

MONOCRYSTALLINE PHOTOVOLTAIC GRADES

IOTA® quartz is widely used in the photovoltaic industry for the manufacture of crucibles for Czochralski (CZ) single crystal silicon growth. This process is used to produce monocrystalline silicon solar cells which have the highest efficiency among commercial scale PV products.

IOTA® quartz is preferred for its reliable performance at high temperature and excellent fusion characteristics. IOTA CG (Crucible Grade) is the standard for the photovoltaic crucible industry. Crucibles made with IOTA CG are ideally suited for both long pulling times and multiple ingot pulling. In the most demanding applications, IOTA 6 can be used as a crucible liner to ensure the purity of the silicon ingot. Crystal pullers who use IOTA crucibles report the highest silicon wafer yields.

All IOTA® quartz grades are produced in ISO 9001 certified plants. Raw materials and services associated with the mining and manufacturing are additionally administered under QIPSM, a proprietary quality assurance system designed by Unimin specifically for its mining and mineral processing activities.

IOTA® CHEMICAL ANALYSIS

These Do Not Represent A Specification

	Al	B	Ca	Cr	Cu	Fe	K	Li	Mg	Mn	Na	Ni	P	Ti	Zn
IOTA 6	8	< 0.05	0.7	0.003	0.001	0.2	0.1	0.2	0.07	0.008	< 0.1	0.002	0.1	1.4	0.01
IOTA CG	14	< 0.10	0.6	0.007	0.019	0.3	0.7	0.5	0.04	0.029	1.0	0.001	0.1	1.2	0.01

Typical Values (ppm)

Shipping Point: SPRUCE PINE, North Carolina, USA

FOR ADDITIONAL INFORMATION:

www.IOTAinquiries@unimin.com



PERFORMANCE DISCLOSURE: While the above-information is believed to be accurate, the user's results may vary as site-specific conditions and applications are different and unique. It is the responsibility of the user to investigate and understand all sources of information affecting Unimin product performance; to comply with all laws and procedures applicable to the safe handling and use of Unimin products; and to determine the suitability and performance characteristics of Unimin's products for user's intended use. All products supplied by Unimin Corporation are subject to Unimin's terms and conditions of sale.

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HEALTH HAZARD WARNING: Prolonged inhalation of dust associated with the materials described in this data sheet can cause delayed lung injury including Silicosis, a progressive, disabling and sometimes fatal lung disease. IARC and NTP have determined that crystalline silica can cause lung cancer in humans. Risk of injury is dependent on the duration and level of exposure. Follow OSHA or other relevant safety and health standards for the form of crystalline silica called Quartz. Current safety data sheet, containing safety information, is available and should be consulted before usage.