

Environmental Product Declaration



In accordance with ISO 14025:2006 for:

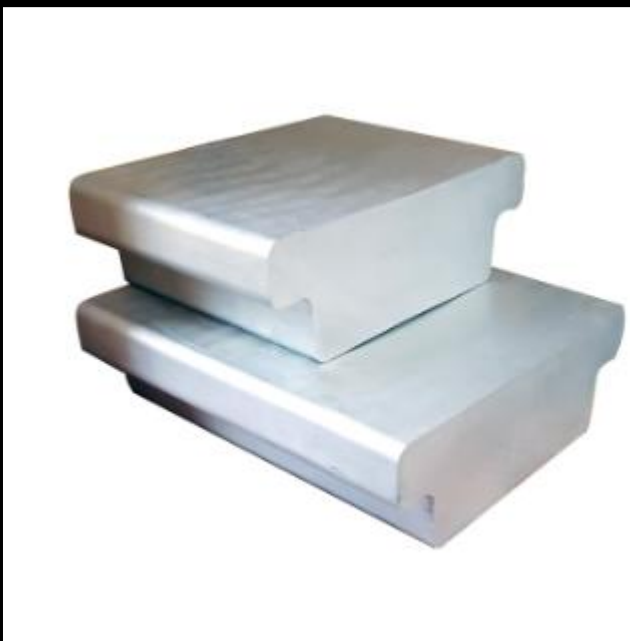
[***THE ALUMINIUM COMPANY OF EGYPT. (EGYPTALUM)***]

from




Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	S-P-12956
Publication date:	2024-08-31
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An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com



Programme information

Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
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Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
PCR: < PCR 2022:08 Basic aluminium products and special alloys v1.0 >
PCR review was conducted by: < <i>Elena Neri, INDACO2 srl, elena.neri@indaco2.it</i> >
Life Cycle Assessment (LCA)
LCA accountability: < <i>Nommary Ali assawi, THE ALUMINIUM COMPANY OF EGYPT (EGYPTALUM)</i> >
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:
<input checked="" type="checkbox"/> EPD verification by individual verifier
Third-party verifier: < <i>Mamoru Yanagisawa</i> >

Approved by: The International EPD® System
OR
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:
<input type="checkbox"/> EPD verification by accredited certification body
Third-party verification: < <i>name, organisation</i> > is an approved certification body accountable for the third-party verification
The certification body is accredited by: < <i>name of accreditation body & accreditation number, where applicable</i> >
OR

Independent third-party verification of the declaration and data, according to ISO 14025:2006 via:

EPD verification by EPD Process Certification*

Internal auditor: <name, organisation>

Third-party verification: <name, organisation> is an approved certification body accountable for third-party verification

Third-party verifier is accredited by: <name of accreditation body & accreditation number, where applicable>

*For EPD Process Certification, an accredited certification body certifies and reviews the management process and verifies EPDs published on a regular basis. For details about third-party verification procedure of the EPDs, see GPI.

Procedure for follow-up of data during EPD validity involves third-party verifier:

Yes No

[Procedure for follow-up the validity of the EPD is at minimum required once a year with the aim of confirming whether the information in the EPD remains valid or if the EPD needs to be updated during its validity period. The follow-up can be organized entirely by the EPD owner or together with the original verifier via an agreement between the two parties. In both approaches, the EPD owner is responsible for the procedure being carried out. If a change that requires an update is identified, the EPD shall be re-verified by a verifier]

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

EPDs within the same product category but registered in different EPD programmes may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see ISO 14025.

