

Environmental Product Declaration

In accordance with ISO 14025 and EN 15804+A1 for:

Aluminium Wire rod - series 1000

from

TRIMET France



trimet



Program

Program operator:

EPD registration number:

Version

Publication date:

Revision date :

Valid until:

The International EPD® System, www.environdec.com

EPD International AB

S-P-03578

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2021-06-16

2023-01-20

2026-06-15



trimet

Program information

Program:	<p>The International EPD® System</p> <p>EPD International AB Box 210 60 SE-100 31 Stockholm Sweden</p> <p>www.environdec.com info@environdec.com</p>
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Owner of the declaration : TRIMET France
Publisher : The International EPD® System
The EPD was worked out with: Clara Lepri, Alice Poletti, Mathieu Canova from **Greenfish**

Greenfish	<p>Greenfish</p> <p>146 rue Montmartre 75 018, Paris, FRANCE</p> <p>communication@greenfish.eu http://www.greenfish.eu</p>
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Created in 2010, Greenfish is specialized in sustainable development. Greenfish is an engineering and advisory company that drives sustainable business transformation, from strategy to implementation. Greenfish is an engineering and advisory company that drives sustainable business transformation, from strategy to implementation. The competence area of Greenfish is :

- CSR & Sustainability
- Environmental Intelligence
- Sustainable Business Transformation
- Sustainable engineering
- Sustainable R&D

<p>Product Category Rules (PCR): PCR 2012:01 Construction products and construction services, Version 2.33</p> <p>PCR review was conducted by: The Technical Committee of the International EPD® System. Chair: Massimo Marino. Contact via info@environdec.com</p> <p>Independent third-party verification of the declaration and data, according to ISO 14025:2006:</p> <p><input type="checkbox"/> EPD process certification <input checked="" type="checkbox"/> EPD verification</p> <p>Third party verifier: Marcel Gómez Consultoría Ambiental</p> <p>Approved by: The International EPD® System</p> <p>Procedure for follow-up of data during EPD validity involves third party verifier:</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but from different programs may not be comparable.



EPDs of construction products may be not comparable if they do not comply with EN 15804+A1.



Company information

EPD owner : TRIMET France | Rue Henri Sainte Claire Deville | CS 30114 | 73302 Saint-Jean-de-Maurienne Cedex – France | trimet.rod@trimet.fr
<https://www.trimet.eu/fr>

Description of the organisation:

TRIMET France is composed of two state-of-the-art aluminium production plants located in Saint-Jean-de-Maurienne and Castelsarrasin. Together these two sites are able to produce more than 150.000 tons of aluminium a year which enables the company to stand as a leader in the European aluminium sector. Both plants are specialized in high-quality aluminium wire rod production meeting the highest technical requirements, thanks to their primary aluminium source, highly qualified workforce and cutting-edge casting technologies.

The Saint-Jean-de-Maurienne smelter, operating since 1907 in the French Alps, is composed of an integrated anode production sector, an electrolysis sector and a casthouse.

TRIMET France is since 2013 a subsidiary of TRIMET Aluminium SE, an innovative family-run enterprise. The medium-sized company develops, produces, recycles, casts, and sells modern light metal aluminium products at eight production locations in Germany and France.

Name and location of production site:

TRIMET France
Saint-Jean-de-Maurienne
Rue Ste Claire Deville – CS30114
73302 SAINT JEAN DE MAURIENNE CEDEX
FRANCE

TRIMET St Jean de Maurienne, a multiple certification site

- **ISO 9001** since 1993
- **ISO 14001** since 2001
- **ISO 50001** since 2017
- **ISO 45001** since 2020 (OHSAS 18001 since 2006)
- **Ecovadis Gold certification** since 2018



