



EcoLeaf

Type III Environmental Declaration (EPD)

Registration number : JR-AW-21001E-A

Japan EPD Program by SuMPO

Sustainable Management Promotion Organization

14-8, Uchikanda 1-chome, Chiyoda-ku, Tokyo Japan

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



NIPPON STEEL

NIPPON STEEL CORPORATION

## HFW OCTG and Linepipe (HFW: High-frequency welded)



### Functional unit

1t

### System boundary

final products       intermediate products

Production stage and optional supplementary info

### Main specifications of the product

Production site : Kyushu Works Oita area  
(Hikari Pipe production Div.)

Standards : API 5CT and 5L grades

ISO 11960 and 3183

DNVGL-ST-F101

NT grades

Size range : OD :323.9mm (12") - 609.6mm(24")

WT : up to 22mm (0.866")

Length : up to 18.3mtr (60ft)

### Company Information

#### Nippon steel Corporation

Energy Tubular Products Marketing Div.

<https://www.nipponsteel.com/>

<http://www.tubular.nipponsteel.com/>

|                              |  |
|------------------------------|--|
| Registration#                | JR-AW-21001E-A   |
| PCR number                   | PA-180000-AW-05  |
| PCR name                     | Steel products (excluding construction), intermediate products |
| Publication date             | 5/26/2021  |
| Verification date            | 1/12/2024  |
| Verification method          | Product-by-product   |
| Verification#                | JV-AW-24008  |
| Expiration date              | 1/11/2029  |
| PCR review was conducted by: |  |
| Approval date                | 5/10/2023  |
| PCR review                   | Yasunari Matsuno   |
| panel chair                  | Chiba University   |

### Third party verifier\*

Yasuo Koseki

Independent verification of data & declaration in accordance with ISO14025

internal

external

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

Registration number : JR-AW-21001E-A

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

| Parameter                       | stage | Production + Indirect Impact *1 | Production Only *2 | Unit                  |
|---------------------------------|-------|---------------------------------|--------------------|-----------------------|
| Global warming IPCC2013 GWP100a |       | 1400                            | 2500               | kg-CO <sub>2</sub> eq |
| Acidification                   |       | 0.20                            | 2.0                | kg-SO <sub>2</sub> eq |
| Eutrophication                  |       | 0.027                           | 0.048              | kg-P043-eq            |

\*1: sum of (1), (2) and Indirect Impact \*2: sum of (1) and (2)

| Parameter                       | stage | Unit                                | Sum of (1) and (2) | (1) Sourcing of Raw Materials | (2) Production | Indirect Impact |
|---------------------------------|-------|-------------------------------------|--------------------|-------------------------------|----------------|-----------------|
| Global warming IPCC2013 GWP100a |       | kg-CO <sub>2</sub> eq               | 2.5E+03            | 5.6E+02                       | 1.9E+03        | -1.1E+03        |
| Ozone layer destruction         |       | kg-CFC-11eq                         | 1.2E-04            | 1.2E-04                       | -8.9E-07       | -2.1E-07        |
| Acidification                   |       | kg-SO <sub>2</sub> eq               | 2.0E+00            | 4.7E-01                       | 1.5E+00        | -1.8E+00        |
| Photochemical ozone             |       | kg-C <sub>2</sub> H <sub>4</sub> eq | 1.6E-02            | 5.5E-03                       | 1.0E-02        | -2.5E-01        |
| Eutrophication                  |       | kg-PO <sub>4</sub> <sup>3-</sup> eq | 4.8E-02            | 1.1E-03                       | 4.7E-02        | -2.1E-02        |

**2. Life cycle inventory analysis (LCI)**

| Parameter                        | Unit                   |
|----------------------------------|------------------------|
| Non-renewable material resources | 6.3E+02 kg             |
| Non-renewable energy resources   | 2.7E+04 MJ             |
| Renewable material resources     | 8.5E+02 kg             |
| Renewable primary energy         | -4.8E+02 MJ            |
| Consumption of freshwater        | 8.1E-01 m <sup>3</sup> |

**3. Material composition**

| Material       | Unit     |
|----------------|----------|
| Iron [Fe]      | ≥96.95 % |
| Carbon [C]     | ≤0.50 %  |
| Silicon [Si]   | ≤0.55 %  |
| Manganese [Mn] | ≤1.90 %  |
| Phosphorus [P] | ≤0.05 %  |
| Sulfur [S]     | ≤0.05 %  |

**4. Waste to disposal**

| Parameter                             | Unit       |
|---------------------------------------|------------|
| Hazardous waste                       | 0.0E+00 kg |
| Non-hazardous waste.                  | 1.7E+00 kg |
| Treated MSW for landfill              | 0.0E+00 kg |
| Treated industrial waste for landfill | 1.7E+00 kg |

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

**5. Additional explanation**

- 1) As the indirect impact, the impact of scrap recycling was evaluated based on ISO 20195. The impact of recycling is shown in the "Indirect Impact" column of the table above. Recycling rate(RR) of this EPD is 93.0%(calculated based on ISO 20915 using 2018FY Japan data (data source: The Japan Iron & Steel Federation, The Japan ferrous raw materials association, and Japan Steel Can Recycling Association))
- 2) Scenario of transport to site is based on PCR.
- 3) Data source for electricity is the average of 10 electric power suppliers of Japan in 2014FY.
- 4) The primary data is from 2018FY.



EcoLeaf

Type III Environmental Declaration (EPD)

Registration number : JR-AW-21001E-A

Japan EPD Program by SuMPO

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

### 6-1. Supplementary environmental information

Certified by ISO14001. For Latest Sustainability report, please visit <https://www.nipponsteel.com/en/csr/report>

### 6-2. Regulated hazardous substances

| Substance      | CAS No.   | Reference to standards or regulations                   |
|----------------|-----------|---|
| Manganese [Mn] | 7439-96-5 | Article 57-2(1) of the Industrial Safety and Health Act |
|                |           |   |

### 7. Assumptions of secondary data used

IDEA v2.1.3 is used. JP-AJ-0001 is used as the scrap LCI.

### 8. Remarks

January 2024; Modification about allocation method of by-product gases

- 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-AW-21001E-A