

Poly Village

PolyMirae Magazine
2021 Spring Vol.46



Hifax EP246P



<<< Hifax EP246P

Hifax EP246P gives the opportunity to replace from ABS or PS to PP by good dimensional stability.

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Dear Business Partners and Employees of PolyMirae,

The New Year, 2021, has dawned. I wish for all your desires to come true this year, and I also wish good luck and blessings for your family.

While 2020 was a meaningful year for our company as it was our 20th anniversary, we, and the wider world, experienced the unprecedented crisis of the COVID-19 pandemic. Despite the difficulties, our company has been able to make strong progress in line with our continued growth over the past 20 years thanks to the assistance of our shareholders, affiliates, customers, and the community, as well as all of our executives and employees who have given their all. I would like to take this opportunity to express my sincere gratitude.

Over the last year, we have been able to further strengthen our company's market competitiveness by achieving more significant performance than ever in terms of sales and finance, as well as in safety, environment, and health, which are our core values.

2021 will be a very challenging year for us due to the intensifying competition in the petrochemical industry caused by the massive expansion of polypropylene worldwide. The 400,000 ton production line at Ulsan PP Co., Ltd., into which our investments and efforts have been focused in order to strengthen our sustainable growth, will be operational this year.

However, our company is not fearful of external difficulties and new challenges. We will advance even more robustly by flexibly responding to changes. We promise that we will focus on certain areas, those we do best, and that all our employees will do their best to help us become the most respected company in Asia's polypropylene industry based on our excellence, competitive people, and social responsibility.

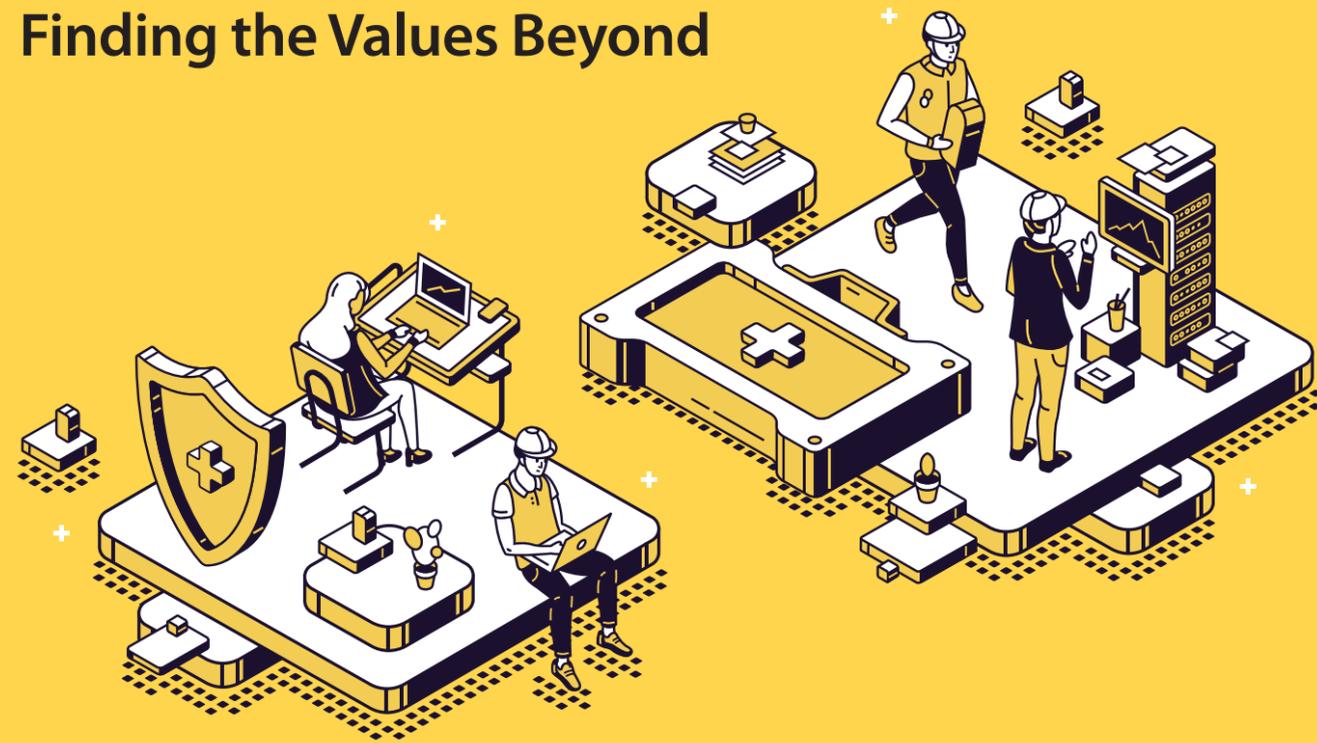
Lastly, I hope this year will be healthy, happy, dynamic, and successful for you and your family. Thank you.

