EcoLeaf Environmental Label **LCI Common Basic Unit List (V2.1)**

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No	Field	No	Base Unit Name	Amount W	Unit	Main Source	Remarks
1	Material Production (Metal)	1	Cold-Rolled steel plate	Produc-tion	kg	Environmental Management, Vol 31, No.6 (1995) P72-P84	From resource acquisition to material (plate) production
2		2	Electroplated steel Plate	Produc-tion	kg	Environmental Management, Vol 31, No.6 (1995) P72-P84	From resource acquisition to material (plate) production
3		3	Hot Dipped steel plate	Produc-tion	kg	Environmental Management, Vol 31, No.6 (1995) P72-P84	From resource acquisition to material (plate) production
4		4	Coated steel plate	Produc-tion	kg	Environmental Management, Vol 31, No.6 (1995) P72-P84	From resource acquisition to material (plate) production
5		5	Electromagnetic steel plate	Produc-tion	kg	Environmental Management, Vol 31, No.6 (1995) P72-P84	From resource acquisition to material (plate) production
6		6	Stainless Steel Plate	Produc-tion	kg	Environmental Management, Vol 31, No.6 (1995) P72-P84	From resource acquisition to material (plate) production
7		7	Copper plate	Produc-tion	kg	Environmental Management, Vol 31, No.6 (1995) P72-P84	From resource acquisition to material (plate) production
8		8	Aluminum plate	Produc-tion	kg	For secondary and virgin metal ratios: Resources statistics annual report, 1992, P.98	From resource acquisition to material (plate) production
9		9	Zinc	Produc-tion	kg	Research Institute for Resource Recycling and Environmental Pollution Control (Narita, 2000)	From resource acquisition to material (ingot) production
10		10	Tin	Produc-tion	kg	Plastic Waste Management Institute: Evaluation Report on the Impact of the Increase in the Use of Plastic Products on the Global Environment, (1993, 3), P31-38	From resource acquisition to material (ingot) production
11		11	Electrolyzed MnO2	Produc-tion	kg	The Chemical Society of Japan Ed.: Chemistry Handbook (Applied Chemistry Edition) 2nd Revision, P216, Maruzen (1973)	From resource acquisition to material (ingot) production
12		12	Metalized manganese	Produc-tion	kg	National Institute of Resources (1988)	From resource acquisition to material (ingot) production
13		13	Electrolytic lead	Produc-tion	kg	Research Institute for Resource Recycling and Environmental Pollution Control (Narita, 2000)	From resource acquisition to material (ingot) production
14		14	Gold	Produc-tion	kg	Survey by the Research Institute for Resource Recycling and Environmental Pollution Control (Sugita, 1999)	From resource acquisition to material (ingot) production
15		15	Silver	Produc-tion	kg	Survey by the Research Institute for Resource Recycling and Environmental Pollution Control (Sugita, 1999)	From resource acquisition to material (ingot) production
16	Material Production (Inorganic Chemistry)	1	Glass	Produc-tion	kg	Environmental Management, Vol.31, No.6 (1995), P.81	From resource acquisition to material (pellet) production
17		2	Cement	Produc-tion	kg	From Cement Association of Japan "Cement Handbook" 2000 Edition, P21, 1999 Data (Base Unit).	From resource acquisition to material production
18		3	Calcium oxide	Produc-tion	kg	Statistical Survey of Energy Consumption (1996) and Resource Annual Report (1996)	From resource acquisition to material production
19		4	Hydrochloric acid	Produc-tion	kg	Chemical Industry Statistics Annual Report (1996)	From resource acquisition to material production
20		5	Sulfuric acid	Produc-tion	kg	Research Institute for Resource Recycling and Environmental Pollution Control (SRI), 1998	From resource acquisition to material production
21		6	Nitric acid	Produc-tion	kg	CMC, 1994, P.167	From resource acquisition to material production
22		7	Acetic acid	Produc-tion	kg	CMC, 1994, P.173	From resource acquisition to material production

