



**COLLAPSIBLE ALUMINIUM TUBES FOR**

# ***the cosmetic market***

**TUBE DIAMETERS 28 & 32mm**



THE INTERNATIONAL EPD® SYSTEM

## **Environmental Product Declaration**

In accordance with ISO 14025:2010

EPD REGISTRATION NUMBER: S-P-05055

PUBLICATION DATE: 2022/01/14

VALIDITY DATE: 2026/12/26

REVISION DATE:

PROGRAMME: The International EPD® System

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This EPD provides 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)





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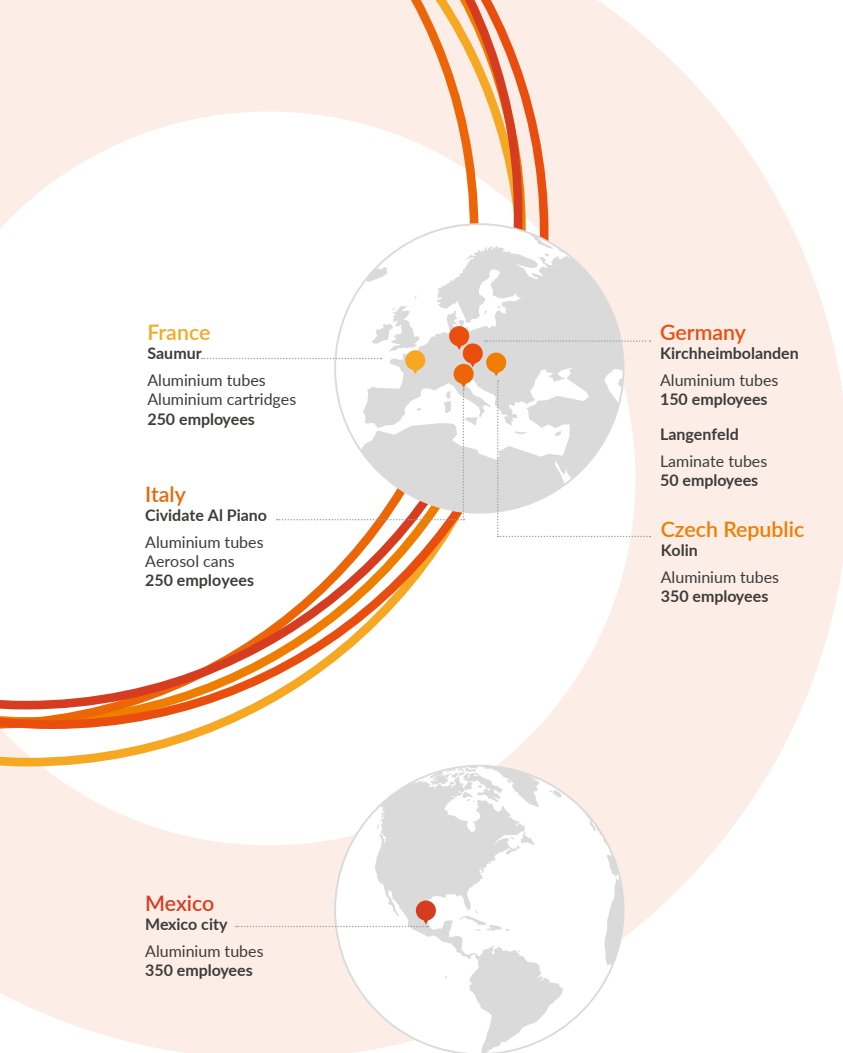


## **N°1 Worldwide leader in collapsible aluminium tubes**

The ALLTUB GROUP is an integrated global aluminium packaging specialist producing aluminium tubes, laminate tubes, aluminium cans and aluminium cartridges.

With a global market share of over 10% (over 20% in Europe and North America)\*, the Alltub Group is the worldwide leader in the manufacture and supply of collapsible aluminum tubes.

\*source: estimation based on the European Tube Manufacturers Association (ETMA) statistics.



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## Company presentation

With **five production sites in Europe** and **one in Mexico** and a global sales network, ALLTUB GROUP is the perfect partner for customers requiring stylish, completely airtight and **100% recyclable packaging**.

Employing **1,350 people worldwide** and generating over 150 million Euros of annual sales, the ALLTUB GROUP has over 70 production lines manufacturing over 1.5 billion units per year.

All plants are certified ISO 9001 with additional certifications such as ISO 14001 (Alltub Central Europe s.r.o and Alltub France SAS), ISO 15378, ISO 50000 (Alltub Deutschland) and ISO 22000, BRC IoP, as well as Drug Master File registrations with the US FDA and Health Canada.

**This EPD is based on primary data of Alltub Central Europe's plant located in Czech Republic.**

| DIAMETER (mm)    |      | 11  | 13,5 | 16  | 19  | 22  | 25  | 28  | 30  | 31,2 | 32  | 35  | 40  | 50  |
|------------------|------|-----|------|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|
| LENGTH (mm)      | min. | 55  | 55   | 65  | 85  | 90  | 100 | 120 | 120 | 125  | 130 | 130 | 130 | 150 |
|                  | max. | 70  | 95   | 105 | 130 | 150 | 165 | 190 | 190 | 190  | 190 | 200 | 215 | 200 |
| FILL VOLUME (ml) | min. | 2   | 5    | 8   | 15  | 20  | 27  | 50  | 50  | 67   | 70  | 85  | 115 | 200 |
|                  | max. | 3   | 10   | 14  | 25  | 45  | 60  | 80  | 95  | 109  | 115 | 135 | 200 | 250 |
| THREAD           | 56   | INJ |      | •   | •   | •   | •   |     |     |      |     |     |     |     |
|                  | INJ  |     |      |     | •   | •   |     |     |     |      |     |     |     |     |
|                  | 68   | OP  |      | •   | •   |     |     |     |     |      |     |     |     |     |
|                  | OR   |     | •    |     |     |     |     |     |     |      |     |     |     |     |
|                  | CN   | •   | •    | •   | •   |     |     |     |     |      |     |     |     |     |
|                  | M7   | INJ | •    | •   | •   |     |     |     |     |      |     |     |     |     |
|                  | OP   | •   | •    | •   | •   | •   |     |     |     |      |     |     |     |     |
|                  | M8   | CN  |      |     |     |     |     |     |     |      |     |     |     |     |
|                  | CN   |     | •    | •   | •   | •   | •   |     |     |      |     |     |     |     |
|                  | 82   | INJ |      |     | •   | •   |     |     | •   |      |     |     | •   |     |
|                  | OP   |     |      | •   | •   |     | •   |     |     |      |     |     |     |     |
|                  | CN   |     |      |     |     |     |     |     | •   |      |     |     |     |     |
|                  | M9   | INJ |      |     | •   | •   |     | •   |     |      |     | •   |     |     |
|                  | OP   |     | •    | •   | •   | •   | •   | •   |     | •    |     |     |     |     |
|                  | EM   |     | •    | •   |     |     |     | •   | •   |      |     |     |     |     |
|                  | OR   |     |      |     | •   |     | •   | •   |     |      |     | •   |     |     |
|                  | 92   | OP  |      |     | •   | •   |     |     |     |      |     |     |     |     |
|                  | EM   |     |      |     |     |     | •   |     |     |      |     |     |     |     |
|                  | 110  | OP  |      |     | •   | •   | •   | •   | •   |      | •   | •   | •   | •   |
|                  | OR   |     |      |     |     |     |     |     |     |      |     | •   |     |     |
|                  | OP   |     |      |     | •   | •   | •   | •   | •   | •    | •   | •   | •   | •   |
|                  | M11  | INJ |      |     |     |     |     |     | •   |      |     |     |     |     |
|                  | OR   |     |      |     |     |     | •   |     | •   |      |     |     |     |     |
|                  | CN   |     |      |     |     |     |     |     |     |      |     |     |     |     |
|                  | M12  | OR  |      |     |     |     |     |     | •   |      |     | •   |     |     |
|                  | EM   |     |      |     | •   |     | •   |     |     |      |     |     |     |     |
|                  | M13  | EM  |      |     |     | •   | •   |     | •   |      |     | •   | •   |     |
|                  | EM   |     |      |     |     | •   | •   | •   | •   |      |     | •   |     |     |
|                  | 135  | OP  |      |     |     |     |     |     |     |      |     |     | •   | •   |
|                  | EM   |     |      |     |     |     |     |     |     |      |     | •   | •   |     |
|                  | M15  | OP  |      |     |     |     |     | •   | •   | •    | •   | •   | •   | •   |
|                  | OR   |     |      |     |     |     |     | •   | •   |      |     | •   | •   | •   |
|                  | M18  | OP  |      |     |     |     |     |     |     |      |     |     | •   | •   |



