

ALUMINUM OXIDE WHITE

CHARACTERISTICS

CRYSTAL FORM	Alpha Alumina
CHEMICAL NATURE	Amphoteric
SPECIFIC GRAVITY	3.95 g/cm ³
LOOSE PACK BULK DENSITY	1.61 - 1.87 g/cm ³
HARDNESS	Knoop - 2000; Mohs - 9
REACTION WITH ACIDS	Subject to mild attack by aqua regia and hot hydrochloric, less attack than brown aluminum oxide.
REACTION WITH ALKALIS	Very slight with hot strong solutions.
OXIDATION - REDUCTION EFFECTS	None
MELTING POINT	2000°C (3,630°F)

TYPICAL CHEMICAL ANALYSIS

ALUMINUM OXIDE	(Al ₂ O ₃)	99.55%
TITANIA	(TiO ₂)	0.01
SILICA (Not Free)	(SiO ₂)	0.05
IRON OXIDE	(Fe ₂ O ₃)	0.04
CALCIUM OXIDE	(CaO)	0.03
MAGNESIA	(MgO)	0.02
ALKALI (Soda & Potash)		0.30

White Aluminum Oxide is somewhat more refractory than brown aluminum oxide.

SPECIFIC SIZES

White Aluminum Oxide grains are available in the following grit sizes: 6, 8, 10, 12, 14, 16, 20, 24, 30, 36, 46, 54, 60, 70, 80, 90, 100, 120, 150, 180, 220, 240, 280, 320, 400, 500, 600, 800, 1000, 1200.

Sizes 240 and Coarser are controlled by screen tests in accordance with American National Standards Institute (ANSI) B74.12-1976. Finer Sizes are tested by Sedimentation or Microscopic methods for conformity to established standards.

**ALUMINUM OXIDE BROWN
CHARACTERISTICS**

CRYSTAL FORM	Alpha Alumina
CHEMICAL NATURE	Amphoteric
SPECIFIC GRAVITY	3.95 g/cm ³
LOOSE PACK BULK DENSITY	1.69 - 2.07 g/cm ³
HARDNESS	Knoop - 2000; Mohs - 9
REACTION WITH ACIDS	Subject to mild attack by aqua regia and/or hot hydrochloric.
REACTION WITH ALKALIS	Very slight with hot strong solutions.
OXIDATION-REDUCTION EFFECTS	None
MELTING POINT	Approximately 2000 °C

TYPICAL CHEMICAL ANALYSIS

ALUMINUM OXIDE	(Al ₂ O ₃)	1344-28-1	95.27%
TITANIA	(TiO ₂)	13463-67-7	2.67
SILICA (Not Free)	(SiO ₂)	7631-86-9	1.05
ZIRCONIA	(ZrO ₂)	1314-23-4	0.35
IRON OXIDE	(Fe ₂ O ₃)	1309-37-1	0.15
MANGANESE OXIDE	(MnO ₂)	1313-13-9	0.11
CALCIUM OXIDE	(CaO)	1305-78-8	0.05
MAGNESIA	(MgO)	1309-48-4	0.31
PHOSPHORIC OXIDE	(P ₂ O)	N/A	0.05
SULPHUR	(SO ₃)	7446-11-9	0.04
ALKALI	(Soda & Potash)	N/A	0.04

SPECIFIC SIZES

Brown Aluminum Oxide grains are available in the following grit sizes: 6, 8, 10, 12, 14, 16, 20, 24, 30, 36, 46, 54, 60, 70, 80, 90, 100, 120, 150, 180, 220, 240, 280, 320, 400, 500, 600, 800, 1000, 1200, and 1F, 2F, 3F, 4F, and 5F. Micrograded sizes available are: 27.5 microns, 25.0, 22.5, 20.0, 17.5, 14.5, 12.5, 9.5, 5.0, 3.0, 1.0

Sizes 240 and Coarser are controlled by screen tests in accordance with American National Standards Institute (ANSI) B74.12-1976. Finer Sizes are tested by Sedimentation or Microscopic methods for conformity to established standards.

COAL AND COPPER SLAG

Coal and copper slag have become more in demand due to their cleaning ability, low free silica, and wide array of available mesh sizes. Their granules are angular in shape to enhance their cutting ability and make them suitable for a wide spectrum of uses. All grades of coal and copper slag are washed and can have a Dust Suppressant added to them at your request.

