

# Chemist



İKMİB's Complimentary Magazine | Issue: 2024/1



## Continues to Grow Packaging

### A Transformation Wind Blows in the Chemical Industry With CBAM

CBAM designed to eliminate the risk of carbon leakage, the Turkish chemical industry has accelerated its sustainability efforts.

### Packaging Industry Continues to Grow

The Turkish packaging industry is addressing the increasing global and domestic packaging demands with its growing export volume.

### Final Preparations at the Chemistry Technology Center

Türkiye's first Chemistry Technology Center, expected to increase the market diversity of chemical exporters, will open in 2024.

The background of the advertisement features a woman with blonde hair, wearing a blue denim shirt over a brown top. She is holding a large, white plastic jug of milk and pouring it into a row of five smaller plastic bottles on a surface. The bottles contain liquids of different colors: pink, white, clear, yellow, and white. The background is a solid light blue.

**Providing solutions  
for safe, affordable  
and sustainable living  
worldwide**





**ADİL PELİSTER**  
President of İKMİB

*“As the Chemistry Sector,  
We Achieved More Than  
13% of Our Country’s  
Total Exports in 2023,  
Ranking Second on a Sec-  
toral Basis.”*

# “WE STRIVE TO SUPPORT OUR COUNTRY’S DEVELOPMENT THROUGH EXPORTS.”

After a short break, hello again dear friends,

I am delighted to be with you again in the first issue of our Chemist magazine for 2024.

We are going through times when global changes are rapidly transforming our world in every aspect. In an environment where regional conflicts and wars, global pandemics, and all these negatively impact economies, we, as actors of the real economy, are striving to keep our business world alive, to produce, and to support our country’s development through exports.

In this context, as the chemistry sector, we completed 2023 by achieving more than 13% of our country’s total exports, ranking second on a sectoral basis.

In numerical terms, we managed to exceed 30 billion dollars. The primary reason for the decrease compared to the previous year was the demand reduction due to high inflation in our target markets, resulting from the global difficulties I listed initially.

The unstable situation in global energy prices, economic turbulence in our country, high inflation, and exchange rate volatility also negatively affected our ability to conduct a stable cost/price analysis, of course.

Despite all these adversities, the rise in our country’s exports keeps our hopes alive for the future. In 2023, as İKMİB, we once again took our exporters to various parts of the world, participated in fairs, and brought you together with global buyers through purchasing delegations.

We continued to support you by developing joint projects with our business

world NGOs. We tried to shed light on our business world with our sectoral reports. We conveyed our problems and solution suggestions to public administrators, followed up on them, and significantly contributed to the implementation of our solution proposals.

We have also reached the final stage of our “Chemistry Technology Center” project, which we believe will make a significant technological, scientific, and economic contribution to our national economy, and we have started setting up our laboratories. With this project, we are taking the future vision of our chemistry sector to a much higher level.

Moreover, I would like to emphasize that we advocate for the necessity of establishing a “National Chemistry Agency” and that we reinforce our goal of making our chemistry sector a global player through the partnership of the public sector, industry, and academia. Developed economies of the world owe their progress largely to their advancements in the chemistry sector because the chemistry sector continues to be the main sector that provides resources to all other sectors. Accordingly, we will continue our efforts to advance our chemistry sector further.

In 2024, we will reach an export level of over 35 billion dollars.

As the chemistry sector, our primary goal is to achieve exports of over 50 billion dollars in volume by 2030 and to increase our export value to 2 dollars/kg in terms of weight.

Dear colleagues,

We will continue to share our views in this direction with you in future issues.

For now, I wish you all the best and success in your work.



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### ADMINISTRATION

#### Concessionaire

On behalf of İKMİB - İstanbul Chemicals and  
Chemical Products Exporters'  
Association - Aydın Yılmaz

#### Administration Office

Çobançeşme Mevkii Sanayi Cad. Dış Ticaret  
Kompleksi 34197 Yenibosna/İstanbul  
Tel: +90 (0212) 454 00 00 Faks: +90 (0212) 45400 01

#### Publication and Distribution İKMİB

### PUBLISHING TEAM



**Executive Editor**  
Selda YEŞİLTAŞ

**Responsible Editor in Chief**  
Murat ERDOĞAN

**Art Director**  
Serpil YENİHAYAT

**Editors**  
Hilal YILDIRIM

**Photograph**  
Burcu GÖKNAR

**Advertising manager**  
İlknur ULUSOY  
ilknur@viyamedya.com

**Advertising Representative**  
Neşe AKSEL

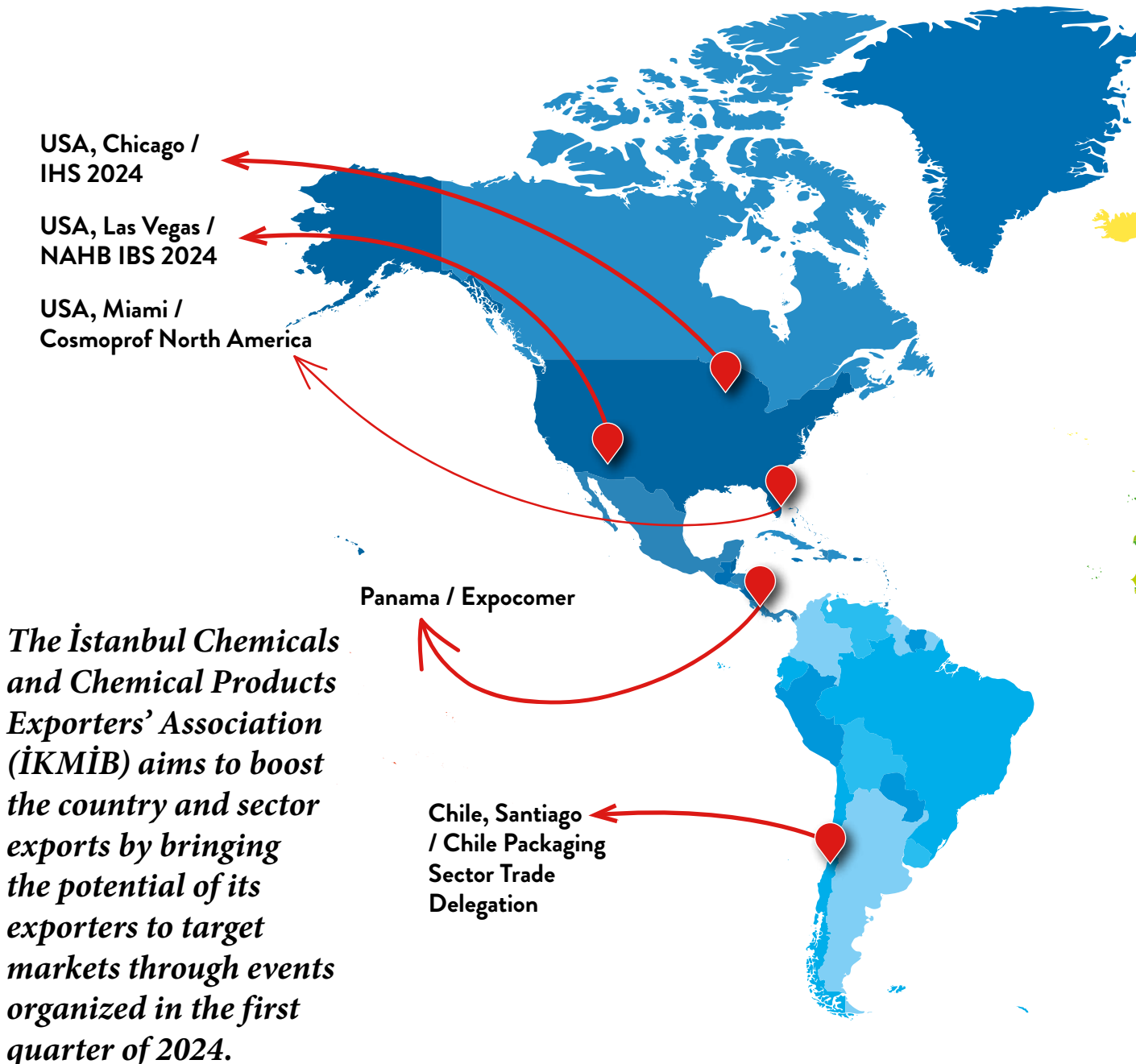
**Contact Address**  
Rumeli Caddesi Rumeli Pasajı Yunus Apt.  
No: 45 Kat: 3 Nişantaşı - Şişli / İSTANBUL  
+90 212 236 00 50  
www.viyamedya.com, viya@viyamedya.com

