



کاتالیست های SRU ( بازیابی گوگرد )

مورد مصرف : صنایع نفت ، گاز ، پتروشیمی ، صنایع شیمیایی و ...



ماده اولیه استراتژیک  
محصول جدید

پودر آلفا آلومینا

مورد مصرف : صنایع سرامیک صنعتی و مهندسی ، دیرگدازها ، جاذب های گوگرد و رطوبت ، صنایع گاز ، صنایع تولید کننده کاتالیست ...



قطعات ویژه آلومینایی  
مورد مصرف: در تمامی صنایع با توجه به نیاز





## گلوله ها و لاینرهای آلومینایی و سیلیکاتی

موارد مصرف: صنایع کاشی و سرامیک،  
چینی، لعاب، رنگ، سیمان، پودر سازی و ...



## لاینرهای ضد سایش آلومینایی

موارد مصرف: صنایع فولاد و معادن و ...



## انواع سرامیک بال آلومینایی و سیلیکاتی

موارد مصرف:

صنایع نفت، گاز، پتروشیمی و صنایع شیمیایی و ...







شرکت مهندسی معدنی  
زرین پودر نوین کسرا  
تحت پوشش شرکت AIC

سنگ آهن هماتیتی  
(اولیزیت)  $Fe_2O_3$   
کنسنتراته آهن

با وزن مخصوص بالا، موارد مصرف:  
صنایع حفاری «فروبار» و در تولید  
رنگهای ضد خوردگی «MIO»

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کاتالیست های جاذب (Active Alumina)

بعنوان جاذب در درایز های جذبی، حذف کننده مواد مضر در سیستمهای  
آب و فاضلاب و غیره ...

موارد مصرف: صنایع نفت، گاز، پتروشیمی و صنایع شیمیایی  
و صنایع هوای فشرده و ...



## ARDAKAN INDUSTRIAL CERAMIC COMPANY

ArdaKAN Industrial Ceramic (AIC) Company was established in 1996. As a knowledge-based company, AIC is known as the largest producer of High Alumina Ceramic Balls, Liners, catalysts and different grades of advanced industrial ceramics in Iran. The annual capacity of the company's production is about 13000 tons.

### A Main Consumers of AIC's Products

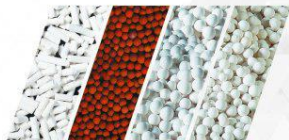
The Oil, Gas, Petrochemical, Chemical, Steel, Mining, Tite, Ceramics, Potters, Glass, Pigments and Paints, Cement and Food Industries.

### AIC's Products

- 1) Sulfur Recovery Catalysts
- 2) Alumina and Silica Ceramic Balls as Bed Support
- 3) Activated Alumina (Adsorbent Materials)
- 4) High Alumina Grinding Balls and Liners
- 5) Wear Resistant High Alumina Liners
- 6) High Alumina Advance Parts
- 7) Acid Resistance Blocks
- 8) Adsorbent Ceramic Balls as Water Filtration
- 9) Hematite Iron Ore Pellets

### 1) Sulfur Recovery Catalysts

After several years of research, the AIC company has succeed in producing Sulfur Recovery Catalysts (Clasac Catalysts), which according to its technical knowledge and manufacturing capability, the following catalysts can be supplied in all grades based on consumer requirements (Conversion, Hydrolysis, Oxygen Sulfurizing).



### 2) Alumina and Silica Ceramic Balls as Bed Support

Other products of AIC: Various grades of ceramic balls, (ACM) which are used in Oil, Gas, Petrochemical and Chemical Industries as a support material of catalysis.

These products known as inert balls, ceramic balls, alumina balls and support balls based on their applications in different industries.

AIC Company is one of the best manufacturer of these products among other companies around the world in terms of physical and chemical properties. All Products are manufactured with strict quality standards and supplied to the market.



### 3) Activated Alumina (Adsorbent Materials)

The Activated Alumina which AIC produce have highest quality, big surface area, adsorption capacity and mechanical strength. They be used in processes that require adsorbent materials, includes Air Compressors, Dryers, Air Instrumentation, etc.).



Typical Characteristics	ACM 200	ACM 300	ACM 500	ACM 900
Al <sub>2</sub> O <sub>3</sub>	25 ± 3	92	99	99
SiO <sub>2</sub>	40 ± 3	2.8	0.3	0.1
Fe <sub>2</sub> O <sub>3</sub>	1.5	0.1	0.1	0.1
H <sub>2</sub> O (loss)	1	0.3	0.3	0.3
NaOH (loss)	14.0	-	-	0.08

Typical Physical	ACM 200	ACM 300	ACM 500	ACM 900
Ball Density (g/cm <sup>3</sup> )	2.35	3.80	3.70	3.70
Porosity (Vol %)	7	9	9	9
Water Absorption (%)	0.4	0.1	0.2	0.2
Compressive Strength (MPa)	1.0	0.2	0.4	0.4
Crush Strength (MPa)	60	100	100	100
Crush Strength (MPa) (30°)	100	100	200	200
Crush Strength (MPa) (45°)	140	700	500	500
Crush Strength (MPa) (90°)	200	800	800	800
Crush Strength (MPa) (180°)	600	1000	1000	1000
Crush Strength (MPa) (360°)	900	1000	1000	1000
Crush Strength (MPa) (45°)	600	1000	1000	1000
Crush Strength (MPa) (90°)	900	1000	1000	1000
Crush Strength (MPa) (180°)	1400	2000	2100	2100

