2025 5 12

1. 4
1.1 4
1.2 4
2. 5
2.1 5
2.2 5
2.2.1 6
2.2.2 6
2.2.3 6
2.2.4 7
3. 8
3.1 8
3.2 10
4. 11
4.1 11
4.2 13
5. LCA 15
5.1 15
5.2 15
5.3 16
5.4 17
6. 20
6.1 20
6.2 20
6.3 21
..... 22

IPCC	Internation panel on climate change( )
CFP	Product carbon footprint( )
HFC	Hydrofluoro Carbon( )
PFC	Perfluoro Carbon ( )
CO_2 eq.	Carbon Dioxide Equivalent( )
LCA	Life cycle assessment( )
BSI	British Standards Institution( )
WBCSD	World Business Council for Sustainable Development( )
ISO	International Organization for Standardization( )
PEF	Product Environment Footprint( )
GWP	Global Warming Potential( )
ELCD	European

2014 8

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316 3C

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6061 6063 6082

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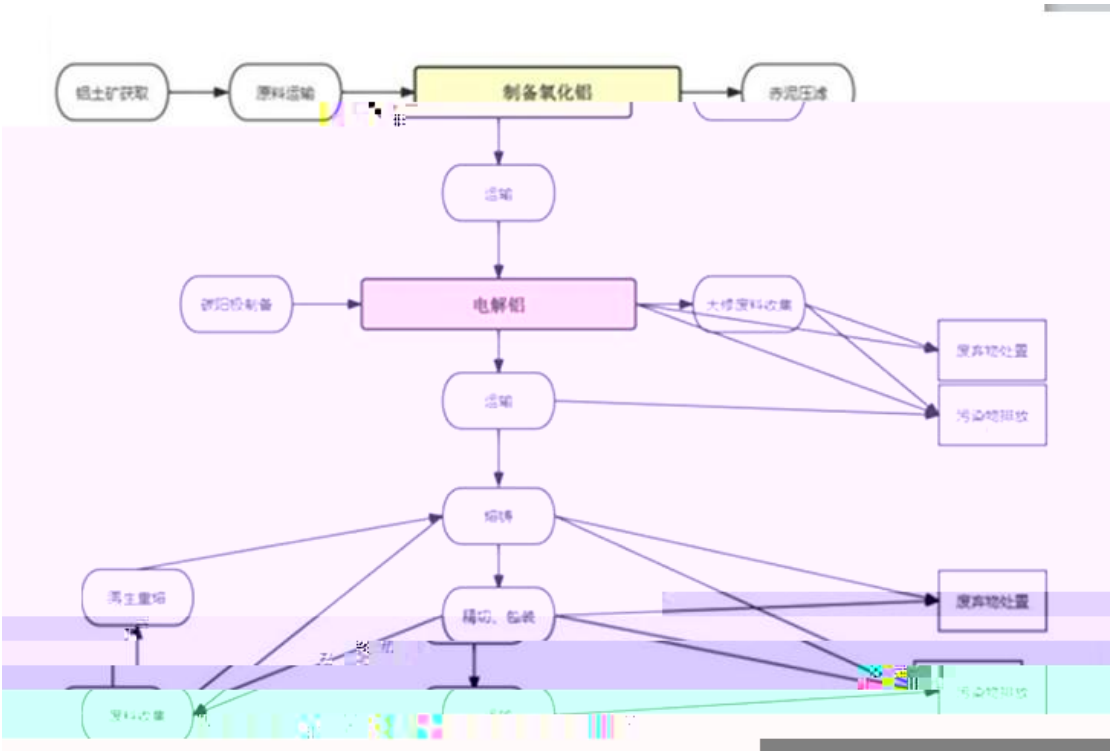
ISO 14040:2006, ISO 14044:2006 ISO 14025 ,

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1 1



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LCA

(Product Environment Footprint, PEF)

1 1% /
5%

2
/ 1%

3

1

2

3 2024
1%

4 GWP100
FAETP) MAETP) TETP)
ADP HTP)
ADP ODP)

5

“

”

