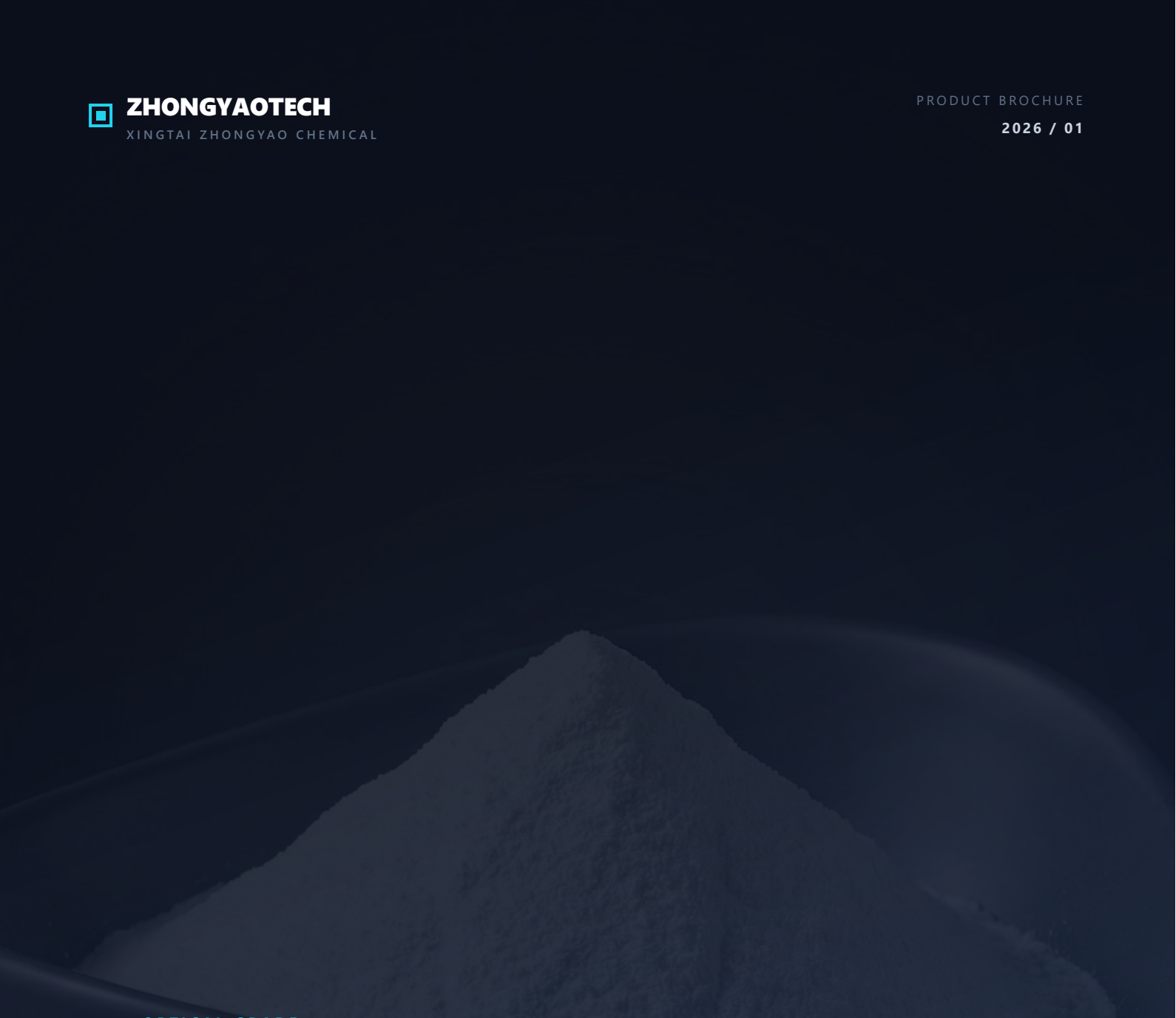
ZHONGYAOTECH
XINGTAI ZHONGYAO CHEMICAL

PRODUCT BROCHURE
2026 / 01



OPTICAL GRADE

MgO for Magnesium Fluoride.

Optical grade magnesia with transition metals below 50 ppm — the precursor for MgF_2 coatings that stay transparent from 193 nm.

MGO	METALS	D50	LOI
≥ 99.5 %	< 50 ppm	5–10 µm	Low

An anti-reflective coating is judged by what it **does not** absorb. **Iron is what absorbs**.

<50 ppm

TRANSITION METALS

The controlling limit for optical transmission.

