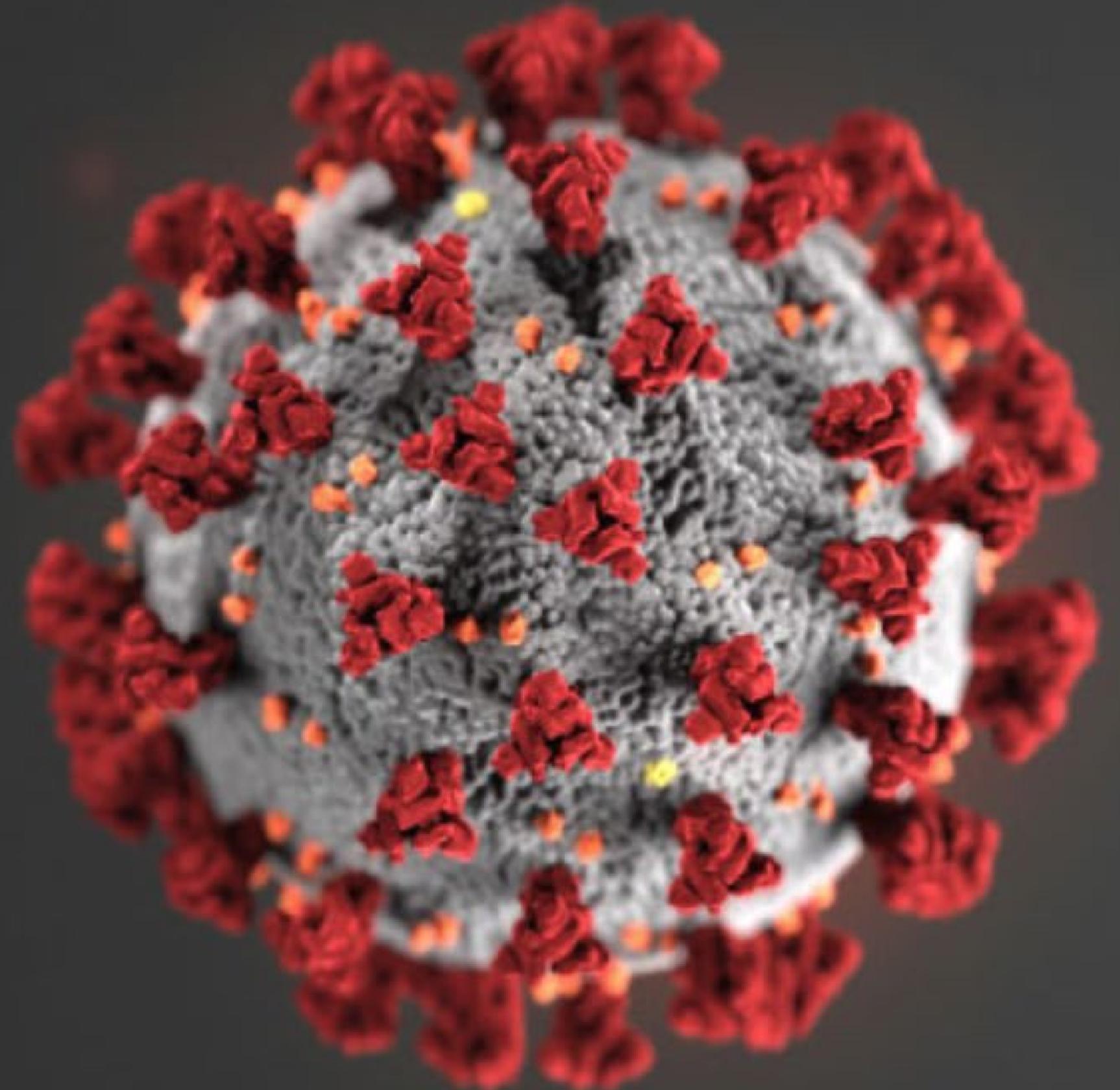




Corona virus Impact Assessment – Chemicals Industry

April 2020



Summary – Industry-Level Impact – Chemicals (China)

Key Highlights:

- Corona Virus outbreak has created disruptions in the production and chemicals supply chain. Chemicals demand from China alone is estimated to decline by 20% during Q1 2020.
- Though major manufacturers and state run refining companies like Sinopec, Petrochina have restarted their plants, it was observed that most of them are running only at 40-50% operating rates. This is mainly due to the already surplus market and downstream derivative plant shutdowns.
- Demand for petrochemicals have taken a hit leading to surplus supply of naphtha in the Asian market. Naphtha cracker spreads hit an all time in Asia as a result of surplus supply.
- Impact is highly felt on the specialty chemical companies which are relying on migrant labor.