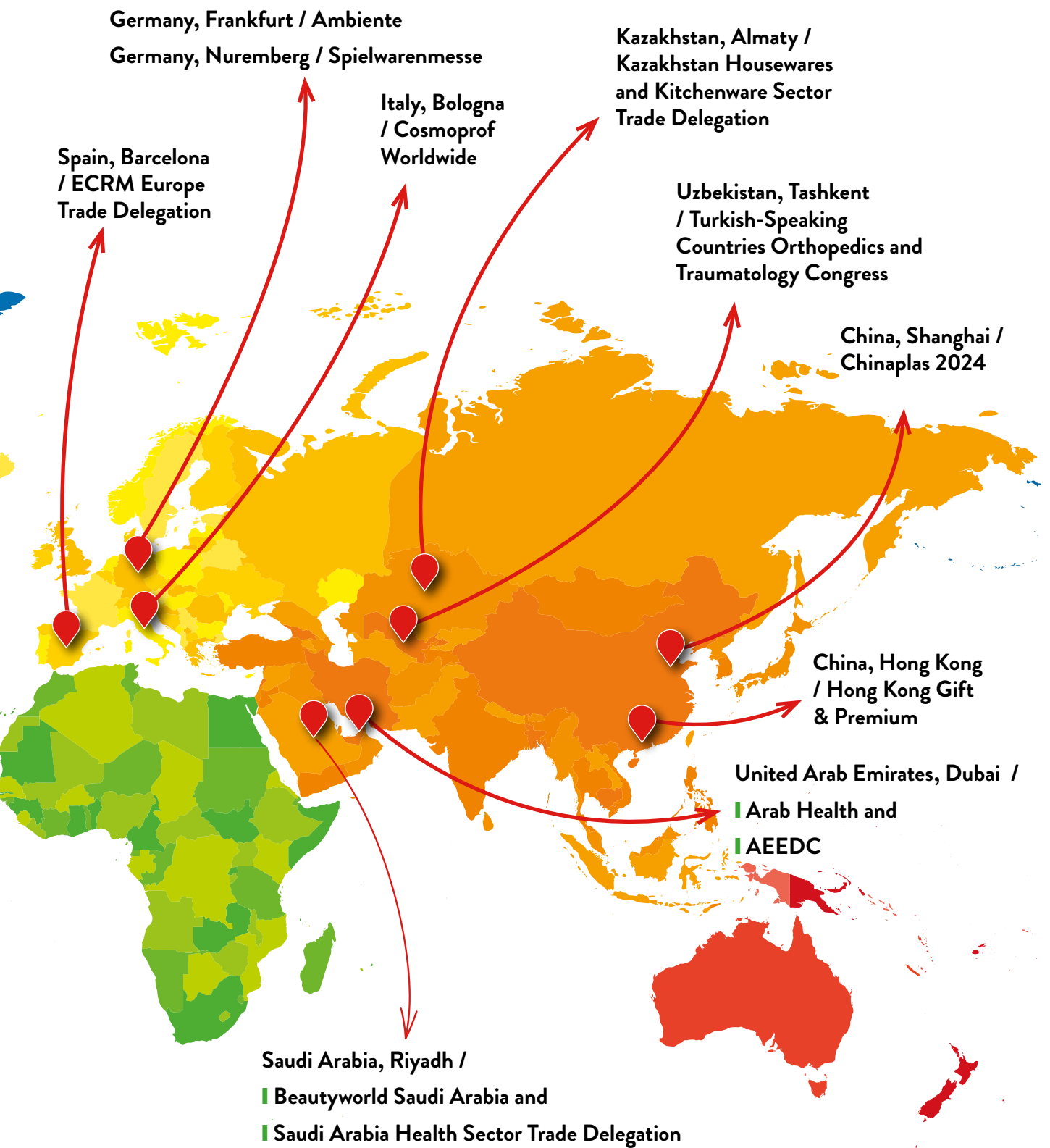


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# İKMİB AIMS TO INCREASE EXPORTS THROUGH ORGANIZED EVENTS









## İKMİB UNVEILS SUSTAINABILITY ACTION PLAN

İKMİB has embarked on a new report that will serve as a compass for the impending change and transformation in the sector, under the concepts of green economy and circular economy.

The presentation of the “Chemical Sector Sustainability Action Plan Report,” shared with sector representatives and exporters, was hosted by Adil Pelister, President of the Istanbul Chemicals and Chemical Products Exporters’ Association

(İKMİB), with the participation of Mustafa Gültepe, President of the Turkish Exporters Assembly (TİM), İKMİB Board of Directors, and press members.

Speaking at the event, Mustafa Gültepe, President of the Turkish Export-

ers Assembly (TİM), stated, “We have no alternative to a large market like Europe. To maintain and increase our power in the market, we need to adapt our exports to the Green Deal criteria. It is essential for the roadmap of our chemical sector to be ready because the process of compliance with the Green Deal is accelerating. Financing is crucial, especially because SMEs cannot cope with the transformation with their own resources.”

### “ADAPTATION TO SUSTAINABILITY IS ESSENTIAL FOR MORE EXPORTS”

In his speech, Adil Pelister, President of İKMİB, stated, “The concepts of ‘Green Economy’ and ‘Circular Economy,’ which have recently entered our lives, bring with them a critical adaptation process that will directly affect the future of our chemical exports. Especially when we consider the EU market, which accounts for more than 40% of our exports, the ‘Carbon Border Adjustment Mechanism,’ ‘Fit for 55,’ and the ‘EU Emissions Trading System’ that will come into play with the Green Deal will significantly affect all our sectors, including chemicals. With the Chemical Sector Sustainability Action Plan Report prepared by İKMİB, we have charted the course of change and transformation in chemistry in this field.

With the action plan report we prepared, we have outlined a route that our chemical sector and exporting companies will follow step by step. As the chemical sector, while aligning with all 17 goals of the UN Sustainable Development Goals, we have identified 8 goals, 5 primary and 3 secondary priority goals, that will be most affected by our sector. We want our chemical sector to be among the game changers of the new era brought about by green transformation and circular economy without missing the sustainability train.”







## CHEMICAL SECTOR SETS NEW COURSE IN EXPORTS

**The Istanbul Chemicals and Chemical Products Exporters' Association (İKMİB) held a press conference to evaluate the performance of the chemical sector in 2023 and share İKMİB's goals for 2024.**

Adil Pelister, President of the Istanbul Chemicals and Chemical Products Exporters' Association (İKMİB), along with the Board Members, evaluated the chemical sector's performance in 2023 and shared İKMİB's new export strategy for 2024 in a press conference. Pelister emphasized that they had positioned the chemical sector as a leader with a record \$33.6 billion in exports in 2022. Despite the global slowdown in trade, global inflation, and fluctuations in commodity and energy prices in 2023, Pelister noted that the chemical sector achieved exports of \$30.6 billion, making it Türkiye's second-largest exporting sector. Pelister announced that in the first half of 2023, they increased their share of global chemical exports by nearly 10%, and they would continue to work to maintain this significant increase.

"Our goal for 2024 is \$35 billion," Pelister said, highlighting that through synergy among the 16 sub-sectors of the chemical sector, they exported to

230 countries and regions. According to data from the Turkish Exporters Assembly (TİM), Pelister stated that the chemical sector accounted for approximately 13.8% of Türkiye's total exports, with an 11.9% share in the overall export of Türkiye.

Pelister pointed out that in 2023, plastic products accounted for nearly 30% of exports, reaching \$9.2 billion,

followed by mineral fuels and products with \$8.333 billion, and inorganic chemicals with \$2.765 billion. He noted that restrictions in the fertilizer and pharmaceutical sectors had affected export figures. Pelister also shared import data for 2023, stating that the main countries supplying raw materials or semi-finished products included China, Germany, South Korea, the United States, and Saudi Arabia.

### "SUSTAINABILITY IS ESSENTIAL"

Pelister highlighted that sustainability efforts were among the sector's goals for the coming year, mentioning the recent publication of the Sustainability Action Report to outline the roadmap for the chemical sector. He emphasized the strategic position of the chemical sector, as it touches and supplies inputs to all other sectors. With approximately 42% of exports to the European Union market, Pelister stated that the Carbon Border Adjustment Mechanism (CBAM) and the EU Emissions Trading System (ETS) would significantly impact their sectors. He emphasized the importance of being prepared for the SKDM starting on January 1, 2026, stating that they had started preparing the chemical sector in this direction to ensure that exporters, especially SMEs, do not face obstacles.





## THE CHEMICAL SECTOR RECEIVES EXPORT STARS AWARDS

The stars of the chemical sector received awards at the İKMİB Export Stars Awards Ceremony organized by İKMİB every year.

**T**he ninth edition of the “İKMİB Export Stars Awards Ceremony,” held annually by the Istanbul Chemicals and Chemical Products Exporters’ Association (İKMİB) to honor the most exporting member companies of the chemical sector, took place on February 22, 2024. At the Awards Ceremony, a total of 170 companies that ranked in the top five in 34 categories of chemical sub-sectors and

product groups were entitled to receive awards, while plaques were presented to a total of 102 exporting companies that ranked in the top three.

### “OUR GOAL FOR 2024 IS TO EXCEED \$35 BILLION”

In his opening speech at the ceremony, Adil Pelister, the President of the İKMİB Board of Directors, stated that despite the global recession following the ma-







for earthquake disasters on February 6, 2023, Türkiye became the second largest exporting sector with exports of \$30.6 billion. The driving force behind the possibility of economic fluctuations entering an upward trend is high technology, innovation, and the ability to create high added value. Our chemical sector, which has an important place in Türkiye's rising exports, accounts for approximately 13% of our total country exports. Our new goal in exports for 2024 is to exceed \$35 billion. To achieve this goal, we will carry out many activities together with our exporters. We believe that a chemical agency similar to Japan's Tsukuba and South Korea's Innopolis science cities should be established in our country. We have long-term plans for this."







## 199 TURKISH COMPANIES PARTICIPATED IN THE ARAB HEALTH 2024 FAIR

The Arab Health Fair, the largest exhibition in the Middle East for the medical and pharmaceutical sectors, was held this year for the 49<sup>th</sup> time in Dubai, United Arab Emirates.

The 49<sup>th</sup> edition of the Arab Health 2024 fair took place in Dubai, United Arab Emirates, from January 29<sup>th</sup> to February 1st, 2024. İKMİB (Istanbul Chemicals and Chemical Products Exporters' Association) organized the

national participation for the 5<sup>th</sup> time, with 49 companies participating through national participation and 150 companies participating individually, totaling 199 Turkish firms. Last year, the fair was visited by over 130,000 pro-

fessionals, and this year Türkiye participated with a national stand covering 702 square meters. The fair, visited by tens of thousands of people, hosted over three thousand participants this year. Exporter companies operating in the health, medical, and equipment sectors had the opportunity to showcase a wide variety of products such as medical devices, supplies, disposable materials, hospital furniture, surgical equipment, orthopedic products, drugs, and software products. Speaking about the Arab Health fair, İKMİB President Adil Pelister said, "Through activities such as national participation organizations, trade delegations, and UR-GE projects, we continue to contribute to our exporter companies in establishing new business connections. This year, for the 5th time, we organized the national participation organization at the Arab Health fair. Representatives of 199 exporter companies operating in the Turkish medical sector participated significantly in the fair. The Middle East is an important market for our country and our sector. Therefore, we will continue to support our companies for sustainable export growth to the Middle East market, including the United Arab Emirates."





## TURKISH HOME AND KITCHENWARE SECTOR AIMS FOR GROWTH IN THE US MARKET

**The Turkish national participation organization at The Inspired Home Show 2024 Fair, held in Chicago, was organized for the 18th time this year in partnership between İKMİB (Istanbul Chemicals and Chemical Products Exporters' Association) and İDDMİB (Istanbul Ferrous and Non-Ferrous Metals Exporters' Association).**

A total of 37 Turkish companies participated in The Inspired Home Show 2024 Fair through the national participation organization, jointly organized by İKMİB and İDDMİB, with 26 participating through the organization and 11 participating individually. Throughout the fair, Turkish companies showcased kitchen, bathroom, and home products made from

plastic, cast iron, Teflon, stainless steel, melamine, metal, and glass, catering to the preferences of buyers. Speaking about the fair, İKMİB President Adil Pelister said, "This year, for the 18th time, we organized the national participation organization at The Inspired Home Show (IHS) 2024 fair, which is among the most important fairs in the home and kitchenware sector



in the US, in partnership with İKMİB and İDDMİB. The sector's exports to the US amounted to \$223.7 million in 2023. The participation of Turkish companies in the fair is crucial for them to establish a presence in the American market with their wide range of products. We will continue to support our exporters by increasing our activities in this direction."





## İKMİB ORGANIZES TWO SEPARATE EVENTS IN SAUDI ARABIA

**The Istanbul Chemicals and Chemical Products Exporters Association (İKMİB), which carries out various activities to increase the sector's exports and add new markets for its members, organized two separate events in Saudi Arabia in February targeting the healthcare sector and the cosmetics, personal care, and cleaning products sector.**

From February 11th to 13th, 2024, İKMİB organized the 4th edition of Beautyworld Saudi Arabia 2024, marking the first time a Turkish national participation organization was held at the fair. Additionally, from February 11th to 15th, 2024, İKMİB conducted the "Health Sector Saudi Arabia Sectoral Trade Delegation" event. A total of 41 Turkish chemical companies made a strong presence in Saudi Arabia through these two events, representing both the healthcare and cosmetics, personal care, and cleaning products sectors.