Typical Properties and Applications

<u>Product Grade</u>	<u>Mil Profile</u>	<u>Nozzle Size (min)</u>
#12-40	3.5 – 4.5	5/16"
#16-30	3 – 4	5/16"
#20-40	2 – 3.5	1/4"
#28-50	1.5 – 3	1/4"
#30-60	1 – 2.5	1/8"
#40-80	0.75 – 1.5	1/8"

Product Application

<u>#12-40</u>	<u>#20-40</u>	<u>#30-60</u>	<u>#40-80</u>
Heavy Coatings Epoxy Heavy Rust Heavy Mill Scale Tar, Vinyl, Rubber, etc. Heavy Blast Profile	Rust Mill Scale Enamel Acrylics Exposed Aggregates White Blast to Near-White Blast Moderate Blast Profile	Light Rust Light Mill Scale Light Coatings White Blast Produces Slight Profile	Light Rust Light Coatings Produces Slight Profile

GLASS BEADS

TYPICAL CHEMICAL COMPOSITION

SILICA	(SiO ₂)	72.8%
ALUMINA	(Al ₂ O ₃)	1.3
CALCIUM OXIDE	(CaO)	8.0
MAGNESIUM OXIDE	(MgO)	3.9
SODIUM OXIDE	(Na ₂ O)	13.3
POTASSIUM OXIDE	(K ₂ O)	0.3
SULFATE	(SO ₃)	0.1
FERROUS & FERRIC OXIDE	(Fe ₂ O ₃ & Fe ₃ O ₄)	0.1
Free Silica Content		<.1%

TYPICAL PHYSICAL PROPERTIES

SIZE RANGE	Typically 80% by weight in range on smaller US Sieve.
SILICA CONTENT	Minimum 67% to assure chemical stability.
SPECIFIC GRAVITY	2.45 - 2.55 g/cm ³ .
HARDNESS	DPH 50g load - 540 kg/m ² (Rockwell 48-50C). Mohs - 5.5
COLOR	Clear or crystal, free from surface films.
STANDARD PACKAGING	Fifty pound multi-wall bags with polyethylene barrier. All sizes listed below US Sieve #100 contain flow aid additive.
AVAILABLE SIZES	20/30, 30/40, 40/50, 50/70, 60/100, 70/140, 100/170, 120/200, 140/270, 170/325, 270 & Finer.

Specifications Available: Mil G9954A, AMS2431, MS0097 V6, D00468, and many others. Call AGSCO for details.

1755 N Butterfield Road
Libertyville, Illinois 60048
P: 847-520-4455 F: 847-520-4970

60 Chapin Road, PO Box 669
Pine Brook, New Jersey 07058
P: 973-244-0005 F: 973-244-0091

STARBLAST[®] STAUROLITE SAND

PHYSICAL PROPERTIES

SPECIFIC GRAVITY	3.60 - 3.85 g/cm ³
LOOSE PACK BULK DENSITY	2.08 - 2.18 g/cm ³ (128 - 136 lb/ft ³)
HARDNESS	Mohs 6.5 - 7.0
GRAIN SHAPE	Round to Sub-angular

TYPICAL MINERAL COMPOSITION

STAUROLITE	(FeAl ₅ Si ₂ O ₁₂ OH)	85%
TITANIUM	(Fe ₂ Ti ₂ O ₇)	7
KYANITE	(Al ₂ SiO ₅)	2
Zircon	(ZrSiO ₄)	3
QUARTZ (Free Silica)	(SiO ₂)	3 *

* Starblast XL has a free silica content < 1%

TYPICAL SIEVE ANALYSIS (Percent Retained)

<u>U.S. SIEVE</u>	<u>COARSE</u>	<u>ULTRA</u>	<u>STARBLAST or STARBLAST XL</u>	<u>BIASILL[®]</u>
20	< 1%	< 1%		
30	5	1		
40	29	10	3%	< 1%
50	44	23	13	5
70	17	20	25	30
100		31	36	41
140		13	18	19
200		< 2	3	3
270			< 1	1
PAN	6		<1	T

