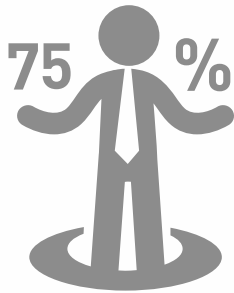




Aluminium is the third-most abundant element on earth. Bauxite, the raw material for aluminium production, is abundantly available with known resources of more than 200 years.

- The total area mined annually worldwide is about half the size of Manhattan. The mining areas are rehabilitated after use.
- The supply of raw materials is secure.
- A well-established system of recycling is an additional source of raw materials.



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

- About a billion tonnes of aluminium have been produced since industrial production began.
- The annual global demand for aluminium is currently about 55 million tonnes.
- Some 80% of this demand is met by primary production and 20% by recycling. There is not sufficient recycled material available to satisfy the growing demand for aluminium.



Aluminium is a permanent material and can be infinitely recycled.

- In contrast to other materials, aluminium is used and not consumed.
- There is a 'permanent' material category in addition to the 'renewable' and 'non-renewable' categories. It includes metals whose inherent properties do not change when the material is used and recycled.
- Recycled material from short-term applications like packaging can also be used in long-life products, such as those used in cars or buildings.



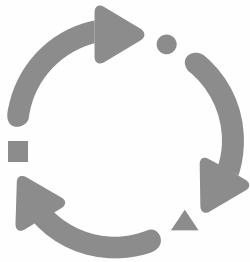
Aluminium has the highest scrap value of all packaging materials.

- In contrast to other materials, aluminium still has a high intrinsic material value even after use and thus offers a large economic incentive to use aluminium in a closed loop.
- Aluminium's high material value is reflected in the premium nature of the marketed products.
- Aluminium is not just a **metal**: it is primarily a **metal resource**.



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

- One achieves maximum resource efficiency using aluminium in a closed loop.
- Compared with the extraction of primary aluminium, the recycling of a tonne of aluminium means:
  - using about four tonnes less bauxite
  - some 95% less CO<sub>2</sub> emissions
  - and up to 95% less energy consumption.



Aluminium is recycled in a closed material loop and used time and again for new applications.

- Modern sorting technologies like the eddy-current technique optimise sorting efficiency and recycling rates.
- Depending on the alloy required, secondary smelters channel the recycled aluminium to the respective field of application.
- The call for a recycled material content in finished products is not constructive either from an economic or from an ecological point of view. It is more important that the *material* is used in a closed loop.



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

- Depending on its specific nature, aluminium packaging can be suitable for recovery of the metal and as a source of energy.
- In incineration plants, the aluminium metal can be extracted from the ash and recycled.
- The aluminium industry is striving to achieve an average recycling rate for metal packaging in Europe of 80% by 2020 and a landfill ban for metals by 2025.



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

- Aluminium packaging is suitable for all types of contents and even the thinnest possible foil offers perfect product protection. It allows maximum benefits to be achieved using a minimal amount of packaging.
- Compared with other materials, aluminium packaging is corrosion resistant and shows no signs of material aging.
- User-friendly aluminium packaging permits an attractive design and is light, unbreakable, hygienic and recycled after use.





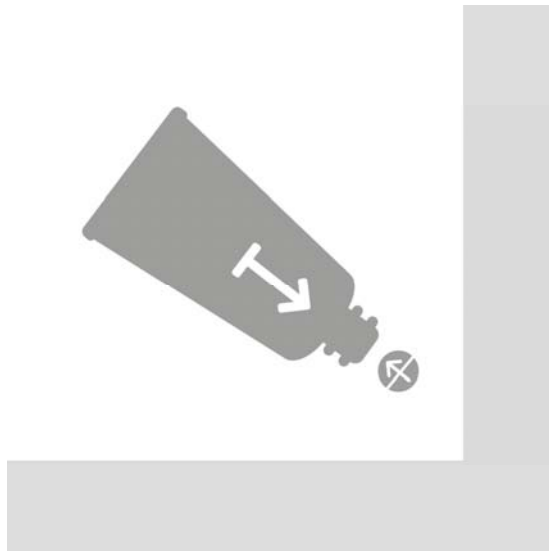
Aluminium tubes have superior barrier properties ensuring best protection of the filling goods.

- Aluminium tubes have better barrier properties than other competing packaging materials.
- In case of the use of an insufficient barrier, the product will perish. Thus, all resources which were needed to produce the filling good would finally get lost. These lost resources are in most cases far higher than all resources needed for the production of the packaging itself.
- The spoilage of the product will have a huge detrimental effect on the carbon footprint of the finished product.



Aluminium tubes can be emptied completely, thus avoiding any unnecessary waste of resources.

- Collapsible aluminium tubes allow to empty the packaging completely due to its excellent folding properties. There are accessories for the consumer available on the market which further facilitate the complete emptying.
- A study of the Swiss LCA experts Carbotech has shown that incomplete emptying of a tube and related product losses spoil the environmental balance of the entire product because in most cases the environmental impacts of the content are much higher than those of the packaging.



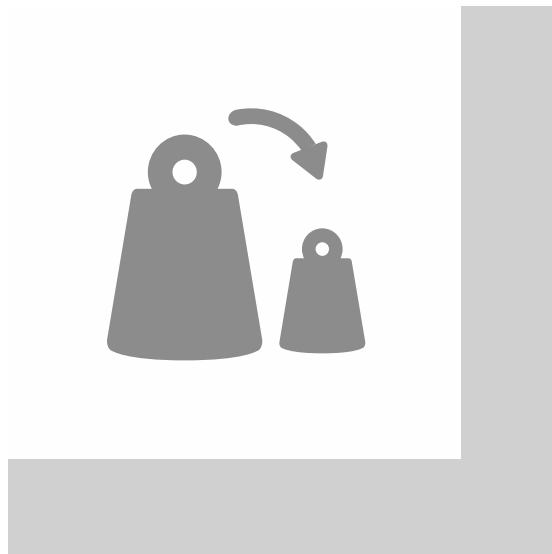
Aluminium tubes avoid the suck-back effect which might affect the integrity and quality of the filling good.

- Due to the material properties of collapsible aluminium tubes and their easy foldability, any unwanted suck-back of the product is avoided.
- This advantage prevents air and other micro-organisms from getting into the tube during use ensuring utmost hygiene, best product protection and a longer shelf life.
- Any suck-back related spoilage of the product will have a huge adverse effect on the carbon footprint of the entire finished product.



Aluminium tubes offer higher flexibility for customers to account for new market trends with ever smaller lot sizes.

- Due to the flexible impact extrusion production technology, aluminium tubes can cope more flexibly and economically with quickly changing market trends.
- Due to increasing varieties of product lines and a rising number of new product launches and re-launches lot sizes are constantly decreasing which requires utmost flexibility.
- Aluminium tubes can cope with any filling good (even those containing relatively “aggressive” substances) thanks to customized protective internal coatings.



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

- In the last 20 years, weight savings of up to 40% have been achieved with aluminium packaging and there is still potential for further reductions.
- Aluminium allows resources to be minimised and permits an efficient packaging material/contents ratio to be achieved.
- Aluminium's good conductivity allows products to be heated or cooled in an energy efficient manner.



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

- Packaging is not an end in itself: it ensures that products reach the user in good condition where they can then be consumed.
- Thanks to its optimal barrier function, aluminium ensures maximum possible product protection and longer shelf lives. In addition, it is possible to forego the use of preservatives.
- GDA is member of the United Nations' Safe Food Initiative.