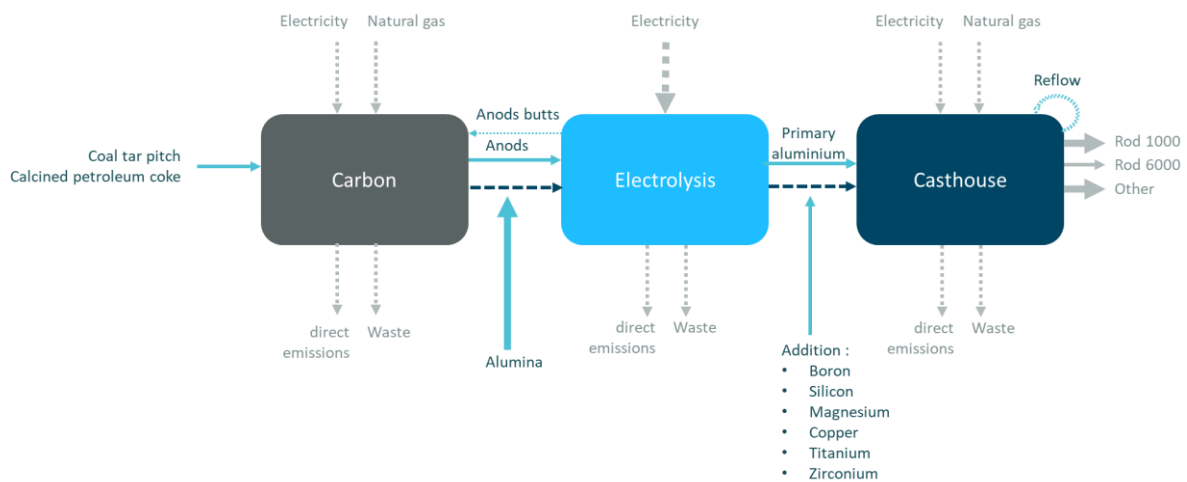
Product description

Product description and description of use

The Environmental Product Declaration (EPD®) describes the environmental impacts of 1ton of an aluminium wire rod for electrical applications.

Aluminium wire rods are made of pure aluminium and different alloys that bring properties to the wires.

The production phase of the wires follows the following steps. Here, the main incoming and outgoing are represented.



- The CCR (Continuous Casting and Rolling) 137050 CONDUCTAL® (equivalent to EC grade) is extensively employed in the manufacture of insulated wires and cables for transport and distribution of electricity and the manufacture of bare conductors for overhead power transmission and distribution lines (of the AAC, ACSR, ...). The CCR (Continuous Casting and Rolling) 137050 CONDUCTAL® conforms to EN 1715.
- The CCR (Continuous Casting and Rolling) 131050 ALUFLEX® Rod is an Aluminium-Iron-Magnesium alloy used in the manufacture of fine gauge wire for flexible cables for aeronautical engineering, cables for automotive engineering, braids and screens for cables.
- The CCR (Continuous casting and Rolling) 137072 is employed in the manufacture of wires and cables for transport and distribution of electricity. The advantage of this product lies in its ability to sustain higher temperature. The maximum continuous temperature of use is 150°C and the maximum temperature for pics < 10h is 180°C.

UN CPC code: 4153

Geographical scope: Global

Product name: Aluminium Wire rod - series 1000

Declared unit : 1 ton

Product composition

The composition of the product is reported in the table below and is based on assumption 2019, by TRIMET France

Materials contribution	% in weight to 1 ton of aluminium wire rod
Aluminium	99,992%
Boron	0,008%
Packaging % in weight per 1 ton of aluminium wire rod	
Wood pallets	5,12 kg / ton of product
Plastic wrapping	79,03 g / ton of product
Protective cover	171 g / ton of product

Technical data:

From primary liquid metal, TRIMET is able to supply following wire rod series 1000:

- **137050 / Conductal®** conforms to EN 1715 with different mechanical and electrical properties and various diameters
- **112059** wire suitable for use in spans on wood poles, transmission towers, and other structures where high tensile strength is not required.
- **137072** capable of withstanding higher temperatures and therefore higher amperage
- **131050** Al-Fe-Mg alloy used in the manufacture of wire for flexible cables for aeronautical and automotive engineering

(For more detailed information: : https://www.trimet.eu/de/broschueren_pdf/trimet-wire-catalog-2019.pdf)