APPROXIMATE GRIT SIZE	# 30/60	# 30/80	# 54/90	# 70/90
--------------------------	---------	---------	---------	---------

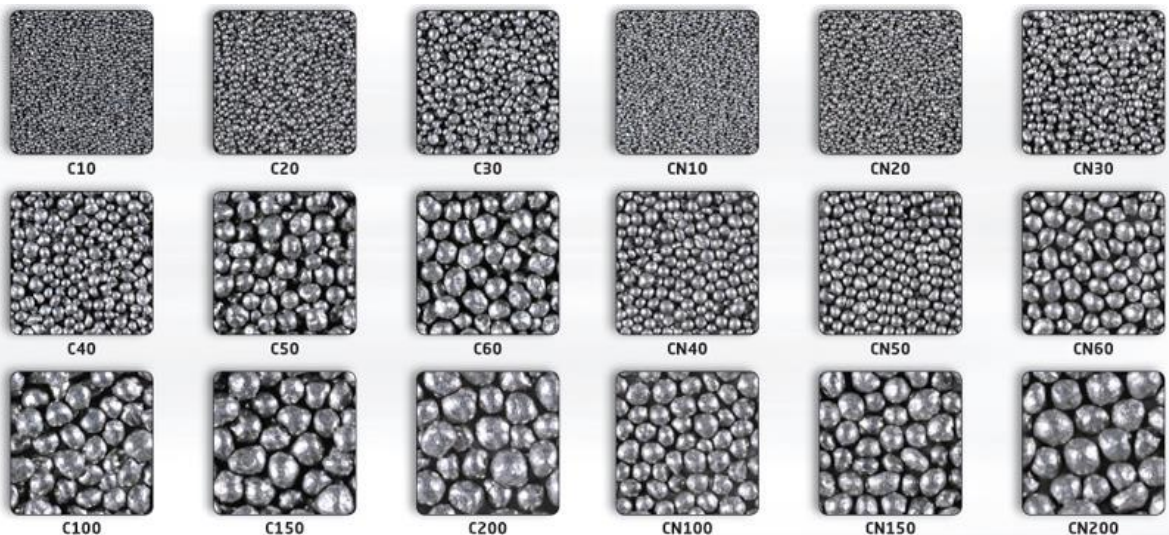
[®] Registered U.S. Patent & Trademark Office by DuPont Company

Stainless Steel (SS) shot is often used for surface cleaning, preparation and finishing of non-ferrous metals and stainless steel castings or forgings, as well as granite and marble.

Typical Composition	Stainless Steel Shot (1% Ni)(C)	Stainless Steel Shot (9% Ni)(CN)
Chemistry	Cr $\approx$ 15% Ni $\approx$ 1% C 0.25% max. Mn 1% max. Si 3% max.	Cr $\approx$ 18% Ni $\approx$ 9% C 0.25% max. Mn 2% max. Si 3.5% max.
Density	4.4 kg/dm ³ average	4.6 kg/dm ³ average
Microstructure	Martensite	Austenite
Oxidation	Good protection	Better protection
Hardness	Harder, more aggressive Shorter blasting time 42 HRC average	Lower Hardness Preferable for satin surface finish 30 HRC average

Size Distribution

Product	C10/CN10	C20/CN20	C30/CN30	C40/CN40	C50/CN50	C60/CN60	C100/CN100	C150/CN150	C200/CN200
Size (mm)	0.05-0.2	0.1-0.3	0.14-0.5	0.4-0.8	0.6-1.0	0.7-1.25	1.0-1.4	1.25-1.7	1.4-2.0
Size (mesh)	170-100	100-70	70-40	40-25	30-20	25-18	18-16	16-14	14-12
SAE Equivalent	N/A	S-70	S-110	S-170	S-230/ S-280	S-330	S-390	S-460	S-550/S-660



Steel Shot Sizing

Screen Opening Sizes and Screen Numbers with Max and Min Cumulative Percentages Allowed on Corresponding Screens

ASTM

Shot number- SAE J444 Shot Tolerances

Mesh No.	mm*	In.	S780	S660	S550	S460	S390	S330	S280	S230	S170	S110	S70
4.00	4.75	0.19											
5.00	4.00	0.16											
6.00	3.35	0.13											
7.00	2.80	0.11	All Pass										
8.00	2.36	0.09		All Pass									
10.00	2.00	0.08	85% min		All Pass	All Pass							
12.00	1.70	0.07	97% min	85% min			All Pass						
14.00	1.40	0.06		97% min	85% min			All Pass					
16.00	1.18	0.05			97% min	85% min			All Pass				
18.00	1.00	0.04				96% min	85% min			All Pass			
20.00	0.85	0.03					96% min	85% min			All Pass		
25.00	0.71	0.03						96% min	85% min				
30.00	0.60	0.02							96% min	85% min		All Pass	
35.00	0.50	0.02								97% min			
40.00	0.43	0.02									85% min		All Pass
45.00	0.36	0.01									97% min		
50.00	0.30	0.01										80% min	
80.00	0.18	0.01										90% min	80% min
120.00	0.13	0.00											90% min
200.00	0.08	0.00											
J.I.S.						S 140	S 120	S 100	S 80	S 70	S 60	S 40	S 30