Company information

Owner of the EPD: [THE ALUMINIUM COMPANY OF EGYPT. (EGYPTALUM)]

Contact: [Nommary Ali assawi / iNomaryaly@yahoo.com]

Description of the organisation: In 1969, the beginning was on the banks of the Nile River in southern Egypt. The process of establishing one of the most important giant projects began, and the birth of the giant edifice was announced: the Egypt Aluminum Factory in Nag Hammadi, 100 kilometers north of Luxor, which contains within its walls a civilization of seven thousand years. When choosing Naga Hammadi as a location for the aluminum factory, several factors were taken into account, the most important of which are: - The location's proximity to the High Dam power transformer station in Naga Hammadi, voltage 500 KV. - Proximity to the port of Safaga to receive alumina and green petroleum coal. - Abundance of manpower necessary to begin site preparation and civil and metal construction. - Community development of the surrounding area through the establishment and paving of schools, roads, and a railway line to transport workers.



Product-related or management system-related certifications: **TS** Egyptalum has ISO 9001:2015 certificates & OHSAS 18001 : 2007 & CE Mark EN 15088: 2005,]

Name and location of production site: [Nag Hammadi , Qena . Cairo Office : 48-50 Abdel Khalek Sarwat Street, Egypt]

Product information

Product name: [Aluminium Ingot]

Product identification: [Aluminium Ingot acc. To P1029 – 99.7% - 99.8% & EC Ingots]

UN CPC code: [UN CPC 4153]

Geographical scope: Egypt

INGOTS, T.BAR & SLABS

T- Bar in EC grade or T-Bar Al 99.7% min

T - Bars	Dimensions	In bundle of	Wight of bundle
	280x810x900	2 pieces	Approx-one ton

Egyptalum production ingots acc .to P1020 - 99.7% - 99.8% & EC Ingots

Ingots	Ingot weight	In bundle	Wight of bundle
	18 - 22 Kgs	44 Ingot	One ton max
	8 - 10 Kgs	89 Ingot	One ton max

Alloys	Size	
	Medium	Large
1 xxx	500 x 1100	500 x 1600
3 xxx	500 x 1250	500 x 1650
4 xxx	500 x 1350	500 x 1750
5 xxx	500 x 1180	600 x 1500
8 xxx	450 x 1420	600 x 2000
		600 x 2100
		610 x 1600
		500 x 1500





LCA information

Functional unit / declared unit: [1 kg of Aluminium Ingot Product manufactured in Egyptalum facilities. (Egypt)]

Reference service life: [According to PCR 2022:08 Basic aluminium products and special alloys, as this LCA is Cradle to gate with options, modules A1-3, the declaration of the RSL is not possible. The RSL is declared as: “not specified”].

Time representativeness: [The production data in this LCA study represents the period of 1st January 2022 and 31st December 2022]

Database(s) and LCA software used: [SimaPro 9.4 LCA software was used in the LCA study. For the primary data used in the study, Egyptalum Company Primary data were obtained from Ecoinvent 3.8 database]

System diagram:

	Product stage		Construction process stage			Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Recycling potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Geography	GLO	ROW	GLO	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Specific data used	>99.5%		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	Not relevant		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	Not relevant		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

X: Declared; ND: Not Declared

Description of system boundaries: [Cradle to gate (A1-3) with options]

Description Of Declared Modules

A1 - Raw Materials Supply

This module into account raw material extraction, processing and energy used in the raw material production process, handled by the raw material manufacturer.

A2 - Transport to the Manufacturer

As no clear transport data could be obtained from the company, an average distance of 100 km was assumed to reach the Facility. The transport has been calculated based on a scenario including the parameters described in the attached table.

Parameters A2 Module	
Transport by road*	Lorry, 16-32 metric kgkm
Distance (km)	100
Database	Ecoinvent v3.9

*Technology is Euro 6

A3 - Manufacturing

This stage involves energy, consumed during production process.

The production processes are as follows;

- Anode Fabrication Process
- Cell Workshop and Electrolysis Process
- Foundry Wire Rods Casting Process

Content declaration

Product

Most of the raw materials used in the production process are collected throughout Egypt, and other necessary raw materials come from suppliers. Aluminum ingot – It consists of primary materials Alumina and Green potrolume coke at an average rate of 94.7%. The remaining percentage is primary elements such as Coal tar bitch, Cryolite, Aluminum Flouride, Sodum carbonate. Production Processes: Anode Production Process, Cell Workshop and Electrolysis Process and Foundry Ingot Casting Process. After all processes are completed, the product is ready to be delivered to the customer. Approximately 97% of the raw materials used are included in the product content and 3% are waste in the form of slag. This waste is used as raw material in other processes.

