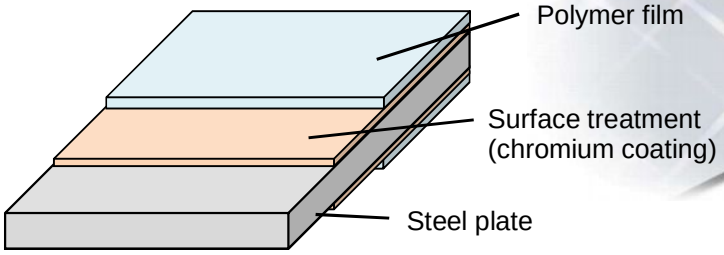
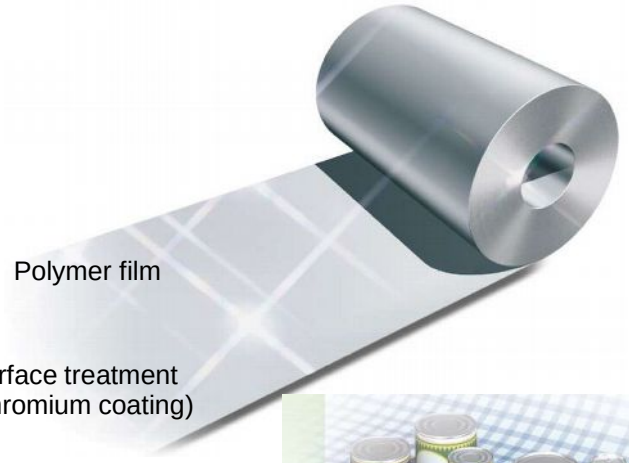
EcoLeaf
Type III Environmental Declaration (EPD)
Registration number： JR-AW-20002E-A

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

NIPPON STEEL CORPORATION

Polymer Laminated TINFREE STEEL





Functional unit

1 t

System boundary

☐Final products ■Intermediate products

Production stages (raw material procurement, raw material transport and product manufacture) and indirect impacts

Main specifications of the product

Production sites: Nagoya Works

Main standards: NTPLT

Shape: Coil and sheet

Main thickness (unit: mm, t= thickness)

t = 0.15 to 0.3

Company Information

NIPPON STEEL CORPORATION
Tin Mill Products Technology Dept., Tin Mill Products Div.
TEL: 03-6867-6558
https://www.nipponsteel.com/

Registration#	JR-AW-20002E-A
PCR number	PA-180000-AW-05
PCR name	Steel products (excluding construction), intermediate products
Publication date	October 26,2020
Verification date	January 29,2024
Verification method	Product-by-product
Verification#	JV-AW-24021
Expiration date	January 28,2029

PCR review was conducted by:

Approval date	May 10,2023
PCR review panel chair	Yasunari Matsuno (Chiba University)

Third party verifier*

Outside verifier: Naoki Makino

Independent verification of data & declaration in accordance with ISO14025

☐Internal ■External

* If the system certification has been performed in the subject business site, the auditor's name is stated.

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1. Results of life cycle impact assessment (LCIA)

Domain of influence	Manufacturing + Indirect impact*1	Manufacturing only*2	Unit
Climate change IPCC2013 GWP100a	**2100**	**3200**	kg(CO_2eq)
Acidification	**-0.053**	**1.7**	kg(SO_2eq)
Eutrophication	**0.011**	**0.032**	kg(PO_4^{3-}eq)

Parameter \ stage	Unit	Manufacturing Stage total	[A1] Raw material procurement	[A2] Raw material transport	[A3]Manufacturing products		[D] Indirect impact
Climate change IPCC2013 GWP100a	kg-CO_2eq	3.2E+03	6.5E+02	1.3E+02	2.5E+03		-1.1E+03
Ozone layer destruction	kg-CFC-11eq	2.7E-05	2.5E-05	8.3E-10	2.1E-06		-2.0E-07
Acidification	kg-SO_2eq	1.7E+00	8.0E-01	7.5E-02	7.8E-01		-1.7E+00
Photochemical oxidant	kg-C_2H_4eq	2.2E-02	6.4E-03	1.2E-03	1.5E-02		-2.4E-01
Eutrophication	kg-PO_4^{3-}eq	3.2E-02	1.0E-02	7.5E-13	2.2E-02		-2.0E-02

2. Life cycle inventory analysis (LCI)

Parameter		Unit
Non-renewable material resources	7.5E+02	**kg**
Non-renewable energy resources	3.7E+04	MJ
Renewable material resources	1.5E+03	**kg**
Renewable primary energy	1.3E+03	MJ
Consumption of freshwater	1.3E+00	**m^3**

3. Material composition

Material		Unit
Iron [Fe]	**≥88.9**	**%**
Manganese [Mn]	**≤0.60**	**%**
Nickel [Ni]	**≤0.20**	**%**
Chromium [Cr]	**≤0.10**	**%**
Copper [Cu]	**≤0.20**	**%**
Titanium dioxide [TiO2]	**≤10**	**%**

4. Waste to disposal

Parameter		Unit
Hazardous waste	**0.00E+00**	**kg**
Non-hazardous waste.	**2.20E+00**	**kg**
General waste; landfill waste	**0.00E+00**	**kg**
Industrial waste; landfill waste	**2.20E+00**	**kg**

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

5. Additional information about the calculation results

(1) Steel material recycling effects were assessed based on JISQ20915 as indirect impacts. Their values are shown in column [D] of the table above. The indirect impacts are added to the total of [A1] to [A3] in the table above.
The recycling rate in this calculation is 93.0%. (The calculation was based on JISQ20915 and used the domestic data of FY2018. (Source: The Japan Iron and Steel Federation, the Japan Ferrous Raw Materials Association, and Japan Steel Can Recycling Association))
(2) Transport to site scenario is based on PCR.
(3) The source of the unit power consumption is the average of 10 electric power suppliers of Japan in 2014.

6-1. Supplementary environmental information

Products are manufactured at an ISO14001 certified Works.

6-2. Regulated hazardous substances

Substance	CAS No.	Reference to standards or regulations
Manganese [Mn]	7439-96-5	Article 57-2(1) of the Industrial Safety and Health Act; Class I designated chemical substance by the Law concerning Pollutant Release and Transfer Register
Nickel [Ni]	7440-02-0	Article 57-2(1) of the Industrial Safety and Health Act; Class I designated chemical substance by the Law concerning Pollutant Release and Transfer Register
Chromium [Cr]	7440-47-3	Article 57-2(1) of the Industrial Safety and Health Act; Class I designated chemical substance by the Law concerning Pollutant Release and Transfer Register
Copper [Cu]	7440-50-8	Article 57-2(1) of the Industrial Safety and Health Act
Tin [Sn]	7440-31-5	Article 57-2(1) of the Industrial Safety and Health Act

7. Assumptions of secondary data used

The IDEA v2.1.3 data were used. For the scrap primary unit (scrap LCI), the primary unit registration No.: JP-AJ-0001 was used.

8. Remarks

January 2024; Modification about allocation method of by-product gases

- 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/)