

Linear Alkylbenzene & Sulphonate Methodology

Linear alkylbenzene (LAB) is an organic compound with the formula $C_6H_5C_nH_{2n+1}$, where n is typically between 11 and 12. LAB is used almost wholly as an intermediate in the production of linear alkylbenzene sulphonate (LAS), which is a surfactant. In the past five decades, LAB has emerged as an important feedstock for producing biodegradable detergents and other cleaners.

Normal paraffin (n-paraffin) and benzene are the main feedstocks for LAB. High-purity n-paraffin is obtained by hydrotreating jet kerosene. This is then dehydrogenated to form linear olefins, which are then exposed to benzene in the presence of a catalyst to produce LAB.

There are three types of catalysts used in producing LAB. Hydrogen fluoride (HF) is the major catalyst used. The second type of catalyst used is aluminium chloride ($AlCl_3$), but it is getting phased out. The HF process, in particular, was seen to be the most commercially viable. However, because of environmental concerns around the use of HF, it has been replaced since 1995 by a fixed bed catalyst system – for example, the DETAL process, which does not use HF.

Surfactant LAS, also known as linear alkylbenzene sulphonic acid (LABSA), is typically sold at a 96% minimum purity level in liquid state. LAS is used widely in the manufacture of detergents for household and industrial use. The common use form is as a sodium salt.

One tonne of LAS uses around 0.77 tonnes of LAB.

ICIS quotes LAB and LAS prices in **Asia and the Middle East**.

Frequency:

The Linear Alkylbenzene & Sulphonate report is published weekly on Wednesdays in Asia.

Linear Alkylbenzene & Sulphonate (Asia/Middle East)

Weekly spot price assessments:

Linear alkylbenzene (LAB)

- FOB India (USD/MT)
- FOB NE Asia (USD/MT)

- FOB Middle East (USD/MT)
- CFR SE Asia (USD/MT)
- CFR India (USD/MT)

Linear alkylbenzene sulphonate (LAS)

- FOB India (USD/MT)
- FOB NE Asia (USD/MT)
- CFR SE Asia (USD/MT)

General information:

Assessment window:

Price assessments are based on information supplied by market participants through the week up to close of business on Wednesdays at 18:00 hours Singapore time.

Specifications:

For LAS, the report assesses the 96% purity grade, as this is the industry standard. **Product with a lower purity of 90-95% will be normalised by adding a \$60-80 premium on top of the price indicated by market players.**

Timing:

In Asia, quotes refer to cargoes delivered two-four weeks forward from the date of publication.

Terms:

L/C at sight, except FOB India, FOB Middle East and CFR India for Middle East origin cargoes which are 60-90 days.

Standard cargo size:

The standard cargo size considered for the LAB assessments is 1,000-3,000 tonnes lifted in bulk carriers or iso-tanks. However, because of the increasing popularity of flexi-containers, the transactions of smaller cargoes, which are typically 100-300 tonnes in volume, will be mentioned only in the commentary.

The standard volume for LAS assessments will be 100-300 tonne drummed cargoes. Cargoes being transported by iso-tanks will also be considered, but mentioned only in the commentary.

Assessment basis:

The LAB and LAS markets in Asia and the Middle East are veering increasingly towards spot cargoes, according to market players. A few years ago, 50% of the transactions were done on a contract basis to large end-users and the other half to smaller players in the detergents sector. Currently, only 25% of trade are done on contract, with the remaining 75% transacted on a spot basis.

The assessments in the price table exclude taxes and special discounts offered on one-to-one basis.

Discounted prices heard in the market will be mentioned in the commentary.

Prices incorporate discussions and confirmed deals across the regions. Prices may represent a bid/offer (or buying/selling idea) range in the absence of confirmed deals or firm discussions. In the absence of business, the published price range may be adjusted to reflect the levels at which trading activity could take place, based on the majority market sentiment, price indications provided by market players and/or on editorial discretion.

In the absence of business on a FOB basis, the published price ranges will be adjusted to reflect the levels at which export activity could take place during the week by doing a netback from CFR Asia **prices** after taking into consideration factors such as freight costs to the destination regions or countries. Freight costs will be obtained from players in the LAB/LAS market as well as the shipping industry. They may vary from week to week (depending on the destination and quantity) and will be mentioned in the text.

The FOB India LAB assessments largely reflect trade flows from India to southeast (SE) Asian and neighbouring South Asian countries. Any FOB India prices obtained from the market for exports to other destinations will be mentioned in the text.

The FOB NE Asia LAB assessments largely reflect trade flows out of countries such as South Korea, China and Taiwan to SE Asian and south Asian countries. Any FOB NE Asia price obtained from the market for exports to other destinations will be mentioned in the text.

The FOB Middle East LAB assessments largely reflect trade flows out of countries such as Saudi Arabia, Qatar and Iran to SE Asian and south Asian countries. Any FOB Middle East prices obtained from the market for exports to other destinations will be mentioned in the text.

The CFR SE Asia assessments reflect largely imports into Vietnam, Philippines, Thailand, Malaysia and Indonesia, even though Indonesia is supplied largely by its domestic producer.



The CFR India assessments reflect largely imports to Indian ports from the Middle East.

The LAS FOB India assessments largely reflect exports out of India to SE Asian and south Asian countries. Any FOB India prices obtained from the market for exports to other destinations will be mentioned in the text.

The LAS FOB NE Asia assessment largely reflects exports out of China, South Korea and Taiwan to SE Asian and south Asian countries. Any FOB NE Asia price obtained from the market for exports to other destinations will be mentioned in the text.

The LAS CFR SE Asia assessments largely reflect imports to Malaysia, Thailand, the Philippines, Vietnam and Indonesia.

The LAB/LAS report offers market commentary and analysis including details of traced LAB and LAS spot transactions, supply/demand issues, export/import data and news, spot prices, contract price negotiations, general market sentiment for price direction, feedstock markets, production news and market outlook.

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