### **31 TURKISH COMPANIES PARTICIPATED IN BEAUTYWORLD SAUDI ARABIA**

Turkish brands made a significant impact at the Beautyworld Saudi Arabia Fair, one of the exhibitions dedicated to

the cosmetics, personal care, and cleaning products sectors, with the participation of 31 companies. İKMİB organized the first Turkish national participation organization at the fair this year, showcasing Turkish cosmetic and cleaning sector products. A total of 31 Turkish companies participated, including 11 under national participation and 20 individual firms. Exporter companies in the cosmetics and cleaning sectors had the opportunity to promote products such as cosmetics, skincare, perfumes and fragrances, hair care, nail care, raw materials, natural and organic products, and cleaning products at the fair.

The Health Sector Saudi Arabia Sectoral Trade Delegation, organized by İKMİB from February 11th to 15th, 2024, in Riyadh, involved the participation of 16 representatives from 10 companies in the medical devices and

pharmaceutical sectors. The program included a retail tour on the first day, visiting Mais Co., a medical devices company, where meetings with company executives were followed by tours of production lines and facilities. On the second day, an acquaintance event was held with the National Procurement Company (NUPCO), the central procurement organization for medical devices and pharmaceuticals in Saudi Arabia, which supplies to government and military hospitals and also serves 30% of the private sector. Potential collaborations between Turkish companies and NUPCO were discussed at the event, and nearly 150 bilateral business meetings were held with the participation of 29 Saudi buyer firms.







## GençNoroo Zemin Kaplama Sistemleri



Kimyasal üretim tesisleri, otomotiv tesisleri, tekstil fabrikaları, gıda tesisleri, fabrikalar, laboratuvarlar, ofisler, depolar, otoparklar, bakım üniteleri ve yemekhaneler için **GençNoroo** ile farklı zemin kaplama çözümleri...

## A TRADE DELEGATION FROM THE TURKISH HOME AND KITCHENWARE SECTOR TO KAZAKHSTAN

The Istanbul Chemicals and Chemical Products Exporters' Association (İKMİB) organized a Sectoral Trade Delegation for the home and kitchenware sector to Kazakhstan. Within the delegation, a total of 200 bilateral business meetings were held with the participation of 53 Turkish and Kazakh companies.

Between February 11th and 14th, 2024, İKMİB organized the Kazakhstan Sectoral Trade Delegation for Home and Kitchenware. İKMİB Board Member Ali Küçük and 21 representatives from 14 companies participated in the Sectoral Trade Delegation held in Almaty, Kazakhstan. As part of the organization, a retail tour was conducted, and wholesalers and retail chains such as "Specialized Technics," "Zeta," and "Nice Cooker" were visited in Almaty. Additionally, with



the participation of 39 buyer companies from Kazakhstan and neighboring countries, Turkish companies held nearly 200 bilateral business meetings. Speaking about the meetings, İKMİB President Adil Pelister said, "We received overall positive feedback from our participant companies regarding the organization.

They shared that they were satisfied with the meetings they had with buyer companies. This year, we plan to organize Sectoral Trade Delegations for Home and Kitchenware to Russia, Italy, and Saudi Arabia following Kazakhstan by the end of the year."

## TURKISH DENTAL INDUSTRY MAKES ITS MARK AT AEEDC FAIR

The Istanbul Chemicals and Chemical Products Exporters' Association (İKMİB) organized the National Participation Organization for the AEEDC Dubai Dentistry Exhibition. The AEEDC Dubai Dentistry Exhibition, a meeting point for dental professionals, participants, and experts from all around the world, took place on February 6-8, 2024. In order to better promote the Turkish dental industry internationally with its wide range of products such as dental implants, prosthetics, aesthetic fillings, teeth whitening products, dental units, and accessories, İKMİB organized the national participation organization for the 5th time at the AEEDC Fair. A total of 42 Turkish companies participated in the fair, with 28 of them participating through the İKMİB national participation organization. İKMİB President Adil Pelister,

DIŞİAD (Dental Businessmen Association) Chairman Erkan Uçar, and Board Members also attended the fair through the national participation organization in cooperation with DIŞİAD.

In his speech at the opening of the Turkish pavilion, Adil Pelister stated,

"The Turkish dental industry has been making a name for itself internationally with its recent localization efforts. Previously reliant on imports, the sector is now participating in some of the world's largest fairs and continues to increase its exports every year."



# SPANISH EXPEDITION FROM THE TURKISH COSMETICS SECTOR



The Istanbul Chemicals and Chemical Products Exporters' Association (İKMİB) organized the Europe Barcelona Sectoral Trade Delegation.

As part of the Europe Barcelona Sectoral Trade Delegation organized by İKMİB for the cosmetics and cleaning sector from February 11th to 15th, 2024, Turkish products related to cosmetics, including skin, bath, hair, and sun care products, were



introduced to European companies. Within the scope of the sectoral trade delegation, which saw the participation of 26 representatives from 14 Turkish companies, meetings were held with approximately 97 chain stores' suppliers from Spain and other European countries.

## **755 BILATERAL BUSINESS MEETINGS HELD**

A total of 755 bilateral business meetings were held during the four-day event, where a total of 111 Turkish and European companies participated and new collaboration opportunities were discussed. In these meetings, Turkish companies met with buyers and suppliers from 23 European countries including Switzerland, the Netherlands, Spain, Germany, the UK, Norway, Portugal, France, the Czech Republic, Romania, Poland, Sweden, Italy, Bulgaria, Belgium, Ireland, Australia, Northern Ireland, Slovenia, Finland, Estonia, the USA, Greece, Lithuania, South Africa, and Serbia, as well as other countries. It is expected that the meetings from the delegation will contribute to the regional increase in sector exports, not only to Spain.

# 78 TURKISH COMPANIES PARTICIPATED IN COSMOPROF WORLDWIDE BOLOGNA 2024 FAIR



Cosmoprof Worldwide Bologna, the International Cosmetics and Personal Care Fair held annually in Bologna, Italy, and this year from March 21st to 23rd, 2024, marked its 55th edition, boasting the title of the world's largest cosmetics fair with over 3,000 participating companies from 153 different countries and more than 253,000

visitors. The leading trends of the beauty industry are showcased at this prominent fair.

Within the scope of the national participation organization organized by the Istanbul Chemicals and Chemical Products Exporters' Association (İKMİB) for the 15th time this year, a total of 78 Turkish companies participated in the



fair, including 21 companies as part of the national participation organization and 57 companies individually. Products such as cosmetics, skincare products, perfumes, and cleaning products were exhibited. Turkish brands had the opportunity to introduce the industry's latest trends to the world.



## *“IMAGINING A FIELD WITHOUT CHEMISTRY IS IMPOSSIBLE”*

**Vefa İbrahim Aracı, emphasizing the power of chemistry to trigger and drive production in all sectors, states, “An environmentally, humanly, and socially compatible chemical industry is also a requirement for a developed economy.”**

**A**s the President of the Board of Koruma Klor, Vefa İbrahim Aracı explains that they are a group making investments in the chemical industry with 100% local production, especially aiming for localization in critical raw materials and chemicals. He says, “We are making significant investments in R&D and technology development to produce domestically the products our country needs and imports, and to increase the added value in our produced products. We are one of the R&D centers of our country. Our qualified and trained human resources and R&D power encourage and strengthen us for new investments.”





*Türkiye has the potential to rank high in the world in chemistry with its dynamic and entrepreneurial industrialists, young population, geographical location, and proximity to major markets, especially Europe.*

**Where do you see the position of the chemical sector in Türkiye?**

The chemical sector, which is the driving force of Türkiye's economy and exports, is one of our country's strategic sectors, and this position strengthens every year. We say there is no field where chemistry does not exist or touch. When we consider the requirements of modern life, we are talking about a sector that will continue to be important in the coming years. The position chemistry has reached today in our country's industrialization journey, which gained momentum from the 1950s onwards, is significant. However, I believe that with technological advancements, it will continue much faster in the coming years.

Considering Türkiye's growth targets and its desired position in the world economy, the chemical industry has significant roles. Türkiye has the potential to rank high globally in chemistry with its dynamic and entrepreneurial industrialists, young population, geographical location, and proximity to major markets, especially Europe. The fact that chemistry ranks high among our country's most exporting sectors is an important indicator of this development. Despite the stagnation in the European market, global economic slowdown, geopolitical tensions, and Türkiye's unique macroeconomic con-

ditions, I find the chemical sector's efforts to maintain its dynamism and increase exports very valuable. The reflection of these efforts in export figures is also a positive development. In the medium and long term, Türkiye's chemical industry will continue to grow. We are a country with the potential to rank high in the global chemical industry. As long as strategic roadmaps that prioritize local production and prepare an environment converting the sector's dynamism into new investments can be implemented.

**What actions should be taken to increase the sector's exports despite the stagnation in the European market and economic uncertainties?**

The stagnation in Europe, which is our largest export market, is a challenging situation for our exporters. Not only Europe but also a slowdown in the global economy is evident. During the post-pandemic normalization period, strong demand and increased consumption tendencies positively reflected in our export figures. Our country's strong production infrastructure and proximity to major markets, especially Europe, also revealed a significant advantage. With the expected interest rate reduction steps by the European Central Bank in the second half of the year, we may start to see a better picture in the European market from the last quarter of 2024.

41

COMPANIES

41 companies are in production within GEBKIM OIZ.

60+

COUNTRIES

Exports are made to more than 60 countries within GEBKIM OIZ.





*“We are a country with the potential to rank high in the world chemical industry.”*

We can ensure market diversity and exceed current export figures by better utilizing the advantages of our sector’s increasingly developing production structure and strong entrepreneurs in regions such as the USA, South America, Africa, and the Far East. In this respect, we find the national participation organizations, trade, and procurement delegations of İK-MİB, which enable reaching new markets and ensuring export cooperation in many different sub-sectors of chemistry, very important.

In the medium and long term, it is possible to say that increasing the added value per kilogram is important for increasing the sector’s exports. Steps such as increasing added value, target country-focused marketing and promotion, and e-commerce will accelerate chemical exports. Chemistry is a strategic sector for our country, and every step taken in chemistry positively affects other sectors. However, the high dependence on imports for raw materials and other inputs remains an obstacle to the sector’s development. Although it varies by sub-sectors, there is a high level of importation of raw materials and inputs used in the sector’s production. We must ensure the production of raw materials not produced in Türkiye through strategic studies at the sector and company level. Attracting foreign investment depends on Türkiye’s current conditions and macroeconomic data, improving the investment environment, and strong demand.

