EcoLeaf
Type III Environmental Declaration (EPD)
Registration number : JR-AW-22009E-A
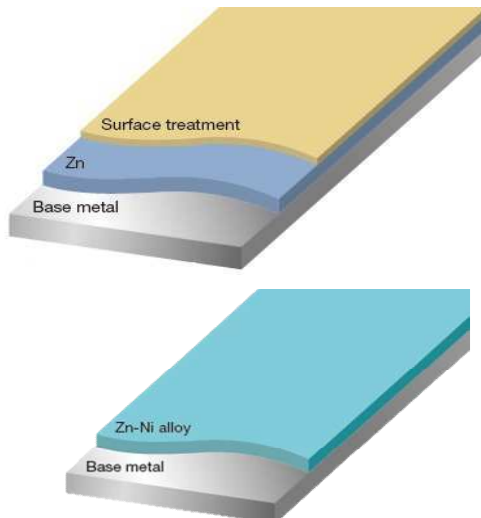
Japan EPD Program by SuMPO
Sustainable Management Promotion Organization
14-8, Uchikanda 1-chome, Chiyoda-ku, Tokyo Japan
https://ecoleaf-label.jp/

NIPPON STEEL

Electrogalvanized Steel Sheets

Coating Structure
(representative example)

Functional unit

1 t

System boundary

final products   intermediate products

Main specifications of the product

Production sites:

East Nippon Works, Setouchi Works

Main standards:

JIS(Japanese Industrial Standards),

NIPPON STEEL standards

For details, please refer to "8. Remarks" in EL sheet 2.

Shape: Coil and sheet

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

t = 0.4 3.2

Company Information

NIPPON STEEL CORPORATION

Flat Products Unit Flat Products Planning Dept.

https://www.nipponsteel.com/

Registration#	JR-AW-22009E-A
PCR number	PA-180000-AW-05
PCR name	Steel products except for construction use)
Publication date	4/21/2022
Verification date	1/19/2024
Verification method	Product-by-product
Verification#	JV-AW-24018
Expiration date	3/17/2027

PCR review was conducted by:

Approval date	5/10/2023
PCR review panel chair	Yasunari Matsuno (Chiba University)

Third party verifier*

Tomoko Fuchigami

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)

Domain of influence	Manufacturing + Indirect impact*1	Manufacturing only*2	Unit
Global warming IPCC2013 GWP100a	1600	2800	kg-CO_2eq
Acidification	-0.0021	1.9	kg-SO_2eq
Eutrophication	0.017	0.040	kg-PO_4^{3-}eq

*1:the total of (1) to (3), *2:the total of (1) to (2)

Parameter \ stage	Unit	the total of (1)to (2)	(1)raw material procurement	(2)product manufacture			(3)indirect impacts
Global warming IPCC2013 GWP100a	kg-CO_2eq	2.8E+03	5.8E+02	2.2E+03			-1.2E+03
Ozone layer destruction	kg-CFC-11eq	1.6E-07	1.2E-07	3.9E-08			-2.2E-07
Acidification	kg-SO_2eq	1.9E+00	7.6E-01	1.1E+00			-1.9E+00
Photochemical ozone	kg-C_2H_4eq	2.1E-02	6.9E-03	1.4E-02			-2.6E-01
Eutrophication	kg-PO_4^{3-}eq	4.0E-02	1.5E-02	2.5E-02			-2.3E-02

2. Life cycle inventory analysis (LCI)

Non-renewable material resources	7.5E+02	
Non-renewable energy resources	3.1E+04	MJ
Renewable material resources	1.1E+03	
Renewable primary energy	1.6E+02	MJ
Consumption of freshwater	4.9E+00	3

3. Material composition

Material		Unit
iron [Fe]	95.0	
carbon [C]	1.10	
silicon [Si]	3.00	
manganese [Mn]	3.00	
phosphorus [P]	0.050	
sulfur [S]	0.050	
zinc [Zn]	2.00	
nickel [Ni]	2.00	

4. Waste to disposal

Parameter		Unit
Hazardous waste	-	kg
Non-hazardous waste.	2.8E+00	kg
Treated MSW for landfill	0.0E+00	kg
Treated industrial waste for landfill	2.8E+00	kg

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

5. Additional explanation

   Each LCI includes allocation for scrap recycling as an optional supplementary information [End-of-Life].
The indirect effect is added to the total value in Tables [Raw material acquisition], [Production] and [Distribution].
Recyclingrate (RR) used in this calculation is 93.0%
(calculated based on ISO 20915/JIS Q 20915 standards and using FY 2018 data from Japan Steel Can Recycling Association and Tetsugen Association).
   Material transport scenariois based on PCR.
   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 95%, 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 in Tables [Raw material acquisition] and [Distribution] due to the characteristics of the consumption rate database on which this estimation is based.
   Each value of the results shown in this sheet is the mean value for Electrogalvanized Steel Sheets.

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6-1. Supplementary environmental information

East Nippon Works and Setouchi Works have ISO 14001 certificates.

6-2. Regulated hazardous substances

Substance	CAS No.	Reference to standards or regulations
manganese [Mn]	7439-96-5	Industrial Safety and Health Act

7. Assumptions of secondary data used

We use the IDEA v2.1.3 data and steel scrap data(JP-AJ-0001) from the Japan Iron and Steel Federation.

8. Remarks

<The details about Main standards>
Typical Type of JIS (JIS G 3313):
  Commercial quality (e.g.:SECC,SECCT,SEHC
  Drawing quality (e.g.:SECD,SEHD
  Deep Drawing quality (e.g.:SECE,SEHE)
  High-Strength quality for drawing (e.g.:SEFC340,SEPH400
Typical Type of NIPPON STEEL standards :
  Commercial quality   e.g.:NSECC,NSEHC
  Drawing quality (e.g.:NSEC270D,NSEH270D)
  Deep drawing (e.g.:NSEC270E,NSEH270E
  Extra deep drawin (e.g.:NSEC270F
  High-Strength quality for automotive forming (e.g.:NSEC390N
  Bake-hardening quality (e.g.:NSEC340BH
  High-Strength quality for drawing (e.g.:NSEC340R
  High-Strength quality for deep drawing (e.g.:NSEC340E
  High-Strength quality of loe yield ratio-type (e.g.:NSEC490D
  DUALZINKLITE™   e.g.:NSNCC,NSNC270D,NSNC340R
  ECOTRIO™   e.g.:ZSNC
  SUPERNICKEL™   e.g.:NTSN

  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/