08	2.6E-05	2.6E-05
Vanadium (+III) [Heavy metals to agricultural soil]	kg	1.2E-12	4.4E-09	4.4E-09
Vanadium (+III) [Heavy metals to air]	kg	1.6E-09	6.5E-06	6.5E-06
Vanadium (+III) [Heavy metals to fresh water]	kg	2.1E-10	7.6E-07	7.6E-07
Vanadium (+III) [Heavy metals to sea water]	kg	1.8E-12	2.3E-08	2.3E-08
Vanadium [Heavy metals to air]	kg	1.5E-05	5.4E-05	6.8E-05
Vanadium [Heavy metals to fresh water]	kg	1.9E-07	7.8E-07	9.7E-07
Vanadium [Heavy metals to sea water]	kg	4.7E-08	1.6E-07	2.0E-07
Vinyl chloride (VCM; chloroethene) [Halogenated organic emissions to air]	kg	3.9E-09	3.0E-08	3.4E-08
Vinyl chloride (VCM; chloroethene) [Halogenated organic emissions to fresh water]	kg	7.0E-13	2.0E-10	2.0E-10
VOC [Organic emissions to fresh water]	kg	2.3E-09	3.0E-05	3.0E-05
VOC [Organic emissions to sea water]	kg	1.0E-09	1.3E-05	1.3E-05
VOC (unspecified) [Organic emissions to air (group VOC)]	kg	3.6E-06	1.3E-05	1.6E-05
Waste heat [Fresh water]	kg	8.0E-05	1.2E-02	1.2E-02
Waste heat [Other emissions to air]	MJ	1.4E+01	2.2E+02	2.3E+02
Waste heat [Other emissions to fresh water]	MJ	1.1E+00	1.2E+01	1.3E+01
Waste heat [Other emissions to sea water]	kg	1.5E-07	5.8E-04	5.8E-04
Waste (unspecified) [Consumer waste]	kg	1.6E-07	0.0E+00	1.6E-07
Waste paper [Waste for recovery]	kg	3.8E-10	0.0E+00	3.8E-10
Waste radioactive [Radioactive waste]	kg	5.4E-06	2.7E-05	3.2E-05
Waste water processing residue [Hazardous waste for recovery]	kg	0.0E+00	0.0E+00	0.0E+00
Water (boiler feed water) [Operating materials]	kg	0.0E+00	0.0E+00	0.0E+00
Water (river water) [Water]	kg	9.0E+00	4.3E+01	5.2E+01
Water (sea water) [Water]	kg	6.4E-04	3.4E-03	4.0E-03
Wood (dust) [Particles to air]	kg	7.9E-12	3.9E-11	4.6E-11
Wood [Waste for recovery]	kg	1.9E-09	0.0E+00	1.9E-09
Wooden pallet (EURO) [Waste for recovery]	kg	4.8E-15	0.0E+00	4.8E-15
Xenon (Xe131m) [Radioactive emissions to air]	Bq	2.9E-01	6.0E+00	6.3E+00
Xenon (Xe133) [Radioactive emissions to air]	Bq	4.7E+01	3.9E+02	4.3E+02
Xenon (Xe133m) [Radioactive emissions to air]	Bq	3.8E-01	2.4E+00	2.8E+00
Xenon (Xe135) [Radioactive emissions to air]	Bq	1.3E+01	1.3E+02	1.4E+02
Xenon (Xe135m) [Radioactive emissions to air]	Bq	2.3E+00	4.9E+01	5.1E+01
Xenon (Xe137) [Radioactive emissions to air]	Bq	4.2E-03	8.8E-01	8.9E-01
Xenon (Xe138) [Radioactive emissions to air]	Bq	5.3E-01	9.8E+00	1.0E+01
Xylene (dimethyl benzene) [Group NMVOC to air]	kg	1.8E-05	1.4E-04	1.6E-04
Xylene (isomers; dimethyl benzene) [Hydrocarbons to fresh water]	kg	8.9E-08	8.3E-06	8.4E-06
Xylene (isomers; dimethyl benzene) [Hydrocarbons to sea water]	kg	4.5E-07	6.0E-06	6.5E-06
Xylene (meta-Xylene; 1,3-Dimethylbenzene) [Group NMVOC to air]	kg	2.8E-11	1.0E-07	1.0E-07

Output (cont.)	Units	*Quarrying*	*Processing*	*Total*
Xylene (meta-Xylene; 1,3-Dimethylbenzene) [Hydrocarbons to fresh water]	kg	4.9E-15	2.4E-11	2.4E-11
Xylene (ortho-Xylene; 1,2-Dimethylbenzene) [Hydrocarbons to fresh water]	kg	3.6E-15	1.7E-11	1.7E-11
Zinc (+II) [Fresh water]	kg	7.1E-08	8.3E-05	8.4E-05
Zinc (+II) [Heavy metals to agricultural soil]	kg	3.6E-10	1.3E-06	1.3E-06
Zinc (+II) [Heavy metals to air]	kg	8.5E-09	1.5E-05	1.5E-05
Zinc (+II) [Heavy metals to fresh water]	kg	8.1E-09	1.6E-05	1.6E-05
Zinc (+II) [Heavy metals to industrial soil]	kg	1.4E-10	7.9E-06	7.9E-06
Zinc (+II) [Heavy metals to sea water]	kg	3.2E-09	2.5E-05	2.5E-05
Zinc (Zn65) [Radioactive emissions to air]	Bq	8.2E-10	6.3E-06	6.3E-06
Zinc (Zn65) [Radioactive emissions to fresh water]	Bq	2.0E-06	1.5E-02	1.5E-02
Zinc [Heavy metals to air]	kg	1.2E-06	4.6E-06	5.8E-06
Zinc [Heavy metals to fresh water]	kg	4.3E-07	1.6E-06	2.1E-06
Zinc [Heavy metals to industrial soil]	kg	6.7E-09	2.3E-08	3.0E-08
Zinc [Heavy metals to sea water]	kg	1.3E-06	4.4E-06	5.7E-06
Zinc oxide [Inorganic emissions to air]	kg	4.3E-14	2.1E-13	2.5E-13
Zinc sulphate [Inorganic emissions to air]	kg	2.7E-09	9.5E-09	1.2E-08
Zirconium (Zr95) [Radioactive emissions to air]	Bq	8.1E-10	6.1E-06	6.1E-06
Zirconium (Zr95) [Radioactive emissions to fresh water]	Bq	2.3E-08	1.8E-04	1.8E-04

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