**Türkiye has begun to lose its skilled workforce, especially in recent years. The chemical industry is among the sectors significantly affected by this situation. What measures should be taken to ensure the continuity of the sector?**

The skilled workforce has turned into a chronic and

urgently needed problem for the Turkish economy and industry. Unfortunately, the chemical sector is also affected by this issue and continues to face challenges in employing a skilled workforce. We must address and develop solutions to this problem, as it is one of the biggest obstacles to healthy growth. We cannot expect the problem to resolve itself without developing systematic and holistic solutions. While taking steps to develop our existing human resources in this direction, we must also work to attract new, well-equipped individuals to the sector. In doing so, we must succeed in retaining our skilled workforce, keeping them satisfied, and increasing their sense of belonging.

Through GEBKİM Chemical Specialization OIZ and GEBKİM Foundation, we have taken responsibility for the sector’s problems, especially regarding skilled personnel. We contributed to education by establishing GEBKİM Vocational and Technical Anatolian High School, which we see as an investment that will provide valuable gains for the future of our sector and our country. We aimed for a model vocational education designed in parallel with the needs of the sector, integrated with the industry. We have an approach that prioritizes the continuous development of our students and educators at our school.

**As a company working to increase the use of local raw materials, what strategies do you follow, and what do you do to enhance local raw material supply?**

We are a group making investments in the chemical industry with 100% local production, especial-





*“We have seen the positive results of the efforts to ensure market diversification carried out under the leadership of İKMİB in the chemical industry.”*

ly aiming for localization in critical raw materials and chemicals. We make significant investments in R&D and technology development to produce domestically the products our country needs and imports, and to increase the added value in our produced products. We are one of the R&D centers of our country. Our qualified and trained human resources and R&D power encourage and strengthen us for new investments. Despite the major earthquake disaster our country experienced, our investment determination continues. We are making investments in our Hatay factory for the production of hydrogen peroxide, sodium percarbonate, and sulfuric acid. Thus, our contribution to the region's economy and employment will also increase.

**Can you talk about the activities carried out by GEBKİM, which has established an exemplary model as Türkiye's first chemical specialization OIZ?**

Located in Kocaeli, one of the top provinces contributing to the Turkish economy, GEBKİM Chemical Specialization OIZ enhances its member companies' growth targets with infrastructure and facilities specifically designed to meet the needs of the chemical industry.

In GEBKİM, many companies from various sub-sectors of chemistry such as paint, pharmaceuticals, composites, plastics, and cleaning materials are clustered in a modern production area designed with all details in mind, embracing a production approach that is friendly to the environment and people. At the same time, through our GEBKİM Foundation, we implement projects in education and health, supporting our children and youth. In addition to GEBKİM Vocational and Technical Anatolian High School, which we established to address the need for skilled personnel in the chemical sector, our GEBKİM Kindergarten also makes a difference in its field.

In our OIZ, which has created an exemplary chemical ecosystem for Turkish industry, there are 72 industrial parcels, all of which are allocated. Currently, 41 companies are in production, 25 companies are in construction, and 6 companies are in the project phase. Our regional companies export their products to more than 60 countries and achieve approximately 1 billion dollars in exports. GEBKİM companies provide employment to nearly 4,000 people.



**“2024 WILL BE A MUCH BETTER YEAR FOR THE CHEMICAL INDUSTRY”**

*Despite the contraction in global trade, it is a significant achievement that our chemical sector realized exports worth 30.6 billion dollars in 2023. The increasing market and product diversification of our chemical exporters in recent years, the sector's dynamism, and the strategies aimed at increasing exports are yielding results. The chemical sector has become the largest player in Türkiye's exports after the automotive sector.*

*Although the slowdown in China continues, the interest rate cuts by the central banks of the US and Europe this year will be important developments. We can expect 2024 to be a better year for the chemical industry than 2023. The government's announcements of support packages for exporters are also valuable. We see that within the framework of the anti-inflation program, efforts will be made to overcome the cost increases caused by exchange rates and their negative impact on exports with the support to be provided.*

*In the medium and long term, the attainment of the levels targeted by the chemical industry in exports will be achieved through increasing the added value in exports, differentiation with innovative products, and promotional and export-enhancing efforts targeting potential markets.*





# FINAL PREPARATIONS AT THE CHEMISTRY TECHNOLOGY CENTER

*An important step towards increasing market diversity and reducing dependence on imports for chemical exporters, the Chemistry Technology Center is set to become operational in the first half of 2024.*

**İ**KMİB, continuing its efforts with projects that will strengthen the chemical industry, one of the locomotive sectors of the Turkish economy, has reached another significant milestone in its aim to establish a new ecosystem focused on high technology and high added value. With the support of the Ministry of Industry and Technology, İKMİB has implemented the Chemistry Technology Center (CTC), a first of its kind in Türkiye, aiming to increase market diversity for chemical exporters, boost sector exports, and reduce dependence on

imports. Located in Türkiye's innovation and technology hub, IT Valley, and with signatures signed on May 13, 2022, the final preparations for the CTC are being completed to launch in the first half of 2024.

All accredited tests and analyses required by the sector are consolidated under one roof with CTC. SMEs and exporters needing advanced laboratory services for all commercial processes can quickly receive services without incurring high costs through CTC. The CTC, which will issue internationally recognized certificates, is not just a test and laboratory center but also an advanced R&D center for exporters. Providing education, planning, and consultancy services, along with an incubation center and digital library for entrepreneurs, the CTC offers an ecosystem benefiting the entire start-up ecosystem in chemistry and related sectors, facilitating collaborative work with universities.

## **“WE AIM TO CREATE A NEW ECOSYSTEM WITH THE CHEMISTRY TECHNOLOGY CENTER”**

Highlighting that they prioritize market diversity for chemical exporters, high





value-added exports, sustainability, green transformation, and circular economy, İKMİB President Adil Pelister stated, “We see that there is a difficult process ahead of us in the near future, and we are acting with the awareness of our duty. Geopolitical developments such as wars or tensions between countries, global inflation, and high interest rates, as well as commodity and energy prices, negatively affect the balance of supply and demand. Therefore, our primary goal is to quickly adapt our chemical exporters to all these changes and transformation processes. As İKMİB, we are also working on many innovative projects in this direction.”

Pelister emphasized that the Chemistry Technology Center is one of their biggest projects, saying, “With our Chemistry Technology Center project, which will be a first in Türkiye, we aim to establish a new ecosystem focused on high technology and high added value. In the first half of this year, we will inaugurate the CTC located in IT Valley, covering an area of 7,500 square meters. Our Chemistry Technology Center will conduct a total of 175 different tests and be accredited for 83 of them. We will

issue the certificates that our exporting companies currently obtain from the EU here. Thus, within the scope of test and analysis services, we expect to save a minimum of 7.2 million dollars annually at optimal capacity. With our planned projects such as the Türkiye Chemistry Agency, we aim to increase the market share of the Turkish chemical sector in the world from 0.6% to over 1% in the near future.”

# 7,2

We expect to save a minimum of 7.2 million dollars annually at optimal capacity within the scope of test and analysis services.





## PRIORITIZING LAB TESTS FOR EXPORTERS IN OUR LABORATORY

**“The main goal of the Chemistry Technology Center (CTC) is to increase exports. Our primary aim is to provide the tests/analyses that exporting companies have to send abroad and the certifications they obtain from abroad in our center.”**

**D**irector Alper Ondur discusses the final preparations for the center's launch, its contributions to the national economy, and the latest developments during the establishment phase.

**What are the final preparations being made for the operation of the Chemistry Technology Center? At what stage are you?**

We are establishing the Chemistry Technology Center at the IT Valley Kocaeli Central Campus. Our four-story, 6,090 square meter building has three floors dedicated to testing/analysis, certification, R&D, education, and consultancy services. The other floor will house Türkiye's first chemistry-themed incubation center. We have completed the first phase of construction and started the second phase. Our laborato-

ry benches, cabinets, fume hoods, and other orders are ready for installation, pending the completion of construction work. We have selected the equipment and are finalizing our orders. We are continuing our discussions to assemble a team of highly educated and experienced individuals to support various sectors. Our goal is to make the center operational in the first half of 2024.

**What role does the Chemistry Technology Center play in Türkiye's economy? Which sectors will it target?**

The main goal of the Chemistry Technology Center is to boost exports. Our primary aim is to provide the tests/analyses that exporting companies have to send abroad and the certifications they obtain from abroad within our center. This will





contribute \$12.5 million annually to the current account deficit. In the short term, we aim to support R&D work of companies by providing human and equipment support, thereby increasing not just the quantity but the quality of exports through high-value-added products. We will assist companies in benefiting from national and international project support through consultancy services. By following the regulations of exporting countries, we will inform exporters about the mandatory tests/analyses and certifications required. We will conduct industry-specific training to enhance awareness and knowledge on these subjects. Additionally, with the support of İKMİB and IT Valley, we will establish a chemical ecosystem in our incubation center. Initially, our focus sectors will

be cosmetics, paint, rubber, and plastics, but our services will be open to all sectors.

**Can you provide detailed information about the services offered by the Chemistry Technology Center? In which areas will tests and analyses be conducted? What impacts might it have on the Turkish chemical industry?**

Our center will primarily serve the aforementioned sectors with comprehensive instrumental, chemical, microbiological, molecular biology, physical, and mechanical analyses. We are ensuring that the devices and analysis methods we choose cover the needs of various sectors, allowing us to quickly respond to requests from different industries. Additionally, with our team's expertise, we aim to provide not only rapid but also high-quality services. Our team will support companies in qualified R&D projects and participate in national and international supported projects. The industry will benefit from both the speed and quality of our services, contributing to increased export quantities and higher export revenues through high-value-added products.

**What benefits will the Chemistry Technology Center provide to exporters and SMEs? How will it support these groups?**

Exporting companies currently rely on foreign firms for many of the tests/analyses and certifications required by their customers or the countries they export to. We aim to save time and money for these companies by conducting these tests/analyses and issuing certifications in our country, thereby preventing foreign exchange outflows. SMEs face challenges in accessing high-cost equipment and analyses for R&D work. Employing highly educated and experienced personnel is also not easy for SMEs. Through our center, SMEs will have easier access to the human resources and high-cost equipment and analyses they need for R&D. Additionally, we will help SMEs ben-

efit from national and international project support through our consultancy services.

**What other missions and goals does the Chemistry Technology Center have besides being a test and laboratory center?**

Yes, the Chemistry Technology Center is more than just a test and laboratory center. Our goal is to provide all the services that exporters need under one roof. In addition to test/analysis services, we will offer certification and certification consultancy, joint R&D projects for product and process development, support for national and international project applications, and provide consultancy on Turkish and export country regulations. We will also conduct training on all these subjects. Additionally, with the support of İKMİB and IT Valley, we will create a chemistry ecosystem in our incubation center. Our Scientific and Advisory Boards, consisting of esteemed professors from our universities and professionals with many years of experience in our focus sectors, will quickly evaluate and solve the issues and questions from companies. Under the leadership of İKMİB and our Chemistry Technology Center Management Board President, Mr. Adil Pelister, we have already started working on these aspects.

