



日鉄ステンレス株式会社

NIPPON STEEL Stainless Steel Corporation

Stainless Steel (Ferritic・Martensitic)



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

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=0.1~9.0, φ=5.5~60

Company Information

NIPPON STEEL Stainless Steel Corporation

TEL: +81-3-6841-6170

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

Registration#	JR-BO-24001E
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-24001
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

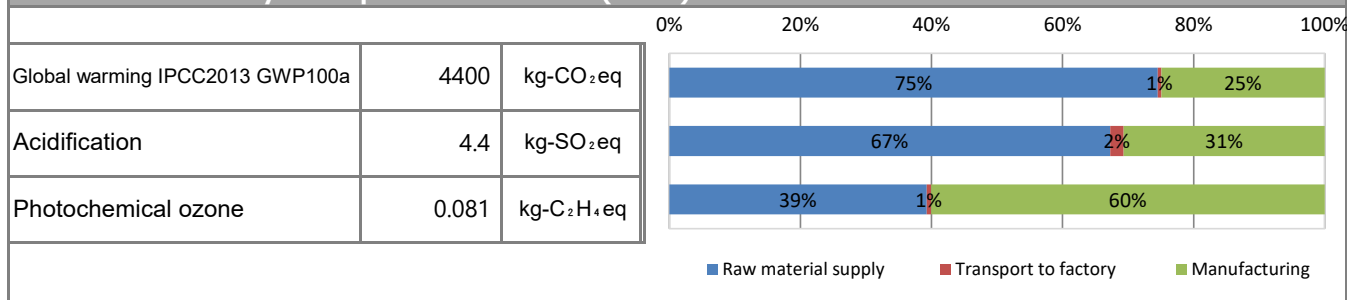
Independent verification of data & declaration in accordance with ISO14025 and ISO21930

internal external

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

Registration number : JR-BO-24001E

1. Results of life cycle impact assessment (LCIA)



Parameter	stage	Unit	Total	Raw material supply	Transport to factory	Manufacturing
Global warming IPCC2013 GWP100a		kg-CO ₂ eq	4.4E+03	3.3E+03	2.3E+01	1.1E+03
Ozone layer destruction		kg-CFC-11eq	1.6E-04	1.6E-04	1.9E-10	1.9E-06
Acidification		kg-SO ₂ eq	4.4E+00	3.0E+00	9.2E-02	1.4E+00
Photochemical ozone		kg-C ₂ H ₄ eq	8.1E-02	3.2E-02	5.3E-04	4.9E-02
Eutrophication		kg-PO ₄ ³⁻ eq	2.9E-01	8.5E-05	1.6E-13	2.8E-01

2. Life cycle inventory analysis (LCI)

Parameter	Unit
Non-renewable material resources	3.2E+02 kg
Non-renewable energy	5.9E+04 MJ
Renewable material resources	6.5E+02 kg
Renewable primary energy	1.4E+03 MJ
Consumption of freshwater	1.2E+01 m ³

4. Waste to disposal

Parameter	Unit
Hazardous waste	0.0E+00 kg
Non-hazardous waste	4.1E+01 kg

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

3. Material composition

Material	Unit
C	≦ 0.4 %
Si	≦ 3.0 %
Mn	≦ 2.0 %
P	≦ 0.15 %
S	≦ 0.4 %
Ni	≦ 2.5 %
Cr	≦ 31 %
Mo	≦ 4.0 %
Cu	≦ 2.0 %
Nb	≦ 1.0 %
Ti	≦ 1.0 %
Al	≦ 6.0 %
Sn	≦ 1.0 %
N	≦ 0.12 %
Fe	≧ 65 %

5. Additional explanation

- Scenarios of transport to site follow the PCR. For the inter-factory transportation for intermediate products, distances were measured using mapping software.
- 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.
- Primary data collected in 2022. The source of the unit power consumption is the average of 10 electric power suppliers of Japan in 2014.
- The calculation results are weighted averages for sheet, bar and wire rod.
- 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

○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)
○ASTM A240/A240M (Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications) — Cold rolled sheet and sheet in coil
○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) — Cold rolled sheet and sheet in coil
○NIPPON STEEL Stainless Steel grade : Cold-rolled stainless steel sheet and strip, 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/>)