



# ENVIRONMENTAL PRODUCT DECLARATION METAL CLOSURES



- » TWIST/LUG
- » BRP
- » CONTINUOUS THREAD (CT)
- » CLASSIC CANNER



**Registration number:**  
S-P-02312

**Product Category Rules:**  
Packaging Products  
PCR 2019:13 - Version 1.0  
**Valid until:**  
2023/11/08

**CPC Code:**  
42932

**Registration date:**  
2021/02/03  
**Valid until:**  
2026/02/02

**Geographical scope:**  
Global

**Programme Operator:**  
The International EPD® System  
[www.environdec.com](http://www.environdec.com)

*This EPD has been developed in conformity to ISO 14025. 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](http://www.environdec.com)*



## OBJECTIVE OF THE ENVIRONMENTAL PRODUCT DECLARATION - EPD®

This document is the Environmental Product Declaration for Tinsplate Metal Closures manufactured by Tecnocap in the Italian plant of Cava de' Tirreni - Italy.

The Declaration is registered according to the EPD® Program 3.1 developed by The International EPD® System and the Product Category Rules (PCR) relating to packaging products: Packaging Product Category Classification: multiple CPC - UN - CPC Code 42932 - PCR 2019: 13 - Version 1.0 - Valid until: 2023-11-08.

Tecnocap Spa intends to use this study to understand the critical impacts of its supply chain, improve its processes and communicate what has been achieved by deepening its commitment to economic and environmental sustainability issues related to the development of its products.

