

# Chemist



İKİMİB's Complimentary Magazine | Issue: 2025/1



**CHEMISTRY TECHNOLOGY CENTER OPENED**

**A NEW ERA BEGINS IN THE INDUSTRY**



**TÜRKİYE'S CHEMICAL INDUSTRY:  
THE SECOND LARGEST EXPORTING  
SECTOR**

**THE ROLE OF  
AROMATIC PLANTS IN  
INDUSTRY IS GROWING**

**TURKISH COSMETIC  
PRODUCTS RISE ON  
GLOBAL SHELVES**

# BAYRAM BAĞIŞLARINIZLA DARÜŞŞAFAKALI ÇOCUKLAR EĞİTİMLE ÜLKEMİZİN GURURU OLUR



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**ADİL PELİSTER**  
President of İKMİB

*One of the most significant achievements in our sector has been the launch of the Chemical Technology Center, a project we initiated in 2019 and have successfully brought to life.*

# “THE CHEMICAL TECHNOLOGY CENTER WILL CARRY THE TURKISH CHEMICAL INDUSTRY INTO THE FUTURE”

Excited to reconnect with you in the first issue of 2025...

Dear Readers,

We have completed another year, with all its challenges and achievements.

Despite struggling with the burdens brought by corrective policies and the process of restoring economic rationality, Türkiye’s industrial and export sectors continued to grow, albeit not at the desired pace. Inflation for 2024 was recorded at 44.38%. The minimum wage was increased to 22,000 TL. Annual exports reached \$262 billion. Exports of the chemical sector alone amounted to \$30.8 billion.

Alongside the economic difficulties we face domestically, global eco-political turbulence, driven by external factors, has negatively impacted both our national and global economy. However, despite these challenges, our country is taking firm steps toward economic recovery. We anticipate that this recovery will accelerate in 2025, bringing our nation closer to a stable economic structure. As Turkish industrialists and exporters, we remain committed to working tirelessly toward this goal.

One of the most significant achievements in our sector has been the launch of the Chemical Technology Center, a project we initiated in 2019 and have successfully brought to life. Aligned with our “Vision 2030” strategy, this center will play a crucial role in propelling Türkiye’s chemical industry into the future. Spanning a closed area of 7,000 square meters, the facility will set new industry benchmarks.

Currently, 39 tests that were previously unavailable in Türkiye will now be conducted at our Chemical

Technology Center laboratories using domestic resources. A total of 209 different tests will be implemented, with accreditation obtained for 100 of them. This initiative will allow us to offer critical testing and laboratory services domestically, reducing dependency on foreign services. As a result, we will save both time and costs while also making an annual contribution of approximately \$12.5 million toward reducing our current account deficit.

Beyond testing and analysis, our center will also provide certification and consultancy services. Additionally, we have established a 1,650-square-meter Entrepreneurship Incubation Center within the facility. Here, we will provide full access to the Chemical Technology Center’s resources for researchers. With a model similar to leading entrepreneurship hubs in the West, we will collaborate with researchers aiming to develop new molecules, raw materials, formulas, technologies, and artificial intelligence-based software solutions. Through partnerships with crowdfunding platforms, we will bring innovative startups to life, helping create new Unicorn companies and adding significant value to our economy.

To support research and knowledge-sharing, our Digital Library will soon be operational, providing access to scientific publications and keeping researchers updated on the latest industry developments.

I extend my heartfelt gratitude to everyone involved in making this project a reality, including our ministers, public officials, the İKMİB Board of Directors, and our dedicated İKMİB team.

