

EXCELLENCE IN SURFACE FINISHING
SWARCOBLAST



SWARCO | The Better Way. Every Day.



Advanced Industry Systems

APPLICATIONS

With their outstanding precision and long service lives, SWARCOBLAST glass blasting beads make a compelling case in a broad range of applications.

Cleaning

Desanding • Removal of residues • Gentle removal of paints and coatings, solder and welding residues, temper colours • Surface treatment for coatings

Finishing

Smoothing, lapping and polishing (reduction of surface roughness, removal of toolmarks, anti-reflective finishing, matting, satin finishing) • Exposure of surface defects

Shot Peening

Surface hardening • Increasing endurance, fatigue strength and dimensional accuracy • Improving lubricating film adhesion • Reducing notch sensitivity • Preventing stress corrosion cracking • Straightening and shaping • Compacting

Deburring

In deburring, burrs are removed from metal workpieces which were manufactured through punching, milling or turning.



SWARCO BLAST CORE COMPETENCE

With their outstanding precision and first-class quality, SWARCO micro glass beads make a compelling case in a broad range of applications.

Refining flat glass into micro glass beads is SWARCO Advanced Industry Systems' core competence. With over five decades of experience and continuous research and development activities SWARCO has always been the front runner, setting new standards in the glass bead industry.

SWARCO Glass Beads have proven time and again to be a reliable, cost effective, environmentally friendly, and versatile option to traditional medias in industrial blasting. SWARCO supplies a complete range of bead sizes with consistent roundness and hardness for your cleaning, finishing, deburring or peening needs. Glass microspheres can be used equally with dry, wet, pressure or suction blasting methods.

Product features:

- Environmentally friendlier than acid & chemical treatments
- Lower disposal & maintenance costs
- Soda Lime glass does not release toxins (no free silica)
- Will not penetrate, contaminate, or leave residue
- Cleans thoroughly without causing dimensional change to the base material
- Leave even, spherical impressions on blasted part surface
- Suitable for pressure, suction, wet and dry blasting equipment.
- Available in a full range of sizes
- Meets both MIL and AMS specs for heavy metal limits

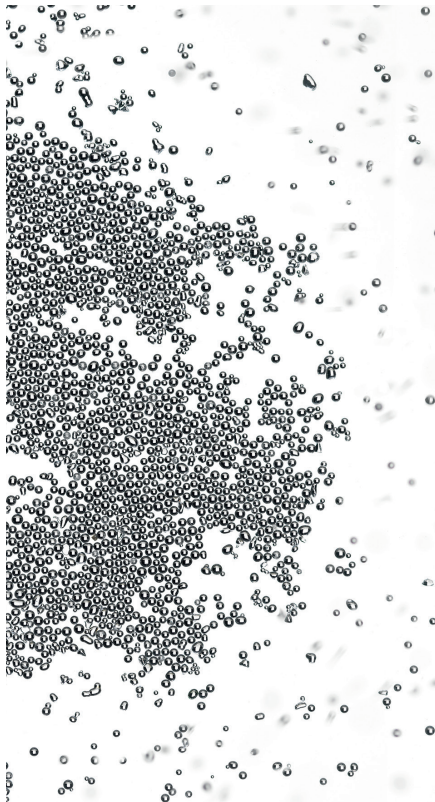
Circular Economy

Instead of producing flat glass by melting primary raw materials, SWARCO Advanced Industry Systems sources high-grade recycled glass from the flat glass industry, which uses 50% less energy. The recycled material used consists solely of cuttings and scraps from high-quality industrial glass (post-industrial waste). At SWARCO Advanced Industry Systems, we have the necessary know-how to produce high-grade glass beads from these recycled products. Also, the origin and trajectory of the glass can be traced. To avoid transporting the raw materials over large distances, we purchase them in the region near the different production facilities.



SWARCOBLAST GLASS BLASTING BEADS

SWARCOBLAST | Excellence in surface finishing | 4



SHOT
CLEANING

PEENING

Material	Soda-lime glass (no free silica)
Description	Mineral fine blasting medium made of glass
Process	Injector and pressure blasting processes
Shape	Sphere
Compacting/Shot peen forming	X
Deburring, Stripping	X
Smoothing, polishing	X
Matting, Cleaning, Texturing	X
Toxicity	None
Color	Clear / Colorless
Configuration	Spherical
Contamination	None
Roundness	65 to 95%
Specific Gravity	2.45 to 2.5 g/cm³
Bulk weight	95lb/ft3
Hardness	acc. to Mohs ~ 5.5-6 acc. to Rockwell ~ 46 acc. to Vickers ~ 645
Packaging	<div> <div>50 lb</div> <div>2000 lb</div> </div>

Chemical composition of
glass blasting beads and
glass blasting granulate

SiO ₂	68.0–75.0%
Al ₂ O ₃	0–2.5%
MgO	0–5.0%

CaO	7.0–12.0%
Na ₂ O	12.0–18.0%
Fe2O3	max. 15%
Other	max. 2.0%



INDUSTRIAL GLASS BEADS FOR CLEANING, FINISHING, PEENING AND DEBURRING APPLICATIONS

PRODUCT APPLICATION

CLEANING with glass beads removes oxide layers and residues from working material without damaging the surface thus restoring part performance lost due to the buildup of harmful heat scale and carbon deposits. Cleaning of metal surfaces prior to painting or plating ensures better performance of the coatings.

