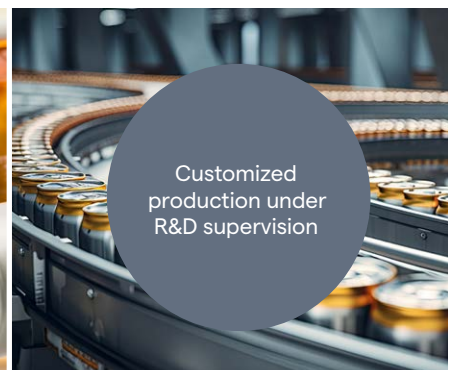




Packaging

- The leading supplier for the world's largest manufacturers of packaging products
- Years of expertise in production of the most demanding semi-products in terms of mechanical properties
- Full value chain from casting to slitting – recycling in all manufacturing sites



Gränges Konin semi-finished products are used in the following industries and applications:

- closures
- foilstock
- tea-lights
- grill trays
- aluminium containers
- cans for fish and seafood products
- beverage cans lids
- lipstick containers
- bulk material containers



| Most commonly used alloys | | | |
|---------------------------|---------------------|-------------|--------------|
| 8xxx | 1xxx | 3xxx | 5801 |
| | Thickness mm | Width mm | Length mm |
| STRIPS - COLD ROLLED | 0.06÷0.40* | 12÷1500** | |
| | 0.40÷2.00 | 20÷1500** | |
| | 2.01÷4.00 (5.00)*** | 30÷1500** | |

** For strips in alloys 1xxx series thickness range is 0.12÷0.40 and 0.20÷0.40 for strips in alloys 5xxx/4xxx series
 ** The width depends to the thickness, above width 1500mm after previous agreement of technical requirements
 *** Thickness 4-5mm depends to the width, alloy, temper

| | Thickness mm | Width mm | Length mm |
|----------------------|---|-------------|--------------|
| SHEETS - COLD ROLLED | Alloys 8xxx series | | |
| | 0.20÷0.50* | 750÷1500 | 500÷2500 |
| | Alloys 1xxx, 5xxx and 3xxx series | | |
| | 0.20÷0.40 | 750÷1500 | 500÷2500 |
| | 0.40÷2.00 | 800÷1500 | 1000÷6000 |
| | 2.00÷3.00 | 900÷1500 | 1400÷6000 |
| | 3.00÷4.00 (5.0)** | 1000÷1500 | 1400÷6000 |
| | Patterned sheets - FIVE BAR (EN AW - 1050A) | | |
| | 2.00÷4.50 | 1000÷1500 | 1400÷6000 |
| | Patterned sheets - STUCCO (EN AW - 1050A) | | |
| 0.40÷1.20 | 1000÷1500 | 1000÷6000 | |

** It's possible to produce other range of dimensions after previous agreement of technical requirements between customer and manufacturer
 ** Thickness 4-5mm depends to the width, alloy, temper

Aluminium bottle caps

Innovative 5801 alloy

5801 is a new aluminium alloy developed by Gränges Konin, dedicated for high pressure bottle closures. New chemical composition and properly designed technology of production allow the pressing of high caps resistant to high pressure.

The alloys are characterized by higher mechanical properties than other alloys, which are used for bottle caps like EN AW-8011A. Excellent adhesion of a varnish and high thermal resistance make this material perfectly suitable for the lacquering processes. For maximal reducing of scrap rate during deep drawing process, 5801 aluminium alloys sheets show very low earing, caused by planar anisotropy.



Dedicated for:

- high pressure bottles
- deepdrawing bottle caps
- easier opening of the bottle
- high-quality, fragile material

Infinitely recyclable:

- based on recycled material
- finished product 100% recyclable

Enhanced material resistance to:

- mechanical damage
- temperature



CHEMICAL COMPOSITION 5801/8011A /3105

| Alloy | | Si | Fe | Cu | Mn | Mg | Cr | Zn | Ti | V | others | |
|-------|-----|------|------|------|------|------|------|------|-------|------|--------|-------|
| | | | | | | | | | | | each | total |
| 5801 | min | 0,75 | 0,1 | 0,05 | 0,25 | 0,8 | - | - | 0,010 | 0,03 | - | - |
| | max | 1,10 | 0,4 | 0,35 | 0,65 | 1,2 | - | 0,15 | 0,15 | 0,2 | 0,05 | 0,15 |
| 8011A | min | 0.40 | 0.50 | - | - | - | - | - | - | - | - | - |
| | max | 0.8 | 1.0 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.05 | 0.05 | 0.15 |
| 3105A | min | - | - | - | 0,30 | 0,20 | - | - | - | - | - | - |
| | max | 0,6 | 0,7 | 0,30 | 0,8 | 0,8 | 0,20 | 0,25 | 0,10 | - | 0,05 | 0,15 |

MECHANICAL PROPERTIES

| Alloy | Temper | R _m [MPa] | R _{p02} [MPa] | A ₅₀ [%] |
|-------|--------|----------------------|------------------------|---------------------|
| 5801 | H14 | 125-160 | min. 100 | min. 3 |
| 8011A | H14 | 110-150 | 90-130 | min. 3 |
| 3105A | H16 | 170-210 | 150-190 | min. 1 |
| | H24 | 150-190 | 120-160 | min. 3 |

Gränges Konin S.A. certifies the mechanical properties for material in delivery condition.

SURFACE PRETREATMENT 5801/ 8011A/ 3105A

Degreased, leveled, phosphate-titanium conversion layer and oiled (DOS).

Layer weight of DOS coating: 3-6 mg/m² per side (recommended 4,5 mg/m² per side).

DIMENSIONS

| Product | Thickness [mm] | Width [mm] | Length [mm] | Squareness |
|---------|--|----------------------------|-----------------------------|---------------------------|
| 5801 | 0,18 – 0,30 ± 0,010 (it depends on final thickness) | 700,0 – 1250,0 +0,6 / -0,0 | 500,0 – 1100,0 +1,0 / - 0,0 | t ≤ 0,08% of sheet length |
| 8011A | 0,18 – 0,30 ± 0,010 (it depends on final thickness) | 700,0 – 1250,0 +0,6 / -0,0 | 500,0 – 1100,0 +1,0 / - 0,0 | t ≤ 0,08% of sheet length |
| 3105A | 0,18 – 0,30 ± 0,010 (it depends on final thickness) | 700,0 – 1250,0 +0,6 / -0,0 | 500,0 – 1100,0 +1,0 / - 0,0 | t ≤ 0,08% of sheet length |

Changes are possible after mutual agreement.

Your experienced partner

Built on the foundation of more than 125 years of innovative engineering and materials development, we are a world leader in high-performance aluminium alloys. With a long heritage of supplying the aluminium (semi-finished) materials to wide range of industries, we are an experienced partner delivering consistent, high quality materials to industries with high demands on safety, performance and sustainability.

→ granges.com



Contributing to a circular and sustainable economy Join us on the path to net-zero 2040

Granges is a global leader in aluminium rolling and recycling in selected niches. We are committed to creating circular and sustainable aluminium solutions in partnership with our customers and suppliers – for a better future.

Our solutions help customers grow and transition to climate neutrality. They are used for efficient climate control in transportation and buildings, electrification and battery components, recyclable packaging, and more.

CONTACT → granges.com

Małgorzata Pilarska
Segment Leader - Packaging
Malgorzata.Pilarska@granges.com

Wiesław Ziola
Regional Sales Manager - Packaging
Wieslaw.Ziola@granges.com

