

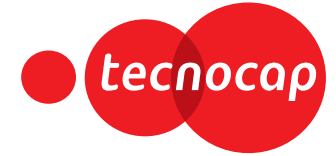


EPD[®]

ENVIRONMENTAL PRODUCT DECLARATION compliant with ISO 14025:2006 for:

ALUMINUM PACKAGING:
» MONOBLOC AEROSOL CANS
» BOTTLES

PRODUCED BY



At Tecnocap TL srl
in the plant of
Lecco, Italy



Program:
The International EPD[®] System
www.environdec.com

Program Operator:
EPD[®] International AB

EPD[®] Registration number:
S-P-02313

Registration date:
2021/02/03

Valid until:
2026/02/02

Last revision date:
2024/03/15

*An EPD must provide current information and can be updated if conditions change.
The declared validity is therefore subject to continued registration and publication on www.environdec.com*



PROGRAM INFORMATION

PROGRAM

The International EPD® System
EPD International AB Box 210 60
SE-100 31 Stockholm Sweden

www.environdec.com
info@environdec.com



ACCOUNTABILITIES FOR PCR, LCA AND INDEPENDENT, THIRD-PARTY VERIFICATION

Product category rule (PCR)

PCR: PACKAGING PRODUCT CATEGORY CLASSIFICATION:
MULTIPLE CPC PCR 2019:13 VERSION 1.1 VALID UNTIL: 2023-11-08

PCR review conducted by:
Anna Bortoluzzi on 17-12-2020, Università degli Studi di Milano
Dipartimento di chimica – anna.bortoluzzi@unimi.it

Life cycle assessment (LCA)

LCA accountability: Tecnocap TL Srl

Corso Carlo Alberto, 29
23900 - Lecco (Italy)

Third party verification

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

EPD VERIFICATION BY INDIVIDUAL VERIFIER:

STUDIO FIESCHI |
& SOCI
sostenibilità su misura

Dr. Ugo Pretato
Studio Fieschi & Soci, s.r.l.
Turin (Italy)

Approved by

The International EPD® System

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

YES NO

COMPANY INFORMATION

OWNER OF THE EPD:

TECNOCAP SPA

Via Starza, 4 bis - 84013 - Cava de' Tirreni

Main Phone: +39 089 441522

VAT: IT 02865960658



As EPD owner, Tecnocap has the sole ownership, liability and responsibility for this EPD.

CONTACTS:

For additional information about Tecnocap Group or regarding this EPD, please contact:

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Dr. Vittorio D'Amore

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NAME AND LOCATION OF PRODUCTION SITE:

TECNOCAP TL srl

Corso Carlo Alberto, 29

23900 - Lecco (Italy)

MORE INFORMATION:

The LCA study was carried out by:

Valore Sostenibile Srls

LCA Practitioner

Dr. Massimo Lombardi

massimolombardi@valoresostenibile.it



For more information about Sustainability at Tecnocap and to request a copy of the Sustainability report, visit the official page:

<https://www.tecnocapclosures.com/sustainability-recyclable-packaging-solutions/>

TECNOCAP GROUP

Founded in Italy in 1993, Tecnocap Group is a multinational company operating in the metal packaging sector through the industrial production of Metal Closures for glass and plastic containers and Aluminum Aerosol Cans and Bottles. The Tecnocap Group operates on the global market with five production facilities in Europe (Italy, Czech Republic and Ukraine), two in the United States, one in India, one currently being completed in Brazil and one more acquisition in progress in Saudi Arabia. The Group also has two commercial and distribution companies and three promotional service companies.

EUROPE

- **Italy (Cava de' Tirreni, Lecco, Aprilia), Czech Republic, Ukraine**

- Italy, Germany, France, Denmark, Norway, Sweden, Finland, Iceland, Greece, Slovenia, Croatia, Serbia, Bosnia & Herzegovina, Montenegro, North Macedonia, Albania, The Netherlands, Belgium, Luxemburg, Slovakia, Poland, Moldova, Ukraine, Hungary, Romania, United Kingdom, Ireland, Germany, Austria, Switzerland, Spain, Portugal

NORTH AMERICA

- **USA (West Virginia, Ohio)**

- USA (AL, AR, AZ, CO, IA, IL, KS, LA, MS, MO, MN, MS, ND, NE, OK, SD, TN, TX, WI, CT, GA, MA, ME, NC, NH, NJ, RI, SC, VT, NY, DE, IN, MD, MI, PA, FL, KY, OH, VA, WV, AK, CA, HI, ID, MT, NV, OR, UT, WA, WY), Canada