- Automotive & Aircraft Parts
- Tubes, Trays & Vats
- Molds
- Weldments
- Stampings
- Dies & Plates
- Castings
- Statuary
- Pipes

DEBURRING frees metal parts and tools of loose burrs, unwanted edges and nicks which, if left untreated can cause injury or damage to machine and operator. Common applications of the glass bead deburring medium include:

- Castings
- Gears
- Files
- Threads
- Drills
- Dies
- Mills
- Jigs
- Punches
- Tools
- Cutting Tools
- Machine Parts

SURFACE TREATMENT AND FINISHING with glass beads is a very efficient way to blend surface defects, improve sealing, and appearance (matted or textured finishes) of all types of molds, deep draw dies and other parts with complicated shapes while improving corrosion resistance and lubrication of moving parts.

SURFACE EXTENSION prepares flat surface areas for galvanization, enameling, and lacquering without further chemical treatment. The metallic purity and the structural extension of the treated areas allow for improved adhesion and bonding between the surfaces and coating material

- Aluminum Castings
- Medical Equipments
- Food Processing Equipment & Cookware
- Stainless Steel Parts

PEENING with glass beads is particularly effective where a high notch sensitivity exists as a result of flexional demands, e.g. With spring, crank shafts, gears, etc. Wet blasting with fine glass beads will also expose cracks and fracture in metals as a fine dark line where they may otherwise have gone unnoticed.



GRADATION SPECIFICATIONS

MIL SPEC G-9954D

U.S. Std. Mesh/ Screen	Microns	Mil-1	Mil-2	Mil-3	Mil-4	Mil-5	Mil-6	Mil-7	Mil-8	Mil-9	Mil-10	Mil-11	Mil-12	Mil-13
		90 % Rds	90 % Rds	65 % Rds	70 % Rds	70 % Rds	80 % Rds	80 % Rds	80 % Rds	80 % Rds	90 % Rds	90 % Rds	90 % Rds	95 % Rds
10	2000	100												
12	1700	95-100	100											
14	1400	0-15	95-100	100										
16	1180													
18	1000													
20	850	0-5	0-15	95-100	100									
25	710													
30	600		0-5	0-15	95-100	100								
35	500													
40	425			0-5	0-15	95-100	100							
45	355													
50	300				0-5	0-15	95-100	100						
60	250					0-5		95-100	100					
70	212						0-15		95-100	100				
80	180						0-5	0-15		95-100	100			
100	150							0-5	0-15		95-100	100		
120	125								0-5	0-15		95-100	100	
140	106									0-5			95-100	100
170	90										0-15			95-100
200	75										0-5	0-15		
230	63											0-5	0-15	
270	53													
325	45												0-5	0-15
400	38													0-5



SAE AMS 2431/6D

U.S. Std. Mesh/ Screen	Microns	AGB-200	AGB-170	AGB-140	AGB-100	AGB-70	AGB-50	AGB-35	AGB-30	AGB-25	AGB-18	AGB-15	AGB-12	AGB-9	AGB-6
		80 % Rds	80 % Rds	80 % Rds	65 % Rds	65 % Rds	70 % Rds	70 % Rds	70 % Rds	80 % Rds	80 % Rds	80 % Rds	85 % Rds	90 % Rds	90 % Rds
7	2800	100													
8	2360	95-100	100												
10	2000	0-10	95-100	100											
12	1700		0-10	95-100											
14	1400			0-10	100										
16	1180	0-3			95-100										
18	1000		0-3		0-10	100									
20	850			0-3		95-100									
25	710					0-10	100								
30	600				0-3		95-100								
35	500						0-10	100							
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60	250									0-10	100				
70	212							0-3			95-100	100			
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200	75												0-3		95-100
230	63														0-10
270	53													0-3	
325	45														
400	38														0-3

1. Designation number is the mean shot diameter in microns divided by 10.
2. % Rounds is % of "true speres" defined as a spheroid with an aspect ratio (ration of maximum to minimum diameter) of 1.2:1.
3. Prefix "AGB" denotes glass peening shot to AMS 2431/6.

VERIFICATIONS / SCREENING: Sieve sizes and standards according to A.S.T.M. Norms (ASTM-D-1155-53)

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WELL ROUNDED

In 1969 we started out with the manufacture of tiny reflective glass beads for road markings. Today, we have grown into one of the world's leading manufacturers of micro glass beads, with production facilities in Europe, the United States and Saudi Arabia. Micro glass beads serve as high-grade filling agents for industrial applications and as blasting media for surface treatment applications. In traffic technology, micro glass beads which are embedded in the marking materials reflect the beam from the headlight back to the driver, making road markings visible; this enhances road safety, especially at night.

SWARCOBLAST is a product family of the business segment SWARCO Advanced Industry Systems. As part of the international SWARCO group, SWARCO Advanced Industry Systems leverages the universal benefits of glass beads for special industry applications.

www.swarco.com/ais

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Imprint
Responsible for content: SWARCO Advanced Industry Systems,
Industriestraße 10, 3300 Amstetten, Austria, www.swarco.com/ais
Idea, design and artwork: Kommhaus, www.kommhaus.com
Photos: SWARCO Advanced Industry Systems/Wolfgang Stadler,
www.shutterstock.com/cpt212/LVM | English translation: Irina Pálffy-Daun-Seiler
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