



EcoLeaf

Type III Environmental Declaration (EPD)

Registration number : JR-AJ-21002E

Ecoleaf Environmental Labeling Program

Sustainable Management Promotion Organization

2-1, Kaji-cho 2 chome, Chiyoda-ku, Tokyo Japan

<https://ecoleaf-label.jp/>

# KYOEI STEEL

(KYOEI STEEL LTD.)

## Round bar of steel



### Functional unit

1t

### System boundary

final products       intermediate products

Production Stage and optional supplementary information

### Main specifications of the product

Production sites: Yamaguchi and Hirakata Works

Main standards: JIS G 3101(SS400、SNR490B)

JIS G 3138(SNR400R、SNR400B、SNR490B)

JIS G 4051(S25C、S45C、S55C)

Type: Round

Size: φ9~φ42

### Company Information

KYOEI STEEL LTD.

<http://www.kyoeisteel.co.jp>

Registration#	JR-AJ-21002E
PCR number	PA-180000-AJ-03
PCR name	Steel products for construction
Publication date	4/20/2021
Verification date	4/8/2021
Verification method	Product-by-product
Verification#	JV-AJ-21002
Expiration date	4/7/2026
PCR review was conducted by:	
Approval date	10/1/2019
PCR review panel chair	Yasunari Matsuno (Chiba University)

### Third party verifier\*

Hiroyuki Uchida

Independent verification of data & declaration in accordance with ISO14025 and ISO21930.

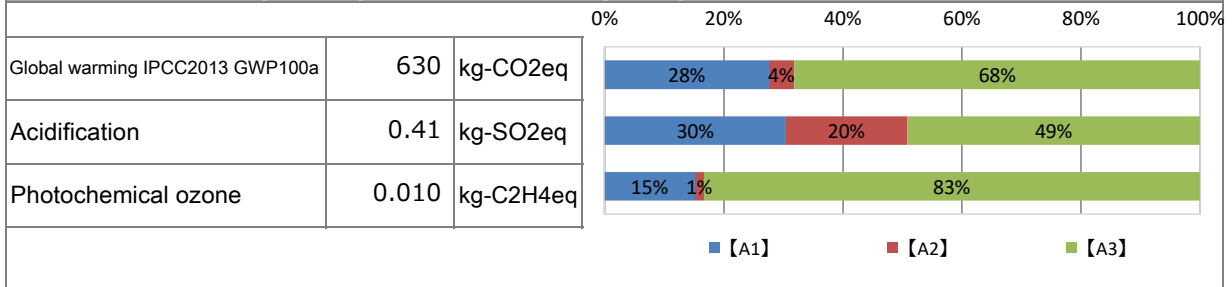
internal       external

\*Auditor's name is stated if system certification has been performed.

Registration number : JR-AJ-21002E



1. Results of life cycle impact assessment (LCIA)



Parameter	stage	Unit	[A1~A3]	[A1]	[A2]	[A3]	[D]
Global warming IPCC2013 GWP100a		kg-CO <sub>2</sub> eq	6.3E+02	1.7E+02	2.7E+01	4.3E+02	1.6E+02
Ozone layer destruction		kg-CFC-11eq	1.8E-07	1.6E-07	2.2E-10	9.9E-09	2.9E-08
Acidification		kg-SO <sub>2</sub> eq	4.1E-01	1.2E-01	8.4E-02	2.0E-01	2.4E-01
Photochemical ozone		kg-C <sub>2</sub> H <sub>4</sub> eq	1.0E-02	1.6E-03	1.5E-04	8.6E-03	3.4E-02
Eutrophication		kg-PO <sub>4</sub> <sup>3-</sup> eq	1.7E-04	4.8E-06	1.9E-13	1.7E-04	2.9E-03

2. Life cycle inventory analysis (LCI)

Parameter	Value	Unit
Non-renewable material resources	-6.6E+01	kg
Non-renewable energy resources	9.2E+03	MJ
Renewable material resources	2.8E+02	kg
Renewable primary energy	2.1E+02	MJ
Consumption of freshwater	1.2E-01	m <sup>3</sup>

3. Material composition

Material	Value	Unit
Iron [Fe]	≥96.72	%
Carbon [C]	≤0.58	%
Silicon [Si]	≤0.6	%
Manganese [Mn]	≤2	%
Phosphorus [P]	≤0.05	%
sulfur [S]	≤0.05	%

4. Waste to disposal

Parameter	Value	Unit
Hazardous waste	0.00E+00	kg
Non-hazardous waste.	3.0E+01	kg

\*Data derived from LCA and not assigned to the impact categories of LCIA

5. Additional explanation

- ① Each LCI figure includes allocation for scrup recycling as a optional supplementary infomation[D]. Recycling rate(RR) of this EPD is 93.1%(the average of Japan in 2014).
- ② Transport to site scienario is based on PCR.
- ③ The source of the unit power consumption is the average of 10 electric power suppliers of Japan in 2014.
- ④ The first data was acquired from 2019.
- ⑤ Each material figure(except iron) is the maximum value of these product standers.
- ⑥ Electric furnace slag and electric furnace dust (Hirakata Works) are sold to the outside as products.



EcoLeaf

Type III Environmental Declaration (EPD)

Registration number : JR-AJ-21002E

Ecoleaf Environmental Labeling Program

Sustainable Management Promotion Organization

2-1, Kaji-cho 2 chome, Chiyoda-ku, Tokyo Japan

<https://ecoleaf-label.jp/>

#### 6-1. Supplementary environmental information

--

#### 6-2. Regulated hazardous substances

Substance	CAS No.	Reference to standards or regulations
Manganese [Mn]	7439-96-5	Industrial Safety and Health Act
Copper [Cu]	7440-50-8	Industrial Safety and Health Act
Chrome [Cr]	7440-47-3	Industrial Safety and Health Act
Nickel [Ni]	7440-02-0	Industrial Safety and Health Act

#### 7. Assumptions of secondary data used

We use the IDEA2.1.3 data and scrap iron data from the Japan Iron and Steel Federation(J.I.S.F).

#### 8. Remarks

--

- For data quantification, please refer to PCR and Rules on quantification and declaration.
- Comparative assertion is permitted only when Rules on quantification and declaration are satisfied.  
(Reference URL : <https://ecoleaf-label.jp/regulation/>)

Registration number : JR-AJ-21002E