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No	Field	No	Base Unit Name	Amount W	Unit	Main Source	Remarks
23		8	Hydrofluoric acid	Produc-tion	kg	Environmental Management, Vol.31, No.6 (1995), P.82	From resource acquisition to material production
24		9	Sodium hydrate	Produc-tion	kg	The Chemical Society of Japan "Chemistry Handbook: Applied Chemistry Edition (2)", P.207, 1986	From resource acquisition to material production
25		10	Calcium hydroxide	Produc-tion	kg	Statistical Survey of Energy Consumption (1996) and Resource Annual Report (1996)	From resource acquisition to material production
26	Material Production (Synthetic Resin)	1	High density polyethylene	Produc-tion	kg	1993 Chemical Economy Research Institute Report, p103	From resource acquisition to material (pellet) production
27		2	Low density polyethylene	Produc-tion	kg	1993 Chemical Economy Research Institute Report	From resource acquisition to material (pellet) production
28		3	Polypropylene	Produc-tion	kg	1993 Chemical Economy Research Institute Report, p104	From resource acquisition to material (pellet) production
29		4	Polystyrene	Produc-tion	kg	NEDO-GET, 9410-1, P64	From resource acquisition to material (pellet) production
30		5	PVC	Produc-tion	kg	1993 Chemical Economy Research Institute Report, p81, 111	From resource acquisition to material (pellet) production
31		6	PBT	Produc-tion	kg	1993 Chemical Economy Research Institute Report, p89, 119	From resource acquisition to material (pellet) production
32		7	Polycarbonate	Produc-tion	kg	1993 Chemical Economy Research Institute Report, p88, 118	From resource acquisition to material (pellet) production
33		8	Polycarbonate−ABS (70/30)	Produc-tion	kg	Distribution and addition with 70:30 from PC and ABS data; PC and ABS data have been prepared from the 1993 Chemical Economy Research Institute Report	From resource acquisition to material (pellet) production
34		9	POM (Polyacetal)	Produc-tion	kg	1993 Chemical Economy Research Institute Report, p87, 117	From resource acquisition to material (pellet) production
35		10	PVDC (Vinylidene Chloride Resin)	Produc-tion	kg	1993 Chemical Economy Research Institute Report, p83, 112	From resource acquisition to material (pellet) production
36		11	ABS	Produc-tion	kg	1993 Chemical Economy Research Institute Report, p79, 108	From resource acquisition to material (pellet) production
37		12	AS Resin	Produc-tion	kg	1993 Chemical Economy Research Institute Report, p80, 109	From resource acquisition to material (pellet) production
38		13	MMA Resin	Produc-tion	kg	1993 Chemical Economy Research Institute Report, p83, 113	From resource acquisition to material (pellet) production
39		14	PA66 (Polyamide 66)	Produc-tion	kg	1993 Chemical Economy Research Institute Report, p85, 115	From resource acquisition to material (pellet) production
40		15	PET	Produc-tion	kg	NEDO-GET-9410-1, P.36	From resource acquisition to material (pellet) production
41		16	Epoxy Resin (EP)	Produc-tion	kg	1993 Chemical Economy Research Institute Report, p92, 123	From resource acquisition to material (pellet) production
42		17	Expandable hard polyurethane (Hard)	Produc-tion	kg	1993 Chemical Economy Research Institute Report, p96, 126	From resource acquisition to material (pellet) production
43		18	Expandable soft polyurethane (for automobile)	Produc-tion	kg	1993 Chemical Economy Research Institute Report, p95, 125	From resource acquisition to material (pellet) production
44		19	Expandable soft polyurethane (for mattress)	Produc-tion	kg	1993 Chemical Economy Research Institute Report, p94, 124	From resource acquisition to material (pellet) production