Major Risk Factors

Industry Risk Drivers	Comments	Risk Probability		
		Almost Certain	Likely	Possible
Raw Material supply	Rubber chemicals, Dyes and Pigments, Carbon black are likely to face supply issues over the coming months. In contrast, availability of feedstock petrochemicals like Ethylene, Benzene, Styrene will see a surplus in the market with demand drop for packaging from the end consumer industry			
Lead times	Factory shutdowns, restrictions at ports and lockdown of few cities is likely to increase the lead times .			
Logistics	Inland logistics in China has been severely impacted thereby causing a delay in inbound and outbound deliveries. The same is expected to have an impact on the export / import freight concerned to China.			
Price Volatility	With crude oil prices declining, prices for resins, elastomers and immediate crude derivatives are likely to come down. However, prices for specialty chemicals are expected to witness a hike in the short term			



COVID-19 Impact on Silicones



Outlook

- The COVID-19 impact on the Silicones market is expected to be **moderate** as supply demand fundamentals will largely remain balanced through the year
- Suppliers are likely to increase prices for silicones in Q2-Q3 2020 (especially siloxanes) which go into Pharmaceutical and Personal Care applications due to increase in feedstock silicon metal prices and to offset the drop in demand from their major downstream applications.



Supply

- **Supply is expected to remain balanced at reduced levels:** There have been no major plant shutdowns or FMs announced by silicone manufacturers in all three regions - USA, Europe and China due to the Corona virus outbreak. Chemicals manufacturing falls under “essential business” in the USA, another factor supporting the lack of plant shutdowns in the US.
- However, production teams are operating on shift basis in most regions due to social distancing/quarantine and operating rates are expected to drop slightly (75-80% from 80-85%)



Demand

- **Reduced demand from major downstream applications to be offset by demand from small volume applications:** Demand from the major downstream applications like Oil & Gas, Construction and Automotive will witness a decrease in Q2 and Q3 2020 (typical peak periods for these industries). The huge drop in WTI and Brent crude oil prices is expected to hamper Oil & Gas applications.
- Demand from Pharmaceutical & Healthcare industry will witness an increase due to rising need for Personal Protective Equipment (PPE) like masks, gloves, gowns etc which use both siloxanes & silicones. Demand from the Personal and Health Care industry is also expected to increase slightly as frequent washing of hands with soap or alcohol based sanitizers will lead to dry, chapped hands. This will lead to increased demand for hand creams and other skin care products.



Supply Demand Dynamics

- **Pharma and Personal Care buyers expected to face price increases to counter lack of demand from major downstream buyers:** A decrease in silicones supply is expected to be balanced by a drop in demand from the high volume downstream buyers.
- Owing to balanced market fundamentals, silicone prices should maintain a stable to decreasing trend. However, suppliers are likely to quote higher prices to Pharmaceutical and Personal and Home Care buyers to stay competitive and maintain their margins.
- Volumes are likely to be directed to pharma buyers on a priority basis owing to the immediate need for PPE.



Supply–Demand Dynamics: Packaging Chemicals – China (1/4)



PVC

- The medical grade of PVC resin is impacted more as an end-use sector, which goes into applications of blood bags, tubes, and medical packaging. However, these sectors contribute to ~1% of the overall PVC demand, and hence, a strong surge in buying momentum may not be expected. In the PVC Chinese market, for both EDC-based PVC and Carbide PVC, market participants do not expect the prices in North East Asia to increase drastically. This is because, buyers and distributors had already replenished much needed stocks before the Lunar New Year holidays kicked in early January 2020, where producers ran operating rates at high levels
- India is a net importer of PVC and can reduce supply chain risks associated with logistics and shipping issues in Chinese ports by looking into other key areas, such as South Korea, Japan, etc. Indian PVC prices can witness an increase in the short term, as the regional supply is low, while the regional demand is healthy. Pricing Impact: The extension of the Lunar New Year holidays (due to the spread of the Corona Virus) weakened demand sentiments, lack of strong buying momentum post the holidays as well as decrease from the feedstock ethylene prices can support for the decline in SEA/NEA regions
- Shipment delays and port restrictions can hamper the logistics of the product flow. However, since the regional demand is low currently, the impact may not be high



