For Semiconductor Application

Aluminum Scandium (AlSc)

Product Introduction

In recent years scandium doped aluminum nitride (ScAlN) films have grown in popularity due to their amplified piezoelectric properties for next generation MEMS sensors and devices found in automotive, IoT and handhelds. ScAlN films are typically produced by reactive sputtering of AlSc metal alloy targets. However, their emergence, adoption and advancements have been restricted due to the limited availability of high-quality AlSc sputter targets, especially as Sc-content increases to levels ⩾20at%.

With key investments to in-house production equipment, Vital Thin Film Materials (VTFM) has scaled production to meet the industries need for high-quality, high-content AlSc sputter targets. VTFM offers AlSc targets up to Ø340mm with Sc-content up to 40at%; in-house indium or diffusion bonding is also offered with bond coverage greater than 98%. Typical target configurations offered support both fxP200 and ARQ151-8" cathodes, but prototyping for other geometries and compositions can be done within 6-8 weeks.

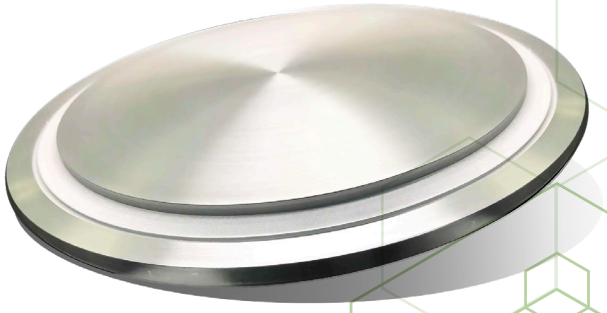
	Sc ⩽9.6at%	>9.6at% to ⩽20at%	>20at%to⩽30at%	Sc >30at%
Purity	⩾3N5 (99.95%)	⩾3N5 (99.95%)	⩾3N5 (99.95%)	⩾3N5 (99.95%)
Sc Content	±0.5wt%	±0.8wt%	±1.0wt%	±1.0wt%
Density	⩾ 99.5% of th. density	⩾ 99.5% of th. density	⩾ 99.5% of th. density	⩾ 99.5% of th. density
Average Grain Size	⩽50μm	⩽80μm	⩽100μm	⩽100μm
O_2 Content	⩽300ppm	⩽300ppm	⩽500ppm	⩽2000ppm
Max Size	Φ340mm	Φ340mm	Φ340mm	Φ340mm

*Dimensions are available on request

Recycling

Vital's inhouse scandium recycling and refining services guarantee stable AlSc supply with consistent quality due to tight control over the starting raw materials. This creates a unique position for VTFM to support customers with a closed-loop recycling service of spent AlSc targets, thereby reducing cost of ownership. VTFM has established an AlSc target 'leasing' program based on utilization rates or crediting accounts for the returned scandium value according to daily prices less recycling fees.

VTFM is ISO9001, ISO14001, ISO14021 and OHSAS18001 certified.



VITAL Thin Film Materials

Vital Thin Film Materials (Guangdong) Co., Ltd

Add: 18G, 18th Floor, Shenzhen Free Trade Center, No.111 Taizi Road, Nanshan District, Shenzhen, Guangdong China 518067

Tel: (+86) 0755-21651348 **Email:** Sales@vitaltfm.com