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No	Field	No	Base Unit Name	Amount W	Unit	Main Source	Remarks
45		20	Unsaturated Polyester (UP)	Produc-tion	kg	1993 Chemical Economy Research Institute Report, p97, 127	From resource acquisition to material (pellet) production
46		21	Acrylic Nitrile	Produc-tion	kg	1993 Chemical Economy Research Institute Report, P81, 110	From resource acquisition to material (pellet) production
47		22	Phenol Resin (PF)	Produc-tion	kg	1993 Chemical Economy Research Institute Report, P81, 110	From resource acquisition to material (pellet) production
48	Material Production (Rubber)	1	Nitrile-butadiene rubber (NBR)	Produc-tion	kg	Rubber Industry Manual, The Chemical Daily: 13599 Chemical Products	From resource acquisition to material (pellet) production
49		2	Styrene-butadiene rubber (SBR)	Produc-tion	kg	CRC Research Institute, March 1999, Survey Report, P66	From resource acquisition to material (pellet) production
50		3	Natural rubber	Produc-tion	kg	Malaysian Rubber Board homepage	From resource acquisition to material (pellet) production
51		4	Butadiene rubber (BR)	Produc-tion	kg	CRC Research Institute, March 1999, Survey Report	From resource acquisition to material (pellet) production
52	Material Production (Organic Chemistry)	1	Ethylene	Produc-tion	kg	NEDO-GET-9410, P26	From resource acquisition to material production
53		2	Xylene	Produc-tion	kg	NEDO-GET-9410, P26	From resource acquisition to material production
54		3	CCl4	Produc-tion	kg	Used data from: CMC "Costs of Chemicals in the 80's", Volume 2, P281, 1979	From resource acquisition to material production
55		4	Methanol (CH3OH)	Produc-tion	kg	Research Institute for Resource Recycling and Environmental Pollution Control SRI (1998) New Zealand: in charge of methanol	From resource acquisition to material production
56		5	Naphtha	Produc-tion	kg	NEDO-GET-9410, P24	From resource acquisition to material production
57		6	Propylene	Produc-tion	kg	NEDO-GET-9410, P26	From resource acquisition to material production
58		7	Styrene	Produc-tion	kg	NEDO-GET-9410-1, P64	From resource acquisition to material production
59		8	Toluene	Produc-tion	kg	NEDO-GET-9410, P26	From resource acquisition to material production
60		9	Trichloro ethane	Produc-tion	kg	Environmental Management, Vol.31, No.6, 1995, P.83	From resource acquisition to material production

