



MATERION

Materion Inorganic Chemicals Catalog Technical Details

The following represent typical manufacturing capabilities and tolerances for Materion Electronic Materials products. All items will be inspected to the tolerances listed below unless further tolerances have been agreed to during the quotation process, or prior to order placement.

Product Standards

Measurement	Standard
Dimensional Target Tolerances	+/- 0.020" all dimensions
Compositional Tolerance	+/- 1.00 wt%
Bond Gaps	0.010"
Multi-Section Targets:	Butt joints
Joints	90 degree butt joints
Bond Gaps	0.010"
Density Range	>5%
Chip Specifications	Depth of 25% target thickness, none >1/4" in any direction
Target Analysis	Based on starting material unless otherwise stated
Purity	Typical (not minimum), based on metallic impurities
Density	Reported as a % derived from actual vs. theoretical g/cc density
Particle Size (powders)	Minimum 90% within standard mesh

Purity Designation and Tolerances

Typical Purity – Metals Basis

All of Materion's products (with the exception of the rare earths noted below), or in some cases their precursors, are analyzed by D.C. Arc Emission Spectroscopy, utilizing CID (Charge Injection Device) detection. The typical purities listed are obtained by subtracting from 100% the sum of all trace metals which are detected. Carbon, gaseous elements, other non-metallic elements (e.g. sulfur, phosphorus, etc.) and elements specifically disclaimed in the product listing are not considered in arriving at the typical purity value.

Typical Purity – Rare Earth Oxide Basis

For all rare earth metals and some oxides, the typical purities listed are based on total rare earth oxide (REO) impurities and are so indicated in the product listing by the notation "(REO basis)".



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Purity Designation and Tolerances, cont.

Phase Purity

Every substance we produce, with the exception of metals and liquids, is characterized by X-ray powder diffraction. The resultant diffraction pattern is compared with the standard patterns established by the JCPDS (Joint Committee for Powder Diffraction Standards) of the International Centre for Diffraction Data. We strive to produce compounds which are 100% phase pure wherever practical. The formulas listed represent the major resulting phase, but no guarantee is made that traces of other phases will not be observed with other methods of analysis. When repeated syntheses indicate that more than a single major phase results, or that lesser amounts of additional phases may be consistently observed, we have listed these findings in the formula column. Please inquire before ordering if phase purity is critical to your needs.

Elemental Composition and Trace Impurity Analyses

The elemental composition of our products is determined by appropriate, established methods which may include classical gravimetric or titrimetric procedures, Atomic Absorption Spectroscopy (AAS), and Inductively Coupled Plasma (ICP) Spectroscopy. Trace impurities are determined, or their emission spectrographic results more precisely quantified, by the AAS or ICP spectroscopic techniques. Where relevant, the carbon, sulfur, nitrogen and oxygen content of our products are determined by established ignition procedures.

Licenses and Regulations

TSCA

The TSCA status of each chemical offered for sale by Materion Electronic Materials is identified for each item. (Toxic Substance Control Act, U.S. Environmental Protection Agency). "TSCA: Yes" will be present if Materion has confirmed that a chemical is on the TSCA Inventory. Otherwise, "TSCA: No" will appear.

Chemicals not identified as being on the TSCA Inventory will only be sold to purchasers in a position to comply with the research and development exemptions specified in 40 CFR Part 720.36 of the TSCA regulations. Prices listed for these items are for R&D quantities only. Commercial quantities will be quoted upon request.

RADIOACTIVE MATERIALS

Materion is licensed to possess and distribute radioactive materials by the State of Wisconsin Department of Health and Family Services. Materion will distribute general license quantities of source material only to domestic customers in a position to certify in writing compliance with applicable parts of 10CFR.

Specific license quantities of source material will be sold only following the receipt by Materion of a copy of the license demonstrating authority to possess requested quantities. Export Licenses will be obtained when necessary prior to distribution internationally. Please check with local, state and national authorities in your area, as they may have additional jurisdiction over the use and handling of radioactive materials.