January 2021

BH Kim President & CEO



Upholding Safety and Finding the Values Beyond



Recently, all of PolyMirae's factories were certified as being Grade A in the operation of the Safety Management System (SMS), and Grade P, which is the highest grade in the operation of the Process Safety Management (PSM). From the company's foundation to present, "safety" has been the top priority of PolyMirae. Let's look into how we have worked to uphold the safety, as well as what values exist beyond that.



GJ Lee, Process/QA Director

Proving "Safety" is Our Core Value

Today, safety is expressed through countless texts and illustrations, and is practiced accordingly. Putting safety first in all aspects of work and life is now a natural thing. We have selected safety as our top priority and invested in it continuously for 10 years, since the time when President BH Kim was the factory manager until present day with KY Yoon in that position.

Our factory's slogan was, "No work if we are unsure of its safety", and we did not carry out any tasks unless the safety was assured in advance. The work culture we established was one of not pushing work simply because it was scheduled, and one of not operating the factory during an unstable situation. Also, we have eliminated environmental risks caused by carelessness through supervision and inspection by special safety management teams, as well as through pre-startup safety review (PSSR) after turnaround work (TA work) and shutdown work (SD work). As a result of these efforts, all our factories were able to acquire Grade A ratings for the operation of the safety management system (SMS) and Grade P ratings, which represents the highest grade for the operation of the process safety management (PSM). Thus, we have proven our stable internal safety to the world.

Now, we must find, improve, and solve fundamental problems to strengthen our culture that we have all created together, and we must find and pursue the values that exist beyond.

The Only Fundamental Solution is to Find and Fix the Root of the Risk

"Why do we have work? Why do we have problems? Why haven't we taken action?" If we ask these questions to ourselves, then we will see the solutions through the veils. Most accidents occur during work. The various improvement activities implemented to reduce the frequency of accidents will be a fundamental solution for the prevention of safety accidents. Unstable work, unnecessary work, unrecognized work, and unsatisfactory work were issues of which we were already aware and could have solved. If we can predict these in advance and derive with various methods and solutions, then we can reduce accident rates, and even if there is an accident, then we can react with stability because we have prepared for such an outcome. Stable operation and quality assurance leave no room for accidents. Stable operation requires a professional spirit and experience pertaining to operational knowledge. Stable operation can be practiced and high quality products can be produced when there is communication and teamwork in the field. If these practices are not implemented, then there could be additional work for reproduction and reprocessing. Situations that have not been communicated and remedied could lead to unstable operation, causing further problems for the next round or the next day. This increases the frequencies of accidents and additional work. Therefore, improving and solving problems is the only fundamental solution for safety. We have continued to leap ahead, experiencing many difficulties and limitations during the 20 years of our history. Through this process, we have seen many other companies failing to secure safety. We have faced these problems head-on, no matter how difficult they were to handle. Now it is time for us to find the values beyond safety.

