

Laxmi Sales

Manufacturer, Supplier & Trader of High-Purity Industrial Products

Product Specification & Comparison Sheet

Product Comparison Table

Feature	Lead Tin Sulfide (PbSnS ₂)	Tin(II) Sulfide (SnS)	Tin(IV) Sulfide (SnS ₂)
Bandgap	1.3–1.8 eV (tunable)	1.2–1.5 eV (direct)	2.2–2.35 eV
Conductivity	n-type or p-type	p-type (intrinsic)	n-type (intrinsic)
Crystal Structure	Orthorhombic	Orthorhombic	Hexagonal
Color	Dark gray/black	Dark brown/black	Gold-yellow
Primary Applications	Solar cells, IR detectors	Solar cells, Batteries	Gas sensors, Pigments
Toxicity Profile	Contains lead (Pb)	Low Toxicity	Low Toxicity
Unique Advantage	Bandgap tuning capability	Earth-abundant components	High selectivity in sensing

Application Suitability Matrix

Application Area	PbSnS ₂	SnS	SnS ₂
Solar Cells / PV	Excellent	Excellent	Limited

Application Area	PbSnS ₂	SnS	SnS ₂
Photodetectors	Excellent (IR)	Good (Vis-NIR)	Good (UV-Vis)
Gas Sensors	Limited	Limited	Excellent
Li-ion Battery Anodes	Limited	Good	Excellent
Thermoelectrics	Good	Good	Limited
Decorative / Pigments	No	No	Excellent (Gold)
Photocatalysis	Limited	Good	Excellent

Contact for Details & Availability

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