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## Chemist

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# İKİMİB AIMS TO INCREASE EXPORTS THROUGH ORGANIZED EVENTS

US Miami /  
Cosmoprof North America



*İKİMİB plans to pave the way for exporters with the events it will organize in 2025. Making a fast start to the year with events held in the first two months, İKİMİB is once again preparing to be the driving force of the sector this year.*

Ambiente 2025 – Frankfurt/Germany

Stamegna Cosmetics Industry  
Trade Delegation – Milano, Italy

Arab Health 2025 – Dubai/UAE  
AEEDC 2025 – Dubai/UAE

Packaging Industry Qatar  
Trade Delegation – Doha, Qatar

ECRM Europe Cosmetics  
Industry Trade Delegation –  
Lisbon/Portugal



## EXPORT ACTION PLAN FOR 2025 ANNOUNCED

**The 2025 Export Action Plan was announced by Minister of Trade, Prof. Dr. Ömer Bolat, at an informational meeting held at the Turkish Exporters Assembly on January 15, 2025.**

**2**024 Having achieved \$262 billion in exports in 2024, Türkiye plans to increase this target to \$390 billion in 2025. In this regard, the “2025 Export Action Plan,” consisting of 77 measures, was introduced by Prof. Dr. Ömer Bolat. The plan covers a broad range of initiatives, including new support mechanisms to boost goods and services exports, strengthening trade diplomacy, simplifying customs processes, and providing innovative solutions for export financing. The meeting was attended by Deputy Minister of Trade Özgür Volkan Ağar, President of the Turkish Exporters

Assembly (TİM) Mustafa Gültepe, President of the Istanbul Chemicals and Chemical Products Exporters’ Association (İKMİB) Adil Pelister, and many other prominent figures.

Bolat emphasized the significance of exports for the Turkish economy, highlighting its substantial contributions in terms of investment, production, employment, and foreign exchange earnings. He stated that their priority is to “increase the export of goods and services under all circumstances.” The Minister of Trade also noted that efforts are being made to increase exports while reducing imports, aiming to lower

the trade deficit and, in turn, reduce the current account deficit. By achieving these goals, Türkiye aims to stabilize foreign exchange markets, enhance predictability, and eliminate uncertainty in pricing. Bolat reiterated President Recep Tayyip Erdoğan’s 2025 target of \$390 billion in goods and services exports, expressing confidence in achieving this goal.

### **\$33 BILLION ALLOCATED TO SUPPORT EXPORTERS**

Bolat announced the support measures planned for exports and exporters in 2025. He stated that the first section of the action plan focuses on the Support and Price Stability Fund (DFİF), the second on support mechanisms and improvements for goods exports, the third on support for service exports, the fourth on trade diplomacy and multilateral regional bilateral relations, the fifth on measures to facilitate exports at customs,

and the sixth on export financing.

Bolat noted that the Ministry's budget had been increased to 56 billion lira for 2025, with 33 billion lira allocated as DFIF support for goods and services exporters. He estimated that around 27,700–28,000 exporters would benefit from these supports. Acknowledging that access to financing remains a major challenge for exporters, he stated that every effort has been made to address this issue. The capital of Eximbank, which stood at 13.5 billion lira, has been quadrupled within 18 months to reach 55 billion lira.

Bolat also reminded that the cost of rediscount loans had been reduced by 6 points at the beginning of the new year, bringing the cost of export rediscount credit financing down to 29.9%. He announced ongoing

efforts to further reduce financing costs next month, noting that the Central Bank, the Ministry of Treasury and Finance, and the Ministry of Trade are working together on this initiative.

### **“A MORE POSITIVE OUTLOOK IN THE SECOND HALF OF THE YEAR”**

TİM President Mustafa Gültepe stated that 2024 ended on a positive note for the export sector, despite some challenges in competitiveness for certain industries. “Some sectors faced significant difficulties, but others performed well, allowing us to reach \$262 billion in exports and achieve a 2.5% growth rate,” he said. Discussing the 2025 export targets, Gültepe noted that the goal for 2025 is \$280 billion, requiring approxi-

mately 7% growth. Given that 2024 ended with 2.5% growth, he described it as the most challenging year for producers and exporters. He expressed optimism that policies supporting production and exporters would take precedence in 2025, adding, “The toughest period is behind us. The first 3–6 months of 2025 may still present challenges, but from the second half of the year onward, we expect a more positive outlook in achieving our targets.”