193 nm

SHORTEST WAVELENGTH

Deep-UV lithography optics.

5–10 µm

D50

Controls crystal size in the fluorination step.

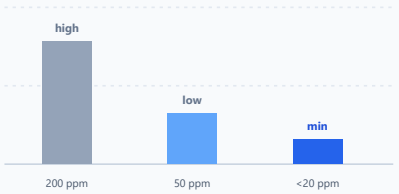
01 — MECHANISM

Precursor quality becomes coating quality.

Magnesium fluoride is made by reacting high-purity magnesia with hydrogen fluoride. Every impurity in the oxide ends up in the crystal — and then in the optical loss.

Iron, cobalt and nickel are the critical elements. Sodium and potassium affect crystal growth rather than transmission.

Compare. Low loss on ignition matters: residual carbonate produces bubbles during vacuum coating.



BY IRON CONTENT IN THE PRECURSOR — INDICATIVE

PROCESS

Mixing → Cure → Service

Transmission loss — By iron content in the precursor — indicative

TRANSITION METALS	FE_2O_3	LOI
< 50 ppm	**≤ 0.01 %**	**Low**
vs < 500 ppm	vs ≤ 0.1 %	vs 2–8 %

02 — SPECIFICATION

Controlled batch to batch.

Parameter	Standard value	Method
MgO Content	≥ 99.5%	Batch COA
Transition Metal Ions	Trace	Batch COA
Loss on Ignition	≤ 2.0%	Batch COA

Quality document

Batch ICP report with the full transition-metal suite. Custom limits can be agreed against a confirmed TDS.

SUPPLY

Packaging	25 / 1 000 kg
Minimum order	1 t
Lead time	3–7 days
Grade code	MgO-MgF2

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

Optical coatings

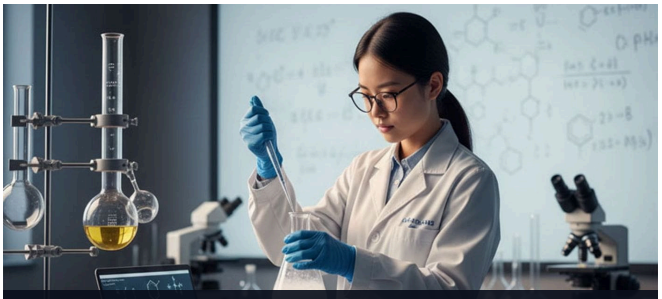
Anti-reflective layers



02

Crystal growth

Optical components



03

Fluorination feed

MgF_2 synthesis



04

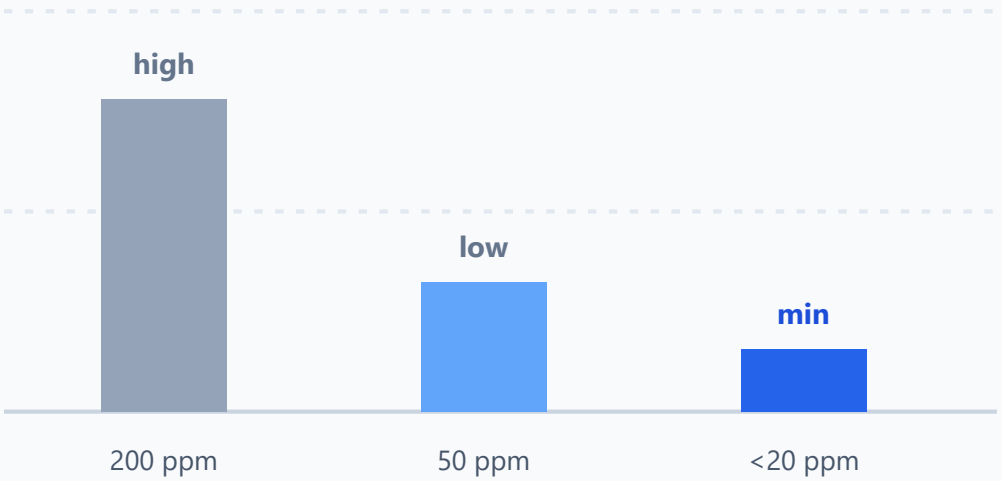
Custom purity

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.



BY IRON CONTENT IN THE PRECURSOR — INDICATIVE

Property	This grade	Standard MgO
Transition metals	**< 50 ppm**	< 500 ppm
Fe_2O_3	**≤ 0.01 %**	≤ 0.1 %
LOI	**Low**	2–8 %
Use	**Optical MgF_2**	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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