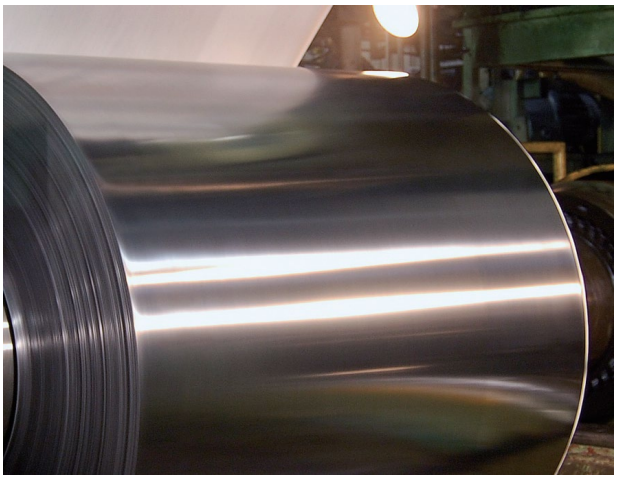
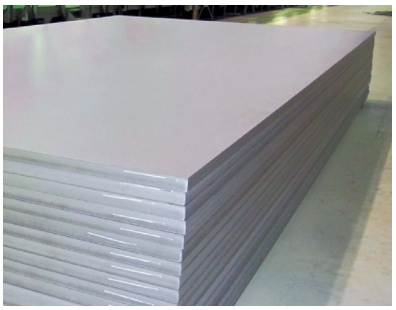
Japan EPD Program by SuMPO
Sustainable Management Promotion Organization
14-8, Uchikanda 1-chome, Chiyoda-ku, Tokyo Japan
https://ecoleaf-label.jp/

NIPPON STEEL
日鉄ステンレス株式会社
NIPPON STEEL Stainless Steel Corporation

Stainless Steel (Austenitic･Duplex)





Functional unit

1t

System boundary

☐ final products ■intermediate products

Production Stage

(Raw material supply, Transport, Manufacturing)

Main specifications of the product

Production sites :

Yamaguchi Works, Kashima Works, Yawata Works

Main standards :

JIS(Japanese Industrial Standards), ASTM, ASME,

NIPPON STEEL Stainless Steel grade

See Table 8.Remarks for details

Type : Sheet, Strip, Wire rod, Steel bar

Main sizes(unit:mm, t:thickness, φ:diameter) :

t=0.1～150, φ=5.5~60

Company Information

NIPPON STEEL Stainless Steel Corporation

TEL: +81-3-6841-6170

https://stainless.nipponsteel.com/en/

Registration#	JR-BO-24002E
PCR number	PA-187000-BO-03
PCR name	Stainless steel products
Publication date	11/25/2024
Verification date	10/11/2024
Verification method	Product-by-product
Verification#	JV-BO-24002
Expiration date	10/10/2029

PCR review was conducted by:

Approval date	2/4/2023
PCR review panel chair	Ken Yamagishi Sustainable Management Promotion Organization

Third party verifier*

Naoki Makino

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

☐internal ■external

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

SuMPO EPD
Type III Environmental Declaration (EPD)
Registration number : JR-BO-24002E

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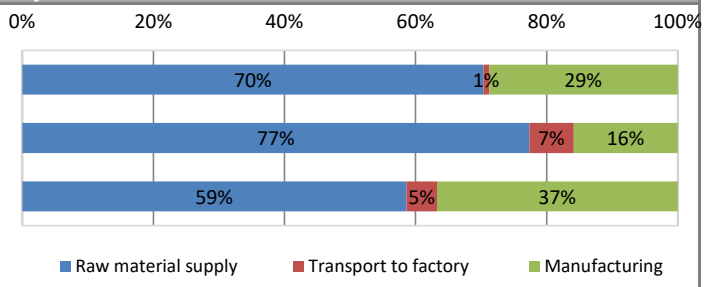
1. Results of life cycle impact assessment (LCIA)

Global warming IPCC2013 GWP100a	3800	kg-CO_2eq
Acidification	4.1	kg-SO_2eq
Photochemical ozone	0.099	kg-C_2H_4eq



Parameter \ stage	Unit	Total	Raw material supply	Transport to factory	Manufacturing		
Global warming IPCC2013 GWP100a	kg-CO_2eq	3.8E+03	2.7E+03	3.3E+01	1.1E+03		
Ozone layer destruction	kg-CFC-11eq	3.7E-04	3.6E-04	2.4E-10	5.2E-06		
Acidification	kg-SO_2eq	4.1E+00	3.2E+00	2.8E-01	6.5E-01		
Photochemical ozone	kg-C_2H_4eq	9.9E-02	5.8E-02	4.6E-03	3.6E-02		
Eutrophication	kg-PO_4^{3-}eq	9.9E-01	7.7E-03	2.1E-13	9.8E-01		

2. Life cycle inventory analysis (LCI)

Parameter		Unit
Non-renewable material resources	5.7E+02	kg
Non-renewable energy	5.1E+04	MJ
Renewable material resources	8.0E+02	kg
Renewable primary energy	1.6E+03	MJ
Consumption of freshwater	4.6E+00	m^3

4. Waste to disposal

Parameter		Unit
Hazardous waste	0.0E+00	kg
Non-hazardous waste	3.7E+00	kg

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

3. Material composition

Material		Unit
C	≦0.2	%
Si	≦5.0	%
Mn	≦16	%
P	≦0.05	%
S	≦0.4	%
Ni	≦25	%
Cr	≦28	%
Mo	≦7.0	%
Cu	≦5.0	%
Nb	≦1.0	%
Ti	≦1.0	%
Al	≦2.0	%
W	≦3.0	%
N	≦0.4	%
Fe	≧47	%

5. Additional explanation

1. Scenarios of transport to site follow the PCR. For the inter-factory transportation for intermediate products, distances were measured using mapping software.
2. Each item (except iron) in table 3 is the maximum value of all product standards covered by this EPD. The iron content is adjusted by the contents of other components.
3. Primary data collected in 2022. The source of the unit power consumption is the average of 10 electric power suppliers of Japan in 2014.
4. The calculation results are weighted averages for sheet, bar, wire rod and plate.
5. Products made from external crude steel (melted) are not included.

6-1. Supplementary environmental information

Each production area has ISO 14001 certificate.

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
Chromium[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

The IDEA2.1.3 data is used.

8. Remarks

〇JIS(Japanese Industrial Standards) : JIS G 4303(Stainless steel bars), JIS G 4304(Hot-rolled stainless steel plate, sheet and strip), JIS G 4305(Cold-rolled stainless steel plate, sheet and strip), JIS G 4308(Stainless steel wire rods)
〇ASTM A240/A240M（Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications）
〇ASME BPVC.Ⅱ.A SA-240/SA-240M（Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications）
〇NIPPON STEEL Stainless Steel grade : Cold-rolled stainless steel sheet and strip, Stainless steel plates, Stainless steel bars, Stainless steel wire rods

- 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/）