

Product Overview & Core Capability

Bakul Casting Pvt. Ltd. manufactures high-grade Aluminum Cut Wire Shots precision-cut from selected aluminum wire and subjected to multi-stage round polishing. Engineered specifically for surface preparation, cleaning, and treatment of non-ferrous components, these shots deliver superior satin finishes without risking base metal erosion or ferrous contamination.

≥ 99%

ALUMINUM PURITY

6,500

NOMINAL CYCLE LIFE

2.7 g/cm³

MEDIA DENSITY

TECHNICAL SPECIFICATIONS

Parameter	Specification & Values	Standard Compliance
Chemical Composition	Al ≥ 99% (High Purity non-ferrous grade)	German VDFI 8001/2009
Material Grades	Mixed (4043, 5053) & Alloy Grade 5356	SAE J441 / AMS2431
Hardness (Mixed Grades)	~40 HRB (Rockwell B)	In-house QA Standard
Hardness (Alloy 5356)	50 – 70 HRB (Rockwell B)	In-house QA Standard
Micro Hardness	45 – 50 HV	ISO 6507-1
Tensile Strength	80 – 240 MPa	ASTM E8/E8M
Standard Grain Size	0.8 mm Regular (0.4 mm – 0.6 mm Custom Available)	Screening Specification

KEY MATERIAL & PROCESS CHARACTERISTICS

Precision Manufacturing & Screening

Precision wire cutting yields uniform cylindrical pellets which undergo specialized round-polishing. Advanced two-stage screening eliminates impurities, fines, and out-of-spec media.

Surface Brightening & Finishing

Features smooth incisions and bright, uniform spherical/rounded geometries. Whitens and brightens workpiece surfaces while leaving zero dark residues or iron-contamination risks.

INDUSTRIAL APPLICATIONS

Shot Peening

Shot Blasting

Rust & Oxide Removal

Pre-Treatment Coating

Profile Patterning

Automotive Castings

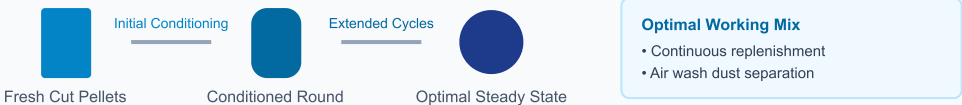
Aerospace Components

Precision Non-Ferrous Parts

MEDIA LIFE EXPECTANCY & REUSABILITY ANALYSIS

While rated for a nominal reference life of **6,500 cycles**, actual service longevity is governed by three critical operational dimensions: shot mechanics, blasting parameters, and environmental controls.

Lifecycle Evolution: Cylindrical to Rounded Media



1. Shot Characteristics

Hardness Ratio: Soft media (40–70 HRB) wears faster against harder targets. Matching hardness prevents shot shattering. **Shape Integrity:** Defect-free rounded particles resist early fracturing. **Purity (≥99% Al):** Low impurity avoids embrittlement and corrosion.

2. Operating Conditions

Blast Velocity: Higher pressure/wheel speed exponentially increases shot consumption. **Impact Angle:** Steeper angles accelerate particle breakdown. **Reclaim Efficiency:** Proper air-wash separator settings maximize usable shot retention.

3. Target & Maintenance

Part Geometry: Harder, complex parts increase degradation rates. **Contamination:** Moisture, oil, or rust promote clumping and short life. **Replenishment:** Regular fresh shot additions maintain steady working mix.

QUALITY ASSURANCE & MATERIAL HANDLING GUIDELINES

Storage & Application Recommendations

Storage Conditions: Keep in sealed containers under dry, climate-controlled conditions to prevent oxidation or moisture-induced agglomeration. **Machine Maintenance:** Regularly calibrate wheel speeds and check blast wheel liners to minimize mechanical destruction of aluminum shot. **Operating Mix:** Add 5–10% fresh shot periodically rather than batch replacements to preserve consistent surface roughness output.

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