

MICRONIZED MINERAL POWDERS · IRAN

Premium Bentonite, Engineered.

Manufacturer of micronized bentonite powders for drilling, pelletizing, foundry, civil engineering, agriculture and consumer applications — from our own mines in South Khorasan to customers on four continents.

250,000 t/yr
PRODUCTION CAPACITY

2009
ESTABLISHED

5 km²
OWN BENTONITE & BARITE
MINE

15+
EXPORT MARKETS

From our own mines to your production line.

Arosha Powder Company was founded in 2009 to produce and supply mineral raw materials for industry in Razavi Khorasan Province, Iran. Relying on rich reserves of bentonite, kaolin and feldspar, well-equipped quality-control laboratories and experienced, specialized human resources, the company produces all kinds of micronized powders based on international standards, with an annual capacity of 250,000 tonnes.

Arosha Powder operates a **5 km² bentonite and barite mine** in South Khorasan and a **5-hectare processing plant**, giving us full control of the chain from extraction to micronizing, sorting and packaging. We serve oil & gas drilling, pelletizing, foundry, tile and ceramic, paint, agriculture and concrete industries, and export to the Persian Gulf states, CIS countries, Turkey and beyond.

CAPABILITIES

- ✓ Mineral processing and granulation line
- ✓ Micronized powder production line
- ✓ Packaging in 20–40 kg bags and jumbo bags up to 1 tonne
- ✓ Direct supply of required minerals from our own mines
- ✓ Dedicated bentonite and barite mine in Sarayan, South Khorasan

LABORATORY & QUALITY

The most important processes across mining and mineral processing are laboratory analyses, which raise the productivity of minerals. XRD and XRF analyses provide comprehensive information about the chemical composition and crystalline structure of natural and industrial materials, and the quantity of their constituent elements.

Arosha Powder's well-equipped laboratory tests every batch of bentonite, ensuring that the product our customers receive meets their required analysis — every time.

100%

BATCH QC TESTED

XRD·XRF

IN-HOUSE ANALYSIS

API 13A

DRILLING STANDARD

OCMA

DRILLING STANDARD



SARAYAN MINE · SOUTH KHORASAN



AROSHA POWDER PLANT — AERIAL VIEW · PROCESSING, STORAGE & DISPATCH ON ONE SITE

Product Portfolio

Eight engineered bentonite grades, each produced to its industry's governing specification. Custom gradings, moisture targets and packaging are available on request.

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Bentonite — The Mineral

Definition · chemistry · typical analysis

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02

Drilling Grade

API 13A & OCMA muds

05

03

Pelletizing Grade

Iron-ore pellet binder

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04

Foundry / Casting Grade

Green-sand molding

07

05

Feed Grade

Livestock & poultry · mycotoxin control

08

06

Pet Litter Grade

Clumping cat litter

09

07

Tile & Ceramic Grade

Glaze suspension · plasticity

10

08

Paper & Specialty Uses

Paper making · carrier · purification · filler · sealant · catalyst

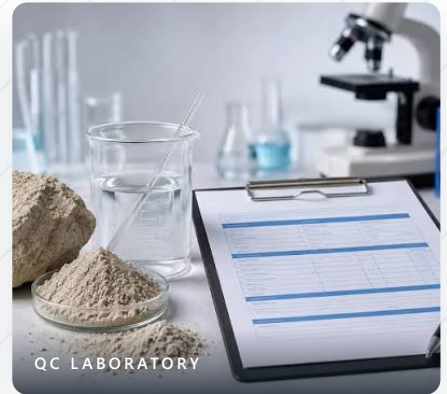
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OPEN-PIT BENTONITE MINE



MICRONIZING PLANT



QC LABORATORY

SUPPLY & LOGISTICS

MOQ from 1 tonne · dispatch within 72 hours of order confirmation · 500–1,000 t/month per customer · FOB / CFR by container, bulk truck or break-bulk · export packaging and full documentation for GCC, CIS, Turkey and Indian Ocean markets.

All analyses in this brochure are typical values from accredited laboratory testing of production batches. Certificates of analysis accompany every shipment. Values may be tailored to customer specifications.

Bentonite / smectite clay

Na & Ca bentonite

MONTMORILLONITE-BASED

Bentonite is a clay consisting mainly of smectite minerals, commonly formed by the decomposition of volcanic ash or tuff, and sometimes from other igneous or sedimentary rocks. It is a highly plastic clay that swells markedly with the addition of water and shrinks on drying — the property that makes it indispensable across drilling, binding, sealing and absorption applications.