LATAM

- **Brazil (São Paulo)**

- Brazil, Peru, Colombia, Mexico, Argentina

MIDDLE EAST

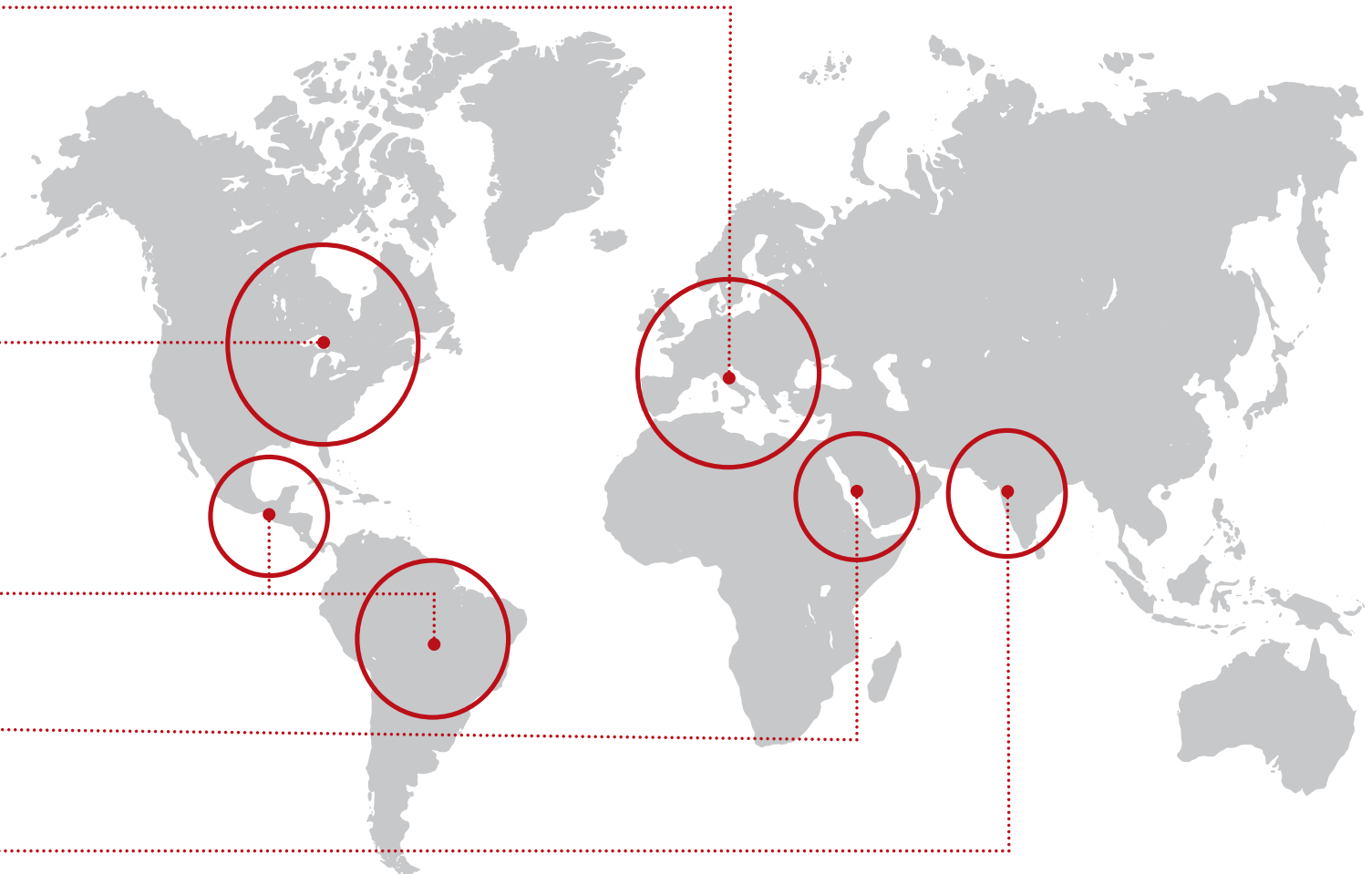
- **Saudi Arabia (in progress)**

- Saudi Arabia, Egypt

INDIA

- **Maharashtra (Murbad)**

- Maharashtra (Mumbai)



