

Product Overview & Core Capability

Bakul Casting Pvt. Ltd. manufactures premium Zinc Cut Wire Shots precision-diced from high-purity zinc wire ($\text{Zn} \geq 99.99\%$) and specialized Zinc-Aluminum alloys. Designed for deburring, deflashing, and paint stripping of non-ferrous die-castings, these ultra-soft media deliver heavy impact energy due to high density while preventing substrate erosion and providing residual sacrificial corrosion protection.

$\geq 99.99\%$
ZINC PURITY (SHG)

7.14 g/cm^3
HIGH DENSITY

20–80 HRB
ULTRA-SOFT HARDNESS

TECHNICAL SPECIFICATIONS

Parameter	Specification & Values	Standard Compliance
Chemical Purity (Pure Grade)	$\text{Zn} \geq 99.99\%$ (Special High Grade Pure Zinc)	ISO 14919 / EN 1179
Alloy Variant	$\text{Zn } 98\% / \text{Al } 2\%$ (Enhanced Durability Grade)	In-house QA Standard
Hardness (As Cut)	20 – 80 HRB / 35 – 50 HV (Ultra-Soft Abrasive)	ISO 6508-1 / ISO 6507-1
Conditioned Hardness	Up to 60 – 85 HV (Work-Hardened In-Use)	In-house QA Standard
Specific Density	$\sim 7.14 \text{ g/cm}^3$	ASTM D792
Bulk Density	$4.8 - 5.2 \text{ g/cm}^3$	ASTM B212
Tensile Strength	$\geq 11 \text{ Kg/mm}^2$ ($\sim 108 \text{ MPa}$)	ASTM E8/E8M
Standard Grain Size Range	0.30 mm to 3.50 mm (0.012" – 0.137") Custom Sizes	Screening Specification

KEY MATERIAL & PROCESS CHARACTERISTICS

Galvanic Protection & Zero Ferrous Contamination

Deposits a microscopic zinc film on treated parts during blasting, offering sacrificial rust protection. 100% free of iron, eliminating ferrous staining on delicate parts.

Substrate Protection & Low Machine Wear

High specific density provides massive momentum at lower blast pressure, removing flash (up to 0.020") without altering part dimensions or wearing blast machine impellers.

INDUSTRIAL APPLICATIONS

Aluminum Die-Cast Deflashing

Deburring Precision Parts

Magnesium Part Finishing

Paint Stripping & Coating Removal

Galvanic Film Deposition

Brass Casting De-sanding

Non-Sparking Applications

DUCTILITY & WORK-HARDENING CYCLE DYNAMICS

Due to high initial ductility, zinc cut wire shots undergo self-conditioning during early blast cycles. Cylindrical pellets quickly transform into smooth spherical media, work-hardening from **35 HV up to 85 HV** without becoming brittle.

Evolution & Sacrificial Layer Transfer



Operating Advantages

- Zero blast wheel erosion
- Prevents corrosion on castings

1. Density Advantage

High Mass (7.14 g/cm³): Delivers equivalent kinetic energy to steel shot at lower blast wheel RPMs. **Low Fracturing:** High elasticity prevents media shattering under impact.

2. Operating Conditions

Wheel Speeds: Recommended operational velocity is 20–30% lower than steel shot. **Air Wash Calibration:** Fine-tune separators so dense, un-fractured particles remain in circulation.

3. Target & Environmental

Alloy Selection: Zn98/Al2 alloy offers extended life over 99.99% pure Zn on abrasive castings. **Non-Sparking:** Safe for hazardous, dust-sensitive production environments.

QUALITY ASSURANCE & OPERATING GUIDELINES

Handling & Storage Recommendations

Moisture Protection: Store in sealed drums or moisture-resistant packaging; prevent exposure to acidic atmospheres to prevent zinc corrosion products. **Operating Mix Maintenance:** Maintain a steady ratio of conditioned spherical shot to newly added cylindrical shot for uniform surface finish. **Dust Collection:** Because zinc dust is non-ferrous and dense, ensure air wash airflow is set properly to prevent premature waste of fine usable media.

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