Product components	Type	Quantity(%)
Aluminium - Primary	Primary	94,7
Aluminium - Recycling	Recycling	0
Alloying Elements	Primary	5,2
Others	Others	0,1

TOTAL		100
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Results of the environmental performance indicators

Impact category indicators

PARAMETER		UNIT	Upstream (A1)	Core (A2-A3)	TOTAL
Global warming potential (GWP)	Fossil	kg CO ₂ eq.	6,78E+00	9,05E+00	1,58E+01
	Biogenic	kg CO ₂ eq.	2,01E-02	9,50E-03	2,96E-02
	Land use and land transformation	kg CO ₂ eq.	1,50E-03	8,14E-03	9,64E-03
	TOTAL	kg CO ₂ eq.	6,80E+00	9,07E+00	1,59E+01
Ozone layer depletion (ODP)		kg CFC 11 eq.	7,00E-07	7,00E-07	7,00E-07
Acidification potential (AP)		mol H ⁺ eq.	0,07396	7,40E-02	7,40E-02
Eutrophication potential (EP)	Aquatic freshwater	kg P eq.	1,17E-03	5,91E-04	1,17E-03
	Aquatic marine	kg N eq.	1,35E-02	6,98E-03	1,35E-02
	Aquatic terrestrial	mol N eq.	1,88E-01	7,81E-02	1,88E-01
Photochemical oxidant creation potential (POCP)		kg NMVOC eq.	0,003712	3,71E-03	3,71E-03
Abiotic depletion potential (ADP)	Metals and minerals	kg Sb eq.	1,79E-04	-2,90E-07	1,79E-04
	Fossil resources	MJ, net calorific value	2,01E+02	1,05E+02	2,01E+02
Water deprivation potential (WDP)		m ³ world eq. deprived	-31,3453	-3,13E+01	-3,13E+01
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption				

Resource use indicators

PARAMETER		UNIT	Upstream (A1)	Core (A2-A3)	TOTAL
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	1,14E+01	5,48E+00	1,69E+01
	Used as raw materials	MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00
	TOTAL	MJ, net calorific value	1,14E+01	5,48E+00	1,69E+01
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	9,27E+01	1,32E+02	2,25E+02
	Used as raw materials	MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00
	TOTAL	MJ, net calorific value	9,27E+01	1,32E+02	2,25E+02
Secondary material (optional)		kg	0.00E+00	0.00E+00	0.00E+00
Renewable secondary fuels (optional)		MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00
Non-renewable secondary fuels (optional)		MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water (optional)		m ³	-0,72614	-7,26E-01	-7,26E-01

Waste Production

PARAMETER	UNIT	Upstream (A1)	Core (A2-A3)	TOTAL
Hazardous waste disposed	kg	2,48E-01	2,16E-01	4,64E-01
Non-hazardous waste disposed	kg	2,12E+00	3,77E-01	2,50E+00
Radioactive waste disposed	kg	8,01E-05	3,74E-04	4,54E-04

References

- **ISO 14020:2000** Environmental labels and declarations
General principles
- **ISO 14040: 2006** Environmental management
Life cycle assessment
Principles and framework
- **ISO 14044: 2006** Environmental management
Life cycle assessment
Requirements and guidelines
- **14025: 2006** Environmental labels and declarations
Type III environmental declarations
Principles and procedures
- **The International EPD® System** | www.environdec.com
The General Programme Instructions v5
PCR 2022:08 Basic aluminium products and special alloys v1.0
Product Environmental Footprint Category Rules Guidance
- Ecoinvent 3.9 | <http://www.ecoinvent.org>
- SimaPro LCA Software 9.4 | <https://simapro.com>
- Egyptalum | <https://www.egyptalum.com.eg>