● FACILITIES

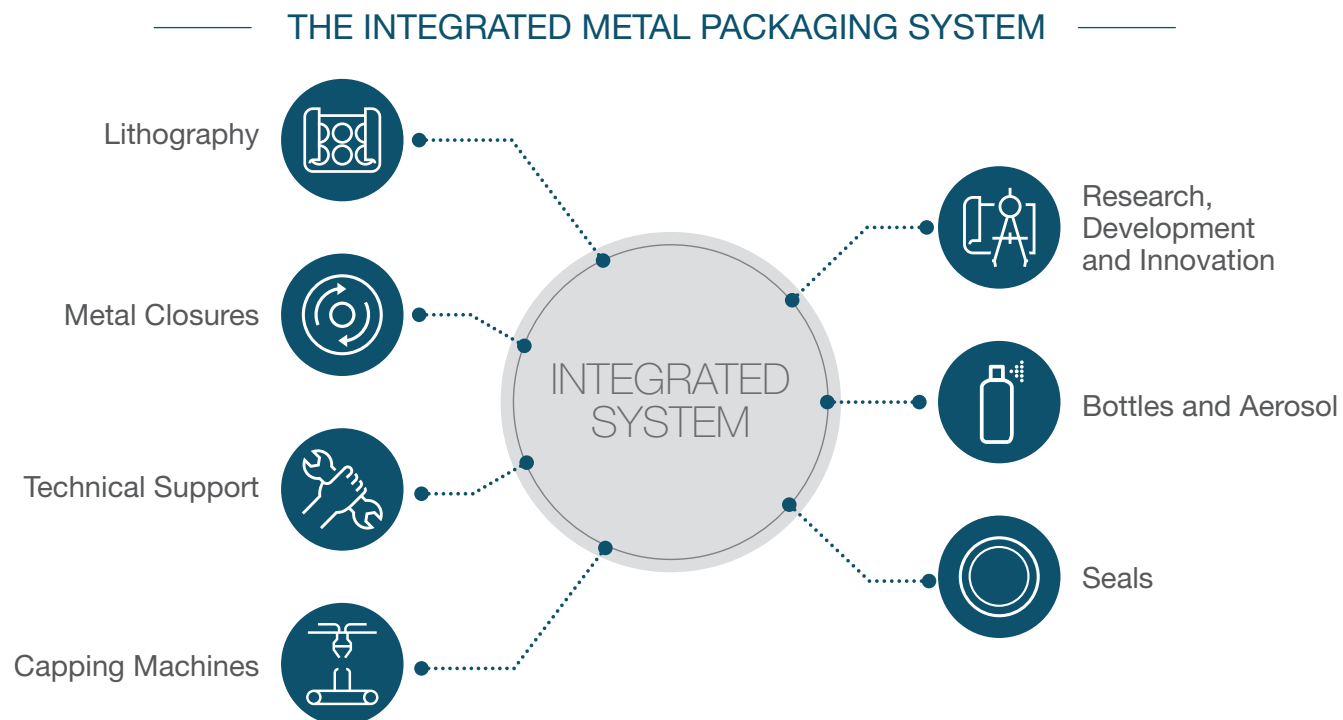
● SALES AND REPRESENTATIVE OFFICES

The Group's business model is founded on the seamless integration of know-how, technologies, products, and services. Tecnocap delivers metal packaging to leading FMCG industry brands, crafted with highly customized technical specifications crucial for ensuring maximum consumer safety, product integrity on the shelf, and the long-term preservation of its characteristics.

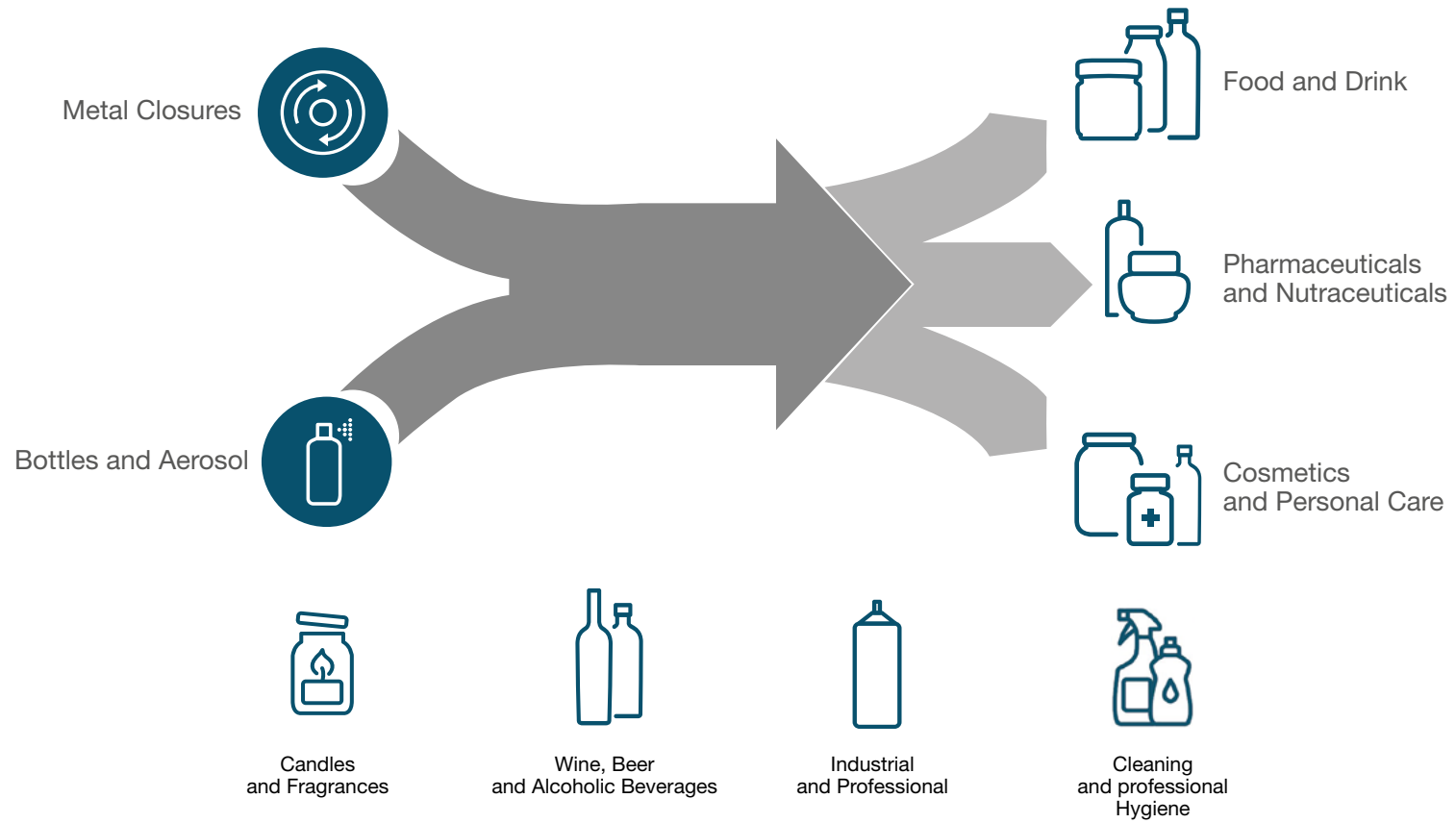
Additionally, the Group specializes in designing and producing machines and complete systems for the high-speed automatic closure of containers. It provides worldwide technical assistance services conducted at customer-operated sites to guarantee the continuity and perfect maintenance of the supplied machines.

