C8: THE IMPACT OF OIL PRICE ON STYRENE PRICE

Styrene is made from intermediates made from oil, so what is the impact of rising (or falling) oil price on the price of styrene? The conventional route involves the production of ethyl benzene from ethylene and benzene both of which show some correlation with the prevailing price of oil (see commentaries “C4: The impact of oil price on ethylene price” and “C5: The impact of oil price on the price of aromatics”). The nexus between the price of oil and the price of styrene is of interest to participants in the petrochemical industry and most organisations have their own analysis. Here is a simple analysis based on the published spot prices for Brent Crude (data from the US EIA) and styrene as reported by European Chemical News and ICIS Chemical Business from 1997 to 2012.

The first graph shows the reported spot price for styrene from 1989 to 2012.

The graph illustrates the volatility of styrene prices with many peaks showing a doubling of styrene price relative to a base level of about $800/t. Since 2000, there has been a steady rise in the styrene price. The correlation with the price of crude oil over this later period is illustrated in second figure. The correlation is reasonable with a correlation factor (R²) of 0.81. A better correlation is obtained for the relationship between styrene and mixed xylene.

From this we might deduce that for recent history, the underlying price of styrene is determined by the prevailing oil price. We may make the supposition that a better correlation could be obtained from ethylene and benzene prices. But this is not so with the correlation factor for the dependence on ethylene and benzene being below 0.6.

In passing we note that styrene, which shows relative high volatility, is similar to para-xylene, which also shows high volatility, and shows a good correlation with crude oil (commentary “C6: The price of para and ortho-xylene”).