How thin is thin?

Thinness is a relative term, and we’re often asked how we categorize the end product’s thinness or gauge. We define thin and ultra-thin this way:

**Thin**
- 0.060” to 0.0005”
- 1.524mm to 0.013mm

**Ultra-Thin**
- 0.00049” to 0.000069”
- 0.01245mm to 0.00175mm

**Materials**
- Titanium Alloys
- Stainless Steel
- Nickel-Base and High-Temperature Alloys
- Ferrous-Based Alloys
- Aluminum Alloys
- Nickel Chrome
- Electrical Silicon Steels
  - Grain Oriented
  - Non-Oriented
- Nickel Iron Alloys
- Magnetic and Cobalt Alloys
- Controlled Expansion Alloys
- Copper-Base Alloys
- Spring Alloys

**Dimension Capabilities**

Arnold’s Precision Thin Metals team stands behind our ability to achieve optimized performance of our Silicon Steels and other precision thin materials utilized in your design. Our in-house laboratory and testing facilities enable us to fine-tune grain structure, for example, so that our customers receive top performance materials at a favorable price point.

**Precision Rolled Thin / Ultra-Thin Alloy Strip and Foil**

PTM's materials improve the power density of motors, transformers, batteries and many other applications in Automotive, Aerospace, Energy Exploration, Industrial and Medical markets. For example, our Silicon Steels improve the power density of motors and transformers, our ultra-thin Ni, Al and Cu are helping in the development of tomorrow’s batteries, while our thin Titanium strip is both strengthening and lightening components used in the aerospace industry.

**Width**

<table>
<thead>
<tr>
<th>Thickness</th>
<th>0.035 in 0.9 (mm)</th>
<th>4.0 in 101.6 (mm)</th>
<th>4.5 in 114.3 (mm)</th>
<th>16.5 in 419.1 (mm)</th>
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Precision Thin Metals (PTM) business of Arnold Magnetic Technologies manufactures thin and ultra-thin gauge metal strip and foil products. In our advanced precision rolling facility, our team has the expertise and capability to roll, anneal, and slit materials at some of the thinnest and widest gauges in the industry. Our materials are commonly found in aerospace and military applications, high efficiency motors, advanced transformer designs, electron beam processing equipment, HVAC systems for smart buildings, security tags, sensing applications, batteries, and high temperature strip and metal tape wound core products.

**Markets Served**

- **Motors & Transformers**
  PTM's thin and ultra-thin GOES and NGOES Silicon Steels help customers achieve efficiency gains of their motor and transformer designs.

- **Aerospace & Defense**
  Customers choose our products to create lighter-weight structural sections to reduce the weight of permanent magnet DC motors.

- **Industrial**
  Proven, reliable results make this one of our largest markets. Our products can be found in motors, sensors, gauges, and more.

- **Oil & Gas / Energy**
  PTM materials are used in a host of oil and gas exploration, green power generation, and other power grid applications.

- **Battery**
  PTM products help improve battery design and energy storage performance for the efficient electrification of system.

- **Motorsport & Automotive**
  We aid auto manufacturers’ work towards more efficient electrification of motors and systems.

**Certifications**

Arnold Magnetic Technologies and the PTM business provide materials that meet DFARS and ITAR requirements.

- ISO 9001:2015
- AS9100 Rev D
- ITAR
- DFAR
- Nadcap

**Manufacturing Capabilities**

- Motor Lamination Materials
- Milling
- Slitting
- Annealing
- Coating
- Magnetizing

**Applications**

- Motor Laminations
- Reverse Thrusters
- Batteries
- Gaskets
- Magnetic Tag Stock
- Honeycomb Structures
- Irradiation Windows
- Transformers
- Brazing Alloys
- Shielding
- Magnetic Bearings
- Barrier Membranes
- Implant Devices
- Heat Shielding
- Magnetic Sensors
- Hysteresis Drives
- Solar Panels
- Radiation Detectors
- Satellites
- Sacrificial Wear Surfaces

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