### — TECNOCAP GROUP HIGHLIGHTS —

100

Presence in over one hundred countries

9

Nine Production Facilities

3

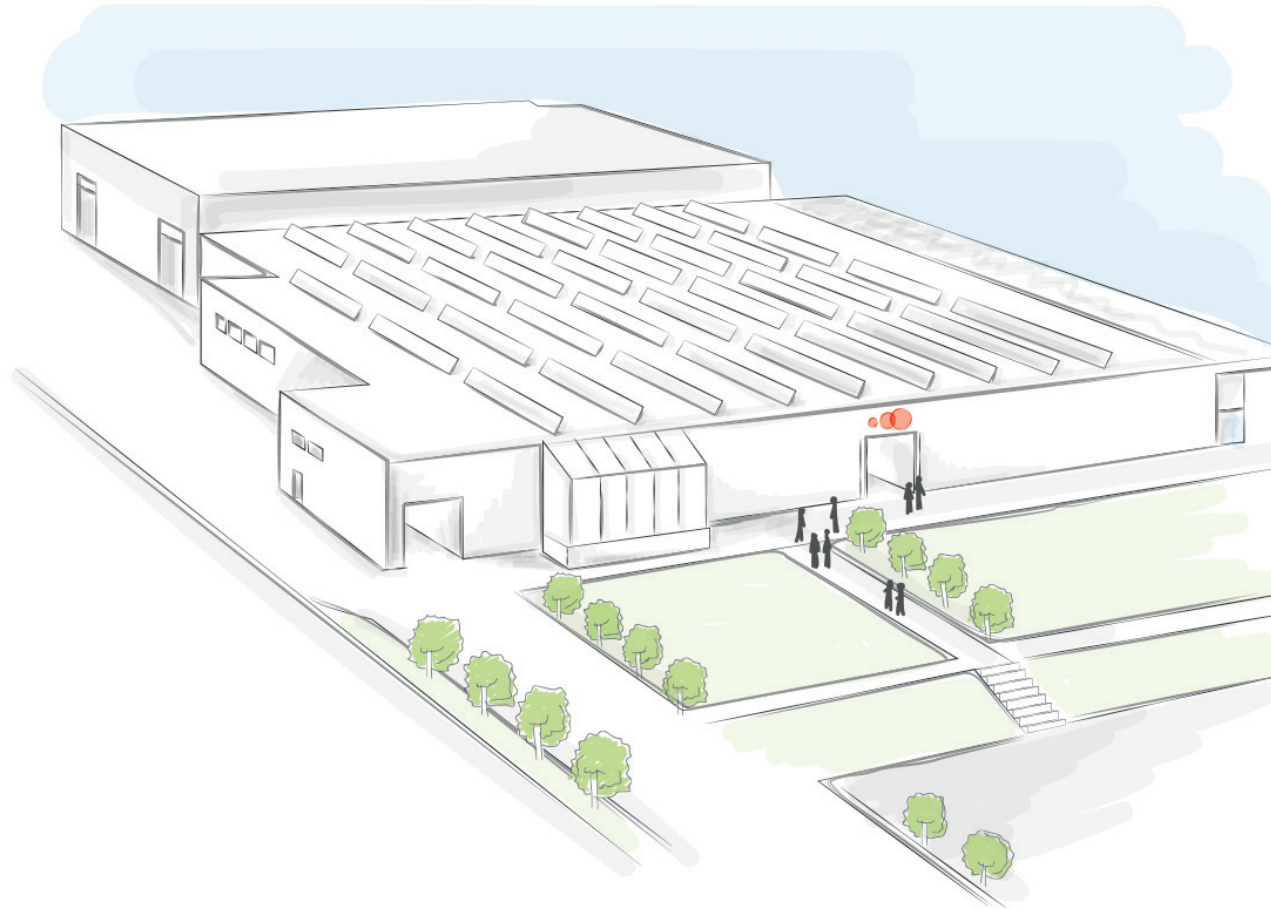
Three R&D and Engineering Centers

1000

Employees

2

Environmental Product Declaration

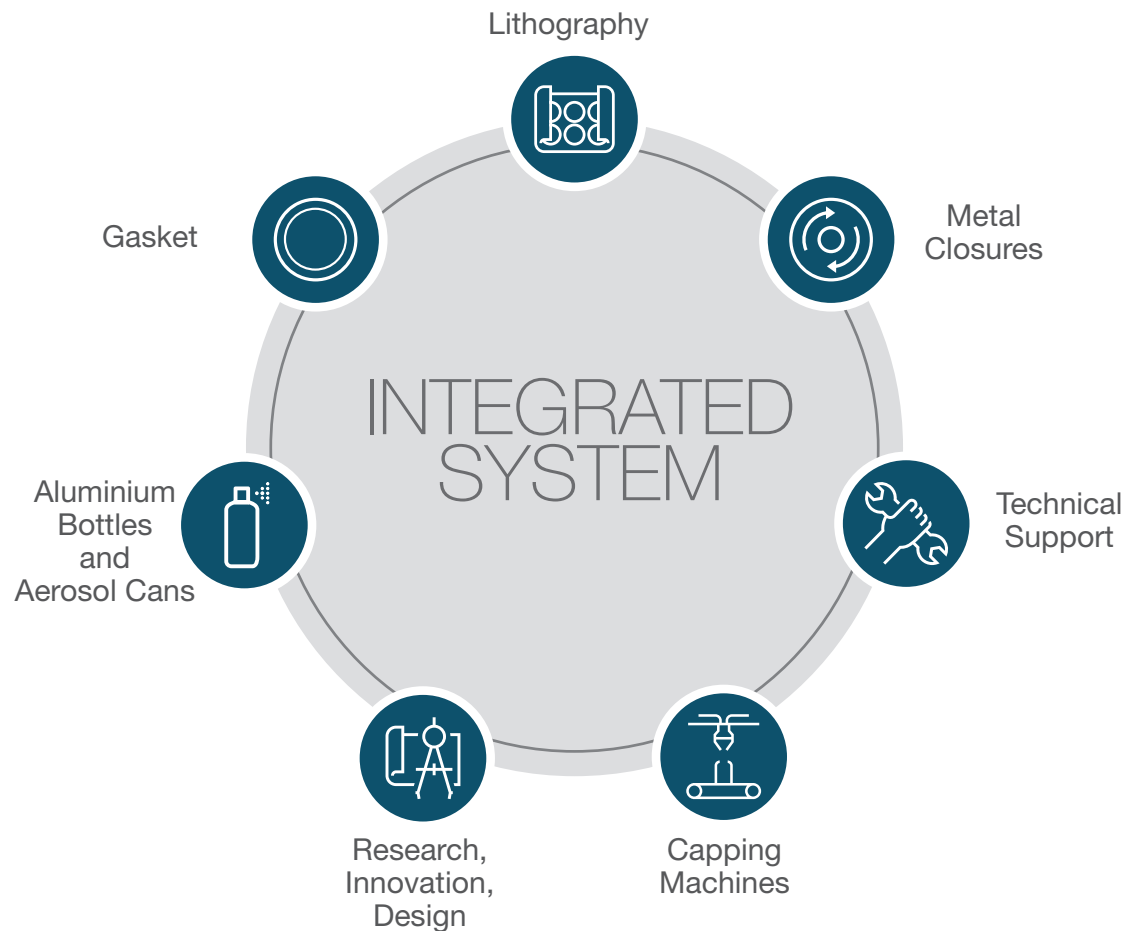


# TECNOCAP GROUP

Tecnocap Group is a worldwide metal packaging manufacturer, specialized in Metal Closures for glass jars and plastic containers and in manufacturing aluminium Bottles and Aerosol Cans.

The Group is one of the biggest producers of tinfoil and aluminum Closures as well as aluminum monobloc Aerosol Cans and aluminum Bottles for some of the world's best known consumer brands in food, beverages, spirits, cosmetics, nutraceuticals, pharmaceuticals, industrial and household products.

Tecnocap commitment goes beyond providing the best quality product. The company helps its clients succeed by enhancing the identity of their brand and preserving the safety of their product working as a partner and advisor, improving existing products and developing new designs & engineering solutions, taking in account ecodesign principles and guidelines.



## MARKETS



Food & Drink



Beauty, Personal Care and Hygiene



Pharmaceuticals & Nutraceuticals



Candles



Wine & Alcoholic Beverages



Professional

## TECNOCAP

Constantly evolving technologies and tailored engineering projects are key factors which drive the Tecnocap market reputation and business growth. The group heavily invests in improving production performance, total quality management and lean manufacturing principles.

**Sustainability** is a key point for all Tecnocap activities and strategic decisions. Tecnocap works closely with its customers to support them in reaching their sustainability targets by providing sustainable packaging solutions.

In 2020 Tecnocap published its first Sustainability Report, prepared in accordance with the Sustainability Reporting Standards of the Global Reporting Initiative (GRI) Standard “Core”.



Report is available in pdf format, at:  
<https://www.tecnocapclosures.com/sustainability-metal-packaging/>

## CERTIFICATIONS

Tecnocap has developed and implemented an Integrated Management System related to workplace Safety and the Environment and has acquired recognition of compliance with relevant international standards.

At Tecnocap SpA Italy, the implemented system has been declared compliant with ISO 14000, ISO 45001 and ISO 9001, BRC/IOP, AIB, SMETA 4 Pillars.

### ISO 9001 Quality Management Standard

Tecnocap Italy  
Tecnocap Czech Rep.  
Tecnocap Spain  
Tecnocap USA  
Tecnocap Ukraine

### BRC/IOP AIB

Tecnocap Italy  
Tecnocap USA  
Tecnocap Czech Rep.

### ISO 14000 Environmental Standard and SMETA 4 Pillare

Tecnocap Italy  
Tecnocap Czech Rep.

### ISO 45001:2018

Tecnocap Italy

## PRODUCTS

Leader in developing and manufacturing Metal Packaging Solutions and Capping Machines.  
Tecnocap provides innovative and customized solutions to meet the requirements of the world's best known consumer brands.