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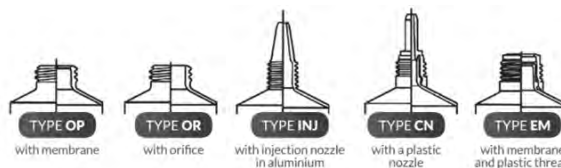
## Company presentation: Range of products

Collapsible aluminium tubes for the cosmetic market are produced at Alltub's plants in Cividate (Italy), Kolin (Czech Republic), Saumur (France) and Kirchheimbolanden (Germany).

Tube sizes range from 2ml up to 250ml fill volumes with a large variety of cap styles available.

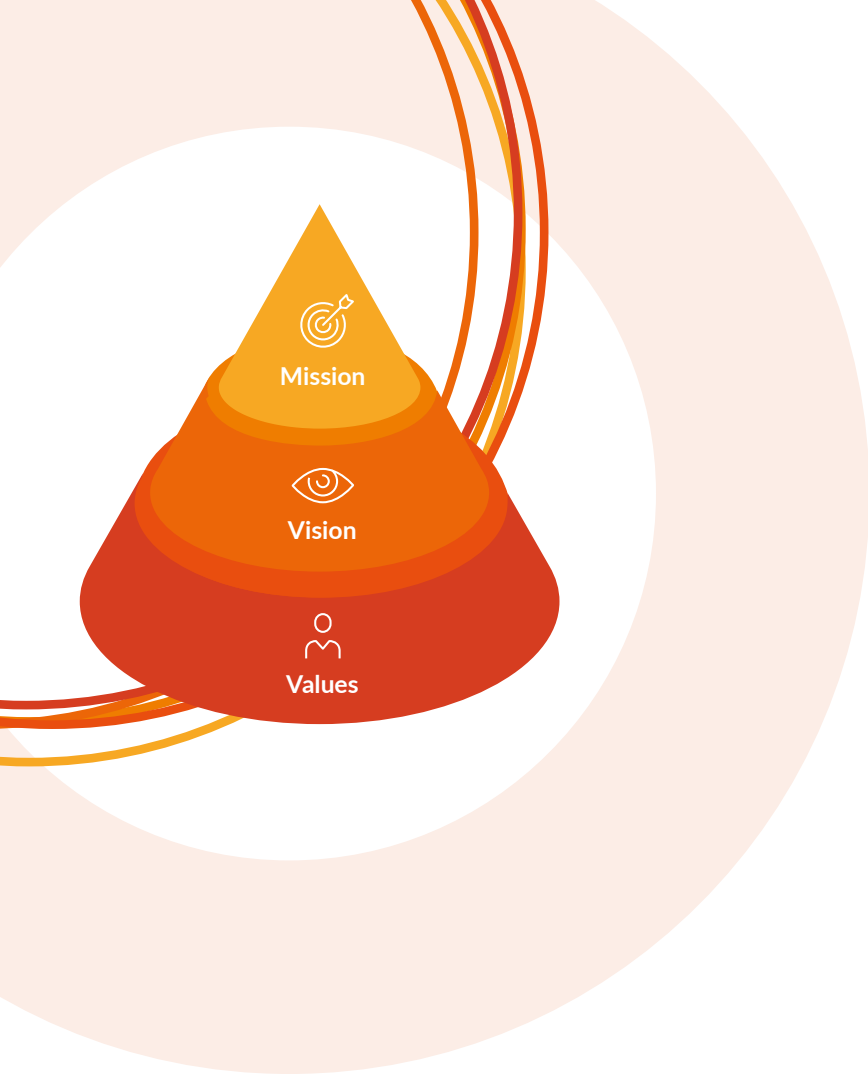
Alltub's product data sheet provides comprehensive details of the tube sizes available, complete with corresponding thread designs/dispensing mechanisms and in accordance with the cap type to be applied onto the tube.

The reference plant for this EPD upon which data was submitted and analysed is Alltub Central Europe and the products considered are aluminium tubes with dimensions 28 x 145 mm and 32 x 161 mm.



ALLTUB GROUP  
aluminium tube technical  
data sheet





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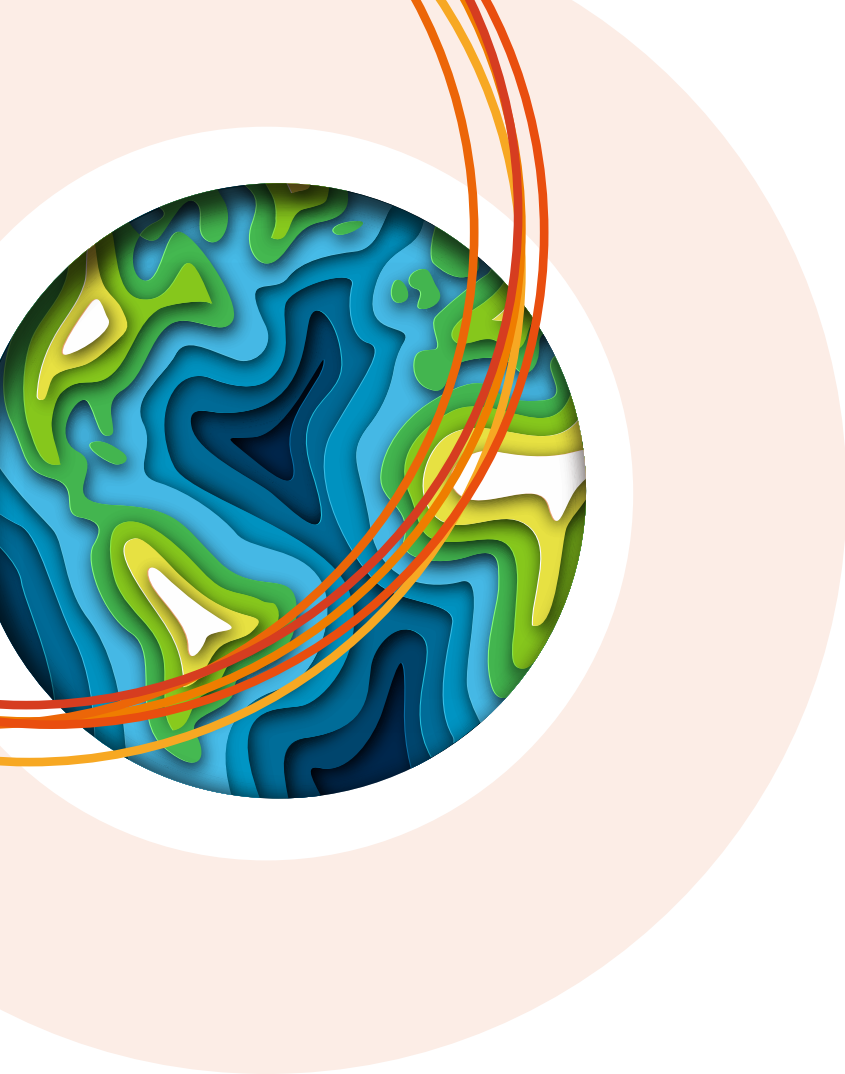
## Company vision & values

ALLTUB GROUP is an **aluminium packaging** specialist, worldwide leader in **collapsible tubes**. The group provides sustainable solutions for customers in the pharmaceutical, cosmetic, food and industrial markets.