An integral component of the business model is specialized consulting aimed at researching and developing innovative solutions to meet the growing demands of global consumer brands in terms of maximum consumer safety, eco-compatibility, and visual impact.

The sustainable growth business model builds on the integration of ESG factors into the business model and the implementation of a Circular Strategy both in Manufacturing and Sourcing as well as the strengthening of strategic cooperation with all the Stakeholders.



PRODUCTS AND PRINCIPAL MARKETS



TECNOCAP GROUP IS MEMBER OF SECTOR ORGANIZATIONS





Purpose driven

Together with all the actors of our Value Chain, we work towards a future where the recycling of packaging achieves perfection and is transformed into a common daily practice. In this respect more and more products on the shelf, across all markets and geographic areas, are packaged in fully “closed loop” recyclable packaging and technologies enable the industry to achieve ever more ambitious goals in terms of competitiveness and sustainability.

Annual sustainability report and ESG Rating available in pdf format, at:

<https://www.tecnocapclosures.com/sustainability-metal-packaging/>

Responsibility membership  

CERTIFICATIONS AND QUALIFICATIONS

Integrated Quality, Safety, Environment System

ISO 9001 Quality Management Standard	Food Safety System BRC/IOP AIB	ISO 14001 Environmental Standard and SMETA 4-Pillars	ISO 45001:2018
Tecnocap SpA Italy Tecnocap TL Italy Tecnocap Czech Rep. Tecnocap USA Tecnocap Ukraine	Tecnocap SpA Italy Tecnocap USA Tecnocap Czech Rep. Tecnocap India	Tecnocap SpA Italy Tecnocap Czech Rep.	Tecnocap SpA Italy

EPD[®]



In 2020, Tecnocap concluded the LCAs conducted on Metal Closures manufactured at the Cava de' Tirreni facility and on Aluminum Bottles and Aerosol Cans produced at the Lecco facility.

The EPD[®] as well as all other Certifications can be downloaded in PDF format from the following internet addresses:

www.tecnocapclosures.com/it/capsule-metallo-aerosol-qualita

www.environdec.com/library/epd2312

www.environdec.com/library/epd2313

PRODUCT INFORMATION

Product name	Product identification	Geographical Scope	UN CPC code
Aluminum Monobloc Aerosol Cans and Aluminum Bottles	Products under study are identified by alphanumeric codes corresponding to their technical data sheet	The geographical Scope of this EPD® is Global	42931

PRODUCT DESCRIPTION

Tecnocap Manufactures two types of Aluminum Packaging solutions in the plant of Lecco, Italy.



Monobloc Aerosol Cans

Bottles

ALUMINUM MONOBLOC AEROSOL CANS

Tecnocap aluminum aerosol cans feature a “monobloc” construction, consisting of a single piece with no joins. It is a leak-proof sealed container with no welds, offering excellent resistance to internal pressure (standard: 12 and 18 bars).

- ✓ High quality standards and excellent barrier properties
- ✓ Suitable for use with all types of propellants and formulations
- ✓ Easy to store, allow safe handling along the entire supply chain

Printing options:

- ✓ 7 colors and more



Special finishes and unlimited design possibilities:

- ✓ Glitter effect
- ✓ Pearlescent effect
- ✓ Brushed aluminum effect
- ✓ Multicolor coatings
- ✓ Matt and gloss finish

More information:

<https://www.tecnocapclosures.com/product/aluminum-aerosol-cans/>



ALUMINUM BOTTLES

Tecnocap designs and manufactures a wide range of aluminum bottles available in various shapes, sizes and formats. Unbreakable, resistant to rust and lightweight (the latter being an important characteristic for e-commerce in particular), this type of metal packaging is easy to transport and protects products also from light and oxygen. The bottles are printed according customer requirements in up to seven colors using a superior dry offset printing process.

Main features:

- ✓ Distinctive and elegant appearance
- ✓ Damage-resistant
- ✓ Protection from external elements and light
- ✓ Ultra-lightweight and 100% recyclable
- ✓ Suitable for all types of filling (cold/hot)
- ✓ Cool-touch effect and quick cooling of beverages
- ✓ Compatible with existing bottling systems
- ✓ Closing options: Screw cap, ROPP, Crown cap

More information:

<https://www.tecnocapclosures.com/product/aluminum-bottles/>



Aluminum bottles guarantee excellent insulation protecting, thus, the functional characteristics of the product and prevent oxidation.