Conductal®	Diameter	UTS	Resistivity
R6 annealed wire	7,5 - 9,5mm	60-75	2,725
R8 (H11)	7,5/9,5/12,2/15,2/19 mm	80-95	2,785
R10 (H12)	9,5/12,2 mm	95-110	2,725
R11 (H13)	9,5 mm	105-120	2,801
R12 (H14)	9,5 mm	115-130	2,801

Other Alloys	Diameter	UTS	Resistivity
137072 R11	9,5 mm	105-120	2,86
131050 F	9,5 mm	120-160	2,92
112050 (AL59)	9,5 mm	165-180	2,840

Market :

Europe and Africa

Reference service life, product:

Dependent on product application, but the material itself has an infinite life time.

LCA information

Declared unit: 1 ton

Time representativeness: 2019

Database(s) and LCA software used: Ecoinvent 3.5., Ecochain;

Description of system boundaries: cradle-to-gate

The communication of the EPD will be business-to-business (B2B).

The goal of the study is the evaluation of the potential environmental impacts of the Aluminium Wire rod - series 1000

Contente declaration :

During the life cycle of the product any hazardous substance listed in the “Candidate List of Substances of Very High Concern (SVHC) for authorization” has not been used in a percentage higher than 0,1% of the weight of the product.

LCA results :

LCA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks.

: Module Declared

MND: Module Non-Declared

A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Raw materials supply	Transport	Manufacturing	Transport gate to site	Assembly / construction installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse – Recovery – Recycling-potential
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

More information: The results of the LCA with the indicators as per EPD requirement are given in the following pages for product manufacturing (A1, A2, A3).

This EPD is not the result of average calculation of a range of products, it concerns only one product.

Considering that the alumina suppliers for the year 2020 are more representative of a standard production, the data from the suppliers for the year 2020 have been used in proportion to the total quantities consumed in 2019. Indeed, the worldwide market was particularly disrupted in 2019. The amount of alumina consumption have been confirmed thanks to a mass balance analysis considering 1.92kg of alumina for 1kg of aluminium. This ratio is specific to Saint Jean de Maurienne factory, it has been experimentally determined and is used in the whole process sizing.

The data used have been provided by Trimet and their traceability have been demonstrated using bills and recording of energy consumption.

The electricity meters for each line of production allow an accurate allocation of the electricity consumption at each stage of the production.

The allocation of emissions has been provided by GEREP.

The other allocation are directly linked to the different process and are recorded for each stage of the production. To that end, an allocation based on mass has been done for each process and to allocate the impact of one ton of product. This allocation based on mass has been done for incoming (raw materials, electricity ...) and outgoing (waste ...) flows.

Material representing in total less than 1% of the raw materials mass and less than 1% of the impact have been cut-off.

The following processes have been excluded :

- Flows related to human activities such as employee transport are excluded, as well as the long-term emissions.
- The construction of plants, production of machines and transportation systems are excluded since the related flows are supposed to be negligible compared to the production of the building product when compared at these systems lifetime level.

The Polluter payer and the modularity principles have been followed.

Environmental performance – EN 15804+A1

Environmental impact

PARAMETER		UNIT	A1-A3
GWP	Global warming potential	kg CO ₂ eq.	4,631E+03
ODP	Depletion potential of the stratospheric ozone layer	kg CFC 11 eq.	1,813E-03
AP	Acidification potential	kg SO ₂ eq.	3,281E+01
EP	Eutrophication potential	kg PO ₄ ³⁻ eq.	2,129E+00
POCP	Formation potential of tropospheric ozone	kg C ₂ H ₄ eq.	3,593E+00
ADPE	Abiotic depletion potential – Elements	kg Sb eq.	1,221E-02
ADPF	Abiotic depletion potential – Fossil resources	MJ, net calorific value	5,265E+04