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No	Field	No	Base Unit Name	Amount W	Unit	Main Source	Remarks
61		10	Trichloro ethylene	Produc-tion	kg	CMC, 1994, P191	From resource acquisition to material production
62		11	Acetone	Produc-tion	kg	CMC, 1994, P196	From resource acquisition to material production
63	Material Production (Organic Gas)	1	CFC−11	Produc-tion	kg	Used data from: CMC "Costs of Chemicals in the 80's", Volume 2, P281, 1979	From resource acquisition to material production
64		2	CFC−12	Produc-tion	kg	Used data from: CMC "Costs of Chemicals in the 80's", Volume 2, P281, 1979	From resource acquisition to material production
65		3	HFC-134a	Produc-tion	kg	Environmental Management, Vol.31, No.6 (1995) P.82	From resource acquisition to material production
66		4	HFC-245fa	Produc-tion	kg	Survey on the Impact of Thermal Insulation Materials on Global Warming, NEDO-GET-9709 (1998)	From resource acquisition to material production
67	Material Production (Wood and Paper)	1	Corrugated cardboard	Produc-tion	kg	Paper Pulp Handbook, 1998 Edition, and others, Japan Paper Association, 1998, 4 issue and others	From resource acquisition to material production
68		2	Cardboard	Produc-tion	kg	Paper Pulp Handbook, 1998 Edition, and others	From resource acquisition to material production
69		3	Paper (Western style)	Produc-tion	kg	Paper Pulp Handbook, 1998 Edition, and others	From resource acquisition to material production
70		4	Wood chip (Japan domestic)	Produc-tion	kg	Evaluation Report on the Impact of the Increase in the Use of Plastic Products on the Global Environment, Plastic Waste Management Institute, March 1993, (1993) P151-2	From resource acquisition to material production
71		5	Wood chip (imported)	Produc-tion	kg	Evaluation Report on the Impact of the Increase in the Use of Plastic Products on the Global Environment, Plastic Waste Management Institute, March 1993, (1993) P151-2	From resource acquisition to material production
72		6	Raw wood (imported)	Produc-tion	kg	Evaluation Report on the Impact of the Increase in the Use of Plastic Products on the Global Environment, Plastic Waste Management Institute, March 1993, (1993) P151-2	From resource acquisition to material production
73		7	Raw wood (Japan domestic)	Produc-tion	kg	Evaluation Report on the Impact of the Increase in the Use of Plastic Products on the Global Environment, Plastic Waste Management Institute, March 1993, (1993) P151-2	From resource acquisition to material production
74	Parts Production (General)	1	Semiconductor circuit unit	Produc-tion	kg	Koseki: Proceedings in Chemical Engineering, Vol. 24, No. 6, p934-939 (1996)	Up to the production of resin-packaged semiconductor chip (with terminals)
75		2	Multilayer substrate	Produc-tion	kg	Koseki: Proceedings in Chemical Engineering, Vol. 24, No. 6, p934-939 (1996)	Up to the production of layered substrate (6 layers)
76		3	Assembled circuit board	Produc-tion	kg	Koseki: Proceedings in Chemical Engineering, Vol. 24, No. 6, p934-939 (1996)	Up to the production of substrate comprising semiconductor package mounted on layered substrate
77		4	Compressor	Produc-tion	kg	From materials by the Association for Electric Home Appliances	From LCA calculations taking into account the processing and assembly in the production of constituent materials
78		5	Medium-sized motor	Produc-tion	kg	From the by Japan Waste Management Association literature	From LCA calculations taking into account the processing and assembly in the production of constituent materials
79	Parts Production (Battery)	1	Alkaline-Manganese dry battery	Produc-tion	kg	Hiroshi Takatsuki and Shin-ichi Sakai: Hazardous Waste, Chuohoki (1993) P63 Source: Tokuji Murata: Reconsidering the Easy Use of Dry Batteries, Current Chemistry, October 1991 issue, P18-23	Only the production of constituent materials (zinc, MnO2, Fe) has been taken into account
80		2	Manganese dry battery	Produc-tion	kg	Hiroshi Takatsuki and Shin-ichi Sakai: Hazardous Waste, Chuohoki (1993) P63 Source: Tokuji Murata: Reconsidering the Easy Use of Dry Batteries, Current Chemistry, October 1991 issue, P18-23	Only the production of constituent materials (zinc, MnO3, Fe) has been taken into account
81		3	Lead-acid storage battery	Produc-tion	kg	P78, (1993), source: Japan Lead Zinc Development Association Ed.: Zinc Handbook (1975)	Only the production of constituent materials (lead, H2SO4, PP) has been taken into account

