HOURGLASS INTERNATIONAL, INC.

Global Sourcing & Supply Chain Update

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TO: Hourglass International Customers
FROM: Stephen J. Atwood, Hourglass International, Inc.
RE: NBR & NR Manufacturing Cost Increases — Southeast Asia
DATE: April 7, 2026

OVERVIEW

This communication provides a comprehensive briefing on the significant cost increases currently affecting the manufacture of **nitrile (NBR)** and **natural rubber (NR)** gloves in Southeast Asia — specifically those produced in Malaysia using feedstock originating from South Korea and Japan. These increases are the result of compounding pressures across the entire raw materials supply chain and are directly impacting the landed cost of gloves exported to global markets.

MALAYSIA'S ROLE IN THE GLOBAL GLOVE MARKET

Malaysia is the world's leading producer and exporter of rubber gloves, supplying approximately 45% of global rubber glove demand across 195 countries. The industry recorded total export value of RM 14 billion (approximately USD 3.2 billion) in 2025, accounting for 64% of Malaysia's total rubber product exports. Of that volume, synthetic (nitrile) gloves comprise 65% of exports, while natural rubber gloves account for 35%. Medical, surgical, and examination-grade gloves represent 72% of the total.

Any disruption to the feedstock supply chains that underpin Malaysian glove manufacturing therefore has significant global consequences — for healthcare systems, industrial safety supply chains, and procurement budgets worldwide.

PRIMARY COST DRIVER: STRAIT OF HORMUZ BLOCKADE

In March 2026, the Malaysian Rubber Glove Manufacturers Association (MARGMA) formally declared a supply emergency and called on the Malaysian government for temporary relief measures. The trigger: the blockade of the Strait of Hormuz drove Brent crude oil prices above USD 100 per barrel. Because Nitrile Butadiene Rubber (NBR) — the primary raw material for nitrile gloves — is manufactured from petroleum derivatives, this geopolitical event had immediate and severe consequences for both the availability and pricing of NBR latex.

MARGMA confirmed that industry NBR latex procurement costs doubled from approximately USD 750 per metric ton to approximately USD 1,500 per metric ton within a matter of weeks. Since NBR latex represents approximately 50% of total nitrile glove production costs, this single event is responsible for the majority of the cost increase buyers are now seeing.

MARGMA's March 2026 statement described the situation as an "unprecedented supply-driven challenge" that is "threatening global medical glove supplies and placing immense financial strain on local manufacturers." The association also flagged a secondary exposure: reduced factory

operating rates are putting Malaysian manufacturers in breach of minimum take-or-pay commitments under their natural gas supply contracts, adding a further layer of financial pressure.

THE FEEDSTOCK SUPPLY CHAIN: SOUTH KOREA & JAPAN TO MALAYSIA

Nitrile gloves begin as a combination of two petrochemical monomers — butadiene and acrylonitrile — which are polymerized into NBR latex. For Malaysian glove manufacturers, the dominant feedstock sources are naphtha crackers in South Korea and Japan, which extract butadiene as a co-product of ethylene production. These two countries are the primary origin of the butadiene and NBR latex flowing into Malaysian production facilities.

Between February 2025 and April 2026, feedstock prices in Northeast Asia moved as follows:

Feedstock / Input	Feb 2025 (USD/MT)	Apr 2026 (USD/MT)	Change $	Change %
Butadiene (NE Asia)	~$1,050–1,150	~$1,350–1,400	**+$275**	**+26%**
Acrylonitrile (NE Asia)	~$1,100–1,200	~$1,250–1,350	**+$150**	**+13%**
NBR Latex (industry avg.)	~$750	~$1,500	**+$750**	**+100%**
Natural Rubber Latex (Malaysia)	~$1,500–1,600	~$2,100–2,260	**+$650**	**+41%**

WHY GLOVES COMPETE FOR A LIMITED BUTADIENE SUPPLY

Butadiene is not produced specifically for gloves — it is a by-product of naphtha cracking, and global demand for it is dominated by larger industrial sectors. Of total global butadiene consumption, nitrile rubber (the category that includes gloves) accounts for only 14–16% of demand. The three sectors above it in the consumption hierarchy — styrene-butadiene rubber for tires (~29%), polybutadiene rubber for tire tread (~27%), and ABS engineering plastics (~18%) — collectively consume over 70% of global supply.

This means that when automotive production recovers, tire demand rises, or ABS demand spikes due to electronics supply chain shifts, butadiene is absorbed by those larger markets first. Malaysian glove manufacturers, sourcing from Korean and Japanese crackers, must pay the resulting market price — which is set by industries with significantly greater purchasing power than the glove sector.

