ZHONGYAOTECH
XINGTAI ZHONGYAO CHEMICAL

PRODUCT BROCHURE
2026 / 01



DIELECTRIC GRADE

MgO for Microwave Ceramics.

99.95 % magnesia with the impurity control that lets a $MgTiO_3$ resonator reach Q×f above 150 000 GHz.

MGO	BET	D50	ER
≥ 99.95 %	5–10 m^2/g	1–2 µm	9.8

Q×f is not a property you add. It is what remains after you remove **everything else**.

>150 000

Q×F GHZ

Achievable in $MgTiO_3$ with this precursor.

9.8

DIELECTRIC CONSTANT

Stable across the 5G band.

≤20 ppm

IRON

The element that costs the most Q.

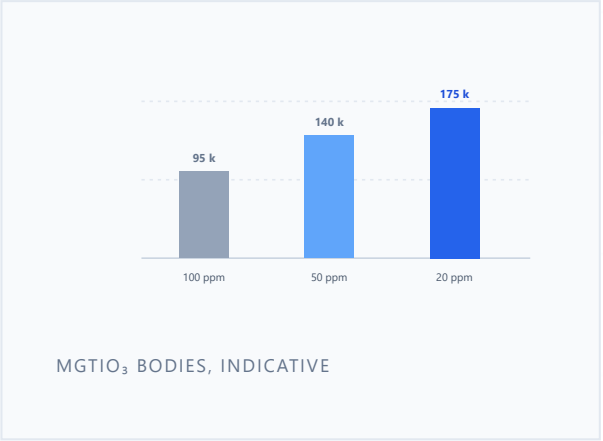
01 — MECHANISM

Loss starts in the powder.

In a microwave ceramic, dielectric loss is dominated by point defects and secondary phases — both traceable back to the precursor powder.

Iron raises loss directly; calcium and silicon form phases that scatter the lattice. Control at the powder stage is cheaper than correcting at the fired body.

Compare. Firing above the optimum coarsens grains and drops Q×f before density changes are visible.



MGTIO₃ BODIES, INDICATIVE

PROCESS

Powder → Sintering → Service

Q×f vs iron — $MgTiO_3$ bodies, indicative

MGO
≥ 99.95 %
vs ≥ 99.9 %

BET
5–10 m²/g
vs 3–8 m²/g

D50
1–2 µm
vs 2–5 µm

02 — SPECIFICATION

Controlled batch to batch.

Parameter	Standard value	Method
MgO Content	**≥ 99.95%**	Batch COA
Specific Surface Area	**5-10 m^2/g**	Batch COA
D50	**1-2 µm**	Batch COA
Dielectric Constant	**9.8**	Batch COA

Development support

We work with ceramic houses on precursor selection and can supply graded lots for firing trials.

SUPPLY

Packaging	**25 / 1 000 kg**
Minimum order	**1 t**
Lead time	**3–7 days**
Grade code	**MgO-Microwave**

CAS 1309-48-4 · Batch COA with every shipment. TDS and SDS on request.

INCOMING

Ore assay

Every lot screened for Fe, Ca, Si before calcination.

IN PROCESS

Activity + LOI

Sampled during production against the batch target.

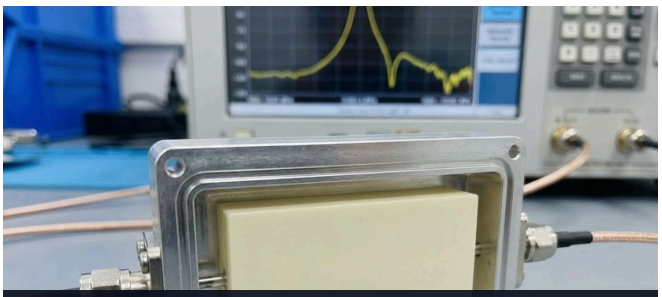
BEFORE SHIPMENT

Full COA

Complete release testing, third-party reports on request.

03 — APPLICATIONS

Where it is specified.



01

5G resonators

Filter components



02

Dielectric substrates

Low loss



03

Base station filters

Temperature stability



04

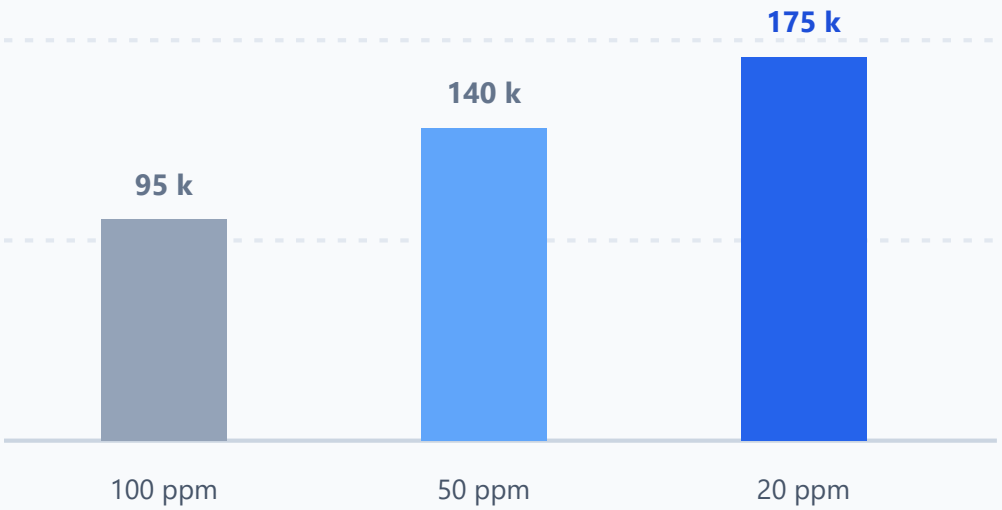
Custom purity

Agreed limits

Dosage and loading figures are starting points for formulation trials. Final performance depends on the complete compound and test conditions.

04 — PERFORMANCE

Loading against performance.



MGTIO₃ BODIES, INDICATIVE

Property	This grade	High purity
MgO	**≥ 99.95 %**	≥ 99.9 %
BET	**5–10 m²/g**	3–8 m²/g
D50	**1–2 µm**	2–5 µm
Use	**Microwave ceramics**	Optical / general

PACKAGING

25 kg PE-lined PP woven bag, palletised on request.

1 000 kg jumbo bag for bulk compounding lines.

LOGISTICS

20' FCL load	**20–24 t**
Port of loading	**Tianjin / Qingdao**
Incoterms	**FOB / CIF / CFR**
HS code	**2519.90**

05 — SUPPLY

Batch traceable. Documented every time.

Every shipment carries a batch-specific COA. TDS, SDS and REACH statements are issued on request. Production is ISO 9001:2015 certified.

50,000 t
ANNUAL CAPACITY

50+
EXPORT COUNTRIES

1 t
MINIMUM ORDER

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Specifications are typical values and do not constitute a batch release certificate. Confirm acceptance criteria against the batch COA and the TDS in force at the time of order.

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