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No	Field	No	Base Unit Name	Amount W	Unit	Main Source	Remarks
82	Parts Production (Others)	1	Cleansing agent	Produc-tion	kg	Japan Institute of Energy Journal, Vol. 75 (12), p1050 (1996)	Electric power and heavy oil energies taken into account with naphtha and NaOH as raw materials
83		2	Ink	Produc-tion	kg	Setting based on CO2: electric power/heavy oil = 8/2	From the energy ratio (electric power/heavy oil = 8/2) (raw material: crude oil)
84		3	Lubricant	Produc-tion	kg	Setting based on CO2: electric power/heavy oil = 8/2	From the energy ratio (electric power/heavy oil = 8/2) (raw material: crude oil)
85	Processing	1	Press molding: Iron	Produc-tion	kg	Chemical Economy Research Institute: Basic Materials Energy Analysis Survey Report, 1993, 9, p135-136 (1993)	Power consumption for pressing 350ml steel can
86		2	Press molding: Nonferrous metal	Produc-tion	kg	Chemical Economy Research Institute: Basic Materials Energy Analysis Survey Report, 1993, 9, p135-136 (1993)	Power consumption for pressing 350ml aluminum can
87		3	Injection molding	Produc-tion	kg	Chemical Economy Research Institute: Basic Materials Energy Analysis Survey Report, 1993, 9, p135-136 (1993)	Power consumption during production of LDPE bottle cap
88		4	Blow molding	Produc-tion	kg	Plastic Waste Management Institute: Considerations Similar to LCA regarding Plastic General Waste, 1995, 3 (1995) P23	Power consumption during PO and PVC molding
89		5	Glass molding	Produc-tion	kg	Chemical Economy Research Institute: Basic Materials Energy Analysis Survey Report, 1993, 9, p135-136 (1993)	Power consumption for 633ml glass bottle
90	Assembly	1	Parts assembly	Produc-tion	kg	From the 2000 Environmental Label Report and Ver. 2 published data	Representative power consumption value for assembly including partial processing
91	Transportation	1	Diesel truck: 2 ton (kg･km)	Transpor-tation	kg.km	Plastic Waste Management Institute (1993) P31-33	Loading factor correction required due to the data being for 100% loading factor
92		2	Diesel truck: 4 ton	Transpor-tation	kg.km	Plastic Waste Management Institute (1993) P31-33	Loading factor correction required due to the data being for 100% loading factor
93		3	Diesel truck: 10 ton	Transpor-tation	kg.km	Plastic Waste Management Institute (1993) P31-33	Loading factor correction required due to the data being for 100% loading factor
94		4	Diesel truck: 15 ton	Transpor-tation	kg.km	Plastic Waste Management Institute (1993) P31-33	Loading factor correction required due to the data being for 100% loading factor
95		5	Diesel truck: 20 ton	Transpor-tation	kg.km	Plastic Waste Management Institute (1993) P31-33	Loading factor correction required due to the data being for 100% loading factor
96		6	Freight by rail	Transpor-tation	kg.km	98 Energy Economics Statistics Overview, Energy Conservation Center, Japan, January 30th, 1998, p107	No loading factor correction required due to the data already including loading factor
97		7	Freight by ship	Transpor-tation	kg.km	98 Energy Economics Statistics Overview, Energy Conservation Center, Japan, January 30th, 1998, p107	No loading factor correction required due to the data already including loading factor
98		8	Freight by air	Transpor-tation	kg.km	98 Energy Economics Statistics Overview, Energy Conservation Center, Japan, January 30th, 1998, p107	No loading factor correction required due to the data already including loading factor
99		1	Electricity	Produc-tion	kWh	Matsuno (1998) for electrical power in Japan; OECD energy statistics for Foreign countries	Average data for Japan (thermal, hydraulic, nuclear, etc.)
100		2	Heavy oil as fuel	Produc-tion	kg	BUWAL-132 DSO2=85%	Includes discharges during fuel production and combustion
101		3	Diesel oil as fuel	Produc-tion	kg	BUWAL-132 S=0.4 % DSO2=85%	Includes discharges during fuel production and combustion
102		4	Kerosene as fuel	Produc-tion	kg	CO2: Environment Agency (1992); Nx, SOx: 1992 Science and Technology Agency	Includes discharges during fuel production and combustion