Finding Values Beyond Safety

The first value beyond safety is the pride associated with the manufacturing of polypropylene (PP). PP products made by PolyMirae, at a safe workplace, are used as raw materials for eco-friendly products, and they are ingredients for plastic, which are essential to human health. The COVID-19 pandemic, which has been ongoing since 2020, is shaking our lives to their foundations. Our PP products are used for basic medical protection and are preventing a worsening situation. In addition, eco-friendly automobile industries use PP, the safest and lightest plastic material. Our high-functioning PP provides the backbone of industrial change, and we will play a role in improving the environment in the future.

The second value is the happiness of our company's workers. You work for a company that manufactures leading, eco-friendly products of which you can be proud. We are small but fruitful, and we are a role model to the community and the wider world. We have been, and will continue to be a company that sets an example with transparency and dignity. Being part of the PolyMirae family and being a part of our operations evokes pride and happiness.

Lastly, PolyMirae is our home. Our efforts to protect the safety of our company and to continuously improve and solve problems are both our assets and privileges, and they are the values beyond safety.





Ahead of a new, promising start, Ulsan PP expects to produce 400,000 tons of PP annually

Ulsan PP is a polypropylene manufacturer formed as a joint venture between SK Advanced and PolyMirae. After the signing of a memorandum of understanding (MOU) in November of 2017, Ulsan PP was established on November 1, 2018. The company began to construct a factory in the Ulsan in March of 2019. The Ulsan PP plant construction project was initially intended to achieve mechanical completion in March of this year. However, the company achieved this goal around two months earlier. As a result, the factory's mechanical completion was finished on January 11, and its test operation is currently underway. Accordingly, the company's commercial production has also been brought forward to this March from the initial set date in May, and the worksite is bustling with preparations amid the excitement and tension.

Onae Kim, UlsanPP - Planning & Finance



Ulsan PP will receive raw materials of propylene from SK Advanced, which operates a world-class PDH factory, and gain marketing insight from PolyMirae, which is equipped with PP manufacturing technology and marketing capabilities. Based on these resources, the company is set to produce approximately 400,000 tons of PP annually and sell it at home and abroad through the sales networks of PolyMirae, LyondellBasell, and Daelim. Ulsan PP is comprised of about 70 employees, including President Joseph James Hoinkis. The product, technology, logistics, and HSE teams, which are led by plant manager Lee Gwang-Seop, are responsible for factory operations. In addition, Director Woo Byeong-Jae and the planning & finance, production support and HR teams provide support operations. The company is striving to realize the corporate vision, "Best Operated, Most Valued PP Manufacturing Company."

During 2020, the company faced multiple setbacks while working on the project due to the worldwide COVID-19 pandemic, including late delivery of construction materials and delays in the entry of overseas supervisors to Korea. However, with the full support of both shareholder companies and the efforts of every member of the company, Ulsan PP was able to complete the project's core tasks in an earlier and safer manner than expected.

Ulsan PP begins commercial production amid an oversupply of PP caused by the competitive new expansion of PP facilities in the industry, and thus intends to respond to this difficult market situation effectively and actively. Guided by the company's new-year "Goal Zero 2121", every member of our company will make continuous efforts toward realization of "One Goal" with "One Team, One Mind" to become a safe and successful startup. We ask for your continued support and interest ahead of the new beginning of Ulsan PP.

PolyMirae's Survival Strategies for the Changing Global PP Market



Currently, PolyMirae is responding to changes in the global market through our "Specialty Focus" strategy. It is a strategy of increasing differentiated businesses and expanding new products through development. Let us take a look into the vision and strategies of our company compared with the changes in the PP market caused by the COVID-19 pandemic.

Has Kim, Market Development



We are Focusing on Reforming Ourselves from Generalists to Specialists.

We are facing a long-term threat from the outbreak of COVID-19 that began in December 2019 before spreading rapidly around the globe. The pandemic has slowed the economic growth in most industries over the past year, but in certain markets, such as face masks and protective gowns, the changes have led to increased demand for polypropylene (PP).

The PP market in 2021 is growing as China continues to expand its new Propane Dehydrogenation (PDH) and as countries in the Middle East and Asia develop their own projects. In 2020, a total of 3.3 million tons of PP capacity was increased annually in China, and about 52% of the new PP capacity was in operation during the second half of the year. The production will further increase as the operations stabilize in 2021. The peak of PP supply growth will increase even higher in 2021 with an expansion of 4.5 million tons, which is equivalent to the 78% of Asia's total additional supply capacity.

