

# Raw Materials Update

## Q1 2017

### Macro-Economic Overview

The U.S. economy continues to expand at a modest pace. The Federal Reserve is expected to accelerate interest rates this year in light of low unemployment and rising inflation. U.S. consumer confidence and new housing starts are near 15-year and 9-year highs, respectively. Crude oil continues to trend upward as expected. For pressure-sensitive materials, global supply and demand imbalances are causing some raw materials to spike in Q1. We expect most costs to moderate into a slow but steady inflationary path by Q3.

### Adhesives & Silicones

**Acrylics:** Propylene prices increased more than 30 percent in January, led by high demand trailing polypropylene in December and an unexpected delay in propane dehydrogenation units. Acrylic monomer prices increased more than 5 percent in January and 20 percent in February. Two of the world's biggest chemical manufacturers are on 100 percent sales control. We expect propylene and monomer costs to stabilize in Q3 as steam cracker and on-purpose supply recovers.

**Hot Melt:** The price of butadiene, a leading component of hot melt adhesives, rose steadily in Q4 and spiked another 30 percent in January. Supply has been curtailed by feedstock preferences shifting to lighter feeds and both, planned and unplanned downtime at butadiene extraction units. Two of the largest butadiene producers are on allocation. Additionally, tackifier costs continue to rise.

**Silicones:** Silicon metal rose in Q4 after several months of decline. We expect gradual increases through the rest of the year.

### Paper

NBSK resumed an expected rise over \$1,000/ton in January. Pulp prices will stabilize soon, but pulp and paper chemicals will trend upward with the recovery in crude. The rising cost of chemicals

will increase the cost of speciality coated papers, such as direct thermal, where demand continues to grow.

### Film

#### Polypropylene

Prices rose sharply in January due to several circumstances including domestic capacity constraints for propylene, producers looking to recover increasing costs (mainly oil) and a reduction in imports. The combination of these factors has led the market to become very tight. Prices will remain elevated through March and should retreat in Q2 as imports start to trickle in and the landscape becomes more balanced.

#### Polyethylene

Domestic demand surged in January and was up almost 8 percent above 2016 averages. Prices are increasing but are still relatively low versus export alternatives. Price increase will stop by Q2 when more resin capacity is expected to come to stream.

#### PVC

This area has tightened in Q1 due to planned maintenance, unplanned outages and pre-buying ahead of consistent increases announced for the rest of Q1. We will continue to see price pressure due to the lack of new PVC capacity and housing starts will continue to increase.

#### Polyester

There is some short-term volatility with MEG lead by domestic suppliers exporting material to China to take advantage of favorable pricing. This depletion of inventory, along with higher feedstock prices, has triggered many large resin manufacturers and polyester suppliers to start pushing for price increases. After this short-term volatility, pricing is forecasted to be generally stable with slight upward pressure.