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103	Electric Power and Fuel	5	Gasoline as fuel	Produc-tion	kg	CO2: Environment Agency (1992); NOx, SOx: 1992 Science and Technology Agency	Includes discharges during fuel production and combustion
104		6	Furnace coal	Produc-tion	kg	BUWAL-132 S=0.67 % DSO2=85%	Includes discharges during fuel production and combustion
105		7	Furnace coke	Produc-tion	kg	Energy Utilization Rationalization (1995), P117	Includes discharges during fuel production and combustion
106		8	Furnace oil coke	Produc-tion	kg	Calculated from Chemical Process Collection (1969) P350 and emission factor	Includes discharges during fuel production and combustion
107		9	Furnace urban gas (13A)	Produc-tion	m3	Institute of Energy Economics, Japan (1999)+BUWAL	Includes discharges during fuel production and combustion
108		10	Furnace LPG	Produc-tion	kg	BUWAL-132 SOX is ignored	Includes discharges during fuel production and combustion
109		11	Furnace LNG	Produc-tion	kg	BUWAL-132 SOX is ignored	Includes discharges during fuel production and combustion
110		12	Heavy oil	Produc-tion	kg	NEDO-GET-9410-1, P.24	Fuel production only
111		13	Diesel oil	Produc-tion	kg	NEDO-GET-9410-1, P.24	Fuel production only
112		14	Kerosene	Produc-tion	kg	NEDO-GET-9410-1, P.24	Fuel production only
113		15	Gasoline	Produc-tion	kg	NEDO-GET-9410-1, P.24	Fuel production only
114		16	Coal	Produc-tion	kg	Research Institute for Resource Recycling and Environmental Pollution Control (Kato, 2000)	Fuel production only
115		17	Coke	Produc-tion	kg	Energy Use Rationalization (1995)	Fuel production only
116		18	Oil coke	Produc-tion	kg	Chemical Process Collection (1969) p.350	Fuel production only
117		19	Urban gas (13A)	Produc-tion	m^3	Institute of Energy Economics, Japan (1999)	Fuel production only
118		20	LPG	Produc-tion	kg	NEDO-GET-9410-1, P.24	Fuel production only
119		21	LNG	Produc-tion	kg	Chemical Economy Research Institute (1993)	Fuel production only
120	Utility (Gas)	1	Oxygen	Produc-tion	m3	Naonori Matsumoto: Low-temperature Engineering, Vol. 11, No.1, P35-42 (1984)	Power consumption during production by low-temperature separation method
121		2	Nitrogen	Produc-tion	kg	From an air analyzer manufacturer hearing (February 2001)	Power consumption taken into account
122		3	H2	Produc-tion	m3	Hearing Survey (1995)	Electrical power and diesel consumption with naphtha raw material (byproduct: steam)
123		4	Cl2	Produc-tion	kg	The Chemical Society of Japan "Chemistry Handbook: Applied Chemistry Edition (2)", P.207, 1986	Electrical power and steam consumption with industrial salt raw material (byproduct: H2)
124		5	Ammonia (NH3)	Produc-tion	kg	Hearing Survey	Electrical power and diesel consumption with naphtha raw material

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125	Utility (Water)	1	Industrial water	Produc-tion	kg	Tokyo City Data	Electrical power and water consumption; soil discharge
126		2	Clean water (kg)	Produc-tion	kg	Ministry of Health and Welfare: Japan Water Works Association, Time-based Analysis of Water Supply Statistics, Water Works Association Journal, Vol. 67, No. 8, p46-84 (1998)	Electrical power and water consumption; soil discharge
127		3	Ultrapure water	Produc-tion	kg	Semiconductor Substrate Technology Research Association: Science of Ultra-pure Water, 1990	Electrical power, clean water, industrial water and steam consumption
128		4	Steam	Produc-tion	kg	Japan Boiler Association: Boiler Almanac, 1999 Edition	Electrical power, kerosene and clean water (10% supply) consumption
129	Disposal and Recycling (Crushing and Sorting)	1	Shredding	Process-ing	kg	Environmental Management, Vol.31, No.7 (1995) P.95	From shredder electrical power consumption
130		2	Sorting:Iron (by magnetic force)	Process-ing	kg	From the 1993 Engineering Advancement Association of Japan Trust Report	From magnetic sorter electric power consumption
131		3	Sorting: Nonferrous metal (by eddy current with wind force)	Process-ing	kg	From the 1993 Engineering Advancement Association of Japan Trust Report	From eddy current + pneumatic separator electric power consumption
132		4	Sorting: Plastics (by relative density difference in water)	Process-ing	kg	1993 Engineering Advancement Association of Japan Trust Report	From specific gravity separator electric power consumption
133	Disposal and Recycling (Incineration and Landfill)	1	Incineration to landfill (as ash)	Process-ing	kg	Prepared through collaboration with four autonomous bodies (1999), including ash (15.5%)	Electric power, water and Ca(OH)2 consumption; atmospheric, water body and soil discharge
134		2	Incineration: Industrial waste	Process-ing	kg	Obtained from three industrial waste businesses (1999)	Electric power, heavy oil, water, Ca(OH)2, NaOH and HCl consumption; atmospheric discharge
135		3	Incineration: Biomass (paper)	Process-ing	kg	Prepared through collaboration with four autonomous bodies (1999) and corrected	Zero CO2 discharge from paper incineration origin
136		4	Landfill: General waste	Process-ing	kg	Prepared through collaboration with four autonomous bodies (1999)	Electric power, diesel oil and NaOH consumption; BOD, COD and SS discharge
137		5	Landfill: Industrial waste	Process-ing	kg	Obtained from three industrial waste businesses (1999)	Electric power, diesel oil and NaOH consumption; BOD, COD, SS, TN and TP discharge

