

LORH LA SENG

Commercial Sole Company Limited

Lump Quartz for Silicon Metal

Premium SAF Feedstock | Bolikhamxay, Lao PDR



Sector reference — silicon-metal smelter operations



LLS vein quartz lump — 20–150 mm ROM, SAF-ready

SiO₂ 99.5 – 99.89%

CHEMISTRY (GUANLONG XRF)

Fe₂O₃ 30 – 500 ppm

IRON OXIDE — BELOW 553 / 441 / 3303 LIMITS

120,000 → 620,000 MT/yr

CAPACITY (MINE 1 + MINE 2 FROM 2027)

Chemistry grade 2202 & 3303 ready · ATIGA 0% duty · 85 km to Cua Lo Port · Scalable to 620,000 MT/year

About Lorh La Seng

Lorh La Seng Commercial Sole Co., Ltd. operates hydrothermal vein-quartz deposits in Bolikhamxay Province, Lao PDR, dedicated to supplying **lump quartz feedstock** for submerged-arc furnace (SAF) smelting of Silicon Metal. Our ROM ore is naturally high-purity (SiO_2 99.5–99.89%), with iron content already low enough for most downstream processes — without acid leaching or flotation. With a government-granted export quota of 120,000 MT/year (Mine 1) and a further 500,000 MT/year coming online in 2027 (Mine 2), we offer scale, consistency, and long-term supply security for Si-metal producers across Asia.



Vein quartz at pit face — high mechanical strength, low decrepitation



Selective extraction — minimal fines, SAF-optimized sizing

Silicon Metal Grade Suitability

Si-Metal Grade	Si min	Fe_2O_3 in Quartz (Typ.)	LLS ROM Fit
Si 553	~98.5%	$\leq 2,000$ ppm	✓ Comfortably exceeds (30–500 ppm)
Si 441 / 421	~99.0%	$\leq 1,500$ ppm	✓ Comfortably exceeds
Si 3303	~99.3%	$\leq 1,000$ ppm	✓ Exceeds
Si 2202 (chem)	~99.5%	≤ 300 ppm	✓ Majority of lots qualify
Solar MG-Si (1101-LB)	~99.7%	< 100 ppm + B < 10 ppm	● Premium lots — subject to B/P testing

ATIGA 0% Import Duty + 0% VAT: Lao PDR origin qualifies for zero import duty into Vietnam, Thailand, Indonesia, Malaysia, Philippines, and all ASEAN member states under the ASEAN Trade in Goods Agreement. Combined with 0% VAT for export-processing enterprises, **LLS feedstock delivers ~30% lower landed cost** versus domestic-sourced quartz across Southeast Asia.

Note: Values refer to Fe_2O_3 in the ROM quartz feedstock, not Fe in finished Si-metal. Final Si-metal chemistry also depends on carbon reductant purity, electrode quality, and furnace operation. Decrepitation Index (DI) and UCS testing via VIMLUKI (Hanoi) and Elkem Fiskaa (Norway) in progress — certificates available Q2 2026.

Why LLS for Silicon-Metal Smelters

1. Chemistry already at chem-grade. Natural Fe_2O_3 as low as 30 ppm — 10× cleaner than typical Vietnamese quartz (200–800 ppm). No acid leaching or flotation required for 553/441/421/3303 grades. **2. Vein quartz = high physical integrity.** Hydrothermal origin means dense, non-porous crystalline silica with target UCS ≥ 80 MPa and low decrepitation — critical for SAF burden permeability. **3. Optimal lump sizing.** Selective blast + sort to 20–80 mm (SAF ideal), 80–150 mm (FeSi), with fines <10 mm kept under 5%. **4. Tariff & logistics advantage.** ATIGA 0% duty + 85 km truck haul to Cua Lo Port (Vinh) → direct bulk vessel to China, Japan, Korea, Malaysia, Taiwan. **5. Scale & consistency.** 10,000 MT/month immediately; 50,000+ MT/month from 2027 (Mine 2). Single-deposit sourcing = consistent chemistry lot-to-lot. **6. Long-term JV potential.** Open to feasibility study for on-site beneficiation plant in Laos — closed-loop value chain for strategic partners.



Integrated mining + sorting operation — SAF-ready lump quartz

Target Customers & End Uses

Steel / Foundry (Si 553)

Chinese & SEA ferroalloy plants producing deoxidizer for steel and Al-casting alloys

Aluminum Alloys (Si 441)

Automotive Al-Si cast alloys — Japanese, Korean, European smelters

Silicone Chemistry (Si 3303 / 2202)

Dow, Wacker, Shin-Etsu, Elkem Silicones — fumed silica, silicone rubber, sealants

Polysilicon Feedstock (Si 2202)

Hoshine, Tongwei, GCL — Siemens / FBR polysilicon for solar wafer industry

Solar MG-Si (1101-LB)

Premium low-boron lots — direct-to-wafer metallurgical route (UMG-Si)

Aluminum Master Alloys

AlSi master-alloy producers serving die-casting industry

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