General formula

SMECTITE GROUP



TYPICAL WATER ABSORPTION

After 1h	After 2h	After 4h	After 24h	Moisture	Swelling index
540	610	680	760	5.88 %	30 ml/2g

SODIUM VS CALCIUM

Na-bentonite swells 12–15× its dry volume — the choice for drilling muds, pellet binding and sealing. **Ca-bentonite** swells less but absorbs fast and is chemically gentler — preferred for feed, pet litter and purification. Arosha mines and supplies both.

WHY AROSHA BENTONITE

High montmorillonite 65–86 %

Own mine consistent ore

Micronizing down to 200–400 mesh

Batch CoA XRD + XRF verified

Packaging 25 kg – 1 t jumbo



TYPICAL CHEMICAL COMPOSITION · %

SiO ₂	Al ₂ O ₃	Fe ₂ O ₃	CaO	MgO	Na ₂ O	K ₂ O	TiO ₂
57.6	13.3	6.1	2.4	2.8	2.8	0.3	0.7

Sodium bentonite, Sarayan deposit. Calcium-bentonite grades (feed / pet litter) assay ≈ 69.8 % SiO₂ · 11.9 % Al₂O₃ · 2.1 % Na₂O. Full XRF certificates per batch.



Drilling Grade / API 13A · OCMA

Sodium bentonite

VISCOSIFIER · FILTRATION CONTROL

Drilling bentonite is the grade formulated for use in drilling mud and fluid. It improves the hole-cleaning capacity of drilling fluids, acts as an effective filtration-control agent and promotes borehole stability — produced according to **API 13A** and **OCMA** standards.

CHEMICAL COMPOSITION · XRF · %

SiO ₂	Al ₂ O ₃	CaO	Fe ₂ O ₃	K ₂ O	MgO	Na ₂ O	TiO ₂	LOI
57.58	13.30	2.38	6.09	0.29	2.80	2.78	0.69	12.66

Physical properties

TYPICAL

Montmorillonite content	65–67 %
Gelling index after 8 h	33
Gelling index after 24 h	40
Swelling index, 2 h / 2 g	31–35 ml
Moisture	6–8 %
Fineness, passing 75 µm (200 mesh)	99 %

65–67%

MONTMORILLONITE

31–35

SWELLING INDEX ML/2G

99%

PASSING 200 MESH

6–8%

MOISTURE



DRILLING MUD SERVICE · ONSHORE RIG

Supplied to API 13A §9 (OCMA DFCP-4 equivalent available). Yield point, plastic viscosity and filtrate values certified per batch on request.

Pelletizing Grade / iron-ore binder

Sodium bentonite

BINDING AGENT · ENSLIN-LINKED SWELLING

Pelletizing bentonite is a commercial grade whose specific properties make it the perfect binding component in iron-ore pellet production. Derived from sodium bentonite, it can swell to many times its dry volume — a behavior directly related to the Enslin value that governs pellet quality.

CHEMICAL COMPOSITION · XRF · %

SiO ₂	Al ₂ O ₃	CaO	Fe ₂ O ₃	K ₂ O	MgO	Na ₂ O	TiO ₂	LOI
57.58	13.30	2.38	6.90	0.29	2.80	2.78	0.69	5–8

Physical & pelletizing properties	TYPICAL
Montmorillonite content	70–74 %
Gelling index after 8 h	20–25
Gelling index after 24 h	25–33
Swelling index, 2 h / 2 g	25–29 ml
Moisture	7–10 %
Fineness, passing 75 µm (200 mesh)	98 %
pH	9.5–10.2
Wet tensile strength	17–18 g/cm ²
Green compressive strength	1100 g/cm ²

70–74%

MONTMORILLONITE

1100GREEN STRENGTH G/CM²**17–18**WET TENSILE G/CM²**98%**

PASSING 200 MESH



GREEN IRON-ORE PELLETS

High green-ball strength and controlled swelling deliver uniform pellet size, fewer fines and lower bentonite dosage per tonne of concentrate.