# 12,5

MILLION DOLLARS

ANNUAL CONTRIBUTION TO  
THE CURRENT ACCOUNT  
DEFICIT



*Our goal is to provide not only fast but also high-quality services with the education and experience of our team.*



**How is the start-up ecosystem in the chemical industry expected to benefit from the Chemistry Technology Center? Does the center have plans to support these start-ups?**

Our chemistry-themed incubation center aims to create a comprehensive ecosystem. Start-ups will benefit from all the resources of the Chemistry Technology Center more quickly and economically, and with the support of İKMİB, they will have the opportunity to meet leading companies in the industry. We will make medium- and long-term agreements to ensure that firms in our incubation center can benefit from the center's services more quickly and economically, conducting their necessary tests/analyses, and receiving consultancy and training. Through events organized with İKMİB support, start-ups will present their developed products and processes to major companies and find solutions to companies' needs through our call system. The planned digital library will allow start-ups to access articles, publications, and patents related to chemistry from our incubation center. Additionally, they will benefit from all the incentives provided by IT Valley, participate in entrepreneurship training and consultancy services provided by IT Valley,

and collaborate with software and technology companies within IT Valley.

**Can you provide detailed information on the process and advantages of the Chemistry Technology Center's goal of issuing certifications obtained from the EU?**

Our center plans to support not only EU certifications but all necessary certifications for the sector. Essentially, a certificate is a document that includes analysis results according to one or more international standard methods, confirming that the results comply with the required standards. This document may sometimes include on-site inspections. Our goal is to enable companies to perform this analysis package accredited in our center and issue the analysis certificate to the requesting organization when a specific institution does not require the certificate. However, in cases where a specific firm's certification is required, we plan to make agreements for the tests/analyses and on-site inspections to be conducted by our center. This way, we aim to prevent the loss of time and money for companies sending samples abroad, waiting for test/analysis results, and bringing foreign inspectors for on-site inspections.





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# Fertilizers

## UNDERGOES CBAM EXAMINATION

*Fertilizers, subject to the Carbon Border Adjustment Mechanism (CBAM), is on the brink of transformation.*





**W**ith the rapid increase in the world's population, food supply and agricultural productivity have become even more crucial. Among the most important inputs in agriculture are soil, seeds, water, and fertilizer; hence, fertilizers holds critical importance in enhancing agricultural productivity. Until the 18th century, the nutrient needs of soil and plants were met solely with animal manure. However, with the advancements in chemistry, German chemist Justus von Liebig discovered the positive effects of potassium, phosphorus, and nitrogen on plant growth, leading to the emergence of chemical fertilizers in agriculture. Fertilizers constitute 60% of agricultural inputs. The use of chemical fertilizers has significantly boosted agricultural yields, facilitating the growth of agriculture and subsequently increasing fertilizer production. Over the years, with evolving technologies, fertilizers has become a vital raw material industry, encompassing the production of fertilizers and intermediates, as well as the import, export, marketing, usage, and provision of educational, administrative, and technical services for fertilizers, raw materials, and intermediates.

#### IMPACT OF QUOTAS ON FERTILIZER EXPORTS

In 2021, the Ministry of Trade revised the list of goods subject to export registration, including all types of fertilizers. With this new regulation, all fertilizers with GTIP codes 3101, 3102, 3103, 3104, and 3105 were included in the list of goods subject to export registration. Subsequently, quotas were imposed on companies' production capacities for the products to be exported. As a result, exports have continued under permits. Since 2021, the decline in exports has been recorded at 38% in terms of quantity and 55% in terms of value. This situation has led to a decrease in fertilizer exports, with a noticeable decline in the registered products.

#### EXPORT REACHES 285 MILLION DOLLARS

The earthquakes, wars, and economic crises

*One of the target policies of the 12<sup>th</sup> Development Plan includes the use of chemical fertilizers based on soil analysis results, as well as the promotion of the production and use of organic and organomineral fertilizers.*

**285  
million  
dollars**

Export value achieved in  
2023.

experienced in 2023 have also affected exports. The dynamic structure of the Turkish fertilizer sector, both within the chemical industry and the agricultural sector, could not maintain the momentum achieved in the previous year due to these developments. According to the Turkish Exporters Assembly (TİM) data, exports in 2023 decreased by 63% compared to the previous year, amounting to 285 million dollars. Among the 16 sub-sectors of the chemical industry, Romania led the countries with the highest fertilizer exports with 21 million dollars, accounting for a 7.4% share. Ireland followed in second place with 19.5 million dollars, and Italy was third with 16.6 million dollars in exports. Significant increases were observed in countries such as Australia, Cameroon, Saudi Arabia, Ethiopia, and Ukraine. Fertilizers diversified its new markets, achieving exports to countries that had not been previously exported to in 2023, including Togo, the Republic of South Africa, Venezuela, and Rwanda. In contrast, countries that saw exports in the previous year but none in 2023 include





*The Ministry of Industry and Technology, with the financial support of the World Bank, has launched the “Türkiye Green Industry Project” through KOSGEB and TÜBİTAK to contribute to the green transformation of Turkish industry.*



Eritrea, Latvia, and Poland. From January to December, the top five countries with the highest fertilizer exports were Romania, Ireland, Italy, Ukraine, and the Turkish Republic of Northern Cyprus (TRNC).

### **NEW INVESTMENTS TO BE IMPLEMENTED**

A roadmap has been established with the 12th Development Plan covering the period 2024-2028, serving as a milestone for Türkiye’s goal to be among the world’s largest economies by 2053. One of the primary priorities of the 12th Development Plan is to increase Türkiye’s economic growth potential by utilizing existing resources most efficiently, targeting an average of 5% stable and balanced growth. Under this plan, it is expected that the Türkiye Wealth Fund and the private sector will undertake new investments needed by the industry, particularly in fertilizers and petrochemicals. The plan includes target policies relevant to fertilizers, such as using chemical fertilizers based on soil analysis results and increasing the production

and use of organic and organomineral fertilizers.

### **CBAM CLOSELY CONCERNS FERTILIZERS**

The European Union (EU) introduced a regulation targeting high-carbon emission sectors under the European Green Deal (EGD) to combat climate change. The Carbon Border Adjustment Mechanism (CBAM) aims to reduce carbon emissions for countries exporting to Europe. Reporting processes for cement, electricity, fertilizers, aluminum, iron-steel, and hydrogen sectors began on October 1, 2023. Starting January 1, 2026, the EU will impose a carbon tax on products from fertilizers that do not meet specific criteria, marking the beginning of financial obligations for exporting firms. With 45% of its exports going to Europe, Türkiye stands out as one of the countries most affected by CBAM. As a priority sector among carbon-intensive industries, fertilizers is reviewing its activi-



# 300 million dollars

Financing provided under the World Bank-funded “Türkiye Organized Industrial Zones Project” to accelerate the transformation of OSBs into Green OSBs.

ties related to climate change in light of this regulation.

## MINISTRY SUPPORTS GREEN TRANSFORMATION

The Ministry of Industry and Technology, through KOSCEB and TÜBİTAK with World Bank financial support, launched the “Türkiye Green Industry Project” to contribute to the green transformation of Turkish industry. The project, with a budget of 450 million dollars, aims to support the efficient green transformation of industrialists, entrepreneurs, and SMEs through the “Green Transformation Support Program.” Fertilizers is among the six priority sectors identified in the project. The ministry will consider investments in green transformation as priority investments. To accelerate the transformation of Organized Industrial Zones (OSBs) into Green OSBs, 300 million dollars in financing has been provided under the World Bank-funded “Türkiye Organized Industrial Zones Project.” This will enhance the efficiency, environmental sustainability, and competitiveness of OSBs.



**SELÇUK DENİZLİ**

General Manager of Alkim Alkali Kimya

## “RENEWABLE ENERGY INVESTMENTS HAVE GAINED MOMENTUM”

*Fertilizers encompasses a wide range of product groups. As Alkim Alkali Kimya, we produce Potassium Sulfate fertilizer, which is used in the special fertilizers product group. Our production capacity is 50,000 tons per year, while Türkiye’s total Potassium Sulfate need is approximately 25,000 tons. Chemistry plays an important role in the agricultural sector, just as it does in every other sector. Many of the components used in fertilizers are obtained through chemical processes. Increasing efficiency in these processes will significantly impact the costs of fertilizer production. Lower fertilizer costs will contribute to increased usage and higher productivity.*

*Fertilizers is one of the five main sectors included in the Carbon Border Adjustment Mechanism (CBAM). Reducing the carbon footprint is among the most critical concerns for companies. Especially in this energy-intensive sector, renewable energy investments have gained momentum. Companies must accelerate their efforts to complete their transformations before the financial implementation of the regulation begins.*



# “THE FERTILIZER SECTOR HAS STRATEGIC IMPORTANCE IN FOOD SECURITY”

*“Fertilizers, one of the cornerstones of the global agricultural industry, plays a critical role in the development of global food security and sustainable agricultural practices.”*

Due to the tensions between Russia and Ukraine that began in 2022, fertilizer trade routes have changed. With many companies and financial institutions in European Union member countries imposing sanctions on Russia, fertilizers produced in Russia have increasingly turned towards African and Latin American markets. These markets are also among the primary high-tonnage export markets for Toros. As a result, the significantly reduced presence of Russian fertilizers in Europe after the war has strengthened opportunities for Toros in the European market. In Türkiye, according to the quota rates announced for each product from the second quarter of 2024 to the end of the year, we aim to bring Toros products to farmers in Romania, Ukraine, Serbia, and Bulgaria, especially through our company AgroPort.

### “CHEMISTRY FORMS THE BACKBONE OF FERTILIZER PRODUCTION”

Fertilizers has strategic importance within the framework of the United Nations Sustainable Development Goals to end hunger and malnutrition and ensure food security. Fertilizer is the most basic necessity for agriculture, and agriculture means food. Food is one of the most fundamental substances needed for the sustainability of life. Therefore, plant nutrition products play a

key role in food security and supply, with the right amount, at the right place, and with the right production. The chemical industry forms the backbone of chemical fertilizer production. Simply put, the soil must contain the necessary amounts of nitrogen, phosphorus, and potassium in forms that plants can absorb for healthy development of seeds or seedlings. If the soil where the plant will grow is insufficient in these elements, this must be supplemented, and this is where the chemical industry comes into play. With the contribution of the chemical industry, these elements are combined in specific ratios through special methods to create the plant nutrient complex needed depending on the soil and the type of plant to be grown. This ensures the sustainability of agriculture.

