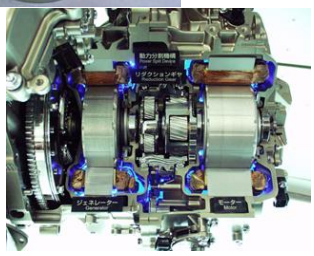
SuMPO EPD
Type III Environmental Declaration (EPD)
Registration number：JR-AW-22021E-A

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

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 infomation

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-A
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.

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1. Results of life cycle impact assessment (LCIA)

Parameter \ Stage	(1)+(2)+(3)	(1)+(2)	Unit
Global warming IPCC2013 GWP100a	1800	2900	kg-CO_2eq
Acidification	0.40	2.0	kg-SO_2eq
Eutrophication	0.057	0.077	kg-PO_4^{3-}eq

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_2eq	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_2eq	2.0E+00	7.7E-01	1.3E+00			-1.6E+00
Photochemical oxidant	kg-C_2H_4eq	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

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	%

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

5. Additional explanation

1. 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).
2. Scenarios of transport to site follow the PCR.
3. Each item (expect 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.
4. Primary data collected in 2018. The source of the unit power consumption is the average of 10 electric power suppliers of Japan in 2014.
5. 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.

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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
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

*November 2024: Change of EcoLeaf mark to SuMPO EPD mark

- 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/)