

GERMANY

Almatis: Forward Strategy in Times of Corona with New Products and Reliable Services

Like many other businesses, the raw material sector is challenged by COVID-19. Reliable supply is one central theme, which is even more difficult now due to a shortage of containers and vessels, as well as an extreme increase in transport costs for international supply. As markets recover, especially the technical ceramics segment has new dynamics in almost all regions. We can see a stronger focus on developments that call for new products and system solutions (e.g. electric vehicles, electronics, energy reduction) to be delivered. We had the opportunity to talk to Chuck Compson (CC), Marketing Director at Almatis, and learned how the alumina business can profit from these market dynamics. He explained market trends, their strategy to optimise lead times and Almatis' approach in responding to market needs with new products and R&D activities.



Fig. 1
Chuck Compson, Marketing Director at Almatis

CA: How has the impact of COVID-19 on Almatis been up to now?

CC: COVID-19 had an impact on our business in 2020 for sure, same as for everyone. We saw the impact first at our operations in China, and our colleagues there moved quickly to implement safety measures. This was transferred around the world so that by March we had measures in place at all operations. We were also able to adjust the business during the slowdown period, and we forecasted pretty close to actual conditions. The recovery was very strong and faster than expected, it really hasn't stopped since.

We saw many logistic challenges initially due to container availability, but moreover also an overlying trend shift to regional supply chains. We believe this trend will lead to customer demand for regional manufacturing capabilities, which benefits Almatis as we have the largest operational footprint in the industry. We are able to manage and meet this shift with manufacturing capability, not just warehousing and local distribution.

In areas where we do not have local manufacturing, such as Southeast Asia, we have worked to strengthen our supply chain. Recently we launched a new distribution center in



Fig. 2
Global Almatris map

Singapore to support Southeast Asia. This distribution center is supported with products from our plants all over the world.

CA: How did the user segments develop in 2020 (refractories, ceramics, polishing, specialties)? Are there other impact factors than issues caused by the pandemic?

CC: All segments were impacted though specific end-applications were better or worse than others. For example, some end-use applications such as pharmaceuticals, semiconductor and electronics, fared much better than automotive, glass or steel, which saw reductions of ~30–50 % in Q2 versus Q1. In fact, the electronics and construction markets continued to strengthen, with some end-uses increasing >10 % over that same period.

In the recovery phase, starting mostly from August/September, the industries that saw dramatic slowdowns were also the ones that recovered the fastest, which makes sense. Despite difficult months in the middle of the year, our overall business was down <10 % for the entire year, showing the robustness of our business adjustment plans and also the economic recovery.

The pandemic did accelerate certain market trends, which were already present. I believe that many companies either

took the opportunity to re-evaluate their strategy, or were forced to. In a time of crisis, and when it is a matter of necessity, prioritization can actually become much clearer, and businesses and industries then pivot much faster. I think this necessity accelerated many market trends.

CA: For Technical Ceramics many user segments are in good shape in spite of the general difficulties. Do you intend to put a stronger focus on this market segment?

CC: Yes, overall this industry had some challenges during the pandemic, being down ~10–20 %, but recovered swiftly and now many companies are seeing backlogs and extended lead times. We already have a very strong focus in technical ceramics, however, we do see some regional trends and clear opportunities for growth, and we have increased our resources in those areas.

China's latest five-year plan is a driver in growth and opportunities. They have made bold commitments to emissions reductions and technology expansion/semiconductor independence. The market in the Asian regions will remain dynamic, and certainly we are focused on serving those markets as well as we have served the rest of the world. This is another reason we decided to launch our distribution center in Singapore. The European market is becoming much more



Fig. 3
Three Almatris plant locations: (f.l.t.r.) Ludwigshafen/DE, Rotterdam/NL and Huangdao/CN

dynamic, and that continues to accelerate. Electric vehicles, electric infrastructure, energy reduction and efficiency applications are the drivers here, and that will continue to accelerate in the coming years. The Americas markets are not as far along, but there are clear signs that growth will be coming there as well.

We were able to utilise our renewed Stage-Gate process to focus our efforts and quickly develop new products. We launched a new ThermaFill product line that is in qualification with customers for heat dissipation applications for end-users in electric vehicles, semiconductor, electronics, and 5G-infrastructure. Despite recently launching this product line, we are already expanding it with next-generation products, including developments towards higher-purity products, low-alpha-radiation products, surface-treated products and higher thermal conductivity aluminas. These will be critical additions to our portfolio.

Further we launched a setting-shrinkage-controlled cement, CA-SYNC, for better control in refractory applications requiring core-removals, and for the building chemistry market. We are launching a new spray-dried powder for improved pressability and green machining in order to complement our existing products. We have developed adjacent process technologies to complement our current offerings, and many customers are testing tailored products that will help them achieve competitive advantages in their markets.

CA: Do you see opportunities to tailor powders for Additive Manufacturing?

CC: Additive Manufacturing is a great technology, with many opportunities, and has even been accelerated during the pandemic. Compared to the overall ceramics industry, its mainstream adoption is still low, however, users are realising the benefits of incorporating this technology into their development and pilot-scale efforts, and some in full manufacturing processes. This technology offers sustainable advantages for manufacturers in the long run, as much of the industry makes products via a “subtractive process”, and additive offers the benefit of greater material utilisation in the final product. Further, it offers the possibility of new

product geometries and architectures that are not possible with many current manufacturing processes. This has already been recognised in dental ceramics and investment casting cores, and I believe much of the ceramic industry will follow suit.

Our approach here is to work with the manufacturers themselves to understand what their systems need to be more efficient. Many of them are looking to make their systems as user-friendly and flexible as possible, while also offering the necessary final properties of standard manufacturing processes. Our products play a key role in supporting that, and we are always excited to work with these companies.