China, the largest importer of PP, is expected to continue to expand new PP and to increase its self-sufficient consumption to cover its own demand. This will intensify the competition among Asian PP producers due to an imbalance in supply and demand. PolyMirae has been pursuing a mutually beneficial sales policy through mutual cooperation with customers based on our unrivaled competitiveness, rather than competing against our customers in these difficult circumstances. Rather than focusing on cost competitiveness through product generalization, we are focusing all our capabilities on differentiating products that can lead to successful market competition, and we know from our successful history that this is only possible through continuous development and endless innovation.

highest level possible. PolyMirae has already developed and released a variety of high-quality products in a timely manner based on differentiated production facilities, product designs, catalyst application technologies, stable operation capabilities, and advanced Metallocene technologies. We have successfully maintained our differentiation strategy since.

The Flagship of the Specialty Product that is Responsible for Our Company's Future

One of PolyMirae's flagship specialty product is the Metocene, which features products that are widely used in nonwoven textile markets for high-strength and high-purity medical masks, diapers, sanitary products, and automotive-Interior part that require low TVOCs, such as LFT materials or flow modifiers and sound absorptive features. It is currently attracting attention as the most innovative solution for low TVOCs.

Reactor-made thermoplastic polyolefin (RTPO) products used in automotive compounds, the largest sector of the plastic industry, are also our specialty products. RTPO products are used in automotive compounding that requires high impacts, such as car bumper, instrument panels, and door panels. It reduces the amount of expensive EPR rubbers used in compound materials, contributing significantly to their cost reduction.

PolyMirae's Pledge for Advancing in the Global PP Market of 2021

Although it is expected in 2021 that PP suppliers will struggle more than ever due to Asian PP market's supply and demand imbalance, we will continue to deliver greater value to our customers through our unique competitive advantage, while understanding, anticipating, and further developing market trends through our global marketing network. We will also do our best to maintain the reputation we have built through consistent product quality, service reliability, and customer friendliness.



Growing with Our Customers Through Our "Specialty Focus" Strategy

To this end, PolyMirae is putting its "Specialty Focus" strategy first. "Specialty Focus" means expanding differentiated business and increasing new products through development. Through this, we aim to grow with our customers by expanding our portfolio of industry-specific products and delivering what they need, when they need it, to maintain their technology and productivity at the

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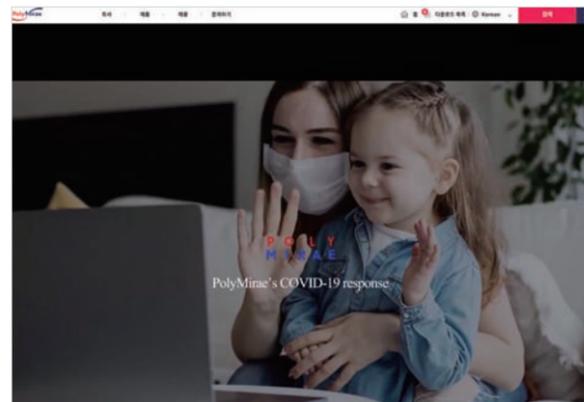
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8 Years Without Incident

As of 24:00 on September 6, 2020, PolyMirae achieved a significant record of eight years without accidents. This record, along with 3000 days without accidents in June 2020, are the fruits of labor of all our executives and employees who actively participated in our efforts with safety as their top priority. In particular, the safety standards of our parent company, Lyondell Basell, counts any incidents in all work that occurs in the workplace, so our record is that much more meaningful. The maintenance work on the Pyeongyeo factory in November 2020 has also been safely completed, and we are moving toward an even more incredible record. In 2021, all our executives and employees will continue to prioritize safety, and will make greater efforts to maintain and develop our culture of safety.