Use of resources

PARAMETER		UNIT	A1-A3	
PERE	Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	1,148E+04
PERM		Used as raw materials	MJ, net calorific value	0
PERT		TOTAL	MJ, net calorific value	1,148E+04
PENRE	Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	2,317E+05
PENRM		Used as raw materials	MJ, net calorific value	3,743E+01
PENRT		TOTAL	MJ, net calorific value	2,317E+05
SM	Secondary material	kg		0
RSF	Renewable secondary fuels	MJ, net calorific value		0
NRSF	Non-renewable secondary fuels	MJ, net calorific value		0
FW	Net use of fresh water	m ³		1,110E+02

Waste production and output flows

Waste production

PARAMETER		UNIT	A1-A3
HWD	Hazardous waste disposed	kg	3,335E+01
NHWD	Non-hazardous waste disposed	kg	2,744E+03
RWD	Radioactive waste disposed	kg	2,701E+00

Output flows

PARAMETER	UNIT	A1-A3
Components for reuse	kg	0
Material for recycling	kg	3,338 E+01
Materials for energy recovery	kg	0
Exported energy, electricity	MJ	0
Exported energy, thermal	MJ	0

TRIMET

TRIMET is committed to achieve the 17 UN sustainable development goals.



The Sustainable Development Goals are a blueprint to achieve a better and more sustainable future for all. They address the global challenges TRIMET faces, including poverty, inequality, climate change, environmental degradation, peace and justice.

TRIMET takes action and includes those SDGs to its core values.

This commitment leads TRIMET to be part of the Aluminium Stewardship Initiative, an aluminium sector's CSR label.

TRIMET and the ASI

As a producer of primary and recycled aluminium, TRIMET is committed to a production of the light metal at our plants which preserves resources and protects the environment.

As an independent family business with a long-term orientation, TRIMET would like to

contribute to the future development of ASI standards, as the company is convinced that ASI sets internationally recognized standards for responsible aluminium production that meets the requirements of ecological and social sustainability.



More information : <https://aluminium-stewardship.org/about-asi/asi-members/trimet-aluminium-se/>

References

/GPI/General Program Instructions of the International EPD® System. Version 2.5.

/ISO 9001:2015/ Quality management systems - Requirements

/ ISO 14020:2000/ Environmental labels and declarations — General principles

/EN 15804/ EN 15804:2012 + A1:2014. Sustainability of Construction Works

/ ISO 14025/ DIN EN ISO 14025:2009-11: Environmental labels and declarations - Type III environmental declarations — Principles and procedures

/ ISO 14040/44/ DIN EN ISO 14040:2006-10. Environmental management - Life cycle assessment – Principles and framework (ISO:2006) and Requirements and guidelines (ISO 14044:2006)

/PCR for Construction Products and Construction Services/ The International EPD System. 2012:01 Version 2.33. DATE 2020-09-18. Valid until 2021-12-31

/The International EPD® System/ The International EPD® System is a program for type III environmental declarations. maintaining a system to verify and register EPD@s as well as keeping a library of EPD@s and PCRs in accordance with ISO 14025. <https://www.environdec.com/home>

European Aluminium / <https://www.european-aluminium.eu/>

/Ecoinvent / Ecoinvent Centre. <https://www.Eco-invent.org/>

/Ecochain / <https://www.ecochain.com/>

Background Report « Rapport de projet Trimet », 02/06/2021, Clara LEPRI, Greenfish.

Glossary

EPD : Environmental Product Declaration

CCR : Continuously Cast and Rolled

LCA : Life Cycle Assesment

PCR : Product Category Rule

APPENDIX

Results in accordance with EN 15804+A2

These results are presented for information only. They allow this product to be compared with equivalent products for which the EPDs are made in application of the EN 15804+A2 standard. Here, the focus is made on the cradle-to-gate part of the life cycle of the product (A1, A2, A3).

