



LORH LA SENG

Commercial Sole Company Limited

## Quartz Feedstock for Float & Container Glass

Single-Operator Chemistry | Lot-to-Lot Consistency



*Sector reference — container glass production line*



*LLS quartz vein — consistent monthly chemistry*

**SiO<sub>2</sub> 99.5 – 99.89%**

STABLE CHEMISTRY, LOT TO LOT

**2 Mines • 1 Operator**

NO BROKER CHAIN STITCHING LOADS

**XRF + 3rd-Party QA**

LAB VERIFICATION RELEASED PER SHIPMENT

*Float, container, TFT-LCD substrate cullet — single-deposit feedstock that doesn't wander between shipments*

# 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 quartz feedstock for float, container, and display-grade glass production. Our ROM ore is naturally high-purity ( $\text{SiO}_2$  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 glass mills across Asia.



*Vein at pit face — same geology Mine 1 + Mine 2*



*Selective blast — controlled lump size for batching*

## Float / Container Glass Suitability

Glass Product	$\text{SiO}_2$ in Batch (Typ.)	$\text{Fe}_2\text{O}_3$ Limit	LLS ROM Fit
Float — clear architectural	70–72%	$\leq 1,200$ ppm	✓ Comfortably exceeds
Float — tinted (green/grey)	70–72%	Tolerant	✓ Wide tolerance
Container — clear (flint)	70–72%	$\leq 1,500$ ppm	✓ Comfortably exceeds
Container — amber / green	68–72%	Tolerant	✓ Iron-tolerant formulation
TFT-LCD substrate cullet	60–65% (alkali-free)	$\leq 500$ ppm	✓ Within spec

**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:** Glass tank operators value chemistry STABILITY at least as much as headline  $\text{Fe}_2\text{O}_3$  numbers. A new feedstock that wanders  $\pm 0.3\%$   $\text{SiO}_2$  between deliveries forces continuous batch retuning. LLS releases full XRF per shipment + third-party verification on contract execution.

# Why LLS for Glass Mills

**1. Single-deposit, single-operator.** No broker chain stitching loads from multiple pits. What ships in lot 12 looks like what shipped in lot 1 — predictable melt behaviour. **2. Two licensed mines, same geology.** Mine 1 (active) and Mine 2 (online 2027) share the same vein system. Capacity scales without chemistry shift. **3. Honest QA trail.** Guanlong XRF results released with every shipment; third-party lab verification (QUATEST, SGS, Intertek, Vinacontrol) on request before contract or per delivery. **4. Cua Lo Port logistics.** 85 km direct truck haul to deep-water bulk port. Direct vessel to Vietnam, China, Korea, Taiwan — no transshipment risk. **5. ATIGA tariff edge.** 0% import duty for ASEAN destinations, 0% VAT for export-processing enterprises. **6. Pilot batch + retainable sample.** 5 MT pilot batch + sealed reference samples available so your batch chemists can validate against current feedstock before commit.



Cua Lo Port — direct bulk vessel access to East Asian glass mills

## Target Customers & End Uses

### Vietnam Float Glass

Viglacera Vân Hải, VICO Quảng Trị, Minco Phú Mỹ — ASEAN-origin domestic supply

### Chinese Container Glass

C&S, Yaohua, Shandong containers — non-Chinese feedstock for diversification

### Korean Float Glass

KCC Glass, Hankuk Glass — high-quality consistent feedstock

### Taiwanese Display Glass

Corning Taiwan, AGC display — TFT-LCD substrate cullet feedstock

### ASEAN Container Glass

San Miguel Yamamura Asia, O-I Indonesia/Philippines — bulk container glass

### Tableware & Cookware Glass

Borosilicate cookware producers — VN, Thailand, China

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