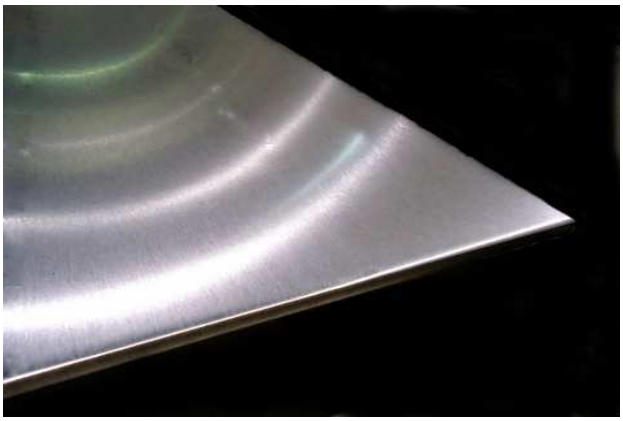
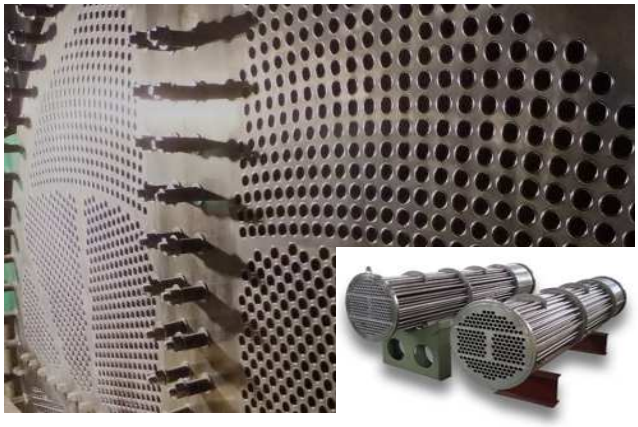
SuMPO EPD
Type III Environmental Declaration (EPD)
Registration number： JR-BZ-24001E

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

NIPPON STEEL | NIPPON STEEL CORPORATION

Titanium Plates





Condenser tube plate

Functional unit

1t

System boundary

☐ final products ■intermediate products

Production Stage(Raw material supply,Transport,Manufacturing)

Main specifications of the product

Production sites : East Nippon Works ,Kyushu Works

Main standards : JIS H 4600, ASTM B265, ASME SB265、

NIPPON STEEL original See Table 8.Remarks for details.

Type : Plate

Main sizes(unit:㎜,t:thickness) t=4.0～60.0

Company Information

NIPPON STEEL CORPORATION

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

Registration#	JR-BZ-24001E
PCR number	PA-201590-BZ-03
PCR name	Titanium products
Publication date	6/24/2024
Verification date	6/10/2024
Verification method	Product-by-product
Verification#	JV-BZ-24001
Expiration date	6/9/2029

PCR review was conducted by:

Approval date	9/1/2023
PCR review panel chair	Ken Yamagishi Sustainable Management Promotion Organization

Third party verifier*

Yasuo Koseki

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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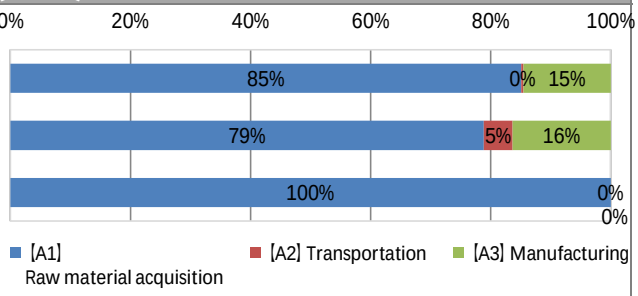
1. Results of life cycle impact assessment (LCIA)

Global warming IPCC2013 GWP100a	**2.4E+04**	kg-CO_2eq
Acidification	**1.3E+01**	kg-SO_2eq
Eutrophication	**9.0E-03**	kg-PO_4^{3-}eq



Parameter \ stage	Unit	Total	[A1] Raw material acquisition	[A2] Transportation	[A3] Manufacturing		
Global warming IPCC2013 GWP100a	kg-CO_2eq	2.4E+04	**2.1E+04**	**9.7E+01**	**3.5E+03**		
Ozone layer destruction	kg-CFC-11eq	4.7E-03	4.7E-03	7.6E-10	1.5E-05		
Acidification	kg-SO_2eq	1.3E+01	1.0E+01	6.1E-01	2.1E+00		
Photochemical ozone	kg-C_2H_4eq	4.8E-01	3.6E-01	6.6E-03	1.1E-01		
Eutrophication	kg-PO_4^{3-}eq	9.0E-03	9.0E-03	6.5E-13	2.8E-07		

2. Life cycle inventory analysis (LCI)

Parameter		Unit
Renewable energy resources	1.0E+04	MJ
Non-renewable energy resources	3.8E+05	**MJ**
Renewable material resources	6.4E+02	**kg**
Non-renewable material resources	1.9E+03	**kg**
Consumption of freshwater	7.4E+01	**m^3**

3. Material composition

Material		Unit
Ti	**≧99**	**%**
C	**≦0.08**	**%**
H	**≦0.015**	**%**
O	**≦0.40**	**%**
N	**≦0.05**	**%**
Fe	**≦0.50**	**%**

*The above values are for pure titanium

4. Waste to disposal

Parameter		Unit
Hazardous waste	**0.0E+00**	**kg**
Non-hazardous waste.	**3.2E-01**	**kg**

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

5. Additional explanation

1. Scenarios of transport to site follow the PCR.For the transportation of coke and inter-factory transportation for intermediate products, distances were measured using mapping software. For titanium scrap transportation, 500km of the PCR scenario was selected. Transport of titanium ore and synthetic rutile are included in the inventory database on which this estimation is based, so those are not included in [A2] transport in 1.Resulst of life cycle impact assessment .

2. Primary data collected in 2022. The source of the unit power consumption is the average of 10 electric power suppliers of Japan in 2014.

3.TranTixxii® -Eco(the tianium scrap ratio is over 50%) is excluded.

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
-		

7. Assumptions of secondary data used

The IDEA2.1.3 data is used. IDEAv2.3 is used for titanium ore and synthetic rutile

8. Remarks

○NIPPON STEEL Grade

Super-TIX®800N、Super-TIX®05CU

- 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/)