1

2.75	t
0.013	t
0.070	t
188	kWh
8.3	m3
1.50	t
0.7	m3
0	kg
145	kg
0.013	kg
0.0017	kg
0	kg

l î

		0.016	t/t AL
		0.479	t/t AL
		13418	Kwh/t AL
		2.5	t/t AL
		3.098	L/t AL
	SO2	1.423	kg/t AL
		0.006	kg/t AL
		0.094	kg/t AL
		0.843	t/t AL
		5.00	mg/L
	COD	28.00	mg/L
		0.0697	t/t AL
		0.0070	t/t AL
		0.0146	t/t AL

3

		0.81	t
		0.09	t
		0.15	Kg
		0.31	Kg
		0.17	Kg
		4.35	Kg
		18.01	Kg
		1.86	Kg
		7.39	Kg
		3.24	Kg
		16.9	Kg
		1.14	Kg
		0.073	Kg
		27	kWh
		0.4	m^3
		15	m^3

	0.29	Kg

LCA

openLCA ecoinvent 3.9.1

LCA

openLCA LCA

LCA

openLCA

LCI LCA

ecoinvent 3.9.1 LCA

TETP)	kg 1,4-DCB-Eq	92.32
ADP	MJ	311689.67
	kg PO4-Eq	37.84
HTP)	kg 1,4-DCB-Eq	54889.32
ADP	kg Sb-Eq	0.02
ODP)	kg CFC-11-Eq	0.00
	kg ethylene-Eq	8.07

“ 1 ” LCA

1 20,567.90 kg CO2-Eq

1. 1

143.28 kg SO2-Eq

2. 8.07 kg ethylene-Eq

VOCs

3. 37.84

kg PO4-Eq

4. 0.00 kg CFC-11-Eq

1

21,169.17 kg 1,4-DCB-Eq

57,533,471.45 kg 1,4-DCB-Eq

92.32 kg 1,4-DCB-Eq

54,889.32 kg

1,4-DCB-Eq

311,689.67

MJ

0.02 kg Sb-Eq

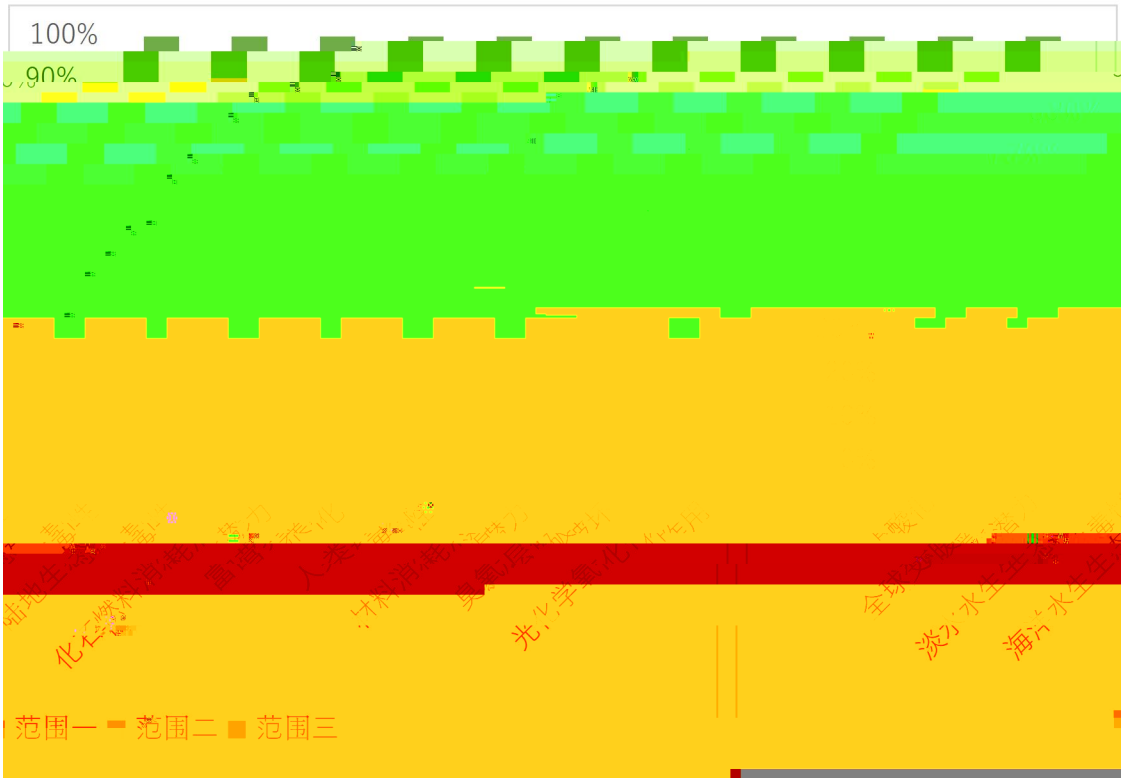
LCA

LCA

( )

