

# TECHNICAL DATA SHEET:

## High-Purity Graphite Rings

**Product Series:** AdTech-GR Series

**Application:** Hot-Top Aluminum Billet Casting

**Manufacturer:** AdTech Metallurgical Materials Co., Ltd.

**Website:** <https://www.c-adtech.com>

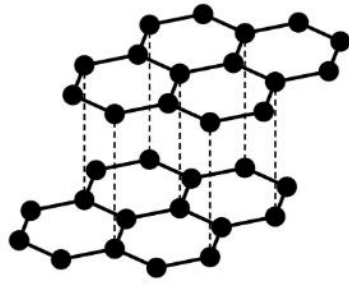
### 1. Product Overview

AdTech **Graphite Rings** are specialized consumables designed for the Hot-Top casting of aluminum alloy billets. Engineered using high-density, isostatic graphite, these rings serve as the critical interface between the molten metal and the mold. They provide essential lubrication and thermal management to ensure that aluminum billets are produced with a superior surface finish and consistent internal structure.

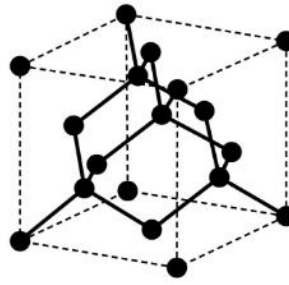
### 2. Technical Specifications

Our graphite rings are manufactured under strict ISO 9001 standards to ensure batch-to-batch consistency.

Physical & Chemical Properties	Standard Value
Bulk Density	1.80 - 1.85 g/cm <sup>3</sup>
Carbon Content	≥ 99.9%
Compressive Strength	≥ 65 MPa
Shore Hardness	55 - 65
Ash Content	≤ 500 ppm
Thermal Conductivity	120 W/(m·K)
Porosity	10% - 15% (Optimized for oil seepage)



Graphite



Diamond

### 3. Key Performance Features

- **Superior Self-Lubrication:** Controlled porosity allows for uniform lubricant seepage, reducing friction between the mold and the solidified billet skin.
- **CNC Precision Machining:** Every ring is machined to tolerances within  $\pm 0.05\text{mm}$ , ensuring a perfect leak-proof seal with standard mold systems.
- **High Thermal Shock Resistance:** Capable of withstanding rapid temperature changes from ambient to  $750^{\circ}\text{C}$  without cracking or spalling.
- **Non-Wetting Surface:** High-purity graphite prevents molten aluminum adhesion, significantly reducing downtime for mold cleaning.
- **Extended Service Life:** Enhanced antioxidant treatment minimizes oxidation loss during high-temperature operations.

### 4. Application Systems

AdTech Graphite Rings are compatible with a wide range of global casting technologies, including:

- **Wagstaff Billet Casting Systems**
- **AirSlip and Gas-Slip Technologies**
- **Horizontal and Vertical Casting Units**
- **Customized Molds:** Diameters available from 2.5 inches to 20 inches.

### 5. Operational & Maintenance Guide

To maximize the lifespan of your graphite rings and ensure billet quality, follow these best practices:

#### Installation:

**Inspection:** Ensure the mold seat is clean and free of aluminum residues.

**Fitting:** Place the ring gently into the mold cavity. Avoid using excessive force to prevent edge chipping.

### **Pre-Heating:**

**Moisture Removal:** Always pre-heat the ring to 150°C - 200°C before the first cast. This removes residual moisture and prevents "spalling" caused by steam expansion.

### **Maintenance:**

**Cleaning:** Use specialized graphite-safe tools to remove any aluminum "buttons" after a cast. Avoid wire brushes or abrasive scrapers.

**Lubrication Check:** Monitor the oil flow to ensure even saturation of the graphite pores.

## **6. Why AdTech?**

AdTech is a global leader in metallurgical materials. Our graphite rings are trusted by Tier-1 aluminum foundries worldwide for their reliability and cost-efficiency. By choosing AdTech, you gain access to:

**Direct Factory Pricing:** Eliminating middlemen for better ROI.

**Technical Support:** Engineering assistance for mold optimization.

**Global Logistics:** Fast shipping and secure export-grade packaging.

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### **Contact Us for a Custom Quote**

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