Casting Grade / green-sand molding

Sodium bentonite
MOLDING-SAND BINDER

Casting bentonite is a sodium bentonite with high natural performance, specifically designed for the sand-molding process. It offers excellent moisture resistance, high bond strength and high thermal stability, with a consistent compactibility level (40) that sets it apart from other bentonite products.

CHEMICAL COMPOSITION · XRF · %

SiO ₂	Al ₂ O ₃	CaO	Fe ₂ O ₃	K ₂ O	MgO	Na ₂ O	TiO ₂	LOI
57.58	13.30	2.38	6.90	0.29	2.80	2.78	0.69	5–8

Physical & foundry properties	TYPICAL
Montmorillonite content	70–74 %
Gelling index after 8 h	20–25
Gelling index after 24 h	25–33
Swelling index, 2 h / 2 g	25–29 ml
Moisture	7–10 %
Fineness, passing 63 µm (230 mesh)	98 %
pH	9.5–10.2
Wet tensile strength	17–18 g/cm ²
Green compressive strength	1100 g/cm ²

40

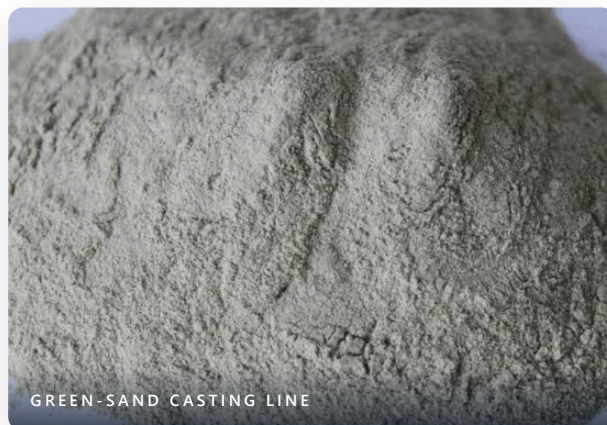
COMPACTIBILITY LEVEL

1100GREEN STRENGTH G/CM²**98%**

PASSING 230 MESH

7–10%

MOISTURE



GREEN-SAND CASTING LINE

Consistent compactibility and wet tensile strength give dimensionally stable molds, clean strip and reduced casting defects in ferrous and non-ferrous foundries.

Feed Grade / livestock & poultry

Ca / Na bentonite · edible

MYCOTOXIN CONTROL · PELLET BINDER

Edible bentonite (animal and poultry feed bentonite) is a multifunctional clay suitable as both calcium and sodium bentonite for animal and poultry feed. Its absorbent property reduces intestinal contamination — especially mycotoxins — while its natural mineral content supplements the ration.

CHEMICAL COMPOSITION · XRF · %

SiO ₂	Al ₂ O ₃	CaO	Fe ₂ O ₃	K ₂ O	MgO	Na ₂ O	TiO ₂
69.80	11.88	0.96	1.73	0.47	1.42	2.10	0.10

Analysis	TYPICAL · FEED SAFETY
Water absorption	680–750 %
Swelling	22–25 ml/g
Moisture	4–8 %
Fineness	400 mesh
Montmorillonite	> 86 %
CEC	100–110 mEq/100 g
Lead (Pb)	n.d.
Cadmium (Cd)	n.d.
Mercury (Hg)	0.22 ppm
Nickel (Ni)	n.d.
Arsenic (As)	2 ppm

>86%

MONTMORILLONITE

750%

MAX WATER ABSORPTION

n.d.

PB · CD · NI

400

MESH FINENESS

FEED FORMS SERVED

- Mash feed
- Crumble feed
- Pellet feed



POULTRY & LIVESTOCK FEED

HOW IT WORKS

With a cation-exchange capacity of 100–110 mEq/100 g and a layered smectite structure, feed-grade bentonite adsorbs aflatoxins and other mycotoxins in the gut, binds excess moisture, and slows passage rate — improving feed conversion, litter quality and pellet durability.

DOSAGE GUIDANCE

Typical inclusion: **0.5–2 %** of the ration for poultry and livestock, **2–3 %** as a pellet binder. Compatible with mash, crumble and pelleted feeds; heat-stable through standard pelleting temperatures.

Heavy-metal profile verified by accredited laboratory analysis; n.d. = not detected. Suitable as mycotoxin binder and pelletizing aid in compound feed.

