

TECHNICAL BRIEF | TB-0A-002 | REV A

Aragonite vs. Limestone

A practical comparison of natural oolitic aragonite and conventional calcite limestone.

Aragonite and calcite share the formula CaCO_3 , but they are distinct mineral polymorphs with different crystal structures and material properties.

Side-by-side technical comparison

Property	AragoCor oolitic aragonite	Calcite / limestone
Crystal system	Orthorhombic	Trigonal / rhombohedral
Density	2.93 g/cm ³	Approximately 2.71 g/cm ³
Relative solubility	Higher under comparable acidic conditions	Lower under comparable acidic conditions
Morphology	Rounded, oolitic grains	Deposit- and milling-dependent
Purity	96-98% CaCO_3	Product-dependent
Origin	Natural Bahamian marine deposit	Deposit-dependent

Why the differences may matter

Reactivity Compare dissolution or thermal behavior under the intended pH, temperature, residence time and formulation conditions.	Morphology Rounded oolitic grains can influence flow, packing, blending and dispersion behavior; measure the selected grade.
Chemistry Product specifications and analytical documentation identify grade chemistry and lot-to-lot control points.	Supply context Consider mineral origin, preparation, packaging, freight and chain-of-custody requirements.

Application selection path

Step	Design focus
1. Define requirements	Set chemistry, particle distribution, moisture, handling and regulatory limits for the application.
2. Match material properties	Compare crystal form, density, morphology, composition and particle distribution.
3. Set process conditions	Align dosage, pH, temperature, residence time, equipment and formulation.
4. Define commercial fit	Align grade, packaging, volume, destination, lead time and acceptance criteria.

Record the decision basis

Material identity Record the AragoCor grade, particle distribution and analytical basis.	Process conditions Capture formulation, dosage, pH, temperature, residence time, equipment and comparison material.
Acceptance criteria Define measurable process, product, handling and compliance outcomes.	Commercial definition Tie the approved material to grade, packaging, volume, destination and agreed acceptance terms.

Conclusion

Natural oolitic aragonite and calcite limestone are different crystal forms of calcium carbonate. Chemistry, morphology, particle distribution, process conditions and application testing should guide material selection.

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