Subin Jang, HSE



PolyMirae's Website Improved

In October 2020, we reorganized our website's design to enhance the diversity and convenience of the information provided, as well as to promote our societal contributions. The improved website depicts not only the value and corporate image that we pursue, but also our social activities in response to COVID-19, maintaining the attention of its visitors.

In addition to the improvements of the main page, we have also added new functions to make access to information easier. We now have three language options on our website, with Chinese being added to the existing Korean and English website. This addition was for the increased convenience of our Chinese customers. We have also separated the PP (polypropylene) products by application to enable users to access their desired application and browse the products. In addition, the Q&A Board was newly established to improve accessibility for customers encountering us for the first time. This has led to inquiries about products, prices, and technologies from various customers. The technical and sales teams are providing rapid feedback so that the product inquiries can proceed to business arrangements.

Sooeun Myung, ADTSI



OJT Held for Production & Support Team of Ulsan PP

We conducted various OJT training sessions for the success of the project of the Ulsan PP plant that is under construction, as well as to support stable operations and efficient management. From June to September 2020, two sessions of OJT training for the production team were carried out in shifts for two months each. The primary contents of the training were basic operations, cases of operation procedures, and potential emergency situations during operation. In addition, the Ulsan PP Maintenance team received on-site experience and training on management and maintenance for major mechanical devices for two days at the Pyeongyeo factory. Ulsan PP's experimental analysis team visited the Yeosu factory and the Daejeon technical center for 5 days beginning November 9, to complete a field trip related to analysis methods and operations management. Through these support activities and trainings, PolyMirae and Ulsan PP made efforts to be the cornerstone of creating higher value based on mutually cooperative relationships. We will continue to play a role in supporting HSE and startups to ensure the stable commercial production of Ulsan PP.

GJ Lee, Process / QA



2020 Kimchi Donation

Every year, we carry out various social contribution activities for the underprivileged, such as donating to welfare facilities, conducting wall-painting events, and offering scholarships. In 2020, our factories and headquarters conducted a program to donate kimchi to low-income, elderly people living alone, as well households with disabled family members living in Yeosu and Yeongdeungpo-gu who are suffering from the effects of COVID-19.

Yeosu City and the Yeongdeungpo-gu Office thanked our company for its continuous support for those in need, especially when numbers of volunteers have decreased during these uncertain times. We were happy to assist the community, and we will continue to make efforts to become more integral parts of our community, while giving attention and providing support to those in need.

SH Hwang, HR · ER

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Successful Commercial Sale of HP465YHP

In September 2020, PolyMirae successfully launched Moplen HP465YHP which is effective to improve the filtration efficiency of melt-blown and reduce inhalation resistance. Existing melt-blown customers had to add additional chemicals to improve filtration efficiency, but this new product does not require additional chemicals to achieve the customers' target filtration efficiency. Also, melt-blown manufacturers evaluated that high filtration efficiency with good breathability could be achieved by using Moplen HP465YHP. Some companies have successfully produced KF94 and N95 level filters using this material. Due to COVID-19 pandemic, the demand for KF94-level melt-blown filters increased rapidly in 2020, and PolyMirae fully supported for production of melt-blown as KF-94 level through stable supply. Currently, Moplen HP465YHP is expanding its applications to not only masks, but also industrial melt-blown application that requires high filtration efficiency level such as HEPA filters, air purifiers, and vacuum filters. We will continue to expand our specialty business through stable supply capability and differentiated product portfolio.