ALLTUB GROUP thrives to be the best partner in providing added value in **sustainable aluminium packaging solutions** both globally and locally, by relying on high quality standards and passionate employees.

ALLTUB GROUP has strong values:

- Respect
- Continuous improvement
- Walk the talk and be consistent
- Discipline
- Team-work
- Trust



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## Company vision & values

Sustainability is at the core business of Alltub Group.

Alltub Group is inspired by the Ellen Macarthur foundation\* and its case studies which present circular economy success stories from around the world, showing how businesses, governments and cities are transforming our economy into one that works for people and the environment.

Alltub Group has developed its own in-house **team of experts in sustainability**.

This EPD demonstrates the first results of the **strategy** and **commitment** established by Alltub.

\*source: <https://ellenmacarthurfoundation.org/topics/circular-economy-introduction/overview>



## Company vision & values : support for sustainable development



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Alltub Group has set itself the rule of respecting the environment and promoting continuous improvement in environmental protection. Alltub Group is committed to sustainably upholding the goal of environmental protection for current and future generations\*.

The next decade will be critical in terms of **environmental challenges**. Decisions should be taken to limit global temperatures rise, to ensure clean air and water, stable climate and safe food for tomorrow

As implementing sustainable solutions is a key driver, ALLTUB GROUP is continuously working on **finding better ways** to make its operations and products more efficient and environmentally friendly. **By respecting nature** and its exhaustible resources, by strongly believing that **recyclable and recycled aluminium** is key for the future in the packaging industry.

ALLTUB GROUP **continuously shapes the market**, challenges the industry, supports changes and trends, brings innovations to the customers.

Alltub Group is proud to measure the environmental impact and performance of its products and communicate in a transparent way for consumers and employees. The main goal of this EPD is **providing data for customers** who would like to publish their own EPD with Alltub Group products.

This EPD has been approved by the ALLTUB Group's Executive Committee.

*\*source : Alltub Group Code of Conduct support for sustainable development (6)*



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## **Product: aluminium tube general information**

Thanks to their **incredible properties and characteristics**, aluminium tubes can be used in many different sectors for a wide range of products and applications, and are the perfect choice for a wide range of packaging styles from vintage to trendy packaging for cosmetics.

Aluminium is a **permanent material** and can be **recycled infinitely**.

Recycling or recycled contents is more than a trend it's a company commitment, especially today.

(Re)turning to aluminium is a **pertinent solution** for many brands and producers. Before the rise of plastics, most toothpastes, creams and ointments were packed in aluminium tubes. **Lightweight and malleable**, aluminium is popular with designers, and its natural, authentic image chimes with the current consumer climate.



Historical picture  
not related to  
Alltub's products\*\*



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## Product: aluminium tube general information

The collapsible aluminium tube is a tried and tested packaging solution which has existed for many decades across all continents of the world.

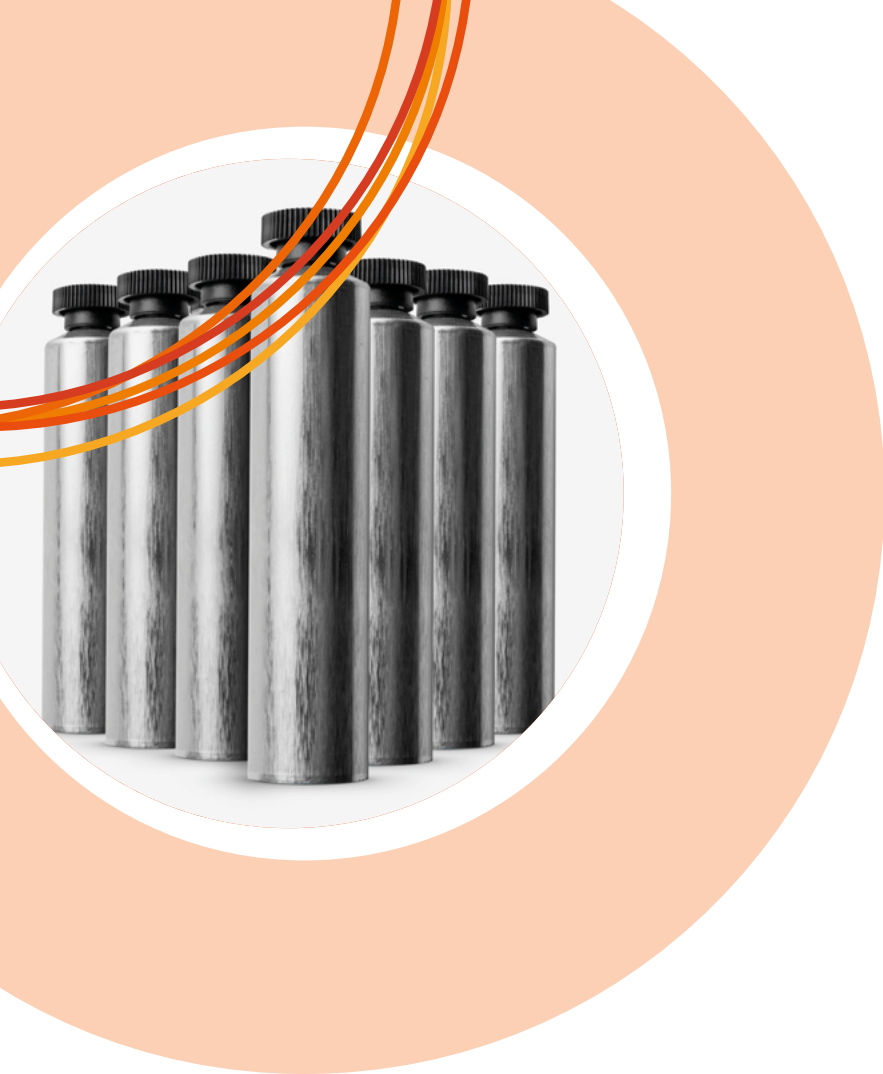
The first squeezable metal tube was born in 1841 in America for paint. Beginning in 1886, attempts were made to fill aluminium tubes with contents other than paint such as toothpaste in 1887. The first attempts to use aluminium for the industrial production of tubes came in 1913. The first year with a high production rate was 1920, and thereafter the number rose greatly during the 1920s and 30s. In 1939, the aluminium tube celebrated its victory over the other materials used up until then.

After more than 175 years ago of history as a material for high-quality packaging, the aluminium tube is still a success story.

All industries today, whether they produce pharmaceuticals, cosmetics, paint or pasty chemicals for technical use, rely on the aluminium tube as the premium packaging for their precious products, and they will continue to do so in the future\*.

\*source: <http://www.aluminium-tubes.org/history.html>

\*\*source: <https://www.kilmerhouse.com>



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## ***Product: aluminium tube general information***

The key characteristics of the aluminium tube which have made it so popular over the years and with ever increasing popularity are the following:

- The typical characteristics of the material guarantee excellent resistance to the ingress of both air and light, preserving over time all the characteristics of the tube's content. Aluminium tubes can also be sterilized by autoclave or gamma radiation for example.
- The wide possibilities of forming the aluminium allow the creation of innovative dispensing systems, increasing the user experience of the tube as well as increasing the shelf life of the content
- Tubes are lightweight and can be customized whilst maintaining their recyclability in full after use.
- Custom printing with a wide variety of beautiful multi-colour print options (matt, gloss, metallic finishes etc.)