Aluminum bottles are also playing a fundamental role in contrasting food losses and damage during transport, due to their long-life capabilities and barrier function against contaminants, oxygen, nitrogen and carbon dioxide, water vapor and light. Finally, aluminum bottles are invulnerable to rodent and insect attacks, preventing the intrusion of aggressive agents and, at the same time, the spill of essential elements that determine food and beverage quality.

Aluminum bottles are playing also an increasingly important role in the conveyance of data, information and messages, nutritional information, and traceability of ingredients through the growing use of Qr-Codes and, in the future, Blockchain and NFT technologies.



MANUFACTURING PROCESS

Aluminum is made from a material found in the Earth's crust. It occurs naturally in a mineral called bauxite. The aluminum in bauxite is formed when the material is refined to remove impurities.

The refining process produces a fine, white powder called alumina or aluminum oxide. Electricity “zaps” the aluminum powder with a continuous electric current, which separates the aluminum from the oxygen.

Packaging from aluminum slugs

The production process for both aerosol cans and bottles starts applying a large force on an aluminum disc or “slug” to extrude the base shape. The parts are subsequently thinned to approximately 0.40 mm through an ironing process and trimmed to specified lengths. The cans are washed in alkaline-based detergent washing chambers and dried in an oven. To protect against corrosion – and to remove the possibility of interaction between the packaging and its contents – a protective lacquer is used to line the interior of the cans.

The electricity melts the aluminum so that it is hot and bubbly, like lava. Next, small amounts of other metals are added to the molten aluminum to add strength and corrosion resistance to the final product (the addition of zinc to aluminum - in conjunction with some other elements, primarily magnesium and/or copper - produces heat-treatable aluminum alloys of the highest strength). The molten metal is cast into ingots or blocks, which are then melted again and shape-casted into slugs (metal disks that are impact extruded to make aerosol cans and bottles).

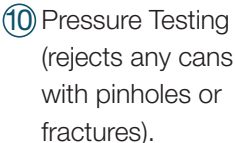
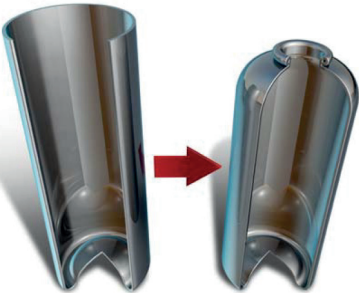
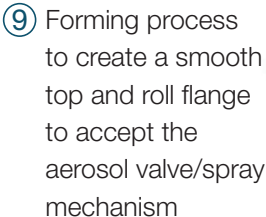
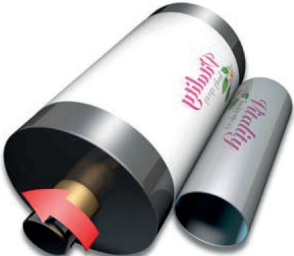
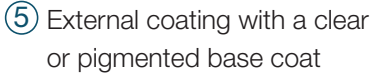
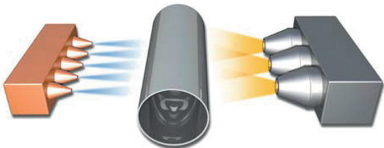
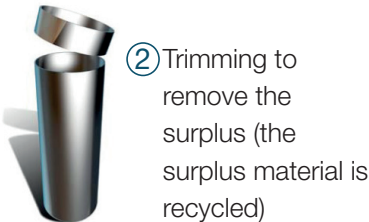
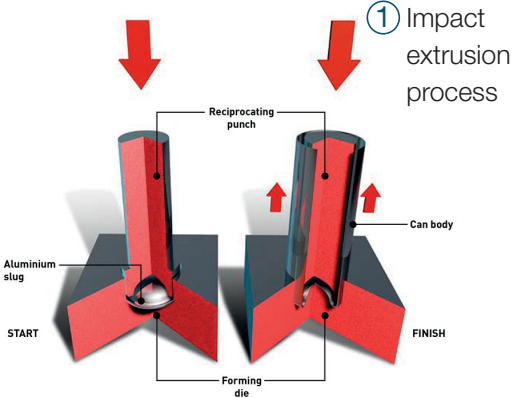
Advanced lithography techniques are then applied to give cans a differentiated, premium look and feel.

This includes the application of stain-resistant surface coating, decorative prints and over-varnish protecting the print surface.

Finally, a neckdown process forms the shoulder and neck of the can. After this, cans are ready to be bundled, palletized, and shipped to customers.



MANUFACTURING PROCESS





PURE Innovation in Ecodesign

Since 2019, in partnership with a European aluminum producer, Tecnocap has launched a number of tests to produce a line of Aerosol Cans and Reusable Bottles made entirely from traceable and certified post-consumer recycled aluminum (PCR), with the aim of being the first operator to launch this innovation in Europe.

In 2020 Tecnocap launched the “PURE” line of aluminum bottles and aerosols, made entirely of post-consumer recycled aluminum, a recycling operation that is particularly relevant since it takes place at the end of the product’s life cycle, i.e. at the end of the use and reuse phase.