Tecnocap plant in Cava de' Tirreni (Italy) produces a large variety of tin plated Metal Closures:

- › **TWIST LUG**
- › **BRP**
- › **CONTINUOUS THREAD**
- › **CLASSIC CANNER**

Vacuum packaging optimises the shelf-life of food subjected to ultra-heat treatment. The seal is guaranteed by the combined action of the Capping Machine and the Sealing Gasket on the Metal Closure.  
The "safety button/f lip" enables consumers to check the integrity of the vacuum seal at any time.

IF THE BUTTON IS RAISED,  
THE PRODUCT IS NOT SAFE FOR CONSUMPTION



## PRODUCTS OBJECT OF THE EPD® AND DECLARED UNIT

Object of the study are tinned closures produced in Tecnocap plant in Cava de' Tirreni (Italy), diameters ranging from 38 to 86 mm.

Boundaries of the considered system are “*cradle to gate*” including all upstream processes of extraction and transformation of raw materials, metal decoration, Tecnocap plant manufacturing, packaging and preparation for shipping.

The declared unit is 1 ton of product, net of packaging.

Average, for 1 ton of product are used 86,24 kg of corrugated packaging and 6,58 kg of plastic packaging. This unit (1ton) is considered sufficiently clear for the user in order to evaluate the impacts regardless of the size of the product.

Reference year is 2019.



### BRP

BRP Closures are metal vacuum closures designed for press-on application and twist-off removal to ensure easy open and easy reseal. It is a high quality closure with the best oxygen barrier properties.



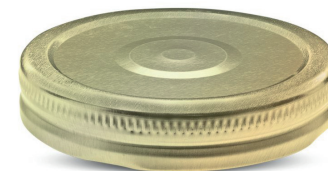
### Continuous Thread Screw Cap (CT)

The Continuous Thread (CT) is a metal closure characterised by uninterrupted spiraling thread. CT Closures are widely used for food, cosmetics and personal care. They are compatible with vacuum and non-vacuum packing applications and available in a wide range of diameters, heights and profiles.



### Twist/Lug

Made of tinplate, the Twist/Lug Closure is the most popular metal closure for food and beverages. It provides the best oxygen barrier technology for a long shelf life.



### Classic Canner

The Classic Canner is a special deep Twist/Lug closure technically designed as a Continuous Thread to give packaging a classic home-made style.

# MANUFACTURING PROCESS

Metal closures are stamped out of sheets of tinfoil, generally with a thickness from 0,10 to 0,25 mm.

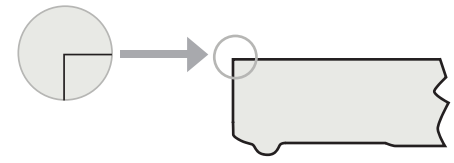
Tinfoil sheets, intended for the production of the closures, are cut to size by guillotine shears and then sent to the presses for the next steps of the production cycle.

Tin plated sheets are usually coated with enamels to prevent the metal from reacting with the content of the container and are frequently printed.

**TINPLATE LOADING**  
The fork carriage positions the pallet on the roller conveyor. By means of manual controls the pallet is loaded in the machine.

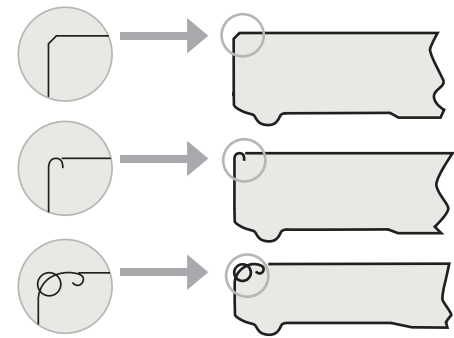
SHELL FORMING

» This phase is carried out by means of automatic continuous presses.  
» The Shell is the basic shape of the Closures.



CLOSURE FORMING

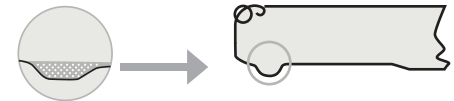
The phases of Coaxing, Curling and Lugging lead to the definitive shape of the Closure.



**COMPOUND LOADING**  
Transfer from the drum by means of a transfer pump to the pumping machine.

LINING

This phase consists in the application, inside the Closures, of a food-grade compound which has an hermetical sealing function.



OVEN CURING

In this phase the Closures are carried out through a tunnel oven and then carry out a cooling path.

TLC DETECTING

A Camera Detection System controls the finished product.

**CARTONS**  
By means of the automatic distribution and collection system, the cartons are made available for loading.

BOXING

Closures are counted and boxed.

PACKAGING

Cartons are palletized and transferred to the warehouse ready to be shipped.

## TECNOCAP SPA LCA: AIMS AND PURPOSE OF THE STUDY

Tecnocap has carried out an LCA on its Metal Closures to **understand** critical impacts in its supply chain, **improve** processes and **communicate** what has been achieved by deepening its commitment towards the issues of economic and environmental sustainability linked to the development of its products.

The Company will not publish the LCA study but makes available this Environmental Product Declaration derived from the life cycle assessment according to the international EPD® system (Environmental Product Declaration).

The purpose of this document is to **illustrate the results** obtained through the Life Cycle Assessment (LCA) study : the study followed a **Cradle-to-Gate** approach.

The LCA study was completed on 15 december 2020 and was conducted in accordance with ISO 14044 and considering the reference PCR: Packaging Product Category Classification: multiple CPC - UN – CPC Code 42932 - PCR 2019: 13 - Version 1.0 – Valid until: 2023-11-08.





## TECNOCAP LCA

The life cycle phases of the products considered in the system range from **Cradle to Gate**.