Almatris is closely cooperating with the newly founded 3DK (Additive Manufacturing Competence Center) headed by Dr Marcus Emmel from FGK, and my colleague Dr Andus Buhr has been invited to be a member of the Advisory Board. We are excited to join this organisation and contribute our knowledge of alumina-products to benefit both the ceramics and refractory industries.

CA: What are the most important customer needs (products and services) Almatris has to respond to?

CC: The core aspects of customer satisfaction are still product quality, supply reliability and fast-response service and support. Customers are looking for a supplier that is large enough to meet their product and supply needs in all regions, but is able to respond quickly. Almatris is able to do this, while also maintaining a large product portfolio. Our operations do an excellent job in pushing the limits of their capability, and always helping us to expand the portfolio further. We rely on a team approach to provide the best service to our customers. Primary service and support come from our sales, customer service and technical teams. They maintain close contact and cooperation with customers, and providing a fast response time is something that is taken very seriously.

Material availability and supply reliability are important to keep our customers operating. We have implemented pull loop systems with a few customers, which is working very well. This can be done locally, regionally and globally. There

is the potential to further improve these systems and also add information transparency through digitalization. This is something we are keenly interested to discuss with our customers in order to best meet their needs and make the process more simplified and efficient.

CA: *How do the different production plants interact to serve best the customers? Or are their activities more regional?*

CC: We underwent a restructuring in March 2020 to better align our business with changes we saw in the industry. With every change that we make, the goal is to be more customer-centric and improve our speed and ability to serve customers. Each major region has dedicated manufacturing facilities to meet market demand. This is a unique position that we have in the market. Further, we are expanding in India with a new tabular plant to meet growing refractory demand, and this will allow India to be more independent from our internal supply chain. This reduces risk in our overall supply chain, when operations are regional and independent, and customers know that we also have internal backup supply options. When demand is high, our facilities can support each other and provide additional supply, as needed. Specific global products are offered in every region. They are produced using the same processes, to offer supply and risk assurance to global customers. This allows them to source the same product and product quality in every region of the world.

CA: *Do you see issues for product recycling – approach circular economy versus economic effects?*

CC: Sustainability, recycling and circular economy as well as product lifecycle are changing the course of business. We want to participate in this change with our customers. Incorporating sustainability into the development process for new products, product refinements and improved processes (sourcing, packaging, logistics, etc.) has very quickly become mandatory for suppliers.

This is one of the trends that clearly accelerated during the pandemic, and we are actively implementing sustainability measures and pursuing the requisite sustainability certificates. Evaluating methodologies for increasing the product lifecycle, with recycling and re-use efforts, will reduce waste and help the environment. While initially some of these changes require capital, it is an investment in the business that should pay dividends in the long term.

Through the years, Almatris has already launched many products, which focused on sustainable advantage, environment, health and safety. Some examples are SLA-92 as a replacement for ceramic fibre products, which also shows a significant lifetime improvement. Our Bonite and Bonite low-density products offered a substantial reduction in energy consumption in lining concepts.

Further, we have MR66 magnesia-rich spinel that replaces chrome ore in fired magnesia bricks for cement kilns and

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STEULER-KCH GmbH | Berggarten 1 | 56427 Siershahn | GERMANY

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last October we launched ES-Y 88 in China to replace fine chrome oxide in gas purging plugs. BSA 96 is a regional offering to reduce dependency on imported BFA products, which reduces scope III emissions and further has lower density and reduces overall material consumption. Our reactive alumina products, building on the success of CT3000 LS SG offer up to 100 °C-lower sintering temperatures than competitive products.

We are developing next-generation products specifically focusing on reducing sintering temperatures for energy and emissions savings.

CA: How do you expect the market development in the near future by main market regions?

CC: Asia will continue to grow strongly, in line with key mega-trends, steel and infrastructure. Newer trends like green energy, climate change and digitalization are creating fast-growing applications and opportunities. Those new trends will also generate renewed growth in the developed regions like Europe, US and Japan, where the legacy growth drivers of steel and GDP will contribute less in the long term. If we just think day-to-day or month-to-month, the markets appear more volatile, with increasing frequency of supply/demand fluctuations. Our customers tell us that their demand visibility is not as clear as it was in the past, and many customers are getting short-term and unforecasted demand. However, if we step back, some clear trends are

visible. The raw material industry needs to align itself to be more flexible to supply customers in any region with reliable supply and shorter lead-times.

This will take some time to implement, but we can support a “flattening of the curve” so to speak, by adjusting our supply behaviour. This requires a re-evaluation of the entire supply strategy ... from manufacturing capability, footprint to overall inventory levels and local distribution centres.

Sustainability initiatives are also changing the course of business, from responsible sourcing to equitable workforce development, recycling, environmental impact and community programs. No one can escape the impact we have on our planet. Businesses have to tear apart their old strategies and re-build around corporate social responsibility. This trend engages suppliers and customers together in the value chain, and from this collaboration also comes innovation.

Complete new fields are emerging, and the lifecycle of a product is much more important. There are examples in thermal management, battery safety, improvement of industrial energy efficiency, and re-use of byproduct streams. Another example is the replacement of certain hazardous materials with alumina, as government agencies tighten regulations for occupational health and safety. Customers using materials that are now deemed hazardous are very open and willing to try alumina as a replacement option.

CA: Thank you for talking to us.

KS

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Head office:
 Aeussere Hut 2
 95490 Mistelgau
 +49 (0) 9279 977 41 - 0

www.eitec-gmbh.de info@eitec-gmbh.de



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