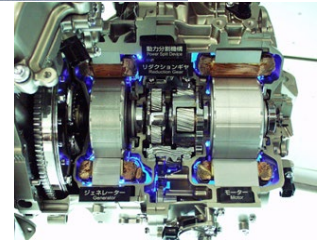


NIPPON STEEL | NIPPON STEEL CORPORATION

Non-Oriented Electrical Steel Sheets



Functional unit

1 t

System boundary

final products intermediate products

Production Stage and optional supplementary information

Main specifications of the product

Production sites : Setouchi Works, Kyushu Works

Main standards :

NIPPON STEEL Grade (H, HX etc.)

See Table 8. Remarks for details.

Type : Coil, Hoop, Sheet

Main sizes (unit: mm, t: thickness)

t=0.15~0.70

Company Information

NIPPON STEEL CORPORATION

<https://www.nipponsteel.com/en/product/sheet/list/>

Registration#	JR-AW-22021E-B
PCR number	PA-180000-AW-05
PCR name	Steel products except for construction use
Publication date	11/25/2022
Verification date	01/10/2024
Verification method	Product-by-product
Verification#	JV-AW-24005
Expiration date	10/24/2027
PCR review was conducted by:	
Approval date	05/10/2023
PCR review panel chair	Yasunari Matsuno (Chiba University)

Third party verifier*

Tetsuya Okuyama

Independent verification of data & declaration in accordance with ISO14025

internal external

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

1. Results of life cycle impact assessment (LCIA)

Parameter	Stage	(1)+(2)+(3)	(1)+(2)	Unit
Global warming IPCC2013 GWP100a		1800	2900	kg-CO ₂ eq
Acidification		0.40	2.0	kg-SO ₂ eq
Eutrophication		0.057	0.077	kg-PO ₄ ³⁻ eq

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

Table Legend
 (1)Raw material supply
 (2)Production
 (3)Recycling potential

Parameter	stage	Unit	(1)+(2)	(1)	(2)	(3)
Global warming IPCC2013 GWP100a		kg-CO ₂ eq	2.9E+03	7.5E+02	2.2E+03	-1.1E+03
Ozone layer destruction		kg-CFC-11eq	1.2E-06	1.6E-07	1.0E-06	-1.9E-07
Acidification		kg-SO ₂ eq	2.0E+00	7.7E-01	1.3E+00	-1.6E+00
Photochemical oxidant		kg-C ₂ H ₄ eq	2.2E-02	8.0E-03	1.4E-02	-2.3E-01
Eutrophication		kg-PO ₄ ³⁻ eq	7.7E-02	7.3E-04	7.6E-02	-1.9E-02

2. Life cycle inventory analysis (LCI)

Parameter	Unit
Non-renewable material resources	5.4E+02 kg
Renewable material resources	1.9E+03 kg
Non-renewable energy resources	3.3E+04 MJ
Renewable energy resources	4.0E+02 MJ
Consumption of freshwater	1.5E+01 m ³

4. Waste to disposal

Parameter	Unit
Hazardous waste	- kg
Non-hazardous waste.	1.9E+00 kg

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

3. Material composition

Material	Unit
Fe	≥90 %
C	≤0.1 %
Si	≤5 %
Mn	≤4 %
P	≤0.2 %
S	≤0.05 %
Al	≤3 %
Ni	≤4 %
Sn	≤1 %
Cu	≤2 %

5. Additional explanation

- Each LCI includes allocation for scrap recycling as an optional supplementary information(3) at table.1 . Recycling rate (RR) used in this calculation is 93.0% (calculated based on ISO 20915/JIS Q20915 and using Japan data in 2018 from Japan Iron and Steel Federation and Japan Steel Can Recycling Association).
- Scenarios of transport to site follow the PCR.
- Each item (except iron) in table 3 is the maximum value of all product standards covered by this EPD. However, the iron content in each product is never less than 90%, and the contents of other components are adjusted.
- Primary data collected in 2018. The source of the unit power consumption is the average of 10 electric power suppliers of Japan in 2014.
- For the transport of metallurgical coal, the amount is double counted due to the characteristics of the inventory database on which this estimation is based.

6-1. Supplementary environmental information

Each production area has ISO 14001 certificate.

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	Industrial Safety and Health Act
Nickel [Ni]	7440-02-0	Industrial Safety and Health Act
Chromium [Cr]	7440-47-3	Industrial Safety and Health Act
Copper [Cu]	7440-50-8	Industrial Safety and Health Act
Tin [Sn]	7440-31-5	Industrial Safety and Health Act

7. Assumptions of secondary data used

The IDEA2.1.3 data and steel scrap data (JP-AJ-0001) from the Japan Iron and Steel Federation are used.

8. Remarks

NIPPON STEEL Grade

HILITECORE™ (e.g. 35H440, 50H350) , HIEXCORE™ (e.g. 50HX290, 25HX1400) ,

HIGH TENSILE STRENGTH HILITECORE™ (e.g. 35HXT780T) , HOMECORE™ (e.g. 50H1000, 50H1300) ,

SEMICORE (e.g. 50HS600)

*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/>)