However, considering the relevant quantity of packaging associated with the output product (92,83 kgs/ton), an **end-of-life scenario for packaging materials** was also modeled and included in the study.

Due to the very nature of the products considered, use-phase has not been included in the study as it was not possible to associate to it any impact model, having evaluated it does not imply any action / transformation that could affect the results of the study.

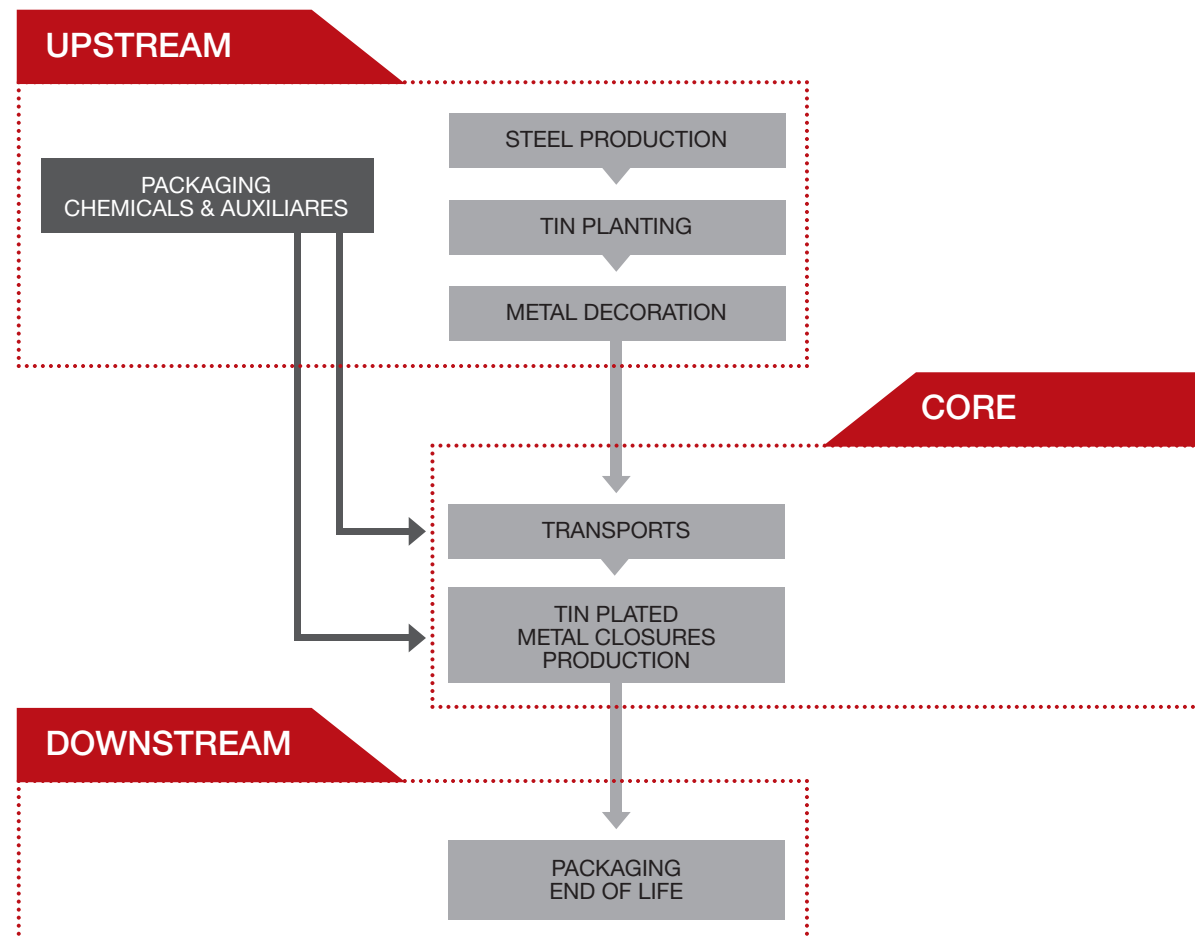
With regard to the distribution phase, it was deemed appropriate not to consider it also, at least in this first LCA study, to maintain a common reference base respect a similar cradle to gate LCA study carried out by the Tecnocap on aluminum products.

Following the General EPD Programme Instructions 3.1 and the applied PCR, potential benefit gained from recycling of tinplate new scraps cannot be credited or associated to Tecnocap's LCA but will benefit subsequent users.

Anyway, according to the World Steel Association (WSA) and its publication LCI Life Cycle Inventory Methodology Report-2017, it is possible to take in account and benefit the manufacturer some **recycling credit** when modeling the tinplate recycling system. This topic will be illustrated in the "Additional information chapter" on the potential benefits of environmental impact deriving from recycling credit. (see page 20).

In this LCA study all steel production phases have been considered, from raw materials extraction to tin-plating, production and transport of auxiliary materials, the management of products, by-products and waste, as well as the use of energy sources in all stages are therefore included.

The phases of the life cycle of the products were then grouped into upstream, core and downstream processes as required by the reference PCR:



## PRODUCT LIFE CYCLE ANALYSIS METHODOLOGY

The life cycle analysis was conducted in accordance with ISO 14044 and 14040, following the path that includes the phases of defining the objective, purpose and scope, inventory analysis (LCI), impact assessment (LCIA) and interpretation of results.

The reference year chosen is 2019. The reference guidelines adopted refer to the Product Category Rules (PCR) relating to packaging products: *Packaging Product Category Classification: multiple CPC - UN – CPC Code 42932 - PCR 2019: 13 - Version 1.0 – Valid until: 2023-11-08.*

Impact assessment methods adopted:

- ✓ GWP, EP, ADPf, ADPr CML-2001 baseline (January 2016);
- ✓ AP CML-2001 non baseline (January 2016);
- ✓ POFP Lotos-Euros as applied in ReCiPe 2008;
- ✓ Water Scarcity Footprint (AWARE) WULCA model for WSF 2015-2017;
- ✓ Cumulative Energy Demand (CED) vers 1.09;
- ✓ SimaPro software version 9.1.0.8 and the Ecoinvent database version 3.6 were used for the analysis.