GWP

15,968.63 kg CO2-Eq 243,351.96 MJ



3

ISO 14044 2006

ISO14044:2006 “ ” :

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ISO 14044 2006

10%

GWP100

10%

—— bauxite

10%

red mud

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b) /

CN-CHUANGYUAN CN-NM

GLO

2021

c)

ecoinvent 3.9.1

“ ”

GLO

d)

CML 4.8

GWP



LCA

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	6.65E-01	2.15E+02	1.07E+02	2.76E+05	7.53E-01	9.20E+03	5.27E-01	6.04E+02	4.10E-05	1.66E-07	7.20E-02
	1.86E-03	1.47E-01	4.06E-02	8.56E+01	4.30E-04	1.76E+00	4.76E-04	1.35E-01	3.51E-07	1.65E-09	1.28E-04
	3.38E+00	2.30E+02	4.03E+01	8.75E+04	1.50E+00	2.84E+03	4.56E-01	1.67E+02	3.20E-04	2.74E-06	1.73E-01
	1.10E+02	1.54E+04	5.47E+03	3.65E+07	5.07E+01	2.17E+05	2.30E+01	2.05E+04	4.81E-03	3.54E-05	6.06E+00
	8.79E+00	1.16E+03	4.37E+02	2.91E+06	4.05E+00	1.73E+04	1.84E+00	1.63E+03	3.84E-04	2.82E-06	4.84E-01
	1.52E+00	5.10E+02	5.65E+01	2.11E+05	9.18E-01	6.25E+03	2.81E-01	1.70E+02	1.30E-04	5.33E-06	9.86E-02
	9.81E-01	1.69E+02	5.93E+02	6.69E+05	6.98E-01	1.59E+03	3.39E-01	1.12E+03	4.63E-04	8.39E-07	5.69E-02
	1.40E-01	5.80E+01	1.44E+01	2.16E+04	2.33E-01	4.19E+03	3.08E-02	2.40E+01	1.11E-04	6.36E-06	2.03E-02
	3.06E-02	5.98E+00	4.02E+00	1.01E+04	6.13E-02	6.40E+01	1.19E-02	9.21E+00	6.34E-05	3.20E-06	1.68E-03
	4.92E-03	1.21E+00	4.33E-01	1.75E+03	3.16E-03	1.29E+01	1.96E-03	8.84E-01	1.12E-06	6.00E-09	2.74E-04
	5.33E-02	2.54E+01	1.83E+01	3.77E+04	3.92E-02	2.10E+02	6.51E-02	1.34E+01	1.06E-05	1.04E-07	3.78E-03
	4.54E+00	1.52E+03	1.69E+02	6.32E+05	2.74E+00	1.87E+04	8.39E-01	5.07E+02	3.89E-04	1.59E-05	2.95E-01
	8.07E-01	1.52E+02	5.01E+02	7.05E+05	7.11E-01	1.53E+03	3.11E-01	3.16E+02	4.64E-04	1.44E-05	1.15E-01
	1.23E+00	2.63E+02	1.68E+02	4.41E+05	2.45E+00	2.84E+03	5.07E-01	3.73E+02	2.40E-03	1.54E-04	7.02E-02

	7.47E-03	1.83E+00	6.44E-01	2.56E+03	6.11E-03	1.94E+01	2.64E-03	1.48E+00	2.16E-06	2.40E-08	4.22E-04
	1.75E-01	3.30E+01	1.32E+04	1.35E+07	1.29E-01	9.18E+02	4.56E+00	5.71E+03	5.57E-05	8.40E-07	1.94E-02
	6.84E-02	3.88E+01	2.94E+01	3.12E+04	5.31E-02	1.75E+02	4.22E+00	1.87E+01	2.95E-05	1.41E-07	5.85E-03