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## Product description / Technical information

| ALUMINIUM TUBE                          | TUBE DIAMETER 28 mm                   | TUBE DIAMETER 32 mm                   |
|---|---------------------------------------|---------------------------------------|
| Diameter mm                             | 28                                    | 32                                    |
| Lenght mm                               | 145                                   | 161                                   |
| Material                                | 99,7% primary aluminium EN 573-3/2019 | 99,7% primary aluminium EN 573-3/2019 |
| Nozzle orifice                          | Closed with membrane                  | Closed with membrane                  |
| Shoulder                                | Smooth                                | Smooth                                |
| Thread ISO std                          | M11                                   | M11                                   |
| Internal varnish                        | Epoxy-phenolic                        | BPA NI                                |
| Enamel                                  | Polyester                             | Polyurethane                          |
| Inks                                    | Polyester (alkyd) resins              | Polyester (alkyd) resins              |
| Standard open end tube not enamelled mm | 1 - 2                                 | 1 - 2                                 |
| Sealing band at the end of the tube     | Acrylic resins                        | Acrylic resins                        |
| Weight g                                | 5.45                                  | 7.35                                  |
| PLASTIC CAP                             |                                       |                                       |
| Material                                | PP plastic                            | PP plastic                            |
| Thread ISO std                          | M11                                   | M11                                   |
| Colour                                  | Several colours                       | Black, natural grey                   |
| Weight g                                | 0.9                                   | 0.9                                   |

No raw materials containing more than 0.1% by weight of Substances of Very High Concern (SVHC) published to the Candidate List for Authorization according to Article 59(10) of REACH are used. The product complies with the requirements for "materials and articles intended to come into contact with food" (EU Framework Regulation (EC) No. 1935/2004 and Regulation (EC) No. 2023/2006 ).



*Aluminium collapsible tube*



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## **Product: technical information**

The product consists of the aluminium tube itself plus a cap which the consumer unscrews, presses on the tube to dispense the amount of product required before screwing the cap back onto the tube.

The tubes produced by ALLTUB GROUP for the cosmetic market are mainly used for hair dye, anti-wrinkle treatments, handcreams, leg and foot balms...





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## Content declaration: regulatory compliance

The ALLTUB Group is a downstream user and manufacturer of articles, the collapsible aluminium tubes for the cosmetics market, in the meaning of the European chemical legislation REACH (Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals).

We exclusively process at our European sites raw materials, which comply with the REACH Regulation including the CLP Regulation (EC) No 1272/2008 (Classification, labelling and packaging of substances and mixtures), and we fulfil all REACH obligations as applicable to packaging manufacturers.

The ALLTUB Group strongly avoids using raw materials containing more than 0.1% by weight of Substances of Very High Concern (SVHC) published to the Candidate List for Authorisation according to Article 59(10) of REACH. However, we will fulfil the REACH obligations to submit relevant data to ECHA via the SCIP database and will inform our customers, if different.

GHS, the Globally Harmonized System, defines the classification and labelling of chemical substances and mixtures. It does not apply to articles like aluminium collapsible tubes.

The ALLTUB products comply with the European Packaging and Packaging Waste Directive 94/62/EC. The objectives as defined in the Directive are the following:

- Reducing waste at source
- Restricting heavy metals (Sum of Cd, Cr, Hg and Pb < 100 ppm)
- Identifying packaging material (non-mandatory) in order to facilitate their collection, re-use and recovery including recycling
- Identifying and recovering waste: all states must implement a system of waste return, collection and recovery

All our tubes for cosmetic applications are developed:

- with raw materials compliant to the EU Framework Regulation (EC) No. 1935/2004 on materials and articles intended to come into contact with food (exempt PCR plastics) and to Regulation (EC) No. 2023/2006 on good manufacturing practice for materials and articles intended to come into contact with food
- according to the applicable requirements of the European Cosmetic Regulation (EU) No 1223/2009 and we communicate all required information as defined in the Advisory Document of the Cosmetics Europe association published in June 2019.



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## Process description: general overview



1

EXTRUSION



2

THREADING & TRIMMING



3

ANNEALING



4

INTERNAL VARNISHING



5

EXTERNAL LACQUER



6

PRINTING



7

CAPPING



8

END SEALANT



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PACKING



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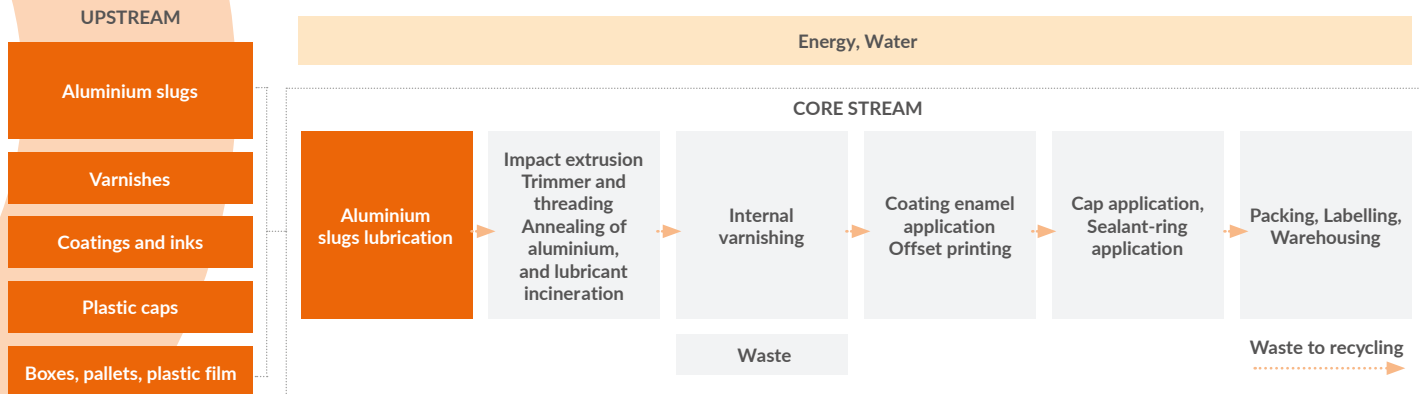


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## System diagram of the processes included in the LCA, divided into the life cycle stages



**Aluminium slugs lubrication:** During the first phase of the core process, aluminium' slugs are lubricated into tumbling machines adding solid lubricant. This process facilitate the next production phase of impact extrusion. The lubricant is subsequently completely removed by incineration into the annealing oven.



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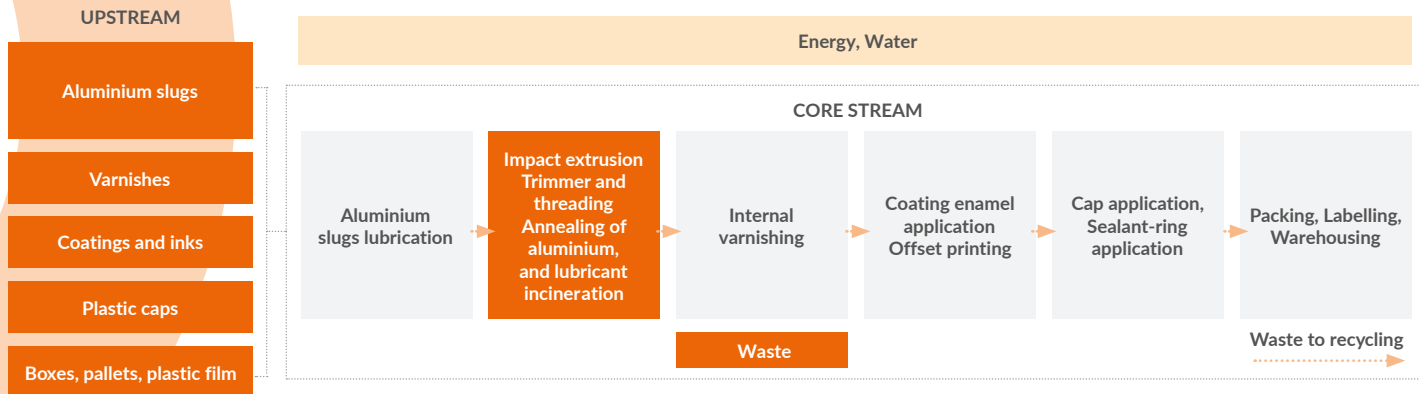


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## System diagram of the processes included in the LCA, divided into the life cycle stages



**Impact extrusion:** The slug is positioned in the die and hit by a mandrel; the aluminium, compressed between the mandrel and the matrix, forms the shoulder shape and flows back along the surface of the mandrel creating the cylindrical shape.

