



EcoLeaf

Type III Environmental Declaration (EPD)

Registration number : JR-AW-23021E

Japan EPD Program by SuMPO

Sustainable Management Promotion Organization
14-8, Uchikanda 1-chome, Chiyoda-ku, Tokyo Japan
<https://ecoleaf-label.jp/>



JFE Steel Corporation

Bar and Bar in Coil
(Products in Sendai)



Functional unit

1 metric ton

System boundary

final products intermediate products

Production Stage (Raw material acquisition and Transportation to factory, manufacturing) and Indirect effect

Main specifications of the product

Production Site: Sendai Works

Representative Standards:

SC, SCR, SCM, SGD, SUM, SWRCH

Shape: Bar and Bar in Coil

Size range (mm):

Bar: ϕ 17 - ϕ 120

Bar in Coil: ϕ 16.7 - ϕ 52

Company Information

JFE Steel Corporation

Planning & Marketing Dept.,

Steel Bar & Wire Rod Division

About us: <https://www.jfe-steel.co.jp/en/index.html>

Contact us: <https://www.jfe-steel.co.jp/en/contact.html>

Registration#	JR-AW-23021E
PCR number	PA-180000-AW-05
PCR name	Steel products (except for construction use)
Publication date	1/15/2024
Verification date	11/21/2023
Verification method	Product-by-product
Verification#	JV-AW-23021
Expiration date	11/20/2028
PCR review was conducted by:	
Approval date	5/10/2023
PCR review panel chair	Yasunari Matsuno (Chiba University)

Third party verifier*

Takahiro Atoh

Independent verification of data & declaration in accordance with ISO14025

internal external

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

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**1. Results of life cycle impact assessment (LCIA)**

Parameter	stage	[A1, A3]	Unit
Global warming IPCC2013 GWP100a		1.0E+03	kg-CO ₂ eq
Acidification		5.9E-01	kg-SO ₂ eq
Eutrophication		3.4E-03	kg-PO ₄ ³⁻ eq

Parameter	stage	Unit	Total	[A1] Raw material acquisition and Transportation to factory	[A3] Manufacturing		[D] Indirect effect
Global warming IPCC2013 GWP100a		kg-CO ₂ eq	1.0E+03	2.5E+02	7.7E+02	-	3.7E+02
Ozone layer destruction		kg-CFC-11eq	2.3E-07	1.7E-07	5.8E-08	-	6.7E-08
Acidification		kg-SO ₂ eq	5.9E-01	2.6E-01	3.3E-01	-	5.7E-01
Photochemical ozone		kg-C ₂ H ₄ eq	1.6E-02	1.7E-03	1.4E-02	-	8.0E-02
Eutrophication		kg-PO ₄ ³⁻ eq	3.4E-03	5.0E-06	3.4E-03	-	6.8E-03

2. Life cycle inventory analysis (LCI)

Parameter	Unit
Non-renewable material resources	2.2E+01 kg
Non-renewable energy resources	1.6E+04 MJ
Renewable material resources	1.3E+01 kg
Renewable primary energy	2.8E+02 MJ
Consumption of freshwater	1.7E+00 m ³

3. Material composition

Material	Unit
Iron [Fe]	84.2 wt%
Carbon [C]	1.10 wt%
Silicon [Si]	3.00 wt%
Manganese [Mn]	3.00 wt%
Phosphorus [P]	0.15 wt%
Sulfur [S]	0.45 wt%
Copper [Cu]	0.60 wt%
Nickel [Ni]	4.00 wt%
Chromium [Cr]	2.50 wt%
Molybdenum [Mo]	1.00 wt%

4. Waste to disposal

Parameter	Unit
Hazardous waste	0.0E+00 kg
Non-hazardous waste.	8.5E-01 kg

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

**5. Additional explanation**

- The indirect effect (scrap recycling potential) is calculated based on ISO 20915/JIS Q 20915 and shown as [D]Indirect effect in table "1. Results of life cycle impact assessment (LCIA)" .
The indirect effect is added to the total value (sum of [A1], [A3]) in tables.
- Recycling ratio used in this calculation is 93.0% (calculated based on ISO 20915/JIS Q 20915 and using FY 2018 data from The Japan Iron and Steel Federatin, The Japan Steel Can recycling Association and The Japan ferrous raw materials association).
- The source of unit power consumption is the average of 10 electric power suppliers of Japan in 2014.
- Primary data collected in 2021.
- Each item (except iron) in table 3 is the maximum value of all product standards covered by this EPD.

6-1. Supplementary environmental information

The production site is certified to ISO 14001.

6-2. Regulated hazardous substances

Substance	CAS No.	Reference to standards or regulations
Copper [Cu]	7440-50-8	• Industrial Safety and Health Act
Manganese [Mn]	7439-96-5	• Industrial Safety and Health Act
Nickel [Ni]	7440-02-0	• Act on the Assessment of Releases of Specified Chemical Substances in the Environment and the Promotion of Management Improvement
Chromium [Cr]	7440-47-3	
Molybdenum [Mo]	7439-98-7	
Lead [Pb]	7439-92-1	

7. Assumptions of secondary data used

IDEA v2.1.3 database is used. Steel scrap data (JP-AJ-0001) from the Japan Iron and Steel Federation are used.

8. Remarks

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- 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/>)