	Environmental impact	Unit	A1-A3
<i>GWP - f</i>	<i>Global warming potential - Fossil</i>	<i>kg CO₂ eq.</i>	4,803E+03
<i>GWP - b</i>	<i>Global warming potential - Biogenic</i>	<i>kg CO₂ eq.</i>	2,115E+00
<i>GWP - luluc</i>	<i>Global warming potential - Land use and LU change</i>	<i>kg CO₂ eq.</i>	2,514E+00
<i>GWP - TOTAL</i>	<i>Global warming potential - TOTAL</i>	<i>kg CO₂ eq.</i>	4,807E+03
<i>ODP</i>	<i>Depletion potential of the stratospheric ozone layer</i>	<i>kg CFC 11 eq.</i>	1,241E-03
<i>AP</i>	<i>Acidification potential</i>	<i>mol H+ eq</i>	3,844E+01
<i>EP - fw</i>	<i>Eutrophication potential - freshwater</i>	<i>kg P eq.</i>	1,111E-01
<i>EP - m</i>	<i>Eutrophication potential - marine</i>	<i>kg N eq.</i>	4,263E+00
<i>EP - T</i>	<i>Eutrophication potential - terrestrial</i>	<i>kg N eq.</i>	5,076E+01
<i>EP</i>	<i>Eutrophication potential</i>	<i>kg PO₄-3</i>	2,212E+00
<i>POCP</i>	<i>Formation potential of tropospheric ozone</i>	<i>kg NMVOC eq.</i>	1,399E+01
<i>ADPE</i>	<i>Abiotic depletion potential – Elements</i>	<i>kg Sb eq.</i>	1,221E-02
<i>ADPF</i>	<i>Abiotic depletion potential – Fossil resources</i>	<i>MJ, net calorific value</i>	2,278E+05
<i>WDP</i>	<i>Water use</i>	<i>m³ depriv.</i>	4,863E+03
<i>PM</i>	<i>Particulate matter</i>	<i>disease inc.</i>	3,096E-04
<i>IR</i>	<i>Ionising radiation</i>	<i>kBq U-235 eq</i>	2,088E+03
<i>ETP - fw</i>	<i>Ecotoxicity - freshwater</i>	<i>CTUe</i>	1,351E+05
<i>HTTP - c</i>	<i>Human toxicity potential - cancer</i>	<i>CTUh</i>	1,462E-05
<i>HTTP - nc</i>	<i>Human toxicity potential - non-cancer</i>	<i>CTUh</i>	2,343E-04
<i>SQP</i>	<i>Land use</i>	<i>Pt</i>	1,231E+04
<i>PERT</i>	<i>Primary energy resources – Renewable</i>	<i>MJ, net calorific value</i>	1,148E+04
<i>PENRT</i>	<i>Primary energy resources – Non-renewable</i>	<i>MJ, net calorific value</i>	2,317E+05
<i>PET</i>	<i>Primary energy resources - Total</i>	<i>MJ, net calorific value</i>	2,432E+05
<i>RSF</i>	<i>Renewable secondary fuels</i>	<i>MJ, net calorific value</i>	0
<i>NRSF</i>	<i>Non-renewable secondary fuels</i>	<i>MJ, net calorific value</i>	0
<i>FW</i>	<i>Net use of fresh water</i>	<i>m³</i>	1,110E+02
<i>HWD</i>	<i>Hazardous waste disposed</i>	<i>kg</i>	3,335E+01
<i>NHWD</i>	<i>Non-hazardous waste disposed</i>	<i>kg</i>	2,744E+03
<i>RWD</i>	<i>Radioactive waste disposed</i>	<i>kg</i>	2,701E+00
<i>CRU</i>	<i>Components for reuse</i>	<i>kg</i>	0
<i>MFR</i>	<i>Material for recycling</i>	<i>kg</i>	0
<i>MER</i>	<i>Materials for energy recovery</i>	<i>kg</i>	0
<i>EEE</i>	<i>Exported energy, electricity</i>	<i>MJ</i>	0
<i>EET</i>	<i>Exported energy, thermal</i>	<i>MJ</i>	0

Modifications versus previous versions of the EPD

Revisions 2 – 2023-01-20 : The revision of the EPD takes into account the modification of the POCP unit in accordance with EN 15804+A2 and the result of the indicator.