# ENVIRONMENTAL IMPACTS ASSESSED

The following environmental impacts were analyzed  
as required by the *General Program Instructions  
for the International EPD® System 3.0*

- » GWP (FOSSIL, BIOGENIC, LAND USE AND TRANSFORMATION)
- » PHOTOCHEMICAL OXIDATION
- » ACIDIFICATION
- » EUTROPHICATION
- » ABIOTIC DEPLETION (FOSSIL FUELS)
- » ABIOTIC DEPLETION
- » WSF (WATER SCARSITY FOOTPRINT)

## LCIA METHODS

The CML-IA Baseline Version 3.02 / EU25 method was used to assess the environmental impacts in Simapro in accordance with the objective of the study and with the reference PCR that requires calculating:

✓ **Emissions of climate-changing gases**  
as the sum of GWP, 100 years, in CO<sub>2</sub> equivalent.

✓ **Emissions of substances in water that contribute to the reduction of aquatic oxygen**  
as PO<sub>4</sub>-equivalent phosphates  
(EP - eutrophication potential).

✓ **Emissions of acidifying gases**  
(AP - acidification potential), as the sum of the acidification potentials expressed as SO<sub>2</sub> - equivalent sulfur dioxide.

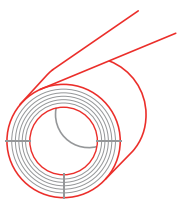
✓ **Depletion of abiotic resources (elements):**  
this impact category quantifies the consumption of abiotic resources linked to the extraction of the materials involved in the production process. The characterization factor is expressed in kg Sb eq (antimony) and is a function of the current state of the resource and the extraction rate.

✓ **Water scarcity footprint:**  
water footprint is an indicator of fresh water consumption that includes both the direct and indirect use of water by a consumer or a producer.

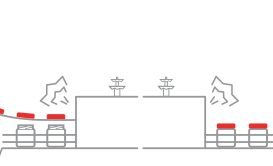
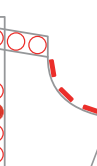
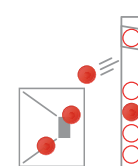
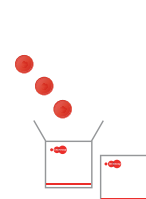
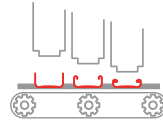
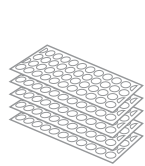
✓ **Gas emissions that contribute to the creation of ozone levels in the air**  
(POCP - photochemical ozone creation potential) as the sum of equivalent C<sub>2</sub>H<sub>4</sub> (ethylene) ozone creation potentials.

✓ **Depletion of abiotic resources (fossils):**  
the consumption of abiotic resources from fossil fuels is indicated as ADP (abiotic depletion potential) and expresses the consumption of resources by relating it to the lower calorific value (MJ / kg) for each m<sup>3</sup> of fuel extracted.

The environmental impacts are those prescribed by the General Program Instructions 3.0 for EPD® and the method is accepted internationally.



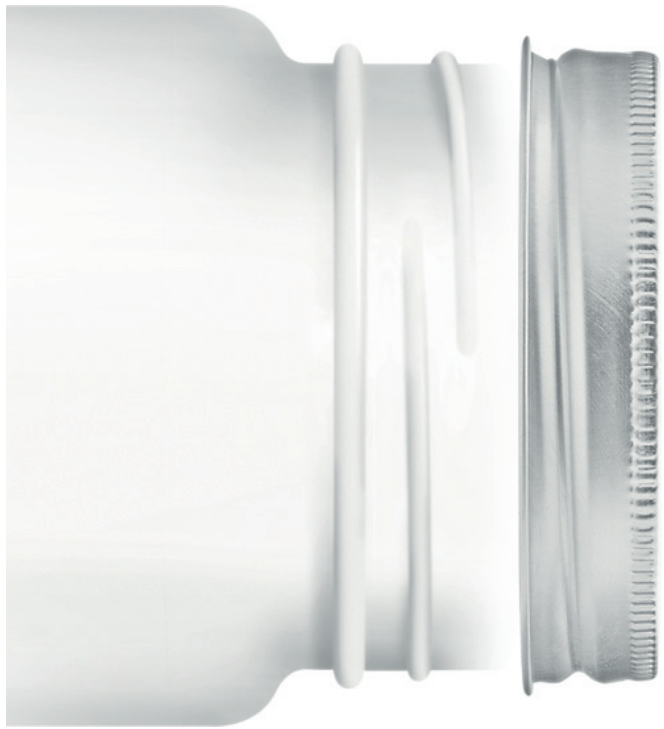
Innovative Packaging to guarantee Quality and Safety