**Dimensional and threading operation:** The trimming machine removes the surplus to obtain the nominal tube length and it machines the thread on the nozzle. The aluminium scraps generated by these operations are eliminated and collected for recycling.

**Annealing of aluminium:** To give to the trimmed tube the requested mechanical properties and remove any residue of the lubricant, the tubes have to come into an annealing oven at a temperature above 300°C.



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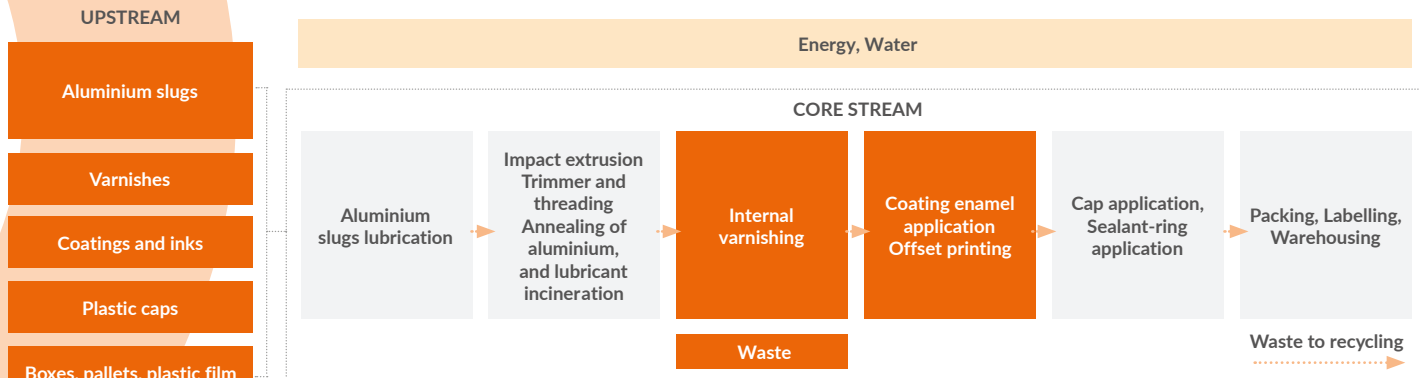


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## System diagram of the processes included in the LCA, divided into the life cycle stages



**Internal varnishing:** At the exit of the annealing oven the tube is coated internally by spraying with 2 or 3 passes. This is necessary to ensure the protection of aluminum to the chemical product contained therein. During the passage through the curing oven, generally at 280-300°C, the internal coating cures and becomes solid and homogeneous. The complete protection of the aluminum must be guaranteed by the thickness, the temperature of polymerization, flexibility and uniformity of the internal film.

**Printing:** The first phase of the printing process is the application of the enamel which consists of applying a coating on the external surface of the tube with a roller. The enamel can be transparent, white or colored, glossy or matt. The next step in the drying oven at a temperature between 120 and 140°C allows the partially cured enamel to improve the adhesion of the printing inks. The printing technology is indirect offset wet on wet. The ink, through a series of rubber and metal rollers, is uniformly distributed and transferred to the photopolymer plate. Then the colour is transferred, one by one, without drying, onto a printing blanket. The complete image is transferred from the blanket onto the tube. The enamel and inks are completely dry after passing in the curing oven at a temperature of 170°C.



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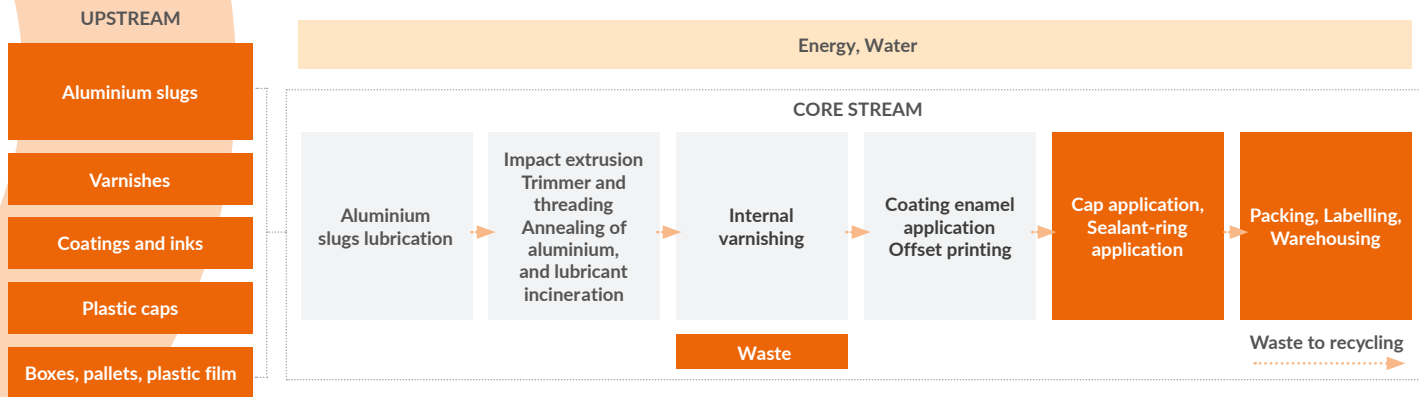


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## System diagram of the processes included in the LCA, divided into the life cycle stages



**Finishing:** This phase consists into three operations:

- Plastic Cap application;
- Sealant-ring application near the open end of the tube;
- Packing and positioning of the tubes into boxes and then onto pallets, wrapped with stretch plastic film, suitable for transport and shipping.



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## Description of the EPD approach

**Geographical scope of the EPD:** Global

**Declared unit:** One aluminium tube with a plastic cap, at gate. The data reported relate to a product not yet on the market divided into the raw material supply (upstream processes) and the production phase, including cap application (core processes). The prevalent cap for the declared tubes is intended as standard and used for impact assessment.

**Declaration of the year(s) covered by the data used for the LCA calculation:** year 2020

**Main database for generic data:** Ecoinvent 3.7.1

**LCA Software:** Simapro 9.2

**System boundary:** “cradle to gate”

**Cut-off rules:** Data for elementary flows to and from the product system contributing to a minimum of 99% of the declared environmental impacts are included (not including processes that are explicitly outside the system boundary as described in Section 4.3 of the PCR).

**Excluded processes:** Production and transport of inks, production of rollers' rubber, production and transport of ammonia water, transport of plastic cap, transport of aluminium ingot to slugs' production facility were excluded because under the cut-off.

**LCA modeling description:** Product environmental performance was assessed using the Life Cycle Assessment (LCA) method, from the extraction of the raw materials to the production of the finished product. The study was conducted in accordance with the ISO 14040 standard and the product category rules set forth in PCR 2019:13 Packaging (1.1), approved by the International EPD® System technical committee.

**Data Quality:** The data quality rules followed for this EPD are those defined in the relevant PCR. In accordance with such rules, both specific data gathered directly from the Aluminium Tubes production site during the year 2020 and generic data extracted from the commercial database (Ecoinvent 3.7.1) were used.



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## ***Sources and version of the characterization model used in the epd***

**Global warming potential (kg CO<sub>2</sub> eq.)**

GWP100, [CML 2001 baseline](#). Version: January 2016

**Acidification potential (kg SO<sub>2</sub> eq.)**

AP, [CML 2001 non-baseline](#) (fate not included), Version: January 2016

**Eutrophication potential (kg PO<sub>4</sub>--- eq.)**

EP, [CML 2001 baseline](#) (fate not included), Version: January 2016.