PP

- **PP production in China:** 2.01 MMT (slightly down by 0.6% M-o-M) in January 2020
- **PP demand in China:** 2.4 MMT (up by 13% Y-o-Y in January 2020)
- **Forecast until March 2020:** PP production is estimated to be in the range 1.85–1.95 MMT/Month, while demand is estimated to reduce by >500 KMT/Month
- Inventories of major PP producers, Sinopec and Petrochina, have increased by 57% W-o-W to average at 1.6 MMT on February 17, 2020, while it has dropped to 1.3 MMT on 23rd Feb as PP producer cuts their operational rate
- Logistics in North China has been affected for the delivery of plastic products and feedstock supply to coal-based and methanol-to-polyolefin producers
- Sinopec (Wuhan; 500,000 MT/Y) could be potentially closed down, post this news. However, they have not yet announced it officially
- Hebei Haiwei Group have delayed its restart, due to coronavirus situation
- Few PP producers have reduced their operational rates by 20–30% M-o-M to average around 60–70% in February 2020
- Price Assessment: High level impact on China could be low, as the market is already oversupplied and demand is further not expected to rise for the next four weeks. PP prices in China are estimated to stay in the range 900–950 \$/MT in China until March 2020. Also, lower margins of the Asian PP producers could further decrease in the coming weeks, due to bearish market sentiments post this incident

- **Update on plant status PP: China** Coronavirus outbreak is likely to result in lower petrochemical supply in China as several companies cut their production amid rising inventory and a possible decline in consumption
- Sinopec's PP units have reduced their operational rates to 80% during early Feb 2020
- Growing demand for face masks, disposable syringes, and other medical protective equipment is expected to boost the supply of transparent polypropylene (TPP) grade and polypropylene (PP) fibre grade.
- PP supply to China is likely to fall from Iran and South Korea amidst rising confirmed cases of coronavirus infection. South Korea accounted for 21% of the exports share in 2019.



Supply–Demand Dynamics: Packaging Chemicals – China (2/4)



PC

- **PC:** The PC market in Asia is currently oversupplied, China is the major consumer of PC in the Asian market. With the automotive and electronics segment to be impacted with extended Lunar New year holidays, due to the outbreak of coronavirus, the demand in China is anticipated to remain subdued until Q1 2020.
- With the Chinese market slowing down the major exporting countries, like the US and South Korea will look to export PC to the other markets, like Europe.
- **Pricing Impact:** The prices in the short term are expected to come down, as the supply is anticipated to remain long and demand to remain low. However, prices post March will improve, as the demand in the global market will increase



Nylon and ABS

- **Nylon and ABS:** Electronics and automotive players could face issues in their supply chain and logistics with delayed shipments of products, as a result of lower operating rates, production cuts, and temporary shutdown in key areas in China. Pricing Impact: ABS and nylon were impacted to a larger extent by the US–China trade issues, leading to low price indices. Even with the Phase 1 trade signed, market participants do not expect the demand to surge until Q2 2020. February 2020 prices for ABS are likely to witness a decline, on the account of the concerns spread over from the corona virus and decrease from feedstock styrene prices. For nylon fibers, there has been production cuts and lower operations, due to logistics issues for raw materials and workforce. With the regional demand on the lower end currently, nylon prices are unlikely to witness an increase by a high degree



Natural Latex

- **Natural Latex:** With the spread of the corona virus moving to a global scale, the demand growth for latex gloves is poised to see an increase in Q1 2020. With the current tight supply in the natural rubber market, the addition of the rise in pent up demand from downstream can trigger further escalations in prices
- Manufacturing margins for the top glove players, such Top Glove Bhd, are likely to witness an increase, in line with a sudden rise in demand and buying sentiments. Production and trading could be delayed further, due to the additional extension of the Lunar New Year holidays (until February 9, 2020). Pricing Impact: Latex grades of rubber, especially from key exporting regions, such as Malaysia and Thailand, are likely to witness a rise in the short to medium term, as the period coincides with ongoing supply constraints, along with the upcoming wintering season from March