Therefore, in the production of “PURE”, the use of virgin materials in each new production cycle is avoided, reducing the amount of material sent to landfill. The traceability of the recycled content is certified for each batch by European aluminum suppliers, partners of Tecnocap. In 2021, the bottle made of 100% post-consumer recycled (PCR) aluminum received the Metal Packaging of the Year award at the UK Packaging Awards. It was described by the judges, as not only a breakthrough in the bottled water market, but also as *the most innovative solution in the Metal Packaging industry*.

Once produced, it can be used, reused and recycled infinitely, minimizing the likelihood of becoming waste in the environment, without any loss of its properties. The pack reached its maximum international standing at COP 26, the United Nations Climate Change Conference, held in Glasgow from 31 October to 12 November 2021. Tecnocap was commissioned by a customer brand to produce a limited edition of customized bottles made entirely of PCR aluminum.

LCA INFORMATION

Functional unit / declared unit

The Declared Unit is a unit of packaging belonging to the product's categories considered in the study (Aluminum Aerosol Cans and Aluminum Bottles)

Time representativeness

Data used in the LCA study refer to the products manufactured in the year 2021

Database(s) and LCA software used

Ecoinvent® 3.8 - Simapro® 9.4.0.2

System diagram

System diagram of the processes included in the LCA study divided into Life Cycle Stages and into Life Cycle Modules:

LIFE CYCLE STAGE	LIFE CYCLE MODULE		
UPSTREAM	A1	Raw material supply	X
	A2	Transport	X
CORE	A3	Manufacturing	X
	A4	Transport to forming or filling	MND*
DOWNSTREAM	A5	Forming	MND*
	B1	Filling operations	MND*
	B2	Distribution of filled packaging	MND*
	B3	Transport to reconditioning	MND*
	B4	Reconditioning	MND*
	B5	Transport to re-filling point	MND*
	C1	Disassembling/sorting	MND*
	C2	Transport to recovery/disposal of distribution packaging	X
	C3	Final disposal of distribution packaging	X

* Module Not Disclosed

Description of system boundaries

System boundaries are “cradle to gate with options” as they include the production of aluminum ingots, the subsequent shaping into slugs and extrusion process, painting operations, as well as the packaging for product shipping. Considering the relevant quantity of packaging associated with products shipping, an end-of-life scenario for packaging materials was also modeled with reference to Italian data on EOL of packaging materials (source: Fondazione per lo Sviluppo Sostenibile, “Italy of recycling 2021”) and included in the study. The Italian scenario was preferred as it is the prevailing one over the total of the other destinations of Tecnocap’s Aluminum Aerosols and Bottles customers.

DISTRIBUTION PACKAGING END OF LIFE SCENARIO

Corrugated paper packaging	Recycling	87%
	Incineration	7,50%
	Landfill	5,50%
Plastic packaging	Recycling	49%
	Incineration	44,60%
	Landfill	6,40%

Excluded lifecycle stages

Modules from A4 to C1 of the “packaging” PCR system diagram have been excluded; modules C2 and C3 have been included only for the end of life scenario of the distribution packaging of aluminum aerosol cans and bottles.

Environmental performance indicators

Below are the environmental performance indicators represented, according to the default list v. 2.0 Updated 03.29.2022 of the International EPD® System.

- ✓ Climate Change (kg CO2eq)
 - Fossil – biogenic - land use and land use change (luluc), and total
- ✓ Acidification Potential (AP) (mol H+ eq)
- ✓ Eutrophication Potential (EP);
 - EP, aquatic freshwater, (kg P eq)
 - EP aquatic marine (kg N eq)
 - EP, terrestrial, (mol N eq)
- ✓ Photochemical ozone creation potential (POCP) (kg NMVOC eq.);
- ✓ Ozone depletion potential (ODP) (kg CFC-11 eq)
- ✓ Abiotic depletion potential (ADP) for minerals/metals (non-fossil resources) (kg Sb eq)
- ✓ Abiotic depletion potential (ADP) for fossil resources (MJ)
- ✓ Water deprivation potential (WDP) (m3 eq)

For the results of the impact indicators, the characterization factors of the EF v.1.01 method were used. For data processing, the SimaPro software version 9.4.0.2 and the Ecoinvent database were used.

PRODUCT 01. ALUMINUM MONOBLOC AEROSOL CAN

Product ref. 205 012	Diameter (mm) 53
Kind of packaging component	Weight (g) 39,7
Material aluminum	Number of uses 1
Brimful capacity (ml) 405	Reference service life NA
Height (mm) 205	



CONTENT DECLARATION

MATERIALS PER UNIT OF PACKAGING REF. 205 012 "AEROSOL CAN" 39,7g	WEIGHT (g)	%	ENVIRONMENTAL / HAZARDOUS PROPERTIES
Aluminum	37,7	94,93	100% recyclable
Paint, enamel and ink	2,0	5,07	food contact compliant
Distribution packaging	100% recycled corrugated board 0,69g - Strapping 0,31g - Stretch plastic film 0,35g - Plastic top 0,08g		
Consumer packaging	NA		
Recycled material	26,62% recycled aluminum from post manufacturing scrap		
REACH declaration	Declaration on the registration, evaluation, authorization and restriction of chemical substances - REACH - Regulation (EC) No. 1907/2006 of the European Parliament: aerosol cans and bottles produced by Tecnocap TL Srl do not contain substances subject to registration and therefore, as required by the standard, it will be Tecnocap to ask its suppliers, in the supply chain, to fully comply with all obligations relating to pre-registration, registration, authorization, preparation of the scenario for the disclosure of security practices, as required by articles 6,31,95 of the aforementioned regulation.		