**Photochemical oxidant formation potential (kg NMVOC eq.)**

POFP, LOTOS-EUROS as applied in ReCiPe 2008

**Abiotic depletion potential – Elements (kg Sb eq.)**

ADPelements, [CML 2001, baseline](#)

**Abiotic depletion potential – Fossil fuels (MJ, net calorific value)**

ADPfossil fuels, [CML 2001, baseline](#)

**Water Scarcity Footprint (WSF) (m<sup>3</sup> H<sub>2</sub>O eq)**

[AWARE Method: WULCA Recommendations on characterization model for WSF 2015, 2017.](#)





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Environmental impacts: **28x145 mm** tube, max filling capacity of 65ml, with standard opening\*\*

| IMPACT CATEGORY                            |                                  | UNIT                       | UPSTREAM PROCESSES   | CORE PROCESSES       | TOTAL*               |
|--|----------------------------------|----------------------------|----------------------|----------------------|----------------------|
| Global warming potential                   | Fossil                           | kg CO <sub>2</sub> eq.     | $6.72 \cdot 10^{-2}$ | $3.07 \cdot 10^{-2}$ | $9.79 \cdot 10^{-2}$ |
|  | Biogenic                         | kg CO <sub>2</sub> eq.     | $8.78 \cdot 10^{-4}$ | $0.37 \cdot 10^{-4}$ | $9.15 \cdot 10^{-4}$ |
|  | Land use and land transformation | kg CO <sub>2</sub> eq.     | $1.84 \cdot 10^{-3}$ | $0.11 \cdot 10^{-3}$ | $1.95 \cdot 10^{-3}$ |
|  | Total                            | kg CO <sub>2</sub> eq.     | $0.70 \cdot 10^{-1}$ | $0.31 \cdot 10^{-1}$ | $1.01 \cdot 10^{-1}$ |
| Acidification potential                    |                                  | kg SO <sub>2</sub> eq.     | $3.66 \cdot 10^{-4}$ | $0.99 \cdot 10^{-4}$ | $4.65 \cdot 10^{-4}$ |
| Eutrophication potential                   |                                  | kg PO <sub>4</sub> --- eq. | $1.46 \cdot 10^{-4}$ | $1.09 \cdot 10^{-4}$ | $2.55 \cdot 10^{-4}$ |
| Formation potential of tropospheric ozone  |                                  | kg NMVOC                   | $2.26 \cdot 10^{-4}$ | $0.73 \cdot 10^{-4}$ | $2.99 \cdot 10^{-4}$ |
| Abiotic depletion potential – Elements     |                                  | kg Sb eq.                  | $2.72 \cdot 10^{-7}$ | $0.51 \cdot 10^{-7}$ | $3.23 \cdot 10^{-7}$ |
| Abiotic depletion potential – Fossil fuels |                                  | MJ, net calorific value    | 0.86                 | 0.34                 | 1.20                 |
| Water scarcity potential                   |                                  | m <sup>3</sup> eq.         | $1.33 \cdot 10^{-2}$ | $0.68 \cdot 10^{-2}$ | $2.01 \cdot 10^{-2}$ |

\* 0.9g. plastic cap intended as standard

\*\* Product composition: Aluminium 72%, Polymeric Coatings 16%, PP 12%



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Use of resources: **28x145 mm** tube, max filling capacity of 65ml, with standard opening\*\*

| IMPACT CATEGORY                          |                         | UNIT                    | UPSTREAM PROCESSES   | CORE PROCESSES       | TOTAL*               |
|--|-------------------------|-------------------------|----------------------|----------------------|----------------------|
| Primary energy resources - Renewable     | Use as energy carrier   | MJ, net calorific value | $6.25 \cdot 10^{-1}$ | $0.72 \cdot 10^{-1}$ | $6.97 \cdot 10^{-1}$ |
|  | Use as raw materials    | MJ, net calorific value | 0.00                 | 0.00                 | 0.00                 |
|  | Total                   | MJ, net calorific value | $6.25 \cdot 10^{-1}$ | $0.72 \cdot 10^{-1}$ | $6.97 \cdot 10^{-1}$ |
| Primary energy resources - Non renewable | Used as energy material | MJ, net calorific value | 1.21                 | 0.68                 | 1.89                 |
|  | Used as raw material    | MJ, net calorific value | 0.00                 | 0.00                 | 0.00                 |
|  | Total                   | MJ, net calorific value | 1.12                 | 0.68                 | 1.89                 |
| Secondary material                       |                         | Kg                      | 0.00                 | 0.00                 | 0.00                 |
| Non - renewable secondary fuels          |                         | MJ, net calorific value | 0.00                 | 0.00                 | 0.00                 |
| Renewable secondary fuels                |                         | MJ, net calorific value | 0.00                 | 0.00                 | 0.00                 |
| Net use of fresh water                   |                         | m <sup>3</sup>          | $2.28 \cdot 10^{-3}$ | $0.53 \cdot 10^{-3}$ | $2.81 \cdot 10^{-3}$ |

\* 0.9g. plastic cap intended as standard

\*\* Product composition: Aluminium 72%, Polymeric Coatings 16%, PP 12%



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## Waste production and output flows 28x145 mm tube, max filling capacity of 65ml, with standard opening\*\*

| IMPACT CATEGORY     | UNIT | UPSTREAM PROCESSES   | CORE PROCESSES       | TOTAL*               |
|---------------------|------|----------------------|----------------------|----------------------|
| Hazardous waste     | kg   | $0.94 \cdot 10^{-6}$ | $0.32 \cdot 10^{-6}$ | $1.26 \cdot 10^{-6}$ |
| Non-hazardous waste | kg   | $1.96 \cdot 10^{-2}$ | $0.44 \cdot 10^{-2}$ | $2.40 \cdot 10^{-2}$ |
| Radioactive waste   | kg   | $5.93 \cdot 10^{-6}$ | $3.95 \cdot 10^{-6}$ | $9.88 \cdot 10^{-6}$ |

| IMPACT CATEGORY              | UNIT | UPSTREAM PROCESSES | CORE PROCESSES       | TOTAL*               |
|------------------------------|------|--------------------|----------------------|----------------------|
| Components for reuse         | kg   | 0.00               | 0.00                 | 0.00                 |
| material of recycling        | kg   | 0.00               | $1.98 \cdot 10^{-3}$ | $1.98 \cdot 10^{-3}$ |
| material for energy recovery | kg   | 0.00               | 0.00                 | 0.00                 |
| Exported energy, electricity | kg   | 0.00               | 0.00                 | 0.00                 |
| Exported energy, thermal     | kg   | 0.00               | 0.00                 | 0.00                 |

\* 0.9g. plastic cap intended as standard

\*\* Product composition: Aluminium 72% , Polymeric Coatings 16% , PP 12%



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## Environmental impacts: **32x161 mm** tube, max fill capacity of 95ml, with standard opening\*\*

| IMPACT CATEGORY                            |                                  | UNIT                       | UPSTREAM PROCESSES    | CORE PROCESSES        | TOTAL*                |
|--|----------------------------------|----------------------------|-----------------------|-----------------------|-----------------------|
| Global warming potential                   | Fossil                           | kg CO <sub>2</sub> eq.     | 0.93*10 <sup>-1</sup> | 0.41*10 <sup>-1</sup> | 1.34*10 <sup>-1</sup> |
|  | Biogenic                         | kg CO <sub>2</sub> eq.     | 1.22*10 <sup>-3</sup> | 0.05*10 <sup>-3</sup> | 1.27*10 <sup>-3</sup> |
|  | Land use and land transformation | kg CO <sub>2</sub> eq.     | 1.58*10 <sup>-3</sup> | 0.15*10 <sup>-3</sup> | 1.73*10 <sup>-3</sup> |
|  | Total                            | kg CO <sub>2</sub> eq.     | 0.96*10 <sup>-1</sup> | 0.42*10 <sup>-1</sup> | 1.38*10 <sup>-1</sup> |
| Acidification potential                    |                                  | kg SO <sub>2</sub> eq.     | 5.06*10 <sup>-4</sup> | 1.33*10 <sup>-4</sup> | 6.39*10 <sup>-4</sup> |
| Eutrophication potential                   |                                  | kg PO <sub>4</sub> --- eq. | 2.01*10 <sup>-4</sup> | 1.46*10 <sup>-4</sup> | 3.47*10 <sup>-4</sup> |
| Formation potential of tropospheric ozone  |                                  | kg NMVOC                   | 3.12*10 <sup>-4</sup> | 0.99*10 <sup>-4</sup> | 4.11*10 <sup>-4</sup> |
| Abiotic depletion potential – Elements     |                                  | kg Sb eq.                  | 3.58*10 <sup>-7</sup> | 0.69*10 <sup>-7</sup> | 4.27*10 <sup>-7</sup> |
| Abiotic depletion potential – Fossil fuels |                                  | MJ, net calorific value    | 1.18                  | 0.46                  | 1.64                  |
| Water scarcity potential                   |                                  | m <sup>3</sup> eq.         | 1.85*10 <sup>-2</sup> | 0.91*10 <sup>-2</sup> | 2.76*10 <sup>-2</sup> |

