

1070 O Aluminum Plate Sheet

1 . 1070-O Aluminum Sheet Description

1070 Aluminum is a commercially pure aluminum alloy belonging to the 1xxx series. The "70" indicates that it contains a minimum of 99.7% pure aluminum, with no major alloying elements added. This high purity guarantees its primary functions: maximum electrical conductivity and superior corrosion resistance.

The "O" Temper stands for the fully annealed condition. During production, the cold-rolled aluminum sheet is placed into an annealing furnace and heated to a specific temperature to relieve all internal stresses. This process changes the crystal structure of the metal, returning it to its softest and most ductile state.

(1) 1070-O Aluminum Chemical Composition

The performance of pure aluminum depends entirely on strict control of trace elements. Below is the standard chemical composition for 1070 aluminum.

Element	Content Limit (%)
Al (Aluminum)	≥ 99.70
Si (Silicon)	≤ 0.20
Fe (Iron)	≤ 0.25
Cu (Copper)	≤ 0.04
Mn (Manganese)	≤ 0.03
Mg (Magnesium)	≤ 0.03
Zn (Zinc)	≤ 0.04
Ti (Titanium)	≤ 0.03

(2) Mechanical Properties of 1070-O Temper

Engineers look at these numbers to determine if the metal will crack under the pressure of a stamping press. The 1070-O aluminum sheet provides excellent deep drawing capabilities.

Property	Standard Value
Tensile Strength (MPa)	60 - 95
Yield Strength (MPa)	≥ 25
Elongation (%)	$\geq 35\%$

(3) Key Features of 1070-O Soft Aluminum Sheet

- **Ultra-High Ductility:** The O temper makes the metal extremely soft. It will conform to heavy stamping, spinning, and deep drawing dies without tearing.
- **Excellent Electrical Conductivity:** It achieves approximately 61% of the International Annealed Copper Standard (IACS). It is highly efficient for transmitting electricity.
- **Strong Corrosion Resistance:** The 99.7% pure aluminum instantly forms a tight oxide film when exposed to air. It resists moisture, many chemicals, and outdoor weathering naturally.
- **Lightweight & Easy Processing:** Weighing only 2.71 g/cm³ (about 1/3 the weight of steel), it reduces the final weight of your products and causes very little wear on your cutting tools.
- **High Thermal Conductivity:** It transfers heat rapidly, making it perfect for thermal management applications.

2 . Main Applications of 1070-O Aluminum Sheet

We supply 1070-O pure aluminum sheet directly to factories. Because of its specific mechanical and chemical traits, it is used in distinct industries.

1. Electronics and Electrical Equipment

Capacitor Foil Base Material: The 99.7% purity is required to store electrical charges efficiently. Soft 1070-O aluminum sheet is heavily used in electrolytic capacitors.

Flexible Busbars: When electrical connections require bending inside tight enclosures, 1070-O offers the required conductivity without snapping during installation.

Transformer Components: Used for transformer windings where heat dissipation and high conductivity are strictly required.

2. Industrial Applications

Chemical Equipment Lining: Because it is highly resistant to nitric acid and other chemicals, soft 1070-O aluminum sheets are easily formed to line the inside of heavy steel chemical tanks.

Heat Insulation Panels: Its shiny surface reflects heat. The soft temper allows workers to easily wrap it around industrial pipes and boilers.

3. Processing and Hardware Parts

Deep Drawing Parts: The high elongation rate makes it the top choice for complex, seamless metal shells (like cosmetic packaging, aluminum tubes, and battery casings).

Kitchenware: Used to stamp out pots and pans because it draws easily, transfers cooking heat

quickly, and is completely food-safe.

Lighting Reflectors: Formed into dome or cone shapes for industrial lighting. The pure aluminum surface provides excellent light reflectivity after polishing.

4. Automotive

Headlight lampshades: because of its excellent thermal conductivity and processability, 1070-O aluminum sheet can be easily stamped and formed, so it is often used in the manufacture of automotive lampshades and other exterior parts.

Car interior panel: the car interior panel is a part of the car, mainly including the instrument panel, door panel interior panel, seat and so on. 1070-O aluminum alloy has good formability and machinability, and is suitable for making automotive interior panels.

3 . Surface Options and Processing Services

Most raw aluminum suppliers only provide standard mill finish coils. At GNEE, we offer a complete processing solution to deliver ready-to-use materials, helping you lower your 1070-O aluminum price by reducing secondary processing costs.

