

Oolitic Aragonite

Natural high-purity calcium carbonate of Bahamian marine origin, mechanically collected, washed, screened and dried.

TDS-OA-001

REV A

EFFECTIVE SEP 2026

96.17

% CaCO₃, ASTM C 25

38.51

% ELEMENTAL CALCIUM

2.93

SPECIFIC GRAVITY

20-325

U.S. MESH ACROSS GRADES

1 • PRODUCT IDENTIFICATION

What the material is

Oolitic aragonite is a naturally precipitated calcium carbonate in the aragonite crystalline form. It occurs as spherical ooids of roughly 50-500 µm, each built from concentric layers of acicular crystals enclosing microscopic voids — a structure that gives the mineral a high surface area and a higher solubility than calcite at the same particle size.

The deposit is Bahamian and marine. Material is distributed from Stockton, California. Processing is entirely mechanical: collection, drying below 93 °C, screening and classification, with no quarry blasting, no calcination, no chemical treatment and no additives at any stage (PDS-OA-001).

ITEM	DETAIL
Chemical name	Calcium carbonate, CaCO ₃ – natural aragonite polymorph
CAS number	1317-65-3
RTECS number	EV9580000
Molecular weight	100.09
Appearance and odour	Odourless, white to off-white granular solid or powder
Transport classification	Not regulated – no DOT UN number or label
Organic status	OMRI Listed, product code avw-23214 – see CERT-OA-001

2 • MINERALOGY

ITEM	DETAIL
Crystal system	Orthorhombic – aragonite polymorph
Crystal habit	Acicular crystals in concentric ooid layers
Thermal behaviour	Metastable; converts to calcite then to calcium oxide on heating
Comparison with calcite	Denser (2.93 against 2.7), harder (3.5-4 against 3), greater surface area and more soluble at equal particle size

Solubility products: aragonite 6.0×10^{-9} against calcite 3.36×10^{-9} at 25 °C. Neutralisation testing and the surface-area basis are set out in TB-OA-001.

3 • CHEMICAL COMPOSITION

Typical chemical analysis

COMPONENT	VALUE	UNIT	METHOD	STATUS
Calcium carbonate, CaCO ₃	96.17	% by wt	ASTM C 25	Representative analysis
Calcium, elemental	38.51	% by wt	ASTM C 25	Representative analysis
Calcium oxide, CaO	53.88	% by wt	ASTM C 25	Representative analysis

Chemical composition

3 • CHEMICAL COMPOSITION (CONTINUED)

COMPONENT	VALUE	UNIT	METHOD	STATUS
Magnesium carbonate, MgCO ₃	0.24	% by wt	ASTM C 25	Representative analysis
Magnesium oxide, MgO	0.12	% by wt	ASTM C 25	Representative analysis
Strontium carbonate, SrCO ₃	1.43	% by wt	ASTM C 25	Representative analysis
Aluminium oxide, Al ₂ O ₃	0.10	% by wt	ASTM C 25	Representative analysis
Silica, SiO ₂	< 0.01	% by wt	ASTM C 25	Representative analysis
Iron oxide, Fe ₂ O ₃	0.01	% by wt	ASTM C 25	Representative analysis
Sodium	0.21	% by wt	EPA 6010	Representative analysis
Turbidity	380	NTU	API RP 56	Representative analysis
Loss on ignition	43.50–45.00	% by wt	—	Published range
Sulfur trioxide, SO ₃	0.10–0.20	% by wt	—	Published range
Sodium chloride, NaCl	0.06–0.25	% by wt	—	Published range
Moisture, as received	5–10	%	—	Published range

Analysis by Bowser-Morner, Inc. (AASHTO/ISO 17025 accredited), report 124914A, sample received 12 January 2026. Sodium by Precision Enviro-Tech (California ELAP #2387). ASTM C 25 assumes elements are present as specific oxides and carbonates, so compound totals need not sum to 100%.

Reading this table

REPRESENTATIVE ANALYSIS is a measurement from an identified sample and describes material as tested. **PUBLISHED RANGE** is a historical deposit range for dried, unwashed material. Neither is a guaranteed minimum or maximum; guaranteed limits are agreed per contract and confirmed per lot by certificate of analysis.