ENVIRONMENTAL PERFORMANCE

POTENTIAL ENVIRONMENTAL IMPACTS - PRODUCT REF. 205 012 (Aluminum Aerosol Cans)						
PARAMETER		UNIT	UPSTREAM	CORE	DOWNSTREAM	TOTAL
Global warming potential (GWP)	Fossil	kg CO2 eq.	4,225E-01	1,124E-01	3,249E-03	5,382E-01
	Biogenic	kg CO2 eq.	1,215E-04	5,091E-04	6,994E-05	7,005E-04
	Land use and land transformation	kg CO2 eq.	4,150E-03	8,832E-06	2,083E-07	4,159E-03
	TOTAL	kg CO2 eq.	4,268E-01	1,129E-01	3,319E-03	5,430E-01
Acidification potential (AP)		kg mol H+ eq.	3,475E-03	2,535E-04	1,508E-05	3,744E-03
Eutrophication potential (EP)	Aquatic freshwater	kg P eq.	9,069E-06	7,128E-06	4,532E-08	1,624E-05
	Aquatic marine	kg N eq.	3,289E-04	5,555E-05	6,638E-06	3,911E-04
	Aquatic terrestrial	mol N eq.	3,352E-03	5,855E-04	7,074E-05	4,009E-03
Photochemical oxidant creation potential (POCP)		kg NMVOC eq.	1,034E-03	1,841E-04	2,479E-05	1,243E-03
Ozone layer depletion (ODP)		kg CFC 11 eq.	3,910E-09	1,814E-08	5,221E-10	2,257E-08
Abiotic depletion potential (ADP)	Metals and minerals	kg Sb eq.	7,000E-07	4,025E-07	1,481E-08	1,117E-06
	Fossil resources	MJ, net cal. value	4,796E+00	1,722E+00	3,253E-02	6,550E+00
Water deprivation potential (WDP)		m ³ world eq.	2,626E+00	8,685E-05	3,177E-07	2,626E+00

USE OF RESOURCES - PRODUCT REF. 205 012 (Aluminum Aerosol Cans)						
PARAMETER		UNIT	UPSTREAM	CORE	DOWNSTREAM	TOTAL
Primary energy resources Renewable	Use as energy carrier	MJ, net calorific value	1,741E+00	2,664E-02	1,751E-04	1,768E+00
	Used as raw materials	MJ, net calorific value	0,000E+00	0,000E+00	0,000E+00	0,000E+00
	TOTAL	MJ, net calorific value	1,741E+00	2,664E-02	1,751E-04	1,768E+00
Primary energy resources Non-Renewable	Use as energy carrier	MJ, net calorific value	5,229E+00	1,886E+00	3,453E-02	7,149E+00
	Used as raw materials	MJ, net calorific value	3,589E-02	0,000E+00	0,000E+00	3,589E-02
	TOTAL	MJ, net calorific value	5,265E+00	1,886E+00	3,453E-02	7,185E+00
Secondary material		kg	1,214E-02	0,000E+00	0,000E+00	1,214E-02

PRODUCT 02. ALUMINUM BOTTLES

Product ref. 196 062	Diameter (mm) 66
Kind of packaging component	Weight (g) 58,2
Material aluminum	Number of uses 1
Brimful capacity (ml) 548	Reference service life NA
Height (mm) 196	



CONTENT DECLARATION

MATERIALS PER UNIT OF PACKAGING REF. 196 062 "ALUMINUM BOTTLE" 58,2g	WEIGHT (g)	%	ENVIRONMENTAL / HAZARDOUS PROPERTIES
Aluminum	55,2	94,93	100% recyclable
Paint, enamel and ink	3,0	5,07	food contact compliant
Distribution packaging	100% recycled corrugated board 1,01g - Strapping 0,45g - Stretch plastic film 0,52g - Plastic top 0,12g		
Consumer packaging	NA		
Recycled material	26,62% recycled aluminum from post manufacturing scrap		
REACH declaration	Declaration on the registration, evaluation, authorization and restriction of chemical substances - REACH - Regulation (EC) No. 1907/2006 of the European Parliament: aerosol cans and bottles produced by Tecnocap TL srl do not contain substances subject to registration and therefore, as required by the standard, it will be Tecnocap to ask its suppliers, in the supply chain, to fully comply with all obligations relating to pre-registration, registration, authorisation, preparation of the scenario for the disclosure of security practices, as required by articles 6,31,95 of the aforementioned regulation.		