Available Surface Finishes:

- **Mill Finish:** The standard raw surface from the rolling mill. Smooth and oil-free.
- **Polished / Mirror Finish:** Mechanically polished for lighting and solar reflectors.
- **Anodized:** Treated for extra scratch resistance and a premium look.
- **Coated (PE / PVDF):** Pre-painted for specific branding or exterior weather resistance.

4 . GNEE Factory Processing Services

Custom Cutting: Cut to your exact length and width. No need to buy standard sizes and waste scrap.

Slitting: We can slit large 1070-O aluminum coils into narrow strips for transformer winding.

Blanking (Circle Cutting): Supplying round aluminum discs for your deep drawing machines.

Surface Protection: We apply transparent, blue, or branded PVC/PE film to prevent surface scratches during transit and stamping.

5 . 1070-O Aluminum Specification

Before placing an order, please review our manufacturing capabilities to ensure we meet your project demands.

Item	Available Range
Material Grade	1070 Aluminum
Temper Condition	O (Fully Annealed / Soft)
Thickness	0.1 mm - 500.0 mm
Width	100 mm - 3000 mm
Length	500 mm - 10000 mm (Custom Cut)
Standard	ASTM B209, EN 573, GB/T 3880
Surface Finish	Mill finish, Anodized, PVC film coated etc.

6 . Strict Quality Inspection Process

Soft aluminum is easily scratched or dented. To ensure you receive perfect 1070-O pure aluminum sheets, GNEE runs a strict quality control system before packaging.

- **Chemical Composition Test:** Spectrometers confirm the aluminum purity is $\geq 99.7\%$.
- **Mechanical Properties Test:** Tensile machines verify the elongation is $\geq 35\%$ to guarantee deep drawing success.
- **Surface Inspection:** 100% visual inspection to ensure no oil stains, roller marks, oxidation spots, or deep scratches.
- **Thickness Tolerance Control:** Micrometers check the edges and center of the sheet to ensure exact thickness uniformity.
- **Flatness Inspection:** Tension levelers ensure the sheet lays perfectly flat on your CNC or stamping bed.

7 . Export Packaging & Safe Delivery

Because 1070-O is fully annealed and very soft, it is highly vulnerable to physical damage and moisture during ocean freight. We use premium seaworthy packaging to eliminate this risk.

- **Moisture Barrier:** Every sheet stack is wrapped tightly in waterproof craft paper and sealed in thick plastic film to prevent oxidation (white rust) from sea humidity.
- **Physical Protection:** The sealed aluminum is placed on sturdy wooden pallets (fumigation-free or fumigated based on customs requirements). We add hardboard on top and metal edge protectors on all corners.

- **Securing:** The entire package is banded with strong steel straps.
- **Loading:** Pallets are carefully loaded and fixed inside the container using wood blocks and wire to prevent sliding during sea transportation.

8 . Why Choose GNEE as Your Aluminum Supplier?

Finding a stable material partner is crucial for your production. Here is why buyers trust GNEE to supply their 1070-O aluminum sheet:

- **Over 18 Years of Experience:** We specialize in aluminum manufacturing and deeply understand material behaviors for different industrial applications.
- **Strict Quality Control System:** We do not ship defective sheets. You get exactly what you pay for.
- **Fast and Stable Delivery:** Massive factory capacity means standard orders are shipped within 15 to 25 days.
- **Competitive Factory Price:** By controlling the process from ingot melting to final cutting, we cut out the middleman and offer aggressive pricing.
- **Global Export Expertise:** We have safely exported to over 70 countries. We handle all shipping, packing, and customs documentation smoothly.

9 . FAQ

1. What is the difference between 1070-O and 1060-O aluminum?

The main difference is purity. 1070 has 99.7% pure aluminum, while 1060 has 99.6%. Because 1070 has fewer impurities, it has slightly better electrical conductivity and is slightly softer, making it marginally better for extreme deep drawing and electrical applications.

2. Is 1070 aluminum suitable for deep drawing?

Yes, but it must be in the "O" (annealed) temper. 1070-O has an elongation rate of over 35% and a very low yield strength, meaning it stretches beautifully into deep, complex shapes without fracturing. If you buy it in H18 (hard temper), it will snap when drawn.

3. What does "O temper" mean in aluminum?

"O" stands for annealed. It means the aluminum has been heated in a furnace to relieve all stress created during rolling. This returns the metal structure to its softest, most ductile, and most workable state.

4. Can you provide custom sizes for my factory?

Absolutely. We offer comprehensive cut-to-size services. We can cut sheets to your exact width and length, or slit large coils into narrow strips. This saves you labor time and reduces your material scrap rate.