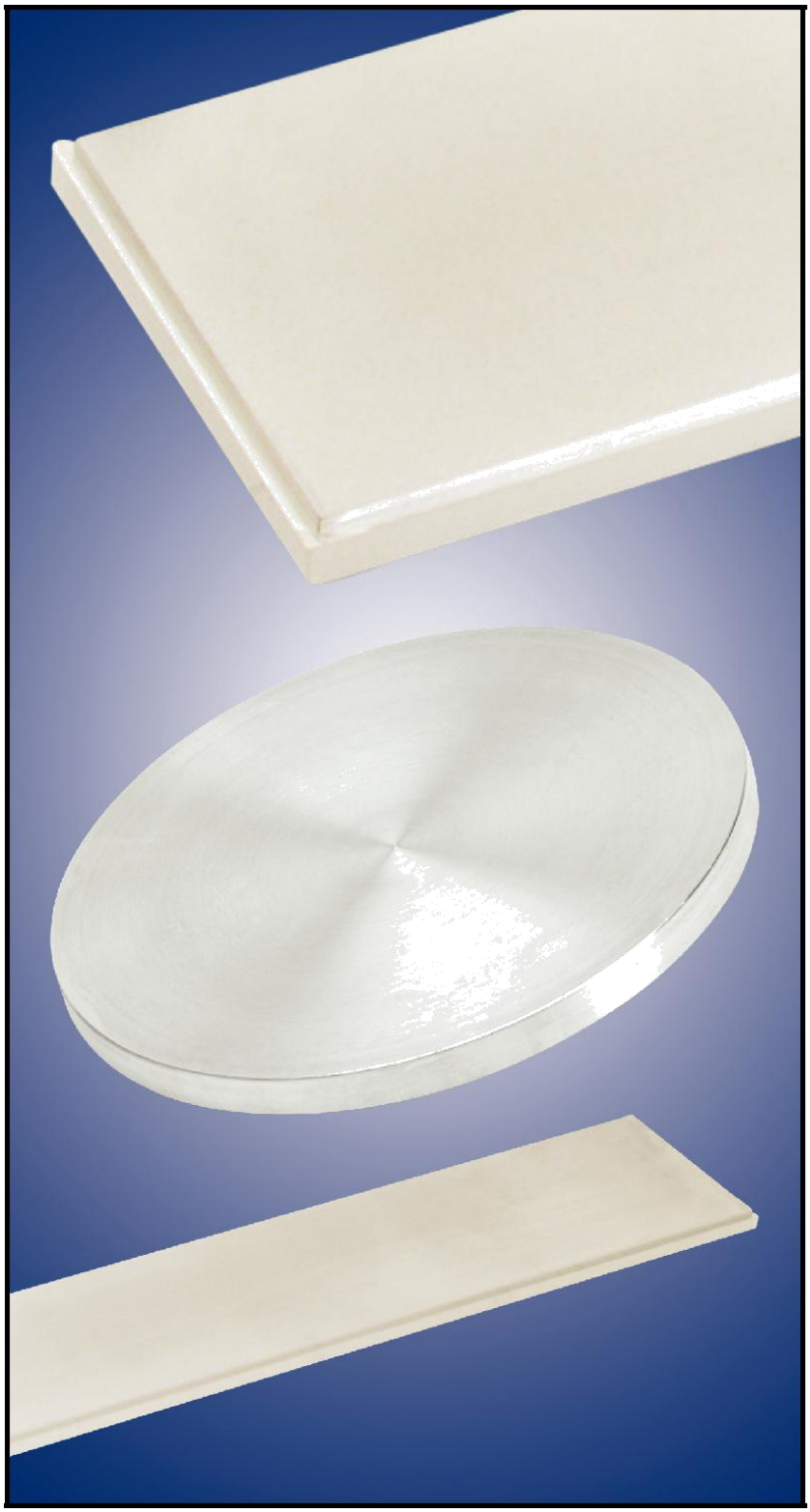
High Purity Aluminum Al

Sputtering Targets

AEM

Advanced Engineering Materials



Applications

- Electronics
- Semiconductor
- Flat panel displays

Features

- Competitive pricing
- High purity
- Grain refined, engineered microstructure
- Semiconductor grade

Manufacturing Process

- Refining
  - Three-layer electrolytic process
- Melting and casting
  - Electrical resistance furnace - Semi-continuous casting
- Grain refinement
  - Thermomechanical treatment
- Cleaning and final packaging
  - Cleaned for use in vacuum
  - Protection from environmental contaminants
  - Protection during shipment

Options

- 99.999% minimum purity
- Semiconductor grade aluminum alloys available
  - Al/Si, Al/Cu, Al/Cu/Si
- Planar circular targets up to 18" (457mm) diameter
- Planar tiles up to 48" (1200mm) X 15.75" (400mm) for larger target configurations
- Smaller sizes also available for R&D applications
- Sputtering target bonding service

Al, average grain size <300μm (50X magnification)

Specifications

Typical Analysis - 99.999% (5N) Purity

Metallic Impurities, ppm by weight

Ag	Ca	Cr	Cs	Cu	Fe	K	Li	Mg	Na	Ni	P
<0.5	<1	<2	<1	<3	<3	<0.4	<0.1	<2	<0.5	<1	<1

Si	Th	Ti	U	V	Zn	Na+K+Li	Th+U	Total
<0.5	<0.01	<2	<0.01	<1	<1	<1	<0.02	</= 5ppm

Non-Metallic Impurities, ppm by weight

C	H	O	N	S
<20	<10	<30	<10	<10

Density	2.7 g/cm$_3$
Grain Size	300 μm average, 400 μm maximum
Electrical Resistivity	2.8 x 10$_{-8}$ Ω˙m
Thermal Conductivity	235 W/m˙K
Melting Point	660°C
Appearance	Silvery, metallic

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