### “WE AIM TO COMPLY WITH THE EU GREEN DEAL”

As you know, CBAM came into effect on October 1, 2023. As Toros Tarım, we started reporting for our exported fertilizers containing nitrogen under the CBAM regulations by calculating our carbon footprint. In fact, our subsidiary in Romania, Agroport, successfully completed the first reports to the EU. Toros Tarım has completed its Carbon Net Zero Roadmap aligned with Science-Based Targets (SBTI) within the framework of the EU Green Deal



**AHMET EREN**  
General Manager of Toros Tarım

and CBAM, identifying critical emission reduction strategies for all scopes. We aim to neutralize Scope 1-2 emissions by 2030 and Scope 3 emissions by 2050. Within the Carbon Net Zero Roadmap, we aim to achieve compliance with the EGD by reducing emissions from our operational processes, supply chain, raw materials, and the use of our products (fertilizer usage). Additionally, the Ministry of Industry and Technology is continuing the “Low Carbon Roadmap Project Action Plan for the Turkish Fertilizer Sector” with the support of the European Bank for Reconstruction and Development (EBRD) to support green transformation in Türkiye’s fertilizer sector. This project analyzes the current situation and emission reduction scenarios and examines the impacts of the EU Emission Trading System and CBAM with a developed greenhouse gas and policy interaction model. As a leading fertilizer manufacturer in Türkiye, we are part of the Steering Committee, contributing to this effort alongside relevant public institutions, national and international NGOs. We play an active role in identifying investment and technology needs for decarbonization in the medium and long-term future of the sector and in implementing policy and practice recommendations to support the sector’s green transformation strategies.





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*"Önce Hayat"*

# DÜNYADA DA BÜYÜYORUZ...

- . 70'den fazla ülkeye ihracat
- . 650'den fazla ruhsatlı ürün
- . 350 milyon kutu üretim kapasitesi,
- . 62 bin metrekare alana kurulu üretim tesisi
- . EU-GMP sertifikası





# A TRANSFORMATION WIND BLOWS IN THE CHEMICAL INDUSTRY WITH CBAM

*Under the Carbon Border Adjustment Mechanism (CBAM), designed to eliminate the risk of carbon leakage, the Turkish chemical industry has accelerated its sustainability efforts.*

## TOP 10 COUNTRIES MOST AFFECTED BY CBAM:

Russia  
China  
Türkiye  
United Kingdom  
Ukraine  
Republic of Korea  
India  
Brazil  
USA  
South Africa

As part of the European Green Deal, which aims to make Europe the world's first climate-neutral continent by 2050, the European Union implemented the Carbon Border Adjustment Mechanism (CBAM) concerning taxes and policies. Since 2005, the Emission Trading System (ETS) has been applied in the EU to mitigate the effects of the climate crisis. Firms exporting to the EU are expected to reduce their emissions and align their exports with carbon-neutral targets, in line with the same objectives as CBAM. Currently, carbon pricing is applied through ETS. CBAM also envisions a carbon pricing mechanism equivalent to ETS. This aims to prevent the risk of carbon leakage from countries that do not take adequate climate change

measures, potentially undermining the EU's emission reduction policies. CBAM imposes additional fees on imported goods based on the carbon emissions released during their production. Thus, producers are encouraged to engage in clean production, and the competitiveness of EU producers is preserved. Starting from October 1, 2023, CBAM entered a three-year transition period, initially covering cement, electricity, fertilizers, aluminum, iron and steel, and hydrogen sectors imported from non-EU countries without financial obligations. Although this is currently limited to these sectors, it is expected to encompass all sectors by 2030. The implementation will become mandatory, and financial obligation processes will commence on January 1, 2026.



## CBAM IS IMPORTANT FOR THE CHEMICAL SECTOR

EU countries account for 45% of Türkiye's exports. In 2023, the Turkish chemical industry, which achieved \$30.6 billion in exports, held about a 42% share in the EU market. CBAM is crucial in this context due to the chemical sector's position in supplying inputs to all sectors. It is inevitable for the sector to take steps in green transformation, circular economy, and sustainability to maintain its competitiveness. According to a report by the Turkish Exporters Assembly (TİM), with 2020 carbon emission values, Türkiye's exports to the EU would face a carbon tax of 12.3% for the cement and glass sector, 1.1% for paper products, 1.2% for aluminum, 2.9% for iron and steel, 1.2% for refined petroleum products, and 2% for chemical products and fertilizers.



**45%**

EU countries account for 45% of Türkiye's exports.

## ADDITIONAL COSTS ON THE HORIZON

As one of the countries most affected by CBAM due to its high market volume, Türkiye seems poised to face significant costs. Compliance with CBAM is essential to maintain Türkiye's competitiveness. A 2023 study by the European Bank for Reconstruction and Development (EBRD) estimates potential annual CBAM costs for the industry at €138 million by 2027, assuming a CBAM fee of €75/tCO<sub>2</sub>e for target products exported to the EU. If the CBAM fee increases to €150/tCO<sub>2</sub>e, these costs could rise to €2.5 billion annually by 2032. A similar analysis from 2022 estimates an additional cost of €777 million for Turkish exporters due to the phased implementation of CBAM. Without any measures, the Climate Change Presidency's report suggests that Türkiye could face an annual cost of \$2.5 billion by 2032.

*According to the TİM report, with 2020 carbon emission values, it is projected that Türkiye's exports to the EU will face a 2% carbon tax for chemical products and fertilizers.*





# BORDER CARBON ADJUSTMENTS IN TERMS OF TRADE POLICY AND FLOWS

*“We are focused on the EU CBAM due to it being our largest export market”*

**DR. S. ARMAĞAN VURDU**  
Secretary General of İMMİB



**B**order Carbon Adjustments (BCAs) are a complex issue emerging at the intersection of climate policy and international trade. Governments’ policies to reduce carbon emissions and combat climate change have placed carbon pricing at a critical point, and BCAs have emerged as a significant policy tool.

BCAs are mechanisms that enable countries, which impose carbon costs on domestically produced goods based on their carbon emissions, to apply similar costs to imported goods. The goal is to encourage companies to decarbonize. These regulations, as a climate policy tool, are expected to balance trade between countries that price carbon emissions and those that do not, making coordinated decarbonization possible. However, these pricing mechanisms also have the potential to alter global trade and investment flows.

This shift may result from the desire to avoid uncertainties, discrepancies, and additional costs, or from the preference to benefit from substantial subsidy packages aimed at enhancing compliance capacity while implementing decarbonization mechanisms. An example of this can be seen in European companies relocating to the US to take advantage of the incentives announced under the US Inflation Reduction Act for clean energy transition.

The European Union was the first region to implement such a regulation, with the reporting period for the EU Border Carbon Adjustment Mechanism (CBAM) starting in October 2023. While companies exporting from Türkiye are trying to adapt to the transitional period, during which only reporting will be required until the EU imposes financial obligations, various ministries in Türkiye are establishing and continu-

ing to develop mechanisms to support compliance capacity. We are focused on the EU CBAM due to it being our largest export market, but Canada and the United Kingdom are also in the consultation process for their own border carbon adjustments.

BCAs are accelerating policy-making by governments and pushing companies to enhance compliance to maintain competitiveness, leading to international debates due to the need to comply with different countries’ carbon policies. The primary concern is that the implementing country might discriminate between its own producers and foreign producers. This situation brings about a range of issues that need to be resolved within multilateral systems like the World Trade Organization (WTO), and there are still uncertainties regarding how these carbon adjustments will be evaluated under WTO rules.

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## “**KON**, AIMS TO LEAVE A SUSTAINABLE WORLD”

*“In our project, we prioritized hygiene, easy shipment, quick setup, climate resistance, and privacy factors.”*







*Kon, a portable toilet designed for use in disaster areas, stands out with its foldable form, minimizing volume during storage and shipment, and can be easily set up to meet needs in the event of a disaster.*

Organized for the 19<sup>th</sup> time this year in partnership with İK-MİB and İDDMİB, the 2023 IMMIB Industrial Design Competition aimed at developing high value-added products, promoting and encouraging industrial design activities, and enhancing export competitiveness. The competition's theme was "Natural Disasters and Emergency Situations." In the "Plastic Products" category, the first prize was awarded to the Kon project by Nur Sena Selek and Gizem Eldeniz. We spoke with Nur Sena Selek and Gizem Eldeniz about their Kon project, which they developed based on the needs identified during disaster periods.

**First, can you tell us a bit about yourselves?**

We are graduates of the 2023 class from the Industrial Design Department of Gazi University's Faculty of Architecture. As young designers, we practice our profession in Ankara. We've always enjoyed working together since our early days in the department. We believe this award is the fruit of the synergy and team harmony between us. We are pursuing our dream of starting a business together due to our shared ideals.

**What needs did you consider when creating your project, and what factors were prioritized in your design?**

We had been closely following the IMMIB Industrial Design Competition. The idea of designing a product under the 2023 Natural Disasters and Emergency Situations theme excited us both. We divided the disaster period into three phases: Pre-Disaster, During Disaster, and Post-Disaster. We decided to focus our project on the "Post-Disaster" phase, considering it had many vital needs. We chose to design a toilet to address the sanitation needs, which we felt were less worked on compared to other needs. In our project, we prioritized hygiene, easy shipment, quick setup, climate resistance, and privacy factors.

**What are the standout innovations and features of your project? What materials did you choose, and what techniques did you use in the production process?**

We developed the project to address the significant problem of meeting sanitation needs during disaster periods. We sought solutions to the issues associated with current solutions, such as shipment, setup, sewage, and hygiene problems. Kon, a portable toilet designed for use in disaster areas, stands out



with its foldable form, which minimizes volume during storage and shipment and can be easily set up to meet needs in the event of a disaster. This foldable structure is designed to transition from 2D to 3D by folding pre-cut areas designed to meet various needs. The components interlock upon folding to create a sturdy structure. Additionally, designated areas for seating, waste disposal, and collection, and privacy needs were designed. The product addresses all these needs with a segmented structure that ensures ease of production and assembly and sustainability through the use of recycled plastic. It is a viable product for disaster scenarios.

**What role do you think your project plays in disasters and emergencies?**

Ensuring sanitation and hygiene in disaster areas is a priority. Currently, emergency solutions involve digging

1.5-meter deep holes in appropriate locations and placing tents over them. These pits are used for sanitation until mobile toilets are provided as a more permanent solution. If the process of accessing mobile toilets is delayed, there is a risk of infectious diseases due to hygiene problems. Kon, with its foldable structure and easy setup, aims to bridge the gap between emergency and permanent solutions by improving the shipment process and providing accessible toilets.

**What measures did you take regarding sustainability and environmental impact when developing your project? How does your design differ in terms of environmental impact?**

Kon is a product that can be used multiple times during disaster periods. After meeting the emergency sanitation

needs, it can be repurposed in public spaces or reused in other disaster areas. Additionally, recycled plastic was chosen for its production. Both the material selection and its reusable, long-lasting nature aim to contribute to leaving a sustainable world for future generations.