We believe in Sustainable Packaging



Today and Tomorrow



# ENVIRONMENTAL PRODUCT DECLARATION



# ENVIRONMENTAL PRODUCT DECLARATION

ENVIRONMENTAL IMPACTS					
IMPACY CATEGORY	UNIT/TON	TOTALE	UPSTREAM	CORE	DOWNSTREAM
Carbon dioxide, fossil	kg CO2 eq	6.718,836	6.394,454	313,735	10,647
Carbon dioxide, land transformation	kg CO2 eq	5,713	5,644	0,068	0,001
Carbon dioxide, biogenic	kg CO2 eq	344,074	328,890	5,221	9,963
Other emission factors	kg CO2 eq	93,234	84,440	18,515	-9,721
<b>Global warming (GWP100a)</b>	<b>kg CO2 eq</b>	<b>7.161,857</b>	<b>6.813,428</b>	<b>337,539</b>	<b>10,890</b>
Abiotic depletion	kg Sb eq	0,662	0,661	0,000	0,000
Abiotic depletion (fossil fuels)	MJ	85.632	80.609	4.927	96
Ozone layer depletion (ODP)	kg CFC-11 eq	0,00054	0,00049	0,00005	0,00000
Photochemical oxidation	kg C2H4 eq	2,970	2,905	0,064	0,001
Acidification	kg SO2 eq	51,065	49,688	1,345	0,032
Eutrophication	kg PO4--- eq	2,205	1,945	0,250	0,011
WSF	m3	21,318	20,536	0,769	0,013

# ENVIRONMENTAL PRODUCT DECLARATION

CUMULATIVE ENERGY DEMAND - CED V.1.09					
IMPACT CATEGORY	UNIT	TOTAL	UPSTREAM	CORE	DOWNSTREAM
Non renewable, fossil	MJ/ton	85.656	80.633	4.927	96
Non-renewable, nuclear	MJ/ton	6.631	6.181	448	1,003
Non renewable, biomass	MJ/ton	6	6	0	0,001
Renewable, biomass	MJ/ton	3.260	3.209	51	0,153
Renewable, wind, solar	MJ/ton	628	384	244	0,042
Renewable, water	MJ/ton	1.950	1.702	248	0,267
<b>TOTALS</b>		<b>98.131</b>	<b>92.114</b>	<b>5.919</b>	<b>98</b>

# ENVIRONMENTAL PRODUCT DECLARATION

USE OF RESOURCES						
PARAMETER		UM PER TON	UPSTREAM	CORE	DOWNSTREAM	TOTAL
Primary Energy non renewable	Used as energy carrier	MJ, net calorific value	86.820	5.375	97	92.195
	Used as raw material	MJ, net calorific value	0	0	0	0
	<b>TOTAL</b>	<b>MJ, net calorific value</b>	<b>86.820</b>	<b>5.375</b>	<b>97</b>	<b>92.195</b>
Primary Energy renewable	Used as energy carrier	MJ, net calorific value	5.294	543	0,463	5.838
	Used as raw material	MJ, net calorific value	0	0	0,000	0
	<b>TOTAL</b>	<b>MJ, net calorific value</b>	<b>5.294</b>	<b>543</b>	<b>0,463</b>	<b>5.838</b>
Auxiliary materials		Kg/ton	225,842	0	0	225,842
Renewable secondary fuels		MJ, net calorific value	0	0	0	0
Non renewable secondary fuels		MJ, net calorific value	0	0	0	0
Net use of fresh water WSI		m3/ton	20,536	0,769	0,013	21,318



# ENVIRONMENTAL PRODUCT DECLARATION

WASTE PRODUCTION				
PARAMETER	UM	UPSTREAM	CORE	TOTAL
Hazardous waste disposed	kg/ton	0	0,540	0,540
Non hazardous waste disposed	kg/ton	0	4,92	4,92
Radioactive waste disposed	kg/ton	0	0	0

WASTE AND ENERGY OUTPUT FLOWS				
PARAMETER	UM	UPSTREAM	CORE	TOTAL
Components for reuse	kg/ton	0	0	0
Materials for recycling	kg/ton	0	192,73	192,73
Materials for energy recovery	kg/ton	0	0	0
Exported energy: electricity	MJ/ton	0	0	0
Exported energy: thermal	MJ/ton	0	0	0

# ENVIRONMENTAL PRODUCT DECLARATION

INVENTORY ANALYSIS					
RESOURCES - NON RENEWABLES					
ENERGY	UM	TOTAL	UPSTREAM	CORE	DOWNSTREAM
Coal, hard	kg/ton	983,699	949,212	34,372	0,115
Gas, natural, m3	m3/ton	588,967	533,147	55,674	0,146
Oil, crude	kg/ton	279,932	232,722	45,285	1,925
MATERIALS	UM	TOTAL	UPSTREAM	CORE	DOWNSTREAM
Iron	kg/ton	19,047	16,312	2,694	0,042
Calcite	kg/ton	84,649	79,528	5,032	0,089
Gravel	kg/ton	406,211	201,926	202,092	2,193
Aluminium	kg/ton	2,713	2,633	0,079	0,001
Nitrogen	kg/ton	15,198	15,004	0,191	0,003
Sodium chloride	kg/ton	296,309	296,209	0,082	0,018
Oxygen	kg/ton	159,621	158,222	1,395	0,004
Dolomite	kg/ton	0,081	0,073	0,008	0,000
Clay, unspecified	kg/ton	26,536	25,046	1,483	0,007
Potassium chloride	kg/ton	0,317	0,316	0,001	0,000
Gangue, bauxite, in ground	kg/ton	29,086	28,228	0,848	0,009
Barite	kg/ton	9,432	9,120	0,304	0,007

# ENVIRONMENTAL PRODUCT DECLARATION

## INVENTORY ANALISYS

### RESOURCES - RENEWABLES

ENERGY	UM	TOTAL	UPSTREAM	CORE	DOWNSTREAM
Energy, biomass gross calorific value	MJ/ton	3.260	3.209	51	0
Energy, potential (hydropwr resev)	MJ/ton	1.742	1.493	248	0
Energy, geothermal, converted	MJ/ton	466	246	220	0
Energy, kinetic (in wind), converted	MJ/ton	162	137	25	0
ENERGY	UM	TOTAL	UPSTREAM	CORE	DOWNSTREAM
Water	m3/ton	24,681	8,299	16,382	0,000

