2025 9 19

91371621MA3WJ6AX5

Particulate matter		disease inc.	1.45E-03
Eutrophication	marine	kg N eq	1.61E+01
	freshwater	kg P eq	3.15E+00
	terrestrial	mol N eq	1.72E+02
Ozone depletion		kg CFC11 eq	1.12E-04
Photochemical ozone formation		kg NMVOC eq	5.09E+01
Resource use			

1 .....- 1 -
1.1 .....- 1 -
1.1.1 .....- 1 -

4.3 .....- 19 -
5 .....- 20 -
5.1 .....- 20 -
5.2 .....- 20 -
5.3 .....- 21 -

1.1.1

1t 1-7 Φ80-581



1

1.1.2

1t

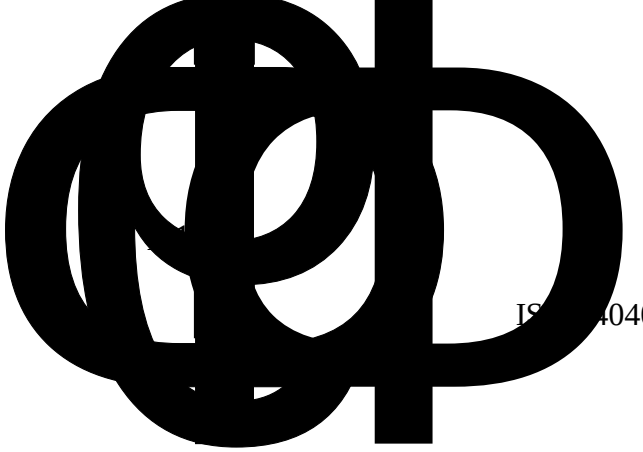
1.1.3

LCA-

1 2024 1 1 -2024 12 31

2

3



2 1t

1.2.2

1%

0.1% ж ☆

5%

1.2.3

a. b.

c.

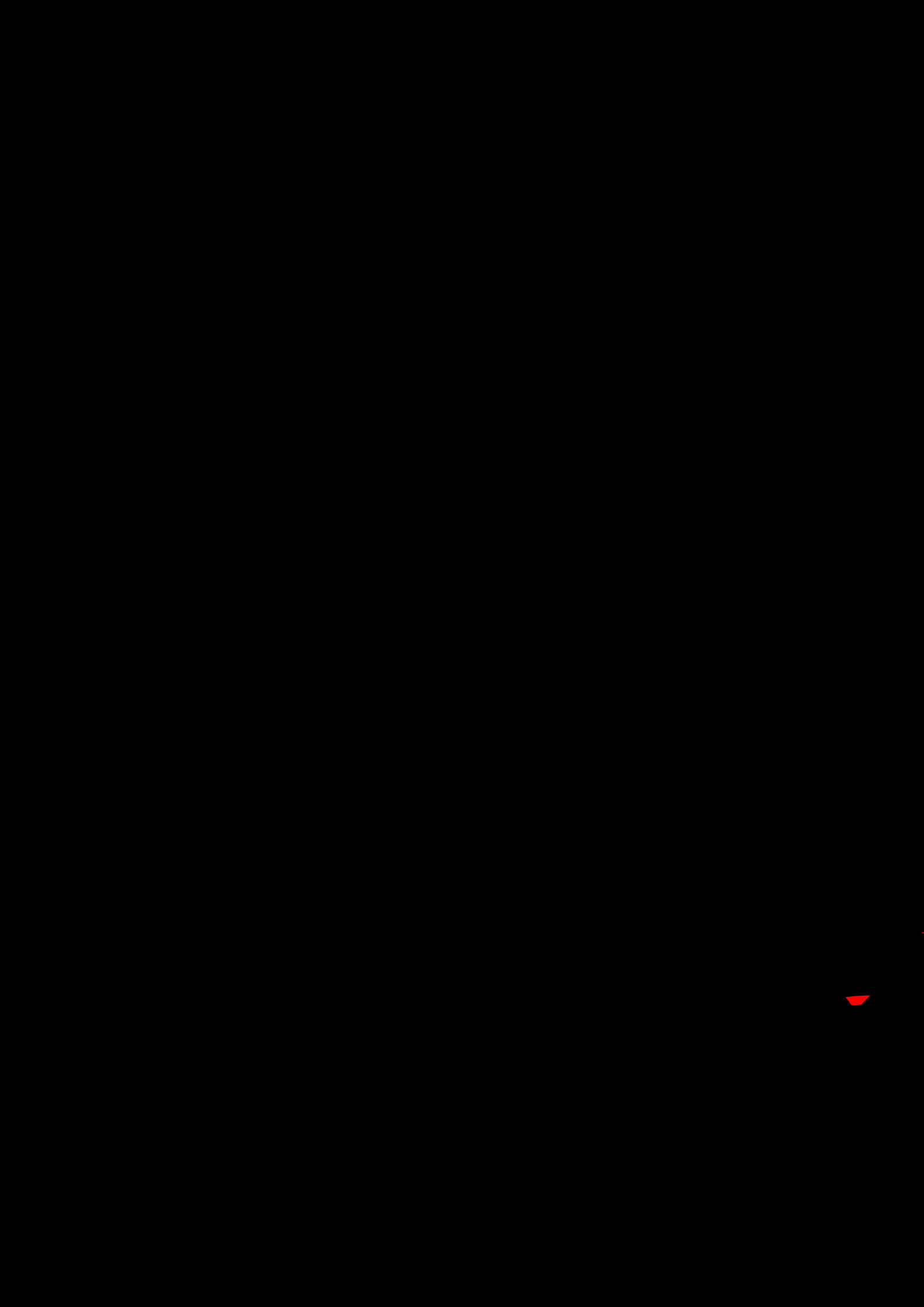
1.2.4

2020

7 1 2024 a

EURO6

1.2.5



>50%

1.00 1.02 1.05 1.10 1.20

U3 (

6 10 15

3

Ecoinvent

“ ” “ ”