Typical Characteristics	Unit	Value
Ball Size Range	mm	3.0mm-5.0mm
Crystal Type	γ-Alumina	
Al <sub>2</sub> O <sub>3</sub>	wt%	99.99
SiO <sub>2</sub>	wt%	Max 0.03
Fe <sub>2</sub> O <sub>3</sub>	wt%	Max 0.05
SO <sub>3</sub>	wt%	Max 0.05
Specific Surface Area	m <sup>2</sup> /g	Max 300
Total Pore Volume	cm <sup>3</sup> /g	0.1-0.4
Crush Strength	kgf/cm <sup>2</sup>	0.7-0.8
Crush Strength (30°)	kgf/cm <sup>2</sup>	Max 10
Crush Strength (45°)	kgf/cm <sup>2</sup>	Max 10
Crush Strength (90°)	kgf/cm <sup>2</sup>	Max 20
Water Adsorption Capacity (25 ± 0.5%RH)	%	Max 10
Loss of Weight (1000°C)	%	7
Ashes Loss	wt%	0.5

AIC Activated Alumina - Typical Chemical and Physical



4) High Alumina Grinding Balls and Liners  
High alumina balls and liners are other products of AIC which are used in industrial ball mills. The Ceramics, Porcelain, Glass, Pigment, Paints and Cement Industries.

### As a consequence, the Properties of High Alumina Grinding Balls are:

- High degree of hardness and resistant to wear
- High compressive strength
- Zero porosity and water adsorption
- High density and low wear resistant rate resulting in reduction of ball and liner consumption
- Absence of unusual impurities in the formulation of grinding materials
- Reducing electrical energy consumption
- Reduction in ball and liners consumption

Ball Size	Al <sub>2</sub> O <sub>3</sub> (%)	SiO <sub>2</sub> (%)	Fe <sub>2</sub> O <sub>3</sub> (%)	Na <sub>2</sub> O (%)
20mm ± 0.14"	99	0	0	0
25mm ± 0.11"	99	0	0	0
30mm ± 1.14"	99	0	0	0
40mm ± 1.54"	99	0	0	0
50mm ± 1.94"	99	0	0	0
60mm ± 2.34"	99	0	0	0

Ball Density (g/cm <sup>3</sup> )	Min 3.60
Hardness (Mohs Scale)	9
Porosity (%)	0
Color	White

### 5) Wear Resistance High Alumina Liners

In the mine, steel and concrete industries the main problem and cost are wear of the equipments. To overcome this huge problem, the wear resistant high alumina liners can be used.

In environment exposed to humidity, contact with corrosive substances and high operating temperature, the use of hard materials and metals have been challenging, but high alumina wear resistant ceramics can be suitable in substitute for hard metals lining due to their unique mechanical and hard-wear properties.

Today these unique properties make it possible to replace high alumina liners instead of metals in different parts of the industries which involve aggressive wear and corrosion. Major industry consumers of these liners are steel, mining and powder industries.

### As a consequence, the Properties of Wear Resistant High Alumina Liners are:

- Very high degree of hardness
- Neutral and lack of reaction with various chemicals involving acids and alkalies
- Less density than metals which causes less load on equipment
- Easier installation with variety of methods (gluing, welding and bolting)
- High temperature resistance
- Low cost installation, repair and maintenance
- Reasonable price

Ball Size	Al <sub>2</sub> O <sub>3</sub> (%)	SiO <sub>2</sub> (%)	Fe <sub>2</sub> O <sub>3</sub> (%)	Na <sub>2</sub> O (%)
100mm ± 3.94"	99	0	0	0
125mm ± 4.92"	99	0	0	0
150mm ± 5.91"	99	0	0	0
175mm ± 6.89"	99	0	0	0
200mm ± 7.87"	99	0	0	0
225mm ± 8.85"	99	0	0	0
250mm ± 9.84"	99	0	0	0
275mm ± 10.82"	99	0	0	0
300mm ± 11.81"	99	0	0	0
325mm ± 12.79"	99	0	0	0
350mm ± 13.78"	99	0	0	0
375mm ± 14.76"	99	0	0	0
400mm ± 15.75"	99	0	0	0
425mm ± 16.73"	99	0	0	0
450mm ± 17.72"	99	0	0	0
475mm ± 18.70"	99	0	0	0
500mm ± 19.69"	99	0	0	0
525mm ± 20.67"	99	0	0	0
550mm ± 21.66"	99	0	0	0
575mm ± 22.64"	99	0	0	0
600mm ± 23.62"	99	0	0	0
625mm ± 24.61"	99	0	0	0
650mm ± 25.59"	99	0	0	0
675mm ± 26.58"	99	0	0	0
700mm ± 27.56"	99	0	0	0
725mm ± 28.55"	99	0	0	0
750mm ± 29.53"	99	0	0	0
775mm ± 30.52"	99	0	0	0
800mm ± 31.50"	99	0	0	0
825mm ± 32.49"	99	0	0	0
850mm ± 33.47"	99	0	0	0
875mm ± 34.46"	99	0	0	0
900mm ± 35.44"	99	0	0	0
925mm ± 36.43"	99	0	0	0
950mm ± 37.41"	99	0	0	0
975mm ± 38.40"	99	0	0	0
1000mm ± 39.38"	99	0	0	0

Ball Density (g/cm <sup>3</sup> )	Min 3.60
Hardness (Mohs Scale)	9
Porosity (%)	0
Color	White