\* 0.9 g. plastic cap intended as standard

\*\* Percentage of product composition: Aluminium 75%, Polymeric Coatings 16%, PP 9%



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Use of resources: **32x161 mm** tube, max fill capacity of 95ml, with standard opening\*\*

| IMPACT CATEGORY                          |                         | UNIT                    | UPSTREAM PROCESSES   | CORE PROCESSES       | TOTAL*               |
|--|-------------------------|-------------------------|----------------------|----------------------|----------------------|
| Primary energy resources - Renewable     | Use as energy carrier   | MJ, net calorific value | $8.27 \cdot 10^{-1}$ | $0.97 \cdot 10^{-1}$ | $9.24 \cdot 10^{-1}$ |
|  | Use as raw materials    | MJ, net calorific value | 0.00                 | 0.00                 | 0.00                 |
|  | Total                   | MJ, net calorific value | $8.27 \cdot 10^{-1}$ | $0.97 \cdot 10^{-1}$ | $9.24 \cdot 10^{-1}$ |
| Primary energy resources - Non renewable | Used as energy material | MJ, net calorific value | 1.67                 | 0.91                 | 2.58                 |
|  | Used as raw material    | MJ, net calorific value | 0.00                 | 0.00                 | 0.00                 |
|  | Total                   | MJ, net calorific value | 1.75                 | 0.91                 | 2.58                 |
| Secondary material                       |                         | Kg                      | 0.00                 | 0.00                 | 0.00                 |
| Non - renewable secondary fuels          |                         | MJ, net calorific value | 0.00                 | 0.00                 | 0.00                 |
| Renewable secondary fuels                |                         | MJ, net calorific value | 0.00                 | 0.00                 | 0.00                 |
| Net use of fresh water                   |                         | m <sup>3</sup>          | $3.20 \cdot 10^{-3}$ | $0.72 \cdot 10^{-3}$ | $3.92 \cdot 10^{-3}$ |

\* 0.9g. plastic cap intended as standard

\*\* Percentage of product composition: Aluminium 75%, Polymeric Coatings 16%, PP 9%



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## Waste production and output flows 32x161 mm tube, max fill capacity of 95ml, with standard opening\*\*

| IMPACT CATEGORY     | UNIT | UPSTREAM PROCESSES   | CORE PROCESSES       | TOTAL*               |
|---------------------|------|----------------------|----------------------|----------------------|
| Hazardous waste     | kg   | $1.30 \cdot 10^{-6}$ | $0.43 \cdot 10^{-6}$ | $1.73 \cdot 10^{-6}$ |
| Non-hazardous waste | kg   | $2.74 \cdot 10^{-2}$ | $0.60 \cdot 10^{-2}$ | $3.34 \cdot 10^{-2}$ |
| Radioactive waste   | kg   | $0.83 \cdot 10^{-5}$ | $0.53 \cdot 10^{-5}$ | $1.36 \cdot 10^{-5}$ |

| IMPACT CATEGORY              | UNIT | UPSTREAM PROCESSES | CORE PROCESSES       | TOTAL*               |
|------------------------------|------|--------------------|----------------------|----------------------|
| Components for reuse         | kg   | 0.00               | 0.00                 | 0.00                 |
| material of recycling        | kg   | 0.00               | $2.67 \cdot 10^{-3}$ | $2.67 \cdot 10^{-3}$ |
| material for energy recovery | kg   | 0.00               | 0.00                 | 0.00                 |
| Exported energy, electricity | kg   | 0.00               | 0.00                 | 0.00                 |
| Exported energy, thermal     | kg   | 0.00               | 0.00                 | 0.00                 |

\* 0.9 g. plastic cap intended as standard

\*\* Percentage of product composition: Aluminium 75%, Polymeric Coatings 16%, PP 9%



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## Other environmental indicators

| IMPACT CATEGORY                            |                                  | UNIT                       | TUBE 28X145 mm<br>TOTAL WITHOUT CAP | PLASTIC<br>CAP 0.9 g |
|--|----------------------------------|----------------------------|-------------------------------------|----------------------|
| Global warming potential                   | Fossil                           | kg CO <sub>2</sub> eq.     | $0.95 \cdot 10^{-1}$                | $3.32 \cdot 10^{-3}$ |
|  | Biogenic                         | kg CO <sub>2</sub> eq.     | $0.91 \cdot 10^{-3}$                | $0.60 \cdot 10^{-5}$ |
|  | Land use and land transformation | kg CO <sub>2</sub> eq.     | $1.95 \cdot 10^{-3}$                | $2.60 \cdot 10^{-6}$ |
|  | Total                            | kg CO <sub>2</sub> eq.     | $0.97 \cdot 10^{-1}$                | $3.33 \cdot 10^{-3}$ |
| Acidification potential                    |                                  | kg SO <sub>2</sub> eq.     | $4.50 \cdot 10^{-4}$                | $1.47 \cdot 10^{-5}$ |
| Eutrophication potential                   |                                  | kg PO <sub>4</sub> --- eq. | $2.51 \cdot 10^{-4}$                | $0.42 \cdot 10^{-5}$ |
| Formation potential of tropospheric ozone  |                                  | kg NMVOC                   | $2.88 \cdot 10^{-4}$                | $1.10 \cdot 10^{-5}$ |
| Abiotic depletion potential – Elements     |                                  | kg Sb eq.                  | $0.31 \cdot 10^{-6}$                | $1.70 \cdot 10^{-8}$ |
| Abiotic depletion potential – Fossil fuels |                                  | MJ, net calorific value    | 1.12                                | $0.82 \cdot 10^{-1}$ |
| Water scarcity potential                   |                                  | m <sup>3</sup> eq.         | $1.87 \cdot 10^{-2}$                | $1.36 \cdot 10^{-3}$ |

Detailed information are offered to the customers in order to encourage possible eco-design activities for the closing system (caps) of the tubes.



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## Other environmental indicators



| IMPACT CATEGORY                              |                                     | UNIT                       | TUBE 32X161 mm<br>TOTAL WITHOUT CAP | PLASTIC<br>CAP 0.9 g  |
|--|-------------------------------------|----------------------------|-------------------------------------|-----------------------|
| Global warming<br>potential                  | Fossil                              | kg CO <sub>2</sub> eq.     | 1.31*10 <sup>-1</sup>               | 3.32*10 <sup>-3</sup> |
|  | Biogenic                            | kg CO <sub>2</sub> eq.     | 1.27*10 <sup>-3</sup>               | 0.60*10 <sup>-5</sup> |
|  | Land use and land<br>transformation | kg CO <sub>2</sub> eq.     | 1.73*10 <sup>-3</sup>               | 2.60*10 <sup>-6</sup> |
|  | Total                               | kg CO <sub>2</sub> eq.     | 1.34*10 <sup>-1</sup>               | 3.33*10 <sup>-3</sup> |
| Acidification potential                      |                                     | kg SO <sub>2</sub> eq.     | 6.25*10 <sup>-4</sup>               | 1.47*10 <sup>-5</sup> |
| Eutrophication potential                     |                                     | kg PO <sub>4</sub> --- eq. | 3.44*10 <sup>-4</sup>               | 0.42*10 <sup>-5</sup> |
| Formation potential of tropospheric<br>ozone |                                     | kg NMVOC                   | 4.00*10 <sup>-4</sup>               | 1.10*10 <sup>-5</sup> |
| Abiotic depletion potential – Elements       |                                     | kg Sb eq.                  | 0.41*10 <sup>-6</sup>               | 1.70*10 <sup>-8</sup> |
| Abiotic depletion potential – Fossil fuels   |                                     | MJ, net calorific value    | 1.57                                | 0.82*10 <sup>-1</sup> |
| Water scarcity potential                     |                                     | m <sup>3</sup> eq.         | 2.63*10 <sup>-2</sup>               | 1.36*10 <sup>-3</sup> |

Detailed information are offered to the customers in order to encourage possible eco-design activities for the closing system (caps) of the tubes.