4 • PHYSICAL PROPERTIES

PROPERTY	VALUE	UNIT	METHOD	STATUS
Specific gravity	2.93	—	—	Representative analysis
Mohs hardness	3.5–4	Mohs	—	Published range
Surface area	> 1.7	m ² /g	Keck Lab	Representative analysis
Grain size, ooids	50–500	µm	Microscopy	Published range
Zeta potential	-6.65 to -33.85	mV	—	Published range
Micro-porosity	Very high	—	—	Representative analysis

Physical properties

4 • PHYSICAL PROPERTIES (CONTINUED)

PROPERTY	VALUE	UNIT	METHOD	STATUS
Sphericity, average	0.82	—	API RP 56	Representative analysis
Roundness, average	0.87	—	API RP 56	Representative analysis
Natural buffering point	6.8	pH	Keck Lab	Representative analysis
Solubility	Insoluble in water and alcohol; soluble in dilute acids	—	—	Representative analysis
Melting point	825	°C	—	Published reference
Flammability	Not combustible	—	NFPA	Published reference

5 • PARTICLE SIZING

Screen size specification — natural commercial grade

U.S. STANDARD MESH	NOMINAL OPENING	PERCENT RETAINED	STATUS
4	4.75 mm	0–1	Published range
8	2.36 mm	1–4	Published range
16	1.18 mm	3–11	Published range
30	600 µm	10–26	Published range
50	300 µm	40–67	Published range
100	150 µm	80–98	Published range
140	106 µm	93–99	Published range
200	75 µm	99–100	Published range

Classified grades are screened from this natural gradation. Nominal openings are standard U.S. sieve equivalents, given for reference.

6 • GRADE SELECTION

GRADE	SIZING	SIZING STATUS	PRIMARY APPLICATION
AG-CAL	0.2–0.5 mm	Published range	Agricultural calcium and pH programs; turf top-dressing; feed additive
GL-CAL	< 0.1 mm	Published range	Glass-batch calcium carbonate source
WT-CAL	1–3 mm	Published range	Process-water remineralization, pond preparation, alkalinity management, carbonate aggregate
PL-CAL	To specification	Customer specification required	Polymers, coatings and functional fillers
Custom	20–325 mesh range	Customer specification required	Application-specific classification — kiln feed, proppant feed, feed rations, greens plating sand

Packaging, storage and handling

7 • PACKAGING AND LOGISTICS

FORMAT	DETAIL
Dry bulk	Vessel or bulk trailer
Super sack	Up to 3,000 lb
Bagged	From 1 lb
Distribution	Stockton, California

Packaging range per PDS-OA-001. Freight is quoted to the named destination on request.

8 • STORAGE AND HANDLING

Store dry and covered. Avoid dust generation. The material is non-combustible and stable, and reacts with acids. Calcium carbonate dust is a physical irritant of the eyes, nose, mucous membranes and skin; control exposure below the OSHA PEL of 15 mg/m³ total dust and 5 mg/m³ respirable fraction.

Shelf life is indefinite when stored dry. Occupational safety guidance is set out in SHS-OA-001. **Consult the 16-section GHS Safety Data Sheet before handling.**

9 • QUALITY AND LOT DOCUMENTATION

A certificate of analysis is issued for each dispatched lot. The following documents are available to customers and prospective customers on request.

DOCUMENT	TITLE	CONTENT
TDS-OA-002	Typical Analysis and Gradation	Published composition ranges and screen specification
CERT-OA-001	OMRI Listed® Summary	Organic listing avw-23214, listed 26 Jun 2026, expiring 1 Sep 2027
PDS-OA-001	Manufacturing Process	Four-step mechanical process; no additives at any stage
SHS-OA-001	Occupational Safety	Exposure limits, hazards, controls and first aid
SDS	Safety Data Sheet	16-section GHS format — hazards, handling, exposure controls and first aid
TB-OA-001	Agricultural Liming Material	Solubility and surface-area basis with laboratory data
REF-OA-001	Published Research	Peer-reviewed literature on aragonite, 2021–2024

Representative values and guaranteed specifications

Values marked **REPRESENTATIVE ANALYSIS** are measurements from an identified sample and describe material as tested.

PUBLISHED RANGE values are historical deposit ranges for dried, unwashed material, and **PUBLISHED REFERENCE** values are properties of the mineral from a published authority. **None constitutes a guaranteed minimum or maximum.** A guaranteed specification is agreed in writing per contract and confirmed per lot by certificate of analysis. This information is offered for consideration, investigation and verification. It is not a warranty or representation of suitability for any particular application, nor permission to practise any patented invention.

REVISION HISTORY

REV	DATE	CHANGE
A	Sep 2026	First issue on approved values.

TECHNICAL SUPPORT

+1 (209) 487-0110
info@aragocorminerals.com
2453 Grand Canal Blvd, Suite 200
Stockton, CA 95207