**Can you tell us a bit about the industrial production process of your design? What steps did you follow in the production phase, and what technologies did you use?**

In the design, the part-whole relationship was considered to ensure ease of production and assembly under mass production conditions. A hinge structure was used at the joint points to utilize the foldable feature of the plastic sheets. The plastic sheets are intended to be produced using the thermoforming method, while some external parts will be produced using plastic injection molding. Additionally, textures were designed to add strength to the sheet areas, forming a structure that would provide durability.

**What impact did winning first place in this competition have on you and your project? How do you plan to develop your project in the future?**

First of all, it was a very enjoyable and proud award ceremony. We would like to thank the jury for deeming our project worthy of the first prize and IMMIB for providing us with a great experience throughout this process. Our goal is to put our project into real use. We aim to develop the waste disposal scenario further. Once our improvements are complete, we will take the necessary steps to bring our product to life and into use. Additionally, with IMMIB's support, we plan to participate in international competitions with our project, representing our country on a global scale.

**Marpol**, 1970 yılından bu yana, dünya çapında polisaj cilaları, fırçaları, aşındırıcı malzemeler, otomobil pasta cilaları ve polisaj için gerekli ana ham maddeleri tek bir entegre tesiste üretebilme yeteneğiyle sektörde eşsiz bir konumda ve bu alandaki yenilikçi yaklaşımlarıyla da öne çıkmaktadır. Şirketin Araştırma ve geliştirme departmanı ile laboratuvarı, en ileri teknolojik ekipmanlarla donatılmıştır.

### **Marpol Ürün Gamı:**

- Polisaj Cilaları
- Polisaj Fırçaları
- Zımpara Flap Diskleri
- Mop Zımparalar
- Velkro Kağıt ve Film Disk Zımparalar
- Sonsuz Bant Zımparalar ve Rulo Zımparalar
- Satin Bantları ve Diskleri
- Nonwoven Moplar, Rulolar ve Diskler
- Otomobil Pasta Cilaları
- Ham Maddeler (Alüminyum Oksit)

**Marpol** ailesi olarak 60'tan fazla ülkeye ihracat yapmanın ve bu ürünlerin küresel tedarikçileri arasında öncü firmalardan biri olmanın haklı gururunu yaşamaktayız.





# Packaging Industry **CONTINUES TO GROW**

*The Turkish packaging industry is addressing the increasing global and domestic packaging demands with its growing export volume, innovative technologies, rapid production capacity, robust infrastructure, and skilled workforce.*

**W**hile packaging, which appears in every aspect of life, solidifies its position every day, it aims to increase its potential with its production capacity and competitive position. As the global population grows and the demand for food increases, the packaging industry plays a key role in protecting products from physical impacts and delivering them from one end of the world to the other. The sector, which provides not only food packaging but also industrial production, supports the needs of many industrial branches. The global packaging industry is worth over a trillion dollars annually. In this context, the Turkish packaging industry is meeting the growing packaging needs of both the world and Türkiye with its expanding export volume, new technologies, fast production capacity, infrastructure, and qualified workforce. The increasing demand for packaging is reflected in the numbers, and the sector's growth momentum is moving upward. The packaging sector, which achieved \$7.5 billion in exports in 2022, recorded \$3.5 billion in exports with a foreign trade deficit of \$1.148 billion in the first six months of 2023. It is estimated that this figure will reach \$8-8.5 billion by the end of the year. The packaging industry, which reached approximately \$30 billion in size as of last year, aims to reach \$50 billion by 2030.

#### TARGET MARKET: EUROPE

Due to its geopolitical location, Türkiye is right next to Europe and is therefore in a highly advantageous position. The packaging industry, which wants to capitalize on this advantage, has turned its route towards Europe. Stating that 65% of the packaging industry's exports are to Europe, Packaging Manufacturers Association (ASD) President Zeki Sarıbekir said, "Europe is a very important market for our sector and it is right next to us. There is no European country we cannot reach within two days. While many countries around the world are trying to sell their products to European countries, we can reach Europe very quickly with our geographical location and quality products. As a country, we need to make more efforts to increase our exports to Europe. While working for more trade with Europe, we should not neglect Asia-Pacific, America, and Africa. However, we can currently meet only 10-15% of Europe's needs in the packaging market. So, we can achieve much better positions in this

*On October 24, 2023, the European Union (EU) adopted the report on the Draft Regulation on Packaging and Packaging Waste prepared to reduce packaging waste and increase the recyclability and reusability of existing packaging.*

market. That's why we have set our first target as Europe."

Stating that packaging consumption in Türkiye has doubled in the last 20 years and that annual per capita consumption has reached \$325, Zeki Sarıbekir said, "We are well above the world average of \$125. Per capita packaging consumption, which is an indicator of welfare level and industrial development, is rapidly increasing in our country. We aim to increase our per capita consumption to \$380. We provide an economic movement of \$490 billion with packaging in our country."

#### TÜRKİYE ON THE USA'S RADAR

At the point of exporting products, not only quality and price criteria but also the effectiveness of supply and logistics processes come to the fore. While quick solutions take a step forward, this situation gains importance in the packaging industry as well. Touching on this issue, Zeki Sarıbekir said, "Companies that need packaging use it to deliver their products to their destination. That's why, instead of packaging that will come from China in a month, they prefer Türkiye, which can deliver packaging in two days. There is another important market besides Europe. That is the

**6,8  
billion**

Packaging  
sector's export  
in 2023







USA. The USA, the world's largest packaging consumer, is looking for countries to manufacture more for itself. At this point, two countries come to the forefront. One is India, and the other is Türkiye. The USA holds great opportunities for the Turkish packaging industry.”

### **TRANSFORMATION STEPS FROM THE EU**

Within the framework of the circular economy, the European Union (EU), which is increasing its efforts to combat climate change, adopted the report on the Draft Regulation on Packaging and Packaging Waste prepared to reduce packaging waste and increase the recyclability and reusability of existing packaging on October 24, 2023.

*The main threat is the lack of recycling in packaging, which has many usage areas.*

According to EU data, 40% of packaging is made of plastic and 50% is made of paper materials, while packaging waste constitutes 36% of municipal waste. In line with the legislation, it aims to reduce packaging-related greenhouse gas emissions from 66 million tons to 43 million tons by 2030, reduce water usage by 1.1 million m<sup>3</sup>, and increase the packaging waste recycling rate to 73% by 2030. Thus, it seems impossible for packaging materials that do not meet sustainability and labeling criteria to be marketed in the EU.

### **NEW CRITERIA IN THE PACKAGING INDUSTRY**

The European Parliament (EP) aims to reduce general packaging by 5% by 2030, by 10% by





*It is known that 9.6 million tons of plastic are produced annually in Türkiye, and 2.2 million tons of the produced plastics are marketed as packaging. Only half a million tons of these packaging materials can be recycled.*

2035, and by 15% by 2040 with the regulation aimed to be introduced. For reducing plastic packaging, targets are set at 10% by 2030, 15% by 2035, and 20% by 2040. The EP aims to reduce packaging, restrict certain types, and ban the use of “non-degradable chemicals” with the regulation. It is also envisaged that very light plastic bags used in the fruit-vegetable category in markets be biodegradable. The report, which draws attention to the unnecessary use of packaging, also sets criteria such as reducing packaging, not using unnecessarily large packaging in e-commerce sales, and minimizing the size of packaging.

With the targeted regulation, some responsibilities will also come to packaging manufacturers. They need to register in the registra-

tion system to be established by member states under the Extended Producer Responsibility (EPR). Within the scope of EPR, a fee will be charged for all packaging products exported or imported in the EU, while a lower fee will be applied to more sustainable products.

### **TRANSFORMATION OF THE TURKISH PACKAGING INDUSTRY IS INEVITABLE**

The applications introduced by the EU to be in line with the circular economy and environmentally compatible practices are also of great concern to Türkiye, which has a 42% share in Europe. To maintain the competitiveness of the Turkish packaging industry, which targets Europe, it is crucial to keep up with the environmental standards brought by the European Green Deal (EGD) and the Border Carbon Adjustment Mechanism (BCAM), which is expected to affect all sectors in the future. To comply with these regulations, the industry must raise sustainability standards and reduce carbon emissions. Ensuring all these will require Turkish packaging exporters to review their production processes. While this situation brings extra costs, it is also predicted to lead to increased demand for producers who ensure these applications and achieve sustainable production.

### **RECYCLING IS A MUST**

In the changing world order, transformation for the future has become inevitable. While packaging materials are essential for the hygienic consumption of food, when we consider the fact that waste does not disappear in nature for years, it becomes important for these materials to be reintegrated into the ecosystem through sustainable methods. The main threat is the lack of recycling in packaging, which has many usage areas. It is known that 9.6 million tons of plastic are produced annually in Türkiye, and 2.2 million tons of the produced plastics are marketed as packaging. Only half a million tons of these packaging materials can be recycled. Developing recycling policies with global cooperation and implementing laws will be one of the important steps in fighting this problem. While the damage caused by waste to the environment has become a global issue, ensuring the recycling process of packaged products after use contributes to the circular economy and minimizes environmental damage.

# 73%

The European Union aims to increase the packaging waste recycling rate to 73% by 2030.

*“WE HAVE  
A VERY STRONG  
POSITION IN THE  
GLOBAL PACKAGING  
SECTOR”*

**Sarten Chairman  
of the Board,  
Zeki Sarıbekir,  
emphasizes that  
the Turkish  
packaging sector  
has a strong  
infrastructure  
and the capability  
to compete  
with companies  
worldwide.**





**H**e states that continuous investment in R&D and innovation is necessary to maintain the competitive advantage. Highlighting the sector's dependency on imports and the need to invest in raw materials, we discussed the past, present, and future of the sector with Sarten Chairman of the Board, Zeki Saribekir.

The packaging sector increased its exports to 8-8.5 billion dollars by 2023. What strategy should the sector follow to reach its target of 50 billion dollars by 2030?

As a country, we have a very strong position in the global packaging sector. Considering the current conditions, when we add our country's geographical location, production capacity, quality, skilled workforce, and competitive structure, we can say that we have even greater potential. However, we now need to invest in raw materials. As one of the rare sectors that exports and generates a trade surplus, we are still dependent on imports in some areas, especially plastics. Therefore, one of the urgent matters Turkey should address is to support large investments. Currently, a significant part of our exports is transported by trucks via road. Var-

ious issues or slowdowns can occur at this point. The solution to this problem lies in rail transport. We should not ignore maritime transport either. Another important point that should not be overlooked to increase our exports is logistics centers. For example, Austria has no coastline but takes a large share of maritime trade. Austria rents ports from Croatia and Slovenia. Ships bring products to these ports. The products arriving at the port are transported by train to nearby container areas. The products are then distributed from these areas. We can do this as Turkey. We can transport our products to Europe by trains and ships, and distribute them all over Europe with Turkish trucks and trailers. The faster we can deliver our quality products to the regions in need, the more advantageous we become. Thus, we can avoid the 40-50 kilometer queues and delays that sometimes occur at border gates.