The five largest consumers of butadiene globally, in order, are:

Rank	Application	~% of Global BD	Relevance to Glove Cost
1	Styrene-Butadiene Rubber (SBR) — tires	~29%	Auto sector recovery drives BD demand, diverting supply from NBR
2	Polybutadiene Rubber (PBR/BR) — tire tread	~27%	EV tire ramp-up sustains demand; locks Korean/Japanese cracker output
3	ABS Resin — engineering plastics	~18%	Tariff-driven supply chain localisation is increasing ABS demand
4	**NBR — nitrile rubber including gloves**	**~14–16%**	Gloves are the fastest-growing end-use within NBR (33% of NBR market by 2026), but compete at the bottom of the supply hierarchy
5	Styrene-Butadiene Latex (SB Latex)	~8–10%	Paper, carpet, adhesives — stable demand, same feedstock pool

FULL MANUFACTURING COST BREAKDOWN — NITRILE (NBR) GLOVES

The table below details the cost movement of each key input in nitrile glove production, from compounding chemicals through to energy and freight, based on industry data from MARGMA, IMARC Group, Chem Analyst, and Mordor Intelligence.

Input / Cost Item	Feb 2025	Apr 2026 (est.)	Change $	Change %
Butadiene (S. Korea / Japan crackers)	~$1,050–1,150/MT	~$1,350–1,400/MT	**+$275**	**+26%**
Acrylonitrile (co-monomer, NE Asia)	~$1,100–1,200/MT	~$1,250–1,350/MT	**+$150**	**+13%**
NBR Latex (compounded) — industry avg.	~$750/MT	~$1,500/MT	**+$750**	**+100%**
Sulfur / vulcanization agents	~$250/MT	~$290/MT	**+$40**	**+16%**
Zinc oxide (activator)	~$1,800/MT	~$2,100/MT	**+$300**	**+17%**
Accelerators (ZDEC / ZDBC)	~$2,200/MT	~$2,500/MT	**+$300**	**+14%**
Antioxidants	~$1,500/MT	~$1,700/MT	**+$200**	**+13%**
Calcium nitrate (coagulant)	~$320/MT	~$360/MT	**+$40**	**+13%**
Energy — natural gas (Malaysia)	Baseline	+6–8% est.	**+$40–60/MT**	**+6–8%**
Freight / shipping (Hormuz disruption)	Baseline	+15–20% est.	**+$50–80**	**+15–20%**
ESTIMATED Increase —				**+35–45%**

FULL MANUFACTURING COST BREAKDOWN — NATURAL RUBBER (NR) GLOVES

Natural rubber glove costs are being driven primarily by supply tightening in Malaysia and across Southeast Asia. Malaysia is a net importer of natural rubber; domestic plantation output is constrained by aging trees, labor shortages, and adverse weather. Flooding in Thailand — the world's largest natural rubber exporter — reduced regional supply by an estimated 300,000 metric tons in 2024–25.

Input / Cost Item	Feb 2025	Apr 2026 (est.)	Change $	Change %
Natural Rubber Latex (Malaysia FOB)	~$1,500–1,600/MT	~$2,100–2,260/MT	**+$650**	**+41%**
Sulfur (vulcanizing agent)	~$250/MT	~$290/MT	**+$40**	**+16%**
Zinc oxide	~$1,800/MT	~$2,100/MT	**+$300**	**+17%**
Accelerators (TMTD / MBT)	~$2,000/MT	~$2,250/MT	**+$250**	**+13%**
Antioxidants / stabilizers	~$1,400/MT	~$1,600/MT	**+$200**	**+14%**
Ammonia (latex preservation)	~$400/MT	~$430/MT	**+$30**	**+8%**
Energy & processing	Baseline	+6–8% est.	**+$30–50/MT**	**+6–8%**
ESTIMATED Increase —				**+35–38%**

SUMMARY OF COST DRIVERS

The cost increases described in this document stem from five converging factors:

- Geopolitical supply disruption: The Strait of Hormuz blockade has restricted petroleum derivative exports from the Middle East, driving crude oil above USD 100/bbl and sharply reducing global NBR latex availability.
- Feedstock competition: Butadiene — the core building block of NBR — is in high demand from the tire and automotive sectors, which consume over 70% of global supply. Glove manufacturers compete for the remaining 14–16%, with limited pricing power.
- Natural rubber supply tightening: Flooding in Thailand and aging Malaysian plantations have reduced natural latex yields, pushing NR prices up 41% from February 2025.
- Energy cost exposure: Malaysian glove factories are intensive users of natural gas. Rising global energy prices increase production costs directly, and MARGMA has flagged that take-or-pay gas contract obligations are creating additional financial risk at current reduced operating rates.
- Freight and logistics disruption: Rerouting of vessels away from the Strait of Hormuz has increased transit times and shipping costs by an estimated 15–20%.

Taken together, these factors are producing estimated total manufacturing cost increases of 35–45% for nitrile gloves and 35–38% for natural rubber gloves relative to early 2025 levels.

Please note these increases are as of April 2026. We will have updates for you on any further increases in May. Prices are subject to change.

Sources: MARGMA (March 2026, October 2025, May 2025); IMARC Group Butadiene & NBR Pricing Reports 2026; ChemAnalyst NBR & Butadiene Price Index; Mordor Intelligence Butadiene Market 2026; ANRPC / Malaysian Rubber Board.