



Stainless Steel Sheet/ Yawata cold rolled sheet (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 :

Kyushu Works

Main standards :

JIS(Japanese Industrial Standards), ASTM, ASME,
NIPPON STEEL Standards

See Table 8.Remarks for details

Type : Sheet, Strip

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

t=0.3~2.5

Company Information

NIPPON STEEL CORPORATION

Stainless Steel Unit Stainless Steel Technology Div.

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

Registration#	JR-BO-24011E-A
PCR number	PA-187000-BO-03
PCR name	Stainless steel products
Publication date	March 19, 2025
Verification date	March 10, 2025
Verification method	Product-by-product
Verification#	JV-BO-24011
Expiration date	March 9, 2030

PCR review was conducted by:

Approval date	February 4, 2023
PCR review panel chair	Ken Yamagishi Sustainable Management Promotion Organization

Third party verifier*

Kengo Minamiyama

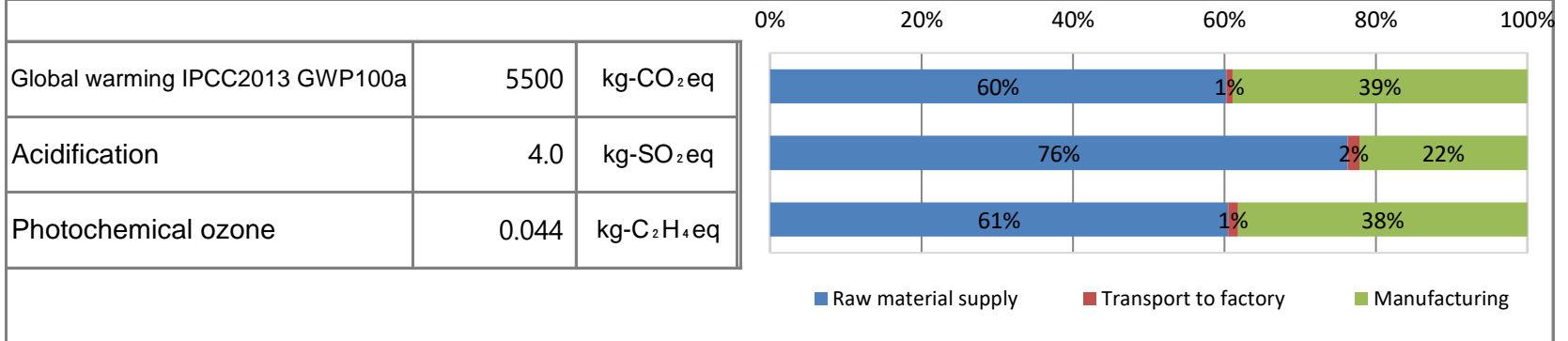
Independent verification of data & declaration in accordance with ISO14025 and ISO21930

internal external

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

Registration number : JR-BO-24011E-A

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	5.5E+03	3.3E+03	4.6E+01	2.1E+03
Ozone layer destruction		kg-CFC-11eq	5.5E-05	2.4E-06	3.1E-10	5.3E-05
Acidification		kg-SO ₂ eq	4.0E+00	3.0E+00	6.1E-02	8.9E-01
Photochemical ozone		kg-C ₂ H ₄ eq	4.4E-02	2.7E-02	5.8E-04	1.7E-02
Eutrophication		kg-PO ₄ ³⁻ eq	4.2E-02	2.7E-05	2.8E-13	4.2E-02

2. Life cycle inventory analysis (LCI)

Parameter	Value	Unit
Non-renewable material resources	8.1E+02	kg
Non-renewable energy	6.9E+04	MJ
Renewable material resources	1.6E+03	kg
Renewable primary energy	2.1E+03	MJ
Consumption of freshwater	5.4E+01	m ³

4. Waste to disposal

Parameter	Value	Unit
Hazardous waste	0.0E+00	kg
Non-hazardous waste	4.4E+00	kg

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

3. Material composition

Material	Value	Unit
C	≒ 0.5	%
Si	≒ 3.0	%
Mn	≒ 2.0	%
P	≒ 0.15	%
S	≒ 0.03	%
Ni	≒ 2.5	%
Cr	≒ 31	%
Mo	≒ 4.0	%
Cu	≒ 2.0	%
Nb	≒ 1.0	%
Ti	≒ 1.0	%
Al	≒ 6.0	%
Sn	≒ 1.0	%
N	≒ 0.1	%
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.

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 4304(Hot-rolled stainless steel plate, sheet and strip), JIS G 4305(Cold-rolled stainless steel plate, sheet and strip)

○ASTM A240/A240M (Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications)

○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)

○NIPPON STEEL Standards : Hot-rolled stainless steel sheet and strip, Cold-rolled stainless steel sheet and strip

April 2025; Modification based on the change of company name

- 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/>)