Supply–Demand Dynamics: Packaging Chemicals – China (3/4)



PET

- US: Feedstock PX prices decreased by ~22% in March 2020 due to steep decline in crude oil values. Demand from the PET market has experienced an uptick due to bulk buying activity as a result of quarantine measures.
- Asia: Slow demand in the downstream polyester markets within China, as western consumers stop buying clothes due to lockdown, coupled with high inventories of downstream PTA in the country had dampened sentiment in the PX sector.
- Europe: Low MEG demand in March 2020 is expected to continue in April 2020 from the antifreeze and coolant sectors. Automotive production has been drastically reduced amid corona virus-related closures. However, demand from the feedstock PTA is expected to improve due to higher sale of PET in the upcoming month.



PE

- The supply in the region is not affected, as there are no plants on the Wuhan region. Demand is estimated to be 10–20% lower in Q1 2020 compared to Q1 2019
- If the current situation continues, the market participants suggest that the current operating rate is around 40–50% for the majority of the units
- Inventories of major PE producers, Sinopec and PetroChina, have increased, as the majority of the units were not shut during Lunar holidays
- Pricing Impact: Overall, the current supply is high, and the demand is estimated to be low, and the scenario is expected to continue until mid-March 2020. PE prices for SE Asia are also expected to witness a downtrend, due to weak demand sentiments in China. PE prices in China are estimated to stay lower by 3% in the short term than the forecasted levels in January 2020



Acetone

- Demand for Acetone from the downstream sector has been heavily affected due to excessive inventory storage as there was no consumption due to outbreak of Coronavirus in the region.
- There have been various Acetone plant shut downs and Some of them have been forced to cut production from late January/early February as a result of extremely heavy inventory pressure caused by restricted logistics in order to curb spread of the 2019-nCoV.
- A slow recovery in downstream demand in response to the overall low plant run rates, in spite of a mild rally fueled by resuming transport conditions, is poised to hit the acetone market in the near term.



Isopropanol

- IPA prices in China and Asia increased as demand picked up from the pharma segment owing to the coronavirus outbreak.
- Supply is expected to remain tight in China owing to various plant shutdowns and reduced operating rates in the wake of Coronavirus Outbreak .
- Demand in the region, especially countries like Malaysia, Singapore and Indonesia, remained strong for downstream sectors like disinfectants, hand sanitizers/rubbing alcohol to combat the spread of the virus also known as Covid-19.

Update on plant status: Pengerang Refining and Petrochemical (PRefChem) located in Pengerang, Johor, Malaysia having capacity of 750,000 T/Y (MEG) is shut due to Fire and explosion at refinery complex on 16 March 2020.
India: The average operating rate of polyester facilities is estimated at around 20-40%, compared to 60-70% in the earlier half of the month.

Update on plant status for Acetone : Nearly 2.2 MMT of acetone is expected to go offline for Q1 2020, owing to the coronavirus outbreak. Formosa Ningbo, Sinopec Mitsui Huizhou Zhongxi, Chang Chun (Changshu), Cepsa China; are some of the few plants which has gone offline. However, the online date of plants is still not clear.

Update on plant status for Acetone : Plants like Kellin Chemical and Super Chemical shut their operations indefinitely. Even with their restarts late last week/early this week, operation ratios remain reduced as internal logistical issues still plague the country.



Supply–Demand Dynamics: Packaging Chemicals – China (4/4)



Phenol

- In the US, an increase in demand for downstream polycarbonate was observed, for production of medical devices in wake of the COVID 19 outbreak
- Despite the increasing PC demand for phenol, the near-dormant demand for phenol from the automotive industry has resulted in an oversupply condition and thereby, a drop in phenol prices
- Though China seems to recover from the COVID 19 outbreak, the severe weakness of global export, due to pandemic restrictions, is expected to result in a declining, domestic price trend
- Indian phenol supplier Deepak Phenolics announced a plant shutdown owing to a country-wide lockdown established in response to the spread of COVID 19 infections



Acrylic Acid

- The acrylic acid spot prices have declined by approximately 5% M-o-M in January 2020 owing to subdued demand conditions. Auto sales in China are likely to have fallen by over 18% M-o-M owing to the outbreak of the novel Corona virus. The demand from downstream applications such as automobile industry and paints and coatings sector have been hit owing to a disruption in their production.
- Owing to the health and logistics concerns, suppliers in USA will rely on domestic suppliers instead of Chinese imports. European buyers will currently rely on imports from Middle East and from India in H2 2020. This is expected to take a toll on Chinese exports and as a result, more material will be added to the Chinese market. Considering the market is already oversupplied, Chinese acrylic acid prices are anticipated to decrease further.