Highlighting the importance of support from the Ministry of Trade and other governmental bodies, Gültepe also noted progress in the fight against inflation, saying, “To put it simply, we are now moving downhill. Hopefully, we will collectively reach our targeted figures in 2025.”

## **“MORE SUPPORT FOR EXPORTERS”**

İKMİB President Adil Pelister also commented on the Export Action Plan, underlining President Erdoğan's \$390 billion export target for 2025. He emphasized ongoing collaboration between the Ministry of Trade, TİM, and export associations to achieve this goal.

Pelister shared insights from the informational meeting on the 2025 Action Plan, highlighting additional measures planned for exporters in 2024 and beyond. He stated that exporters would receive increased support, particularly for international operations. Additionally, companies would be provided with more assistance in preparation for the EU's Carbon Border Adjustment Mechanism (CBAM), which is set to take effect in 2026. The plan also includes expanded access to financing through Eximbank loans and the introduction of new financial solutions via İGE AŞ and Türk Ticaret Bankası.

Pelister noted that financing access for exporting companies had reached a daily li-



**Adil PELİSTER**  
İKMİB Başkanı

mit of 4 billion lira, with a potential interest rate reduction announcement expected in the coming month. He expressed hope for a decrease in policy interest rates and a corresponding drop in Eximbank loan rates.

Addressing financial concerns, Pelister emphasized the burden placed on SMEs by collateral requirements and called for their reduction. He also pointed out that the Turkish lira's rising costs and the exchange rate's failure to keep pace with inflation negatively affected competitiveness, suggesting that even a slight increase in the exchange rate would ease conditions for exporters. He mentioned that rising living costs and minimum wage hikes were increasing operational expenses for companies, making exchange rate adjustments crucial for maintaining competitiveness.

Finally, Pelister stated that efforts to increase financial support, simplify regulations, and introduce more flexible policies were ongoing to strengthen exporters



## İKMİB PREPARES A NEW ROADMAP FOR THE CHEMICAL INDUSTRY

At a press conference held on January 23, the Istanbul Chemicals and Chemical Products Exporters' Association (İKMİB) evaluated the export performance of the sector and shared its new targets and upcoming initiatives.

**W**ith \$30.8 billion in exports in 2024, the chemical industry maintained its position as Türkiye's second-largest exporting sector and entered 2025 with new goals and a strong start. At the press conference organized by İKMİB President Adil Pelister and the Board of Directors, the achievements and challenges of the chemical sector in 2024 were reviewed, while strategies to strengthen its position in global markets were emphasized. Additionally, the conference outlined sustainability-focused projects, innovative product development strategies, and technological investments, set-

ting a vision for the sector's future.

Despite the slowdown in global trade, nine out of sixteen chemical sub-sectors managed to achieve growth. Highlighting this success, İKMİB President Adil Pelister announced that the export target for 2025 is set at \$35 billion.

### **"WE HAVE SUCCESSFULLY INCREASED OUR MARKET AND PRODUCT DIVERSITY"**

Stressing that the chemical industry is one of Türkiye's leading export sectors and adds high value to every area of production, Adil Pelister stated:

"As the chemical sector, we stand out among Türkiye's most successful export industries. Our strategic products, which add value to every aspect of life, continue to drive our export growth and proudly represent our country across the globe. Last year was particularly challenging for our exporters due to the slowdown in the global economy, protectionist measures driven by geopolitical risks, and difficulties in global trade. However, thanks to the dedication and determination of our chemical exporters, we have successfully increased both our market and product diversity.

Now, as we look forward to the new year with renewed optimism, our goal is to seize global opportunities and elevate our chemical exports to the next level. In 2025, we are implementing a strategic growth plan that will empower our exporters. This plan includes increased investments in technology, expanding innovation and R&D-driven production across all areas of chemistry, and accelerating industrial transformation."