2-1

		995.80	t
		331.86	t
	-	27.50	t
		261.85	t
		314.25	t
		1.39	t
		8.10	t
		24.58	t
		237.15	t
		52.83	t
		764.00	t
		9.26	t
		10.94	t
		123220.86	t
		31790.06	t
		100.10	t
		43.77	t
	7.5-16	492883.46	t*km
	16-32	21370895.97	t*km
		11297032.30	KWh

		7379980.00	m^3
		5.00	t
		161610.00	m^3
		26.57	t
		1.58	t
		1.26	t
		7109.50	t

Ecoinvent “ ” “ ”

2-2

Magnesium {CN}| magnesium production, pidgeon process | Cut-off, U

Aluminium, wrought alloy {GLO}| market for aluminium, wrought alloy | Cut-off, U

- Sanitary ceramics {RoW}| sanitary ceramics production | Cut-off, U
- Magnesium, for reuse in titanium sponge production {CN}| electrolys ion

		Tap water {RoW}| market for tap water | Cut-off, U	
		Nitrogen oxides	
		Particulates, unspecified	
		Sulfur dioxide	
		Hazardous waste, for incineration {RoW}| treatment of hazardous waste, hazardous waste incineration | Cut-off, U	

SimaPro9.5.0.0 EF 3.1 normalization and weighting set 1t

3-1 1t LCA

Climate change	Biogenic	kg CO_2 eq	2.38E+00
	Fossil		1.45E+04
	Land use and LU change		1.84E+00
	Total		1.45E+04
Acidification		mol H^+ eq	9.34E+01
Particulate matter		disease inc.	1.45E-03
Eutrophication	marine	kg N eq	1.61E+01
	freshwater	kg P eq	3.15E+00
	terrestrial	mol N eq	1.72E+02

Ozone depletion		kg CFC11 eq	1.12E-04
Photochemical ozone formation		kg NMVOC eq	5.09E+01
Resource use	fossils	MJ	1.26E+05
	minerals and metals	kg Sb eq	3.59E-02
Water use		m^3	1.32E+03

3-2 1t

-

- - - - - -

9.13E+01	1.40E+04	1.81E+00	1.40E+04	1.47E+00	1.31E-03	1.57E+01

3-3 1t

-

- - - - - - -

	Acidification	Climate change	Climate change - Biogenic	Climate change - Fossil	Climate change - Land use and LU change	Particulate matter	Eutrophication, marine	Eutrophication, freshwater	Eutrophication, terrestrial	Ozone depletion	Photochemical ozone formation	Resource use, fossils	Resource use, minerals and metals	Water use
	0.65%	1.02%	2.68%	1.02%	4.49%	8.54%	0.92%	1.97%	0.89%	3.31%	1.52%	1.42%	0.74%	0.88%
	0.16%	0.15%	1.11%	0.15%	3.52%	0.13%	0.15%	0.23%	0.15%	0.20%	0.16%	0.17%	0.18%	0.23%
-	0.00%	0.00%	0.17%	0.00%	0.01%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	0.00%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%
	0.11%	0.13%	12.96%	0.13%	1.40%	0.05%	0.12%	0.22%	0.12%	0.20%	0.15%	0.18%	0.04%	0.20%
	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	0.00%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

0.00%	0.00%	0.02%	0.00%	0.03%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.10%	0.00%
0.00%	0.00%	0.03%	0.00%	0.02%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.03%	0.00%



4.1.1

1

2

3

Ecoinvent Ecoinvent

4.1.2

1

2

3

4

Water use	m^3	2.86E+04	[-1.08E+06,9.49E+05]

ISO 14044 2006

4-2

		/	-10%	+10%	-10%	+10%
Acidification		mol H^+ eq	8.43E+01	1.03E+02	9.34E+01	9.34E+01
Climate change	Total	kg CO_2 eq	1.31E+04	1.59E+04	1.45E+04	1.45E+04
	Biogenic	kg CO_2 eq	2.20E+00	2.56E+00	2.38E+00	2.38E+00
	Fossil	kg CO_2 eq	1.31E+04	1.59E+04	1.45E+04	1.45E+04
	Land use and LU change	kg CO_2 eq	1.69E+00	1.98E+00	1.83E+00	1.83E+00
Particulate matter		disease inc.	1.32E-03	1.58E-03	1.45E-03	1.45E-03
Eutrophication	marine	kg N eq	1.45E+01	1.77E+01	1.61E+01	1.61E+01
	freshwater	kg P eq	2.85E+00	3.45E+00	3.15E+00	3.15E+00
	terrestrial	mol N eq	1.56E+02	1.89E+02	1.72E+02	1.72E+02
Ozone depletion		kg CFC11	1.02E-04	1.22E-04	1.12E-04	1.12E-04

		eq				
		kg MVOC eq	4.60E+0	5.58E+01	5.09E+01	9E+01
		MJ	1.14E+05		1.26E	1.26E+05
Resource use	minerals and metals	g Sb eq	3.46E-02	3.61E-02	3.53E-02	3.53E-02
Water use		m^3	1.20E+03	1.44E+03	1.32E+03	1.32E+03

1t

:

1

2

;

3