

WQ-100 Series Gold Extraction Reagent vs. Sodium Cyanide

Six-Point Technical Engineering Comparison

Head-to-head performance across recovery, leach time, dosage, downstream compatibility, tailings handling, and water recycling

NO.	TECHNICAL INDICATOR	SPECIFIC EVALUATION ITEM	TRADITIONAL CYANIDATION (NaCN)	WQ-100 SERIES
01	Leaching Recovery Rate (%)	Common, easily-processed oxide ore	95-98%	95-98%
		Refractory ore (after roasting / POX pretreatment)	92-95%	95-98%
		Refractory ore (no roasting / POX — fine grind 200 mesh, direct leach of high-sulfur, quartz-associated, arsenopyrite, high-copper, high-lead, high-carbon ore)	10.0-25.0% (<i>completely ineffective</i>)	92-95%
02	Industrial Tank Leach Cycle	Leach cycle (hours)	24-36 hours	20-30 hours
03	Reagent Dosage per Ton of Ore (kg/t ore)	Common, easily-processed oxide ore	0.5-1.0 kg/t	0.7-1.2 kg/t
		Refractory ore (after roasting / POX pretreatment)	0.8-1.5 kg/t	0.8-1.5 kg/t
		Refractory ore (no roasting / POX — fine grind 200 mesh, direct leach of high-sulfur, quartz-associated, arsenopyrite, high-copper, high-lead, high-carbon ore)	N/A (<i>ineffective</i>)	3.0-5.0 kg/t
04	Compatibility with Downstream Recovery Methods	Coconut-shell activated carbon adsorption	Fully compatible	Fully compatible
		Zinc powder displacement (Merrill-Crowe)	Fully compatible	Fully compatible
		Macroporous ion exchange resin	Fully compatible	Fully compatible
05	Tailings Treatment Requirements	Decyanidation / detoxification and environmental compliance	Decyanidation/detoxification required	No cyanide-destruction detox needed — natural settling or conventional filter pressing is sufficient
06	Composition & Concentration of Reagents in Recycled Water	Main residual reagent components	Free cyanide ion (CN ⁻), thiocyanate (SCN ⁻), copper/iron-cyanide complexes	Active reagent recirculated for reuse
		Residual reagent concentration in barren/return solution	Free CN ⁻ concentration: 100-500 mg/L	Total residual active reagent: 200-800 mg/L
		Water recycling rate & upstream impact	Recycling rate limited (<70%) — residual cyanide/thiocyanate poisons upstream flotation	100% closed-loop circulation — residual reagent can serve as pre-soak base for the next batch

Note on figures: Values shown represent target performance based on formulation design and bench-scale testing. Results are currently undergoing independent third-party validation; see our Validation & Compliance page for current status.