**How do you evaluate Sarten's performance in 2023? Which countries were added to your export network in 2023? Which countries do you aim to include in your export route in 2024?**







*Turkish packaging sector has a strong infrastructure and the capability to compete with companies worldwide*

We can say that 2023 was a productive year for Sarten. We export to nearly 100 countries. In 2023, we expanded our export network towards America and North Africa. In 2024, we aim to continue increasing our presence in the new markets we have entered.

**What path is being followed to meet Europe's demand for quality products, which is one of the important markets for the Turkish packaging sector?**

We especially prioritize the production of high value-added products. Additionally, we are quickly working on adapting to sustainability transformations to ensure the continuity of exports to Europe. Within the scope of sustainable development goals, the most important point for our sector is "Responsible Production and Consumption." We proceed with this awareness.

**What position does the Turkish packaging sector hold in the world? Can the sector maintain its competitive advantage in the global market?**

Turkey ranks 6th in Europe and Eurasia and 16th in the world with a size of 25 billion dollars. The

Turkish packaging sector has a strong infrastructure and the capability to compete with companies worldwide. However, to maintain our competitive advantage, we need to continuously invest in R&D and innovation, produce in the fastest and most economical way, and increase our share in the highly competitive world markets. We know the importance of closely following innovations and organizing our fair, which is a platform where the latest technologies are showcased and sectoral issues are discussed. In 2024, as the Packaging Manufacturers Association (ASD), in collaboration with RX Tüyap, we will hold the 29th edition of our fair from October 23-26.

Despite being one of the sectors with the highest need for qualified labor, the chemical industry is experiencing a significant shortage of skilled personnel. Do you have any educational activities as Sarten to address this problem? Every year, we include university graduates in our workforce.



# 25 billion dollar

Türkiye ranks 6th in  
Europe and Eurasia and  
16<sup>th</sup> in the world with a size  
of 25 billion dollars.



We organize various training programs for young colleagues who join us. We have ongoing training sessions. We are also closely involved with vocational high schools. As part of the Istanbul Chamber of Industry's program, sponsors are assigned to schools. Sarten is one of them. We support Silivri Yusuf Sarıbekir Vocational and Technical Anatolian High School.

**How will the Border Carbon Regulation Mechanism imposed on exporters shape the transformation of the Turkish packaging sector while the concept of sustainability is gaining increasing importance recently? Do you have any initiatives in this regard?**

We are aware that to achieve sustainable growth in the packaging sector, environmental, social, and cultural transformation must be targeted. We believe that production processes should be based on a circular economy model, a sustainable production model that maximizes resource efficiency. All stakeholders should act with a holistic approach. Packaging, which protects, carries, and delivers the product to the consumer, should be produced considering its environ-

mental impact. When packaging is included in the recycling process after use, it will contribute to the environment and the national economy. As ASD, we will continue to emphasize the importance of focusing on recyclable and environmentally friendly packaging for sustainability. For Sarten, circular economy and sustainability are among the top priorities. Since our establishment, we have highlighted sustainability in different areas, and in the past three years, we have built our sustainability approach on a strategy. At Sarten, we address sustainability under three main headings: Pioneer and responsible service approach, respect for the environment, and our stakeholders. We closely follow the steps taken and emerging issues in the field of sustainability worldwide and in our sector, working to increase our positive impact in these areas. At the same time, we monitor our sustainability performance under these three focus areas. Through our annual sustainability report, we transparently share how our performance has changed over the years, the projects and improvement efforts we have undertaken in areas where we have seen reductions or increases.



# Chemical Industry

## 2023 Ranks As The Second Sector In Export Performance In

**\$30.6**

**BILLION**  
EXPORTS FROM JANUARY  
TO DECEMBER

### ROLE OF SUB-SECTORS IN CHEMICAL INDUSTRY EXPORTS IN 2023

**\$9.1**

**BILLION**

PLASTICS AND  
PRODUCTS



**\$8,3**

**BILLION**

MINERAL FUELS,  
MINERAL OILS, AND  
PRODUCTS



**\$2,7**

**BILLION**

INORGANIC  
CHEMICALS



**\$1,9**

**BILLION**

ESSENTIAL OILS,  
COSMETICS, AND  
SOAPS

**\$1,6**

**BILLION**

RUBBER AND  
RUBBER  
PRODUCTS



**\$1,5**

**BILLION**

PHARMACEUTICAL  
PRODUCTS



**\$1,47**

**BILLION**

PAINTS, VARNISHES, INKS,  
AND PREPARATIONS



**\$1,1**

**BILLION**

VARIOUS  
CHEMICAL  
PRODUCTS



**\$932**

**MILLION**

ORGANIC CHEMICALS

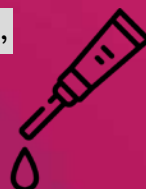
WASHING  
PREPARATIONS

\$855 million



ADHESIVES,  
GLUES,  
ENZYMES

\$492 million



GUNPOWDER,  
EXPLOSIVES  
AND DERIVATIVES

\$21 million





## TOP 10 COUNTRIES FOR EXPORTS FROM JANUARY TO DECEMBER 2023

1	2	3	4	5
<b>NETHERLANDS</b>	<b>RUSSIA</b>	<b>ITALY</b>	<b>ROMANIA</b>	<b>SPAIN</b>
\$2 BILLION	\$1.7 BILLION	\$1.57 BILLION	\$1.4 BILLION	\$1.3 BILLION
6	7	8	9	10
<b>GERMANY</b>	<b>USA</b>	<b>IRAQ</b>	<b>UNITED KINGDOM</b>	<b>BELGIUM</b>
\$1.3 BILLION	\$1.15 BILLION	\$1.11 BILLION	\$870 MILLION	\$785 MILLION

\$9,1  
BILLION

THE LEADING EXPORT PRODUCT GROUP IN THE SECTOR WAS PLASTIC PRODUCTS WITH



\$8,3  
BILLION

SECOND PLACE WENT TO MINERAL FUELS AND PRODUCTS WITH



\$2,7  
BILLION

INORGANIC CHEMICALS EXPORTS RANKED THIRD WITH





## “WE NEED TO MASTER TRUE KNOWLEDGE ABOUT SCENT”

*“As a scientist, we embarked on a journey to create a scientific library and leave a mark from ourselves for the future.”*

**N**az Biotechnology, operating within Technopark Istanbul, draws attention with its Digital Scent Library project. Developed with the aim of classifying and identifying scents on scientific grounds, the primary goal of this project is to update existing knowledge about scents and carry it into the future. Prof. Dr. Nazan Apaydın Demir, the founder of Naz Biotechnology, emphasizes that scent is present in every aspect of our lives, stating, “Our goal regarding scent is not to catch something new but to modernize existing ancient knowledge.” We discussed the place of the digital scent library in the field of chemistry and the importance of scientific data with Prof. Dr. Demir, who has numerous scientific articles, projects, patents, and thesis

advisorships in this area and who also founded Türkiye’s first Cosmetic Products Application and Research Center.

**“You are known as Türkiye’s perfume professor. Can you tell us about Naz Biotechnology?”**

Naz Biotechnology is an R&D company within Technopark Istanbul that plans to produce pharmaceuticals, cosmetics, and food additives using biotechnology and natural resources. Since my field of expertise is biochemistry and biotechnology, we plan to proceed in this way.

**What is a digital scent library? How did this idea come about, and how did you decide to bring this project to life?**

Scent has always existed since the world was created and is at the pinnacle of the cosmetics sector. If we liken it to a pyramid, perfumes and scents are at the

top, and cleaning materials are at the bottom. Obtaining scents is very difficult. There are many such studies, but they are fragmented, and everyone is repeating each other. When you say thyme, rose, lavender, etc., there are dozens of repetitive studies, and many of them are not scientifically valid. Therefore, scent is necessary not only for the cosmetics sector but for many other areas. It is used in textiles, ceramics, food... It is used in every sector, but there is no infrastructure for this in our country. We wanted to bring these together. In other words, it is not possible to create a very comprehensive digital library in two or three years. This is a project that can grow over decades and will be continuously contributed to.

#### **What technologies and methods does this project use to define and classify scents?**

First of all, I am a biotechnologist. When I came to Muğla Sıtkı Koçman University, I founded the Department of Molecular Biology and Genetics. This is also Türkiye's first Cosmetic Products Application and Research Center. We have very advanced devices in our system. Access to these was easy and possible. Therefore, when you have so much information, advanced devices, and a good computer infrastructure, you think of it somehow with your team. Because initially, you feel a lack. You are in search of a proper source. Much of the information circulating in search engines is not reliable. Almost all technical information, useful information, real academic information in the world is patented and protected. Access to those indexes is only possible through paid sites. As a scientist, we embarked on such a journey to create a scientific library and leave a mark from ourselves for the future.

#### **How did you benefit from the science of chemistry while conducting this study?**

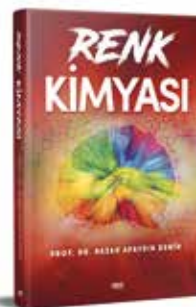
It is entirely chemistry. Scent is the soul of a plant. When you pick a plant, you kill it, but you cannot take its soul. Taking its soul is entirely chemistry. Analysis, extracting the souls of flowers, combining, formulating them is our job. This should not be considered only in terms of perfume or cosmetics. Rose oil has

*“Fragrance is the soul of a plant. When you pluck a plant, you kill it, but you cannot take its soul. “Taking your soul is all about chemistry.”*

been used as a medicine for centuries. Even if there is a nice flower scent in your room, it makes you feel good psychologically. Therefore, the scent also has a healing power. The opposite is also possible. Think of science like a samurai sword. Therefore, we need to master true knowledge about scent and classify them within themselves.

#### **What new discoveries or uses can the digital scent library project lead to in the future regarding scents?**

Our goal here regarding scent is not to catch something new but to modernize existing knowledge, ancient knowledge. People have been extracting scents for thousands of years. Ancient techniques have existed for thousands of years. We modernize these, adapt them to current science, bring them all together with analyses and spectral interpretations, and classify them. There are scent families; more current ones are classified in terms of chemical contents. In our library, there are synthetic and natural scents, and in terms of innovation, this is it. In the Muğla and Çukurova Region, there is a significant amount of endemic plant spread, and most of them have no content analyses. We also include endemic flowers in the library in this project in terms of innovation. We have analyzed 16 scents and 16 plants. All of these belong to endemic plants and are not present in the literature. We will also upload data approved in the relevant literature. Because currently, the scents circulating in the scent world are not natural scents. Almost all are synthetic scents, and there are not enough natural scent sources for the whole world. To synthesize these, you need to analyze natural sources, distinguish scent components. This is where chemistry plays the leading role.







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