

# PRODUCT DATA SHEET

# Gallium Sesquioxide



Synonyms	Gallium Oxide, Gallium (III) Oxide
CAS Number	12024-21-4
EC Number	234-691-7
RTECS	LW9650000
Purity	99.99 to 99.999%
Appearance/Form	White powder
Crystal Structure	Mostly β-phase, confirmed by XRD
Formula Weight	187.44g/mol
Theoretical Gallium Content	74.39%
Density	6.44g/cm <sup>3</sup> ; approx. 0.7g/cm <sup>3</sup> apparent
Melting Point	1,900°C
Vapor Pressure	N/A
Solubility	Soluble in alkalis, slightly in hot acids, insoluble in water

Impurities	99.99 (Type 1 or 2)		99.999 (Type 1)	
	Typical	Maximum	Typical	Maximum
Moisture (LOD, 104°C)	<0.1%	0.1%	<0.1%	0.1%
Volatile (LOI, 800°C)	<0.1%	0.1%	<0.1%	0.1%
Aluminum (Al)	<5.0ppm	5.0ppm	<1.0ppm	3.0ppm
Arsenic (As)	<1.0ppm	2.0ppm	<1.0ppm	1.0ppm
Calcium (Ca)	<10.0ppm	10.0ppm	<1.0ppm	3.0ppm
Chromium (Cr)	<3.0ppm	5.0ppm	<1.0ppm	1.0ppm
Copper (Cu)	<3.0ppm	5.0ppm	<1.0ppm	1.0ppm
Germanium (Ge)	<5.0ppm	5.0ppm	<1.0ppm	3.0ppm
Iron (Fe)	<5.0ppm	5.0ppm	<1.0ppm	3.0ppm
Indium (In)	<5.0ppm	5.0ppm	<1.0ppm	3.0ppm
Magnesium (Mg)	<3.0ppm	5.0ppm	<1.0ppm	1.0ppm
Nickel (Ni)	<1.0ppm	5.0ppm	<1.0ppm	1.0ppm
Lead (Pb)	<1.0ppm	2.0ppm	<1.0ppm	1.0ppm
Silicon (Si)	<3.0ppm	10.0ppm	<1.0ppm	3.0ppm
Sodium (Na)	<10.0ppm	10.0ppm	<1.0ppm	3.0ppm
Tin (Sn)	<3.0ppm	5.0ppm	<1.0ppm	1.0ppm
Zinc (Zn)	<3.0ppm	5.0ppm	<1.0ppm	1.0ppm
<b>Total Combined Metals</b>	<b>&lt;50ppm</b>	<b>&lt;100ppm</b>	<b>&lt;10ppm</b>	<b>&lt;10ppm</b>

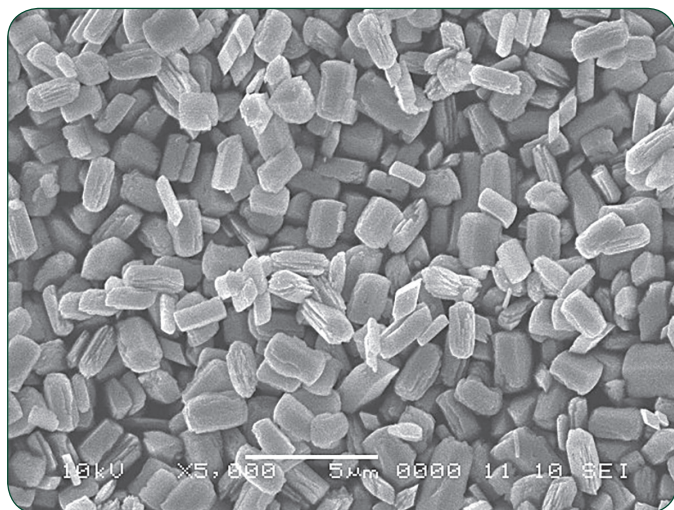
All information is for reference only. Not to be used as incoming product specifications.

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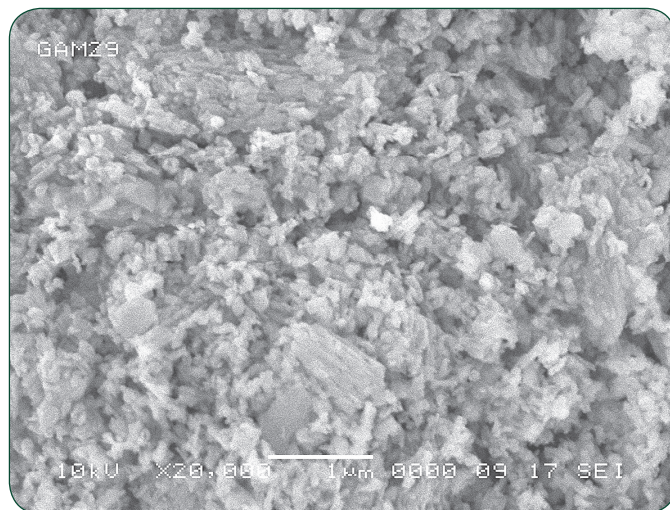


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# Gallium Sesquioxide ( $\text{Ga}_2\text{O}_3$ )



Type 1—Rod-shaped uniform particles.



Type 2—Agglomerates of smaller amorphous particles.

### Typical Particle Size and Surface Area Analysis

	d90 (micron)	d50 (micron)	d10 (micron)	BET (m <sup>2</sup> /g)
Type 1	2.5–4.0	1.25–2.25	0.75–1.25	12–17
Type 2	20–45	5–15	1–5	12–17

### Packaging

- PE Bottle: 100g, 500g, 1kg, 2kg
- Plastic Pail: 5kg, 10kg, 20kg
- Plastic Drum: 25kg, 50kg and up

### Applications

- Phosphors
- Cathodes for solid oxide fuel cells
- Piezo-electric crystals
- GGG crystals and IGZO targets for latest technology displays

### Storage and Shelf Life

**Gallium Sesquioxide** should be stored at room temperature and the container kept tightly sealed. Shelf life is 12 months.

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