Pet Litter Grade / clumping

Calcium bentonite

GRANULES 1.5–3.5 MM

Pet (cat) litter bentonite is a valuable grade of bentonite clay with carefully balanced properties: excellent absorption, natural odor control, quick and strong clumping, safety and hygiene, minimal dust and no waste materials.

CHEMICAL COMPOSITION · XRF · %

SiO ₂	Al ₂ O ₃	CaO	Fe ₂ O ₃	K ₂ O	MgO	Na ₂ O	TiO ₂
69.80	11.88	0.96	1.73	0.47	1.42	2.10	0.10

Analysis	TYPICAL
Water absorption	560–580 %
Swelling	17–20 ml/g
Moisture	5–7 %
Granule size	1.5–3.5 mm
CEC	63 mEq/100 g

WHY IT CLUMPS

Calcium-bentonite granules instantly absorb liquid and lock it into firm, scoopable clumps, trapping ammonia odor at the source — a natural, fragrance-free litter with very low dust.

580%

MAX WATER ABSORPTION

1.5–3.5

GRANULE MM

Low

DUST LEVEL

Fast

FIRM CLUMPING



Granulation and dust control tuned for retail litter brands; private-label packaging from 5 kg consumer bags to 1 t jumbo available.

Tile & Ceramic Grade / glaze & body

Low-iron bentonite

SUSPENSION AGENT · PLASTICIZER

Bentonite is a fine-particle clay widely used as a suspension agent in ceramic glazes, where it slows or prevents sedimentation of the glaze. With iron below one percent and a light fired color, Aroshe's ceramic grade preserves the whiteness of the finished body. Colloidal and typically finer than ball clay, bentonite offers an enormous active surface area and high plasticity — delivering exceptional dry strength with minimal effect on fired color.

KEY BENEFITS

- ✓ **Glaze suspension** — prevents sedimentation in glaze slurries, keeps application uniform
- ✓ **Low iron (< 1 % Fe_2O_3)** — light color during firing, no discoloration of white bodies
- ✓ **High plasticity** — improves workability of bodies finer than ball clay
- ✓ **Dry strength** — reduces breakage between forming and firing

<1%

 Fe_2O_3 CONTENT

Light

FIRED COLOR

High

PLASTICITY

Fine

SUB-BALL-CLAY SIZE



GLAZED TILE PRODUCTION



GREENWARE & GLAZE SHOP



LOW-IRON MICRONIZED GRADE

APPLICATIONS

Ceramic glazes

Tile bodies

Sanitary ware

Tableware

Pottery & studio ceramics

Paper & Specialty Uses

Multi-industry

CARRIER · PURIFIER · FILLER · SEALANT

PAPER MAKING

In paper pulp, bentonite increases paper strength and water absorption, improving final quality and durability. As a naturally renewable mineral, it also improves the recyclability of the product and reduces environmental impact.

CARRIER

Bentonite serves as an effective carrier for pesticides, fertilizers and fire retardants — assuring even distribution of the active agent and retention of pesticides and fertilizers on plants.

PURIFICATION

Bentonites decolorize mineral, vegetable and animal oils, and clarify wine, spirits, beer and vinegar. Bentonite absorbs large amounts of protein molecules from aqueous solutions, making it uniquely useful in winemaking, where protein removal prevents haze when bottles are exposed to heat. It is also an effective, low-cost adsorbent for removing chromium (VI) ions from contaminated wastewater.



FROM RAW MINERAL TO REFINED PRODUCTS

FILLER

Used as a filler in adhesives, cosmetics, paint, rubber and soaps, where bentonite acts as a stabilizer and thickener.

SEALANT

Sodium bentonite's high water absorption makes it an outstanding sealant: it is used to seal underground disposal systems and to provide impermeability at nuclear-fuel storage sites, and as a chemical absorbent and container sealant across industry.

CATALYST & MEDICINE

High-purity calcium bentonite is used as a catalyst to crack heavy oil fractions into smaller hydrocarbon chains. Pharmaceutical-grade bentonite is approved by the US FDA as a laxative, and outperforms other drying agents such as silica gel in absorption capacity.



ONE MINERAL, EIGHT INDUSTRIES

Drilling

Pelletizing

Foundry

Feed

Pet litter

Ceramics

Paper

Civil & environmental

GET IN TOUCH

Let's supply your next project.

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Mine Sarayan, South Khorasan — 5 km² bentonite & barite

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COMPLETE PRODUCT DATA & CERTIFICATES

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