*Corresponds to ISO recommendations

Hardness Scale	Knoop value	HRC Value	Also Identified As
S	402-558	40-51	GS or SG
M	495-650	47-56	GM or MG
L	612-754	54-61	GL or LG
H	>732	>60	GH or HG

STEEL GRIT

SIEVE SIZE SPECIFICATIONS Percent Retained (%)

<u>U.S Sieve</u>	G-10	G-12	G-14	G-16	G-18	G-25	G-40	G-50	G-80	G-120
#7	0%									
#8		0%								
#10	> 80		0%							
#12	> 90	> 80		0%						
#14		> 90	> 80		0%					
#16			> 90	> 75		0%				
#18				> 85	> 75		0%			
#20										
#25					> 85	> 70		0%		
#30										
#35										
#40						> 80	> 70		0%	
#45										
#50							> 80	> 65		0%
#80								> 75	> 65	
#120									> 75	> 60
#200										> 70

Hardness Scale	Knoop value	HRC Value	Also Identified As
S	402-558	40-51	GS or SG
M	495-650	47-56	GM or MG
L	612-754	54-61	GL or LG
H	>732	>60	GH or HG

WALNUT SHELLS

TYPICAL PROPERTIES

SPECIFIC GRAVITY	1.35 g/cm ³
DRY PACKAGING DENSITY	42 - 47 lbs/ft ³
HARDNESS	3 - 4 MOHS
pH (In Water at 25 °C)	4 - 6
FREE MOISTURE (80 °C for 15 Hours)	3 - 10%
FLASH POINT (Closed Cup)	380 °F

AVAILABLE SIZES

# 6-10	AD - 1B
# 8-12	AD - 2.5B
#12-20	AD - 3B
#14-30	AD - 4B
#18-40	AD - 6B
#35-60	AD - 7B
#40-100	AD - 9B
#60-200	AD - 10.5B
- #200	WF - 5
- #325	WF - 7

ZIRCONIA SILICA BEADS

Zirconia silica ceramic beads were developed specifically for surface treatments of high quality and cost efficiency. They are characterized by a very long life and be successful both in wheel and in compressed air systems. The beads can be used both wet and dry.

Physicals Properties

Specific gravity	3.86 g/cc
Bulk Density	2.35 g/cc
Compressive strength	710 Newtons
Mohs hardness	7.2
ZrO ₂	68%±3%
SiO ₂	32%±3%

Products come in two varieties. Tables of the various particle size ranges is shown below for shot blasting (B) and shot peening (Z).

Shot Peening	Particle Size Range (μ)	Mesh Size
Z-100	100-150	#100-140
Z-150	100-210	#70-140
Z-210	210-300	#50-70
Z-300	300-425	#40-50
Z-425	425-600	#30-40
Z-600	600-850	#20-30
Z-850	850-1000	#18-20

Packaging

Zirconia silica beads come in 55 pound pails with 40 pails to a pallet.

Shipping

All products ship from our two locations shown at the bottom of the page. For more information, email us at info@agsco.com.

Shot Blasting	Particle Size Range (μ)	Mesh Size
B20	600-850	#20-30
B30	425-600	#30-40
B40	250-425	#40-60
B60	125-250	#60-120
B120	63-125	#120-230
B125	0-125	#120 & Finer
B205	0-63	#230 & Finer

ZIRCONIA SILICA BEADS

Zirconia silica ceramic beads were developed specifically for surface treatments of high quality and cost efficiency. They are characterized by a very long life and be successful both in wheel and in compressed air systems. The beads can be used both wet and dry.

Physicals Properties

Specific gravity	3.86 g/cc
Bulk Density	2.35 g/cc
Compressive strength	710 Newtons
Mohs hardness	7.2
ZrO ₂	68%±3%
SiO ₂	32%±3%

Products come in two varieties. Tables of the various particle size ranges is shown below for shot blasting (B) and shot peening (Z).

Shot Blasting	Particle Size Range (μ)
B20	600-850
B30	425-600
B40	250-425
B60	125-250
B120	63-125
B125	0-125
B205	0-63

Shot Peening	Particle Size Range (μ)
Z-100	100-150
Z-150	100-210
Z-210	210-300
Z-300	300-425
Z-425	425-600
Z-600	600-850
Z-850	850-1000

Packaging

Zirconia silica beads come in 55 pound pails with 40 pails to a pallet.

Shipping

Is from our two locations shown at the bottom of the page. For more information email us at info@agsco.com.