ENVIRONMENTAL PERFORMANCE

POTENTIAL ENVIRONMENTAL IMPACTS - PRODUCT REF. 196 062 (Aluminum Bottles)

PARAMETER		UNIT	UPSTREAM	CORE	DOWNSTREAM	TOTAL
Global warming potential (GWP)	Fossil	kg CO2 eq.	6,194E-01	1,648E-01	4,762E-03	7,889E-01
	Biogenic	kg CO2 eq.	1,781E-04	7,464E-04	1,025E-04	1,027E-03
	Land use and land transformation	kg CO2 eq.	6,083E-03	1,295E-05	3,054E-07	6,096E-03
	TOTAL	kg CO2 eq.	6,257E-01	1,655E-01	4,865E-03	7,961E-01
Acidification potential (AP)		kg mol H+ eq.	5,095E-03	3,716E-04	2,210E-05	5,489E-03
Eutrophication potential (EP)	Aquatic freshwater	kg P eq.	1,330E-05	1,045E-05	6,644E-08	2,381E-05
	Aquatic marine	kg N eq.	4,822E-04	8,144E-05	9,732E-06	5,733E-04
	Aquatic terrestrial	mol N eq.	4,915E-03	8,584E-04	1,037E-04	5,877E-03
Photochemical oxidant creation potential (POCP)		kg NMVOC eq.	1,517E-03	2,699E-04	3,633E-05	1,823E-03
Ozone layer depletion (ODP)		kg CFC 11 eq.	5,732E-09	2,659E-08	7,654E-10	3,309E-08
Abiotic depletion potential (ADP)	Metals and minerals	kg Sb eq.	1,026E-06	5,901E-07	2,171E-08	1,638E-06
	Fossil resources	MJ, net cal. value	7,031E+00	2,524E+00	4,768E-02	9,602E+00
Water deprivation potential (WDP)		m ³ world eq.	3,850E+00	1,273E-04	4,658E-07	3,850E+00

USE OF RESOURCES - PRODUCT REF. 196 062 (Aluminum Bottles)

PARAMETER		UNIT	UPSTREAM	CORE	DOWNSTREAM	TOTAL
Primary energy resources Renewable	Use as energy carrier	MJ, net calorific value	2,552E+00	3,905E-02	2,567E-04	2,591E+00
	Used as raw materials	MJ, net calorific value	0,000E+00	0,000E+00	0,000E+00	0,000E+00
	TOTAL	MJ, net calorific value	2,552E+00	3,905E-02	2,567E-04	2,591E+00
Primary energy resources Non-Renewable	Use as energy carrier	MJ, net calorific value	7,669E+00	2,764E+00	5,062E-02	1,048E+01
	Used as raw materials	MJ, net calorific value	4,992E-02	0,000E+00	0,000E+00	4,992E-02
	TOTAL	MJ, net calorific value	7,719E+00	2,764E+00	5,062E-02	1,053E+01
Secondary material		kg	1,780E-02	0,000E+00	0,000E+00	1,780E-02

DIFFERENCES FROM THE PREVIOUS EPD®

Compared to the 2019 LCA study relating to Tecnocap TL productions, the following factors were considered/integrated/modified in this study:

- ✓ In accordance with the version 1.1 of the “packaging” PCR, all impacts were related to a packaging unit and not to one ton of product.
- ✓ A better and more detailed allocation of the weights of the individual materials making up the aluminum packaging (metal, paint, varnish) has been carried out.
- ✓ All data have been updated and recalculated on the basis of the production results for the year 2021.
- ✓ Updated Simapro software version (9.4.0.2) and Ecoinvent v. 3.8 were used to calculate the environmental impacts along with the EF v.1.01 method as it is more in line with the environmental performance indicators of the list v. 2.0 (updated 03/29/2022) of the International EPD® System.
- ✓ Adopted GPI 3.1 for the international EPD® System instead of version 3.0.
- ✓ Compared to the previous LCA, **GWP impact decreased by 24,15%**. The reasons for this reduction lie, in addition to a general efficiency improvement of all processes, in the adoption in 2021 of a CHP plant fueled by natural gas which made possible to reduce electricity consumption by more than 50%, increasing gas consumption only by 16,87% (per ton of product).

REFERENCES

ISO14040: 1997	Environmental management — Life Cycle Assessment — Principles and Framework
ISO 14044: 2006	Environmental Management — Life Cycle Assessment — Requirements and Guidelines
LCA Tecnocap TL srl	Aluminum monobloc aerosol cans and bottles, 2021
Intergovernmental Panel on Climate Change (IPCC)	Climate Change Sixth Assessment Report, 2021
Fondazione per lo Sviluppo Sostenibile	Report “L’Italia del Riciclo 2021”, November 2021
EU COMMISSION	RECOMMENDATION 9332 of 16.12.2021 on the use of the Environmental Footprint methods to measure and communicate the life cycle environmental performance of products and organisations
Pré (Product Ecology)	SimaPro 9.4.0.2: Reference Manual
GENERAL PROGRAMME INSTRUCTIONS FOR THE INTERNATIONAL EPD® SYSTEM	Version 3.1, 2019-09-18
INTERNATIONAL EPD® SYSTEM PCR (Product Category Rules)	PACKAGING PRODUCT - CATEGORY CLASSIFICATION: MULTIPLE CPC PCR 2019:13 VERSION 1.1 VALID UNTIL: 2023-11-08



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