



**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/>

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

### 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-PO <sub>4</sub> <sup>3-</sup> eq

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

Be sure to refer to "6-1. Supplementary environmental information" for Scope 3 and carbon footprint calculations.

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	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	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	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.



**6-1. Supplementary environmental information**

Certified by ISO14001. For Latest Sustainability report, please visit <https://www.nipponsteel.com/en/csr/report/>  
Note on Global warming IPCC2013 GWP100a: When purchasers of this product calculate GHG emissions under GHG Protocol Scope 3, Category 1 for their organization, or when calculating the carbon footprint of products manufactured using this product, they must check the following URL:  
<https://www.nipponsteel.com/en/product/cfp/certificate.html>  
(The content of the above URL is not subject to EPD verification.)

**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.  
April 2026; Additional explanatory notes added to "6-1. Supplementary environmental information".

- 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/>)