## “WE CONTINUE OUR WORK UNDER THE VISION 2030 STRATEGY”

Underlining İKMİB’s commitment to shaping the future of Türkiye’s chemical industry, Pelister emphasized that the association is taking significant steps in line with its Vision 2030 strategy:

“With the recent launch of the Chemical Technology Center, we have introduced a first-of-its-kind initiative for our sector in Türkiye. Thirty-nine tests that were previously unavailable in our country will now be conducted at the Chemical Technology Center. A total of 209 different tests will be carried out, with 100 tests obtaining accreditation. This will provide exporters with significant time and cost savings, while also contributing approximately \$12.5 million per year to reducing Türkiye’s current account deficit.

As part of our Vision 2030 strategy, we are also working on the establishment

of the Turkish Chemical Agency and the Chemical Industry Summit. Additionally, our Turquality Project for the branding and promotion of the Turkish cosmetics industry has been approved by the Ministry of Trade. Through this project, we aim to strengthen our position in high-potential markets such as the United States, China, and Italy.”

## “CBAM WILL BE A CRITICAL SHIFT THAT DIRECTLY IMPACTS US”

Emphasizing the need to stay ahead of global trade transformations, Pelister highlighted a major agenda item for 2025—the Carbon Border Adjustment Mechanism (CBAM) under the EU Green Deal:

“One of the key topics in our 2025 agenda is CBAM, which will soon take effect. By December 31, 2025, companies exporting to the EU in CBAM-regulated sectors will be required to report their carbon emissions. However,

from January 1, 2026, importers will be obligated to purchase CBAM certificates corresponding to the carbon content of the products they import.

This marks a critical transformation that will directly impact our sector. With CBAM, the cost of carbon-intensive products will increase, potentially affecting the competitiveness of Turkish exporters. Therefore, reducing the carbon footprint within the industry has become crucial. Moreover, we must reduce our dependence on imported raw materials. In the medium term, Türkiye needs at least five additional petrochemical plants to address this issue.

As İKMİB, we are taking the necessary steps to prepare for these global trade changes. We are actively working with all stakeholders and government authorities to navigate this transition effectively. In 2025, we will expand our market development efforts, opening new trade channels across a broad spectrum—from Africa to Latin America.”





## TURKISH COSMETIC PRODUCTS SHOWCASED AT COSMOPROF NORTH AMERICA MIAMI

The Istanbul Chemicals and Chemical Products Exporters' Association (İKMİB) organized Türkiye's national participation at Cosmoprof North America Miami, where 30 Turkish companies introduced their innovative products to international buyers.

**H**eld in Bologna, Hong Kong, Mumbai, and Bangkok, Cosmoprof officially expanded to Miami, USA, in 2024 under the name "Cosmoprof North America". The 2025 edition of the Cosmoprof North America Miami Fair, which took place from January 21-23, marked the second time İKMİB organized Türkiye's national pavilion. The fair, which brings together global leaders in the cosmetics and beauty industry, welcomed 30 Turkish companies, including 20 under the national participation program and 10 individual exhibitors.

Turkish companies strengthened their presence in the American market and showcased their competitive position in the industry through their innovative products and brands.

Throughout the event, Turkish exhibitors presented their next-generation solutions in cosmetics, personal care,

perfumes, natural products, and related sectors to an international audience. Turkish products received great interest at the fair, opening new doors for business collaborations in the American market.

### **"OUR COSMETICS INDUSTRY INCREASED EXPORTS BY 8.5% IN 2024"**

İKMİB Chairman Adil Pelister highlighted that essential oils, cosmetics, and soap, a key subsector of the chemical industry, ranked second among the fastest-growing export sectors in 2024.

"In 2024, our cosmetics, essential oils, and soap subsector achieved an export volume of \$2.08 billion, marking an 8.5% increase. Among our 16 sub-sectors, this segment ranked fourth in total exports and second in export growth rate. The impact of our national participation in trade fairs,

industry-specific trade delegations, and purchasing missions can clearly be seen in our export figures.

At İKMİB, we continuously support all our sectors and prioritize initiatives that contribute to their growth. Despite a challenging year, our cosmetics industry has significantly increased its exports and secured a place among the top five exporting sectors.