Soeun Myung, ADTSI

TA Work for Pyeongyeo Factory Completion

We carried out 23 days of regular maintenance at the Pyeongyeo factory from October 29 to November 21, 2020. During this period, investment projects were carried out to inspect legal regular inspection facilities and improve safety. Included in this was the existing automatic fire sprinkler system used in the case of a factory fire, and we have installed an additional, remote-controlled, firewater-spraying system that is linked to the CCTV system. A fire safety system was established to protect the lives that could be in danger in the event of a fire by quickly responding in case of an emergency via remote control. With the installation of a remote-controlled firewater-spraying system at the Pyeongyeo factory, now all our factories (lines 1-4) are equipped with a remote-controlled, firewater-spraying system. The CO2 fire extinguishing system was swapped out with a halogen compound (clean) fire extinguishing system in the Rack room, the HVAC room, and the MCC room in the building to prevent suffocation and to protect human lives. As such, we have established a system to protect not only facilities, but also human lives, in the event of fire, and we are making investments according to our corporate purpose of prioritizing human safety. Also, our HSE facilities were strengthened and factory operations were improved to comply with the latest Industrial Safety and Health Act by replacing the Corrosion Under Insurance (CUI) pipes and by installing a capacitor for efficient power usage. There were thorough plans laid and safety management carried out by all related departments, including the production team, to safely carry out the long-term repair of 23 days under the risk of the pandemic. As a result, the work was completed within the designated period, and the stabilization of our factory could be elevated to another level.

JY Park, PD 3

Yongsung Factory Acquires Grade A in SMS

In the 2020 Safety Management System (SMS) review conducted by the Korea Gas Safety Corporation, we were able to verify our company's safety level once again by obtaining the highest grade of "A" in the Yecheon factory in 2019. The SMS is a system introduced by government agencies (Korea Gas Safety Corporation) to evaluate safety systems and operations of each industrial site every four years to prevent serious industrial accidents and to manage them according to their assigned grades. The grades given are A, B, and C. The 'A' grade of SMS is the highest, and it is only given to 10-20% of the companies being evaluated. This achievement is the result of our continuous development and the implementation of the safety management system based on the our strong commitment to safety.

C Park, HSE

Acquired P Grade in PSM

In the 2020 Process Safety Management (PSM) review conducted by the Ministry of Employment and Labor, we were awarded the Grade P, which is the highest grade possible through the PSM. It is the second P Grade received since the 2012 PSM review. The P Grade of 2020 was only given to the top 2% of companies in the Yeosu Industrial Complex and the larger Gwangyang Special Economic Zone. This shows that our company's safety and health management are at a very high level, and it is more valuable because it is the result of our continuous efforts to strengthen safety, the environment, and health. The PSM system is implemented by the Ministry of Employment and Labor to prevent serious industrial accidents, and it evaluates worksites' compliance with 12 PSM elements, as well as investments and improvement activities in safety and health. The grades assigned are P, S, M-, and M+, and excellent companies are selected every four years. This honor is the result of our full support for a safe environment, as well as our employees' efforts in implementing our practices. With the achievement of the P Grade, we will continue to improve organizational safety and health by operating a more practical and systemized HSE system.

JH Jung, HSE

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Online Meeting Held for Commercial Sales of Ulsan PP with Basell Asia Pacific (BAP)

For the successful overseas sales of Ulsan PP, which is scheduled for commercial production of polypropylene during the first half of 2021, we held an online meeting with BAP on September 25, 2020.

Under the supervision of the PolyMirae Market Development Team, we discussed the target market situations and overall PP demand with the marketing managers of BAP. The meeting led to in-depth discussions on Ulsan PP's potential overseas markets, product groups, sales figures, and market premiums currently formed. Furthermore, the market research data (such as fiber, PP for compounds, injections, pipes, etc.) from each marketing manager of BAP served as the basis for the selection of Ulsan PP's production.

Starting with this meeting for commercial sales of Ulsan PP, we will hold regular meetings with BAP. Through our cooperation, we will establish an appropriate production and sales plan for Ulsan PP, while preparing for the rapidly changing market conditions. We look forward to a successful leap ahead in Ulsan PP's business, which will begin during the first half of 2021.

Has Kim, Market Development



Moplen HP461X, HP461Y, HP465Y, HP465YHP

PolyMirae's Meltblown PP is one of the best references for Meltblown market in the world.



PolyMirae's pellet Meltblown PP "*Moplen* HP461X, HP461Y, HP465Y and HP465YHP" can maximize the productivity by minimizing fume and fly generated during Meltblown processing. In particular, *Moplen* HP465YHP is an effective product for improving filter performance.