## ADDITIONAL ENVIRONMENTAL IMPACT INFORMATION ABOUT TECNOCAP: TINPLATE METAL CLOSURES RECYCLING CREDIT APPROACH

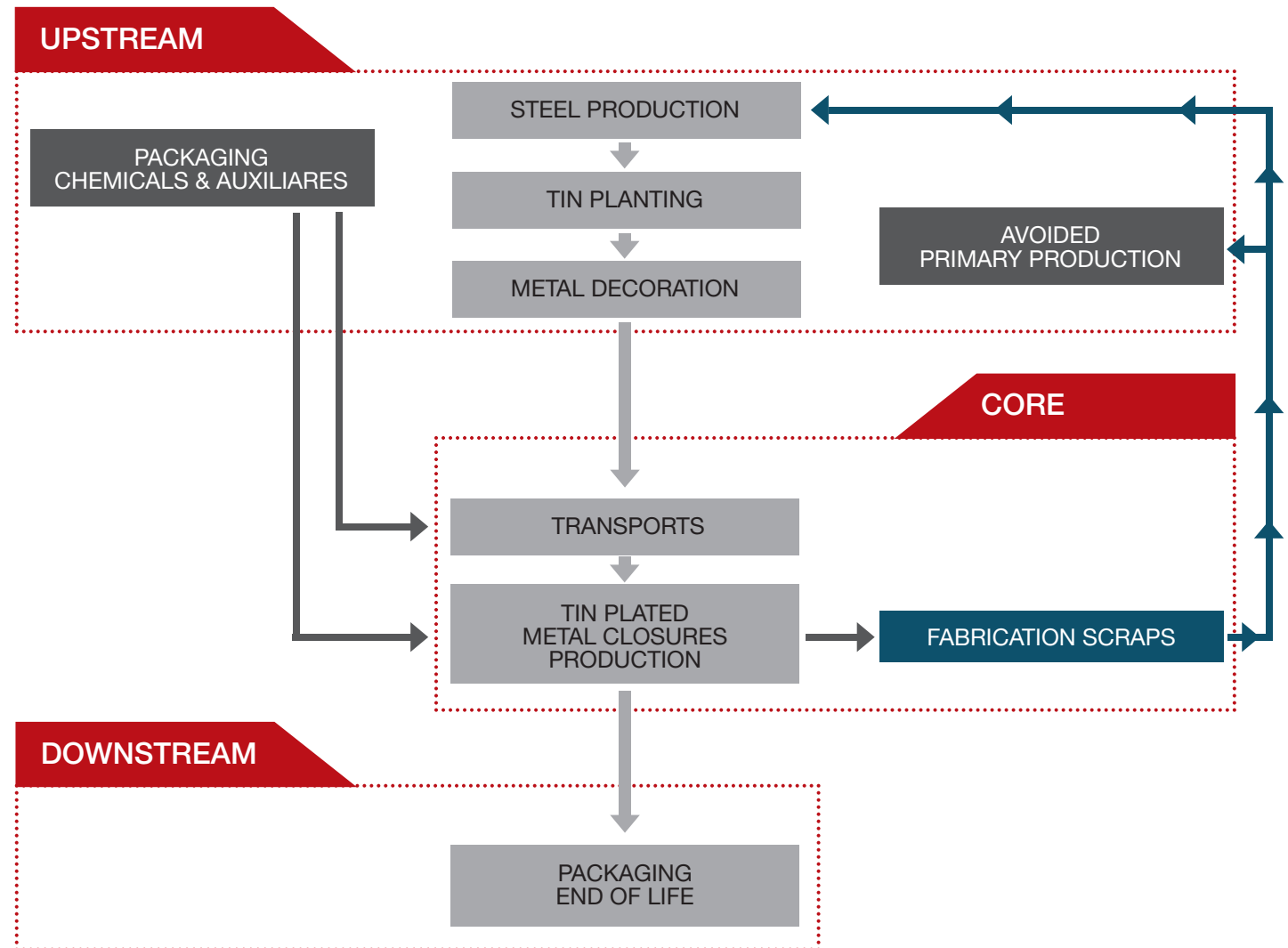
The life cycle phases of the products considered in the system is *cradle to gate*.

Following the EPD General Programme Instructions 3.1 and the applied PCR, potential benefit gained from recycling of tinsplate new scraps cannot be credited or associated to Tecnocap's LCA but will benefit subsequent users.

Anyway, according to the World Steel Association (WSA) and its publication *LCI Life Cycle Inventory Methodology Report- 2017*, it is possible to assign a recycling credit to manufacturer by means of two approaches when modeling the tinsplate closures recycling system (closed loop recycling approach and recycled content approach).

In this chapter we will study the effects on Tecnocap environmental impact using **The closed loop approach** for company's tinsplate productions. The method is based on product life cycle and material stewardship perspective.

A cradle-to-gate-with-recycling LCI study considers the cradle-to-gate level as well as the impacts of using steel scrap in the steelmaking process and the credits for the end-of-life recycling of the steel from the final product when it reaches the end of its life (end-of-life scrap), at a specified recycling rate. These impacts and credits can be calculated separately on the input and output side, or as net credits. It does not include the manufacture of the downstream final products or their use.



## ADDITIONAL ENVIRONMENTAL IMPACT INFORMATION ABOUT TECNOCAP: TINPLATE METAL CLOSURES RECYCLING CREDIT APPROACH

The general life cycle equation for this “closed material loop recycling methodology” is applied as shown by the equation below:

**Net scrap = Amount of steel recycled at end-of-life – Scrap input**

Where the end-of-life recycling rate should be expressed as X tonnes of steel recycled per tonne of steel in the final product (this is commonly also expressed as a percentage). Scrap input should also be expressed as X tonnes of steel scrap input per tonne of steel produced.



Substituting available data in the previous equation we obtain:

**Net scrap = 0,217 ton\*82.5%(metal recycling rate in Europe - APEAL)  
-29,28% (steel scrap input) – Net scrap= 126 kg/ton**

Benefits of recycling have been associated to the “Recycling of steel and Iron” process and calculated among the products avoided with the use of the “Pig Iron market for” process as indicated in the Ecoinvent 3.6 dataset. This is the “end of life approach or closed loop approach” as described in the “Woldsteel LCI methodology report”.

The method takes an overall approach to recycling as it considers the assignment of environmental impacts and credits between different product systems across different life cycles and the environmental impact of the product system is dependent on the recycling rate at end-of-life. Another way of thinking about this method is in terms of system expansion where the boundary of the study is extended to include another product system. Where a material is recycled at end-of-life, the product system is credited with an avoided burden based on the reduced requirement for virgin material production in the next life cycle.

This method is also known as the **closed material loop method** because recycling saves the production of virgin material with the same properties. The approach is particularly relevant for metals such as steel where recycling rates of end-of life of products are known. From a policy perspective, this method leads to a focus on recycling at end-of-life and promotes the concepts of the **circular economy**.

## ADDITIONAL ENVIRONMENTAL IMPACT INFORMATION ABOUT TECNOCAP: TINPLATE METAL CLOSURES RECYCLING CREDIT APPROACH

The following table summarizes the changes in environmental impact obtained taking into account the recycling credit:

IMPACY CATEGORY	UNIT/TON	LCA METAL CLOSURES				LCA WITH RECYCLING CREDIT				DELTA
		TOTAL	UPSTREAM	CORE	DOWNSTREAM	TOTAL	UPSTREAM	CORE	DOWNSTREAM	
Carbon dioxide, fossil	kg CO2 eq	6.718,836	6.394,454	313,735	10,647	6.518,417	6.394,454	113,316	10,647	-2,98%
Carbon dioxide, land transformation	kg CO2 eq	5,713	5,644	0,068	0,001	5,666	5,644	0,021	0,001	-0,82%
Carbon dioxide, biogenic	kg CO2 eq	344,074	328,890	5,221	9,963	343,445	328,890	4,591	9,963	-0,18%
Other emission factors	kg CO2 eq	93,234	84,440	18,515	-9,721	69,460	84,440	-5,259	-9,721	-25,50%
<b>Global warming (GWP100a)</b>	<b>kg CO2 eq</b>	<b>7.161,857</b>	<b>6.813,428</b>	<b>337,539</b>	<b>10,890</b>	<b>6.936,988</b>	<b>6.813,428</b>	<b>112,669</b>	<b>10,890</b>	<b>-3,14%</b>
Abiotic depletion	kg Sb eq	0,662	0,661	0,000	0,000	0,662	0,661	0,000	0,000	-0,01%
Abiotic depletion (fossil fuels)	MJ	85.632	80.609	4.927	96	83.176	80.609	2.470	96	-2,87%
Ozone layer depletion (ODP)	kg CFC-11 eq	0,00054	0,00049	0,00005	0,00000	0,001	0,000	0,000	0,000	-2,27%
Photochemical oxidation	kg C2H4 eq	2,970	2,905	0,064	0,001	2,803	2,905	-0,103	0,001	-5,62%
Acidification	kg SO2 eq	51,065	49,688	1,345	0,032	50,038	49,688	0,319	0,032	-2,01%
Eutrophication	kg PO4--- eq	2,205	1,945	0,250	0,011	1,879	1,945	-0,077	0,011	-14,79%
WSF	m3	21,318	20,536	0,769	0,013	21,097	20,536	0,547	0,013	-1,04%

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APEAL	Life Cycle Assessment (LCA) on Tinplate – june 2015
APEAL	Report on Metal Recycling – 2018
ISPRA	Report – 2019
GENERAL PROGRAMME INSTRUCTIONS FOR THE INTERNATIONAL EPD® SYSTEM	Version 3.1 — 2019-09-18
PACKAGING PRODUCT CATEGORY CLASSIFICATION	Multiple CPC — PCR 2019:13 — Version 1.0 — Valid until: 2023-11-08

## INFORMATION VERIFICATION AND REFERENCE PCR

Product Category Rule (PCR): Packaging Product Category Classification: multiple CPC - UN – CPC Code 42932 - PCR 2019: 13 - Version 1.0 – Valid until: 2023-11-08

PCR review was carried out by the Technical Committee of the International EPD® System;  
Contacts: info@environdec.com

ISO 14025: 2006 declaration and data verification process: EPD® verification

Third party verifier:  
Ing. Vito D'Incognito – Individual EPD® Verifier

Accredited or approved by: Technical Committee of International EPD® System  
It is not possible to compare EPDs which, although within the same product category, are operated by different programs.

This LCA study was conducted by Massimo Lombardi on behalf of Greener Italia Srl, a company specialized in life cycle analysis.

The study was commissioned by:

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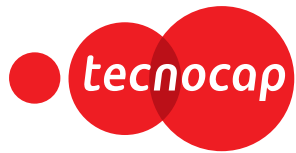
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# ENVIRONMENTAL PRODUCT DECLARATION METAL CLOSURES

- » TWIST/LUG
- » BRP
- » CONTINUOUS THREAD (CT)
- » CLASSIC CANNER



**Registration number:**  
S-P-02312

**Product Category Rules:**  
Packaging Products  
PCR 2019:13 - Version 1.0  
**Valid until:**  
2023/11/08

**CPC Code:**  
42932

**Registration date:**  
2021/02/03  
**Valid until:**  
2026/02/02

**Geographical scope:**  
Global

**Programme Operator:**  
The International EPD® System  
[www.environdec.com](http://www.environdec.com)

*This EPD has been developed in conformity to ISO 14025. 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](http://www.environdec.com)*