Supply–Demand Dynamics: Chemicals – India



LAB

Linear alkylbenzene (LAB) is predominantly used in the manufacture of Linear Alkylbenzene Sulfonate (LAS) surfactant used in the manufacture of laundry detergents, dishwashing, industrial cleaning and household cleaning. In India, due to lockdown by the government the major suppliers have either stopped production or reduced their operating rates. However, there is no major impact as India’s domestic capacity is insufficient to meet the internal demand and generally imports from Middle East and Africa

Supplier	Plant Location	Capacity (MT/Y)	Impact
Nirma Ltd	Vadodara, India	110,000	The plant is running at a lower rate of about 70%
Indian Oil Corp. Ltd	Vadodara, India	120,000	Decrease in operating rate/production cut
Tamilnadu Petroproducts (TPL)	Manali, Chennai, India	120,000	The plant is shutdown due to country lockdown



Acrylic Acid

- US:** Amid the COVID-19 pandemic, the supply of acrylic acid continued to remain plenty. Buying interest from adhesives markets for food and medical packaging seems to be thriving. The typical seasonal boost from architectural coatings may be limited significantly to do-it-yourself projects as the economy and consumers continue to be constrained by COVID-19 pandemic. While the US paint and coatings season is underway, the demand from this sector is currently on a decline. The automobile industry was projected to decline by rates outpacing those seen in 2019. The month of March 2020 witnessed a rollover in prices as plunging oil futures and weak feedstock propylene were counterbalanced by heightened demand for packaging adhesives and some spring paint demand. An extended period of lockdown in the US may diminish the demand from paints beginning April 2020. It is anticipated that the demand will decline sharply in April, hinging largely on how quickly the COVID-19 is contained and mitigated, which remains the largest uncertainty.
- Europe:** Owing to challenging market conditions due to the shift of the COVID-19 epicentre to Europe, the regional market continues to remain oversupplied while the demand continues to be lower than expected.
- Asia:** The demand for acrylic acid took a hit from the acceleration of COVID-19 spread, with partial and/or complete lockdowns seen in several regions in efforts to curb the spread. Ample supply and weaker consumption is expected to add pressure on the market. Feedstock propylene prices were down by close to 23% over the last three weeks and do not lend support from a cost perspective. Asian markets including India, Malaysia, Thailand and the Philippines are facing COVID-19 -related lockdowns. Many downstream plants have temporarily stopped production and have postponed the shipment of their cargoes until operations resume. Other downstream plants in Asia have reduced operating rates due to reduced demand. The China domestic market was also weak on ample supply with plant restarts, while exports were hindered with the wider Asia region impacted by the pandemic.



Summary – Industry level impact – Chemicals (Europe/South Korea)

Key Highlights:

- Corona Virus outbreak Italy and South Korea is yet to show its impact on the Chemical industry.
- Regions in Italy, where the current outbreak of coronavirus is identified is a major hub for API manufacturing. Hence, the impact on the petrochemicals and specialty chemicals industry is expected to be low.
- South Korea is one of the major petrochemical producing region in Asian market with most of its production exported to China. Currently there are no announcements on plant shutdowns by the manufacturers.
- However, if the situation in South Korea intensifies, there might be a supply shortage for petrochemical derivatives like Resins, synthetic rubber and solvent categories

Category impact Based on Situation in South Korea

Key Categories	Impact Level	Comments
Resins	Medium	Petrochemicals derivatives like PP, LDPE, PET , PC and Engineering plastics supply chain will be impacted in the Asian region
Synthetic Rubber	Medium	China, South East Asia and USA are the major export hubs for South Korean synthetic rubber.
Solvents	Medium	South Korea is a major exporter for solvents like Acetone, phenol, MIBK. Any plant shutdowns due to Coronavirus is likely to create a shortage of supply in the Asian market.



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