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Aluminium is a permanent material and can be recycled infinitely.



Aluminium packaging preserves more resources than it uses itself avoiding spoilage and product losses.



75% of the aluminium ever produced is still in use.



Recycling saves 95% of the energy required to produce primary aluminium.



Aluminium is the third most abundant element present on earth and Bauxite, the raw material for aluminium production, is widely available with known resources for more than 200 years.



Aluminium is multi-functional packaging material for utmost product protection, safety, convenience and resource efficiency.



Aluminium enjoys high recycling rates, for example a rate of 60% for packaging in Europe.



Aluminium is recycled in a closed material loop and is widely used in new applications.



Continuous weight reduction of aluminium packaging has been achieved without compromising functionality and performance.



Aluminium has the highest scrap value of all packaging materials.



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Today, CSR (corporate and social responsibility) is an integral part of corporate operations and ALLTUB provides products to its customers compliant with our CSR approach.

In concrete terms, ALLTUB's commitment reflects the various policies implemented across companies to participate towards environmental protection, greenhouse gas emission reduction but also the improvement of product quality, social inclusion and economic development... If CSR was historically associated with environmental protection, today it also involves other areas whether economic, social, cultural or even educational.

The ALLTUB Group participates in the **Ecovadis CSR programme** (platform to assess social and environmental performance of global supply chains). Twenty-one criteria among 4 topics as follows (social, ethics, supply chain, environment) are assessed. ALLTUB obtained a "silver" rating and is among the 30% of the companies best rated by Ecovadis.

In parallel of Ecovadis programme, ALLTUB GROUP also participates in the Carbon Disclosure Project (CDP) since 2014. The CDP organization encourages investors, businesses and cities to take action to build a truly sustainable economy, measuring and understanding their impact on the environment.



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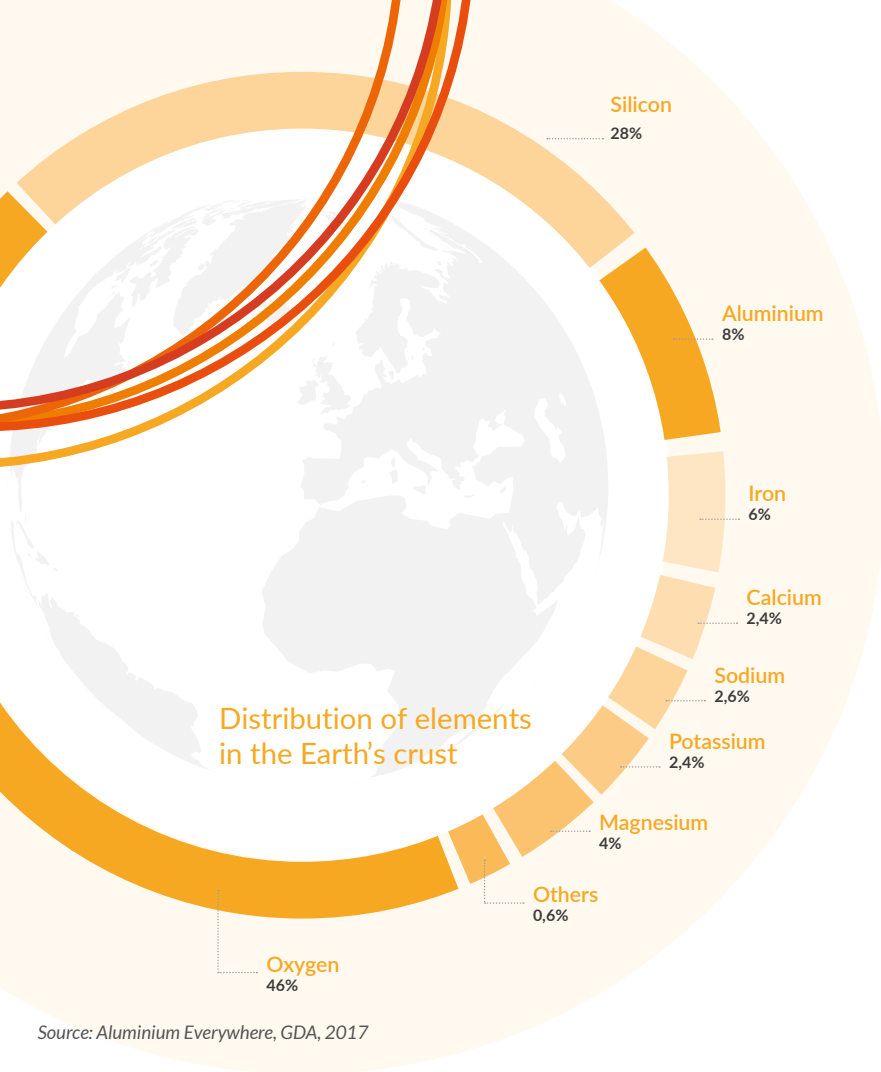
### ALLTUB GROUP Associative Environmental Activities

ALLTUB Group contributes actively to the promoting the increase in recycling of lightweight aluminum packaging.

In France, as a **member of the CELAA/Projet Metal Club** (Recycling and Lightweight Packaging Club), founded in 2009 by Nespresso and France Aluminium Recyclage.

In Europe, Alltub Group is an active member of the **ETMA (European Tube Manufacturers Association)** and has won the Tube of the Year prize in 2020 for one of its latest innovations: the Green Tube, made from >95% Post-Consumer Recycled aluminium.

In North America, as a member of **The Tube Council of North America**.



Source: Aluminium Everywhere, GDA, 2017



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### Aluminium is everywhere

Aluminium is the third most abundant element in the Earth's crust: it accounts for as much as 8%, with oxygen accounting for 46% and silicon 28%. It means aluminium is the most abundant metal.

The source of aluminium is bauxite, which through the Bayer process is converted into alumina. In turn the alumina is converted into aluminium through electrolysis.

65million tonnes\* of primary aluminium are produced every year. In addition, more than 30million tonnes\*\* of recycled aluminium are produced from melted down aluminium scraps. The trend is upwards because the global demand for aluminium is increasing. Almost 75 per cent of the 1.5 billion tonnes of Aluminium ever produced is still in use today\*\*\*.

\*source: <https://international-aluminium.org/statistics/primary-aluminium-production/>

\*\*[https://international-aluminium.org/work\\_areas/recycling/](https://international-aluminium.org/work_areas/recycling/)

\*\*\*[https://international-aluminium.org/work\\_areas/recycling/](https://international-aluminium.org/work_areas/recycling/)

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### PROGRAMME INFORMATION



In accordance with ISO 14025:2010

Product category rules (PCR): **PCR 2019:13 Packaging (1.1), UN CPC CODE 4293**  
PCR review was conducted by: **The Technical Committee of the International EPD® System.**  
**Chair: Maurizio Fieschi. Contact via: [info@environdec.com](mailto:info@environdec.com).**

Independent third-party verification of the declaration and data, according to ISO 14025:2006:  
☐ EPD process certification ☒ **EPD verification**

Third party verifier: **SGS Italia SpA**

In case of accredited certification bodies:  
Accredited by: **ACCREDIA (Certificate nr. 006H)**

Procedure for follow-up of data during EPD validity involves third party verifier:  
☒ **Yes** ☐ **No**

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*ALLTUB GROUP SAS has the sole ownership, liability and responsibility of the EPD*

*The environmental impacts of different EPDs can be compared only taking into account all the technical information supporting the declared/functional unit de initiation as requested by the PCR.*

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