The American market is a key target for us. In \*\*2024, exports of essential oils, cosmetics, and soap to the U.S. increased by approximately 18%, reaching \$135 million. We believe that the Cosmoprof North America Miami Fair, now in its second year, provides an important opportunity for our exporters to secure new business partnerships.

In 2025, we expect our sector to expand into new markets and further increase its export potential."



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A large, detailed image of a pink rose occupies the center of the page. In the center of the rose's petals, there is a smaller version of the MG logo, where the letters 'MG' are white and set against a dark red, glossy, liquid-like background that swirls and reflects light.

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# CHEMICAL TECHNOLOGY Center Inaugurated

**The Chemical Technology Center, established by İKMİB, has been launched to enhance market diversity for chemical exporters and reduce foreign dependency.**

**D**esigned to drive innovation and high-value transformation in Türkiye's chemical industry, the Chemical Technology Center officially opened its doors on December 27, 2024, at Bilişim Vadisi. Developed with the support of the Ministry of Trade and contributions from the Ministry of Industry and Technology, the center aims to increase exports, reduce foreign dependency, and diversify markets within the sector.

The opening ceremony featured speeches from Minister of Trade Prof. Dr. Ömer Bolat, Minister of Industry and Technology Mehmet Fatih Kacır, Chairman of the Industry, Trade, Energy, Natural Resources, Information, and Technology Commission Mustafa Varank, and İKMİB President Adil Pelister. Following the speeches, a ribbon-cutting ceremony marked the official

opening of the Chemical Technology Center.

The center provides all accredited test and analysis services required by the chemical sector under one roof, offering cost and time savings for exporters and SMEs. Notably, 39 tests that were previously unavailable in Türkiye will now be conducted domestically using national resources. In addition, a total of 209 different tests will be performed, with 100 of them obtaining accreditation, elevating quality standards across the industry.

Beyond being a testing facility, the Chemical Technology Center is also designed as an R&D hub. It offers training, consultancy, and planning services, while also providing a startup incubation center and a digital library to foster innovation and entrepreneurship. Additionally, it plans to host sector-specific technological projects in collaboration with universities.



## “The Center Will Accelerate Laboratory Research”

**Prof. Dr. Ömer BOLAT**  
Minister of Trade

Speaking at the inauguration, Minister of Trade Prof. Dr. Ömer Bolat emphasized that exporters will greatly benefit from this center, which has received financial support from the ministry. Highlighting the rapid growth of the chemical sector over the past 20 years, Bolat stated:

“The chemical industry is a giant in the global economy, accounting for \$7 trillion out

of the \$106 trillion global production. Over the last 20 years, Türkiye’s chemical sector has made remarkable progress, becoming one of the top three exporting industries in the country. It plays a critical role in production, employment, exports, and foreign exchange earnings, significantly contributing to our economy.”



## “Chemicals Play a Catalytic Role Across Many Industries”

**Mehmet Fatih KACIR**  
Minister of Industry and Technology

At the opening ceremony, Minister of Industry and Technology Mehmet Fatih Kacir emphasized that the Chemical Technology Center represents a significant step forward for the sector’s technological development and testing infrastructure. Announcing that the project was realized with an investment of 165 million TL, he stated:

“Under our National Technology Initiative Vision, we are committed to advancing our country toward high-value and technology-

driven production.

Today, Türkiye has evolved into a global production hub, with the number of organized industrial zones increasing from 191 to 364 and 45 industry zones established. Our 105 technology parks host over 11,000 technology startups focused on innovation.

Additionally, our 1,600+ R&D and design centers, led by the private sector, continue to develop projects that will accelerate value-added production.”



## “The Center Will Significantly Boost Türkiye’s Exports”

**Mustafa VARANK**  
Chairman of the Industry and Technology Commission

Mustafa Varank, Chairman of the Industry and Technology Commission, expressed his excitement for being part of the project since its inception: “I am thrilled to be here today at the opening of such a crucial facility, which we have supported since its concept and approval stage.

We are committed to encouraging businesses to embrace innovation, and the

Chemical Technology Center will play a key role in enhancing both the quality and quantity of Türkiye’s exports. As we work together with the private sector, we are laying the foundation for Türkiye’s Century. This center will contribute significantly to Türkiye’s global goals, elevate the future of the chemical sector, and generate high-value production. I extend my gratitude to everyone involved.”



## “The First Step Toward a Fully National Chemical Industry”

**Adil PELİSTER**  
İKMİB President

Speaking at the inauguration, İKMİB President Adil Pelister elaborated on the center’s importance for the chemical sector and Turkish economy: “We take great pride in contributing to our country’s development at İKMİB. The chemical industry, with its 16 sub-sectors, has established a strong position in the global market in terms of quality and price competitiveness.

Today, we export to almost every country in the world, but we must continue to grow and evolve. With exports exceeding \$30 billion, our sector ranks second in Türkiye’s total exports. Our Vision 2030 goal is to increase our sector’s exports to \$50 billion, achieving \$2 per kilogram in export value.

We will continue to work tirelessly. There’s no stopping—only growth and progress.” Pelister also highlighted İKMİB’s efforts to support the industry, stating: “We participate in international trade fairs, organize trade delegations, host competitions and workshops, and provide various industry supports.

Recently, we compiled a list of over \$50 million worth of chemicals that Türkiye currently imports but does not produce domestically. This report has been submitted to government authorities, and 98 of these chemicals have been included in the Ministry of Industry and Technology’s strategic investment program.”

### **“THE CENTER WILL CONTRIBUTE \$12.5 MILLION ANNUALLY TO REDUCING THE CURRENT ACCOUNT DEFICIT”**

“The Chemical Technology Center, which we started developing in 2019, marks the first step toward a fully national chemical industry. We have established state-of-the-art laboratories for

instrumental, chemical, microbiological, molecular biology, physical, and mechanical analysis. The selected modern equipment and analytical methods cover various industries and needs, ensuring a rapid response to diverse demands. With an investment of 165 million TL, the 7,000-square-meter center will introduce 39 tests previously unavailable in Türkiye, conduct a total of 209 different tests, and obtain 100 test accreditations. By localizing key testing and laboratory services, we will reduce dependency on foreign services, contributing an estimated \$12.5 million annually to reducing the current account deficit. The center will not only provide testing and certification services but will also serve as a hub for R&D, international accreditation, and consultancy. Additionally, we will support companies in accessing national and international project funding.”

### **“THE INCUBATION CENTER CONNECTS ENTREPRENEURS WITH INVESTORS”**

Highlighting future-oriented investments, Pelister added: “We have established a 1,650-square-meter startup incubation center within the Chemical Technology Center. Here, researchers and entrepreneurs will have full access to our state-of-the-art facilities to develop new raw materials, molecules, formulas, technologies, and AI-based software solutions. We will collaborate with crowdfunding platforms to launch new startups, with the goal of creating unicorn companies that contribute significantly to Türkiye’s economy. Additionally, our digital library will soon be operational, providing scientific literature and industry insights to researchers.”

# TESTS CONDUCTED AT THE CHEMICAL TECHNOLOGY CENTER

The Chemical Technology Center hosts a wide range of tests to ensure the quality, reliability, and compliance of products with industry standards. These tests provide significant support not only to the chemical sector but also to many other industrial fields.



## Chemical Analysis Laboratory

- ▶ PH MEASUREMENT
- ▶ DENSITY ANALYSIS
- ▶ SOAP ANALYSIS (TS 54)
- ▶ VISCOSITY ANALYSIS
- ▶ DETERMINATION OF VOLATILE SUBSTANCES (MOISTURE CONTENT)

### ACTIVE INGREDIENT ANALYSES

- ▶ TOTAL ACTIVE MATTER
  - ▶ CATIONIC ACTIVE MATTER
  - ▶ ANIONIC ACTIVE MATTER
  - ▶ NONIONIC ACTIVE MATTER
- ✓ DETECTION OF STAPHYLOCOCCUS AUREUS (ISO 22718)
  - ✓ DETECTION OF CANDIDA ALBICANS (ISO 18416)
  - ✓ DETECTION OF ESCHERICHIA COLI (ISO 21150)
  - ✓ EVALUATION OF ANTIMICROBIAL PRESERVATIVE EFFECTIVENESS
  - ✓ CHALLENGE TEST (ISO 11930)

## PHYSICAL AND MECHANICAL ANALYSIS LABORATORY

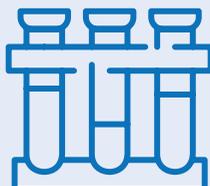
- Plastics – Determination of Tensile Properties – **Part 1: General Principles (TS EN ISO 527-1)**
- Plastics – Determination of Tensile Properties – **Part 2: Test Conditions for Molding and Extrusion Plastics (TS EN ISO 527-2)**
- Plastics – Differential Scanning Calorimetry (DSC) – **Part 1: General Principles (TS EN ISO 11357-1)**
- ✓ Plastics – Determination of Izod Impact Strength (TS EN ISO 180 / ASTM D256)
- ✓ Plastics – Determination of Melt Mass-Flow Rate (MFR) and Melt Volume-Flow Rate (MVR) – **Part 1: Standard Method TS EN ISO 1133-1 (Method A)**
- ✓ Tensile Strength and Elongation (ISO 37 / ASTM D412 / DIN 53504)
- ✓ Ash Content Determination (ISO 247-1)



## INDUSTRY-SPECIFIC ANALYSES

### COSMETICS TESTS

- Heavy Metal Analyses
- Microbiological Tests
- Animal DNA Analyses
- Preservative Effectiveness Tests
- Paraben Detection
- 1,4-Dioxane Detection
- Formaldehyde Detection
- Phthalate Detection
- Alcohol Content Determination
- Flash Point Test
- Detection of Allergenic Fragrance Substances (IFRA Allergens)
- CIT & MIT Preservative Analysis
- Refractive Index Test
- Stability Tests



### PAINT TESTS

- Heavy Metal Testing
- Artificial Light (UV) Testing (ISO 4892-3)
- Color Analyses (ASTM E1347, ASTM D2244)
- TGA and DSC Thermal Stability Tests
- UV-Vis and Fluorescence Measurements
- Determination of Water Vapor Transmission Rate – Cup Method (TS EN ISO 7783)
- Salt Spray Corrosion Test (TS EN ISO 15710)
- Road Marking Materials – Paint, Thermoplastic, and Cold Plastic Materials – Physical Properties (TS EN 1871)
- Chemical Resistance Tests
- Stability Tests
- Volatile Organic Compounds (VOC) and Semi-Volatile Organic Compounds (sVOC) Analysis – Part 2: Gas Chromatography Method (TS EN ISO 11890-2)

## INSTRUMENTAL ANALYSIS LABORATORY

- ICP-MS Heavy Metal Analysis (Pb, Cd, Hg, As, Cr, etc.)
- Phthalate Detection (PBB, PBDE, DEHP, DBP, BBP, DIBP, etc.)
- Organic Tin Analysis
- Alcohol Content Determination (Methanol, Ethanol, Isopropanol, etc.)
- Benzalkonium Chloride, Didecyldimethyl Ammonium Chloride Determination
- Chlorhexidine Digluconate Detection
- Bisphenol A (BPA) Detection
- Detection of D4, D5, and D6 Cyclosiloxanes
- Polycyclic Aromatic Hydrocarbon (PAH) Analysis
- Detection of Cosmetic Product Preservatives (Paraben, etc.)
- Detection of Allergenic Fragrance Substances (IFRA Allergens)
- RoHS Testing
- Cleveland Open Cup Flash and Fire Point Test
- Closed Cup Flash Point Test

## MICROBIOLOGY AND MOLECULAR BIOLOGY LABORATORY