EcoLeaf Environmental Label LCI Common Basic Unit List (V2.1)

Note: This basic unit document is a dedicated database that has been created to implement the JEMAI EcoLeaf Program.
Unauthorized use for other purposes is prohibited.

* This list is for publishing the "basic unit names" for use when preparing an EcoLeaf label, and is not to address inquiries regarding detailed information.

How to use the basic unit a when preparing an EcoLeaf label:

◎ **The production amount (Output) of base materials, parts, etc., produced, or the processed amount (Input) is multiplied by the corresponding common base unit a, and then summed.**
Inventory value I (e.g., CO_2 output in kg) = Σ {common base unit a (e.g., X kg-CO_2/kg) × produced or processed amount W (kg)}

Note: In the distribution stage, the common basic unit a for transportation by truck being a value for a loading factor of 100%, the processed amount W is to be calculated according to the formula below:

Processed amount W (transportation burden amount: kg･km) = transportation mass (kg) × transportation distance (km) × 100 ÷ mass loading factor (%w)

No	Field	No	Base Unit Name	Amount W	Unit	Main Source	Remarks
138	Disposal and Recycling (Regeneration)	1	Recycle: to cold-rolled steel	Processing	kg	JEMAI (1995) p.118 Non-traditional Technology Report (1995), p.103	Electric oven melting + rolling = plate forming
139		2	Recycle: to copper plate	Processing	kg	Non-traditional Technology Report (1995), p.89	Electric oven melting + rolling = plate forming
140		3	Recycle: to Aluminum plate	Processing	kg	For secondary and virgin metal ratios: Resources Statistics Annual Report, 1992, P.98 For rolling: Non-traditional Technology Report, 1995, P.5	Electric oven melting + rolling = plate forming
141		4	Recycle: to Thermoplastic pellet	Processing	kg	Calculated with 60% thermal efficiency melting temperature (average value for PS, ABS, PC, PE, PP, etc.)	Melting + injection molding = pelletizing
142		5	Recycle: to corrugated cardboard	Processing	kg	Paper Pulp Handbook, 1998 Edition, and others	Corrugated cardboard production from used paper
143		6	Recycle: to Cardboard	Processing	kg	Paper Pulp Handbook, 1998 Edition, and others	Cardboard production from used paper
144		7	Recycle: to Paper	Processing	kg	Paper Pulp Handbook, 1998 Edition, and others	Paper production from used paper
145		8	Recycle: to Glass	Processing	kg	From Chemical Economy Research Institute: Basic Materials Energy Analysis Survey Report, 1993.9 issue, P129-130, Table 1-3-15	Glass melting + forming
146	Disposal and Recycling (Other)	1	Sewage processing	Processing	kg	Japan Resource Association Ed.: Life Cycle Energy in Big City Life, Anforume, January 13th, 1999, p.147-149	Electric power, heavy oil, NG, water, NaOH and Cl2 consumption
147		2	Decomposition: CFC−11	Processing	kg	Environmental Management, Vol.31, No.7 (1995) P.95	
148		3	Decomposition: CFC−12	Processing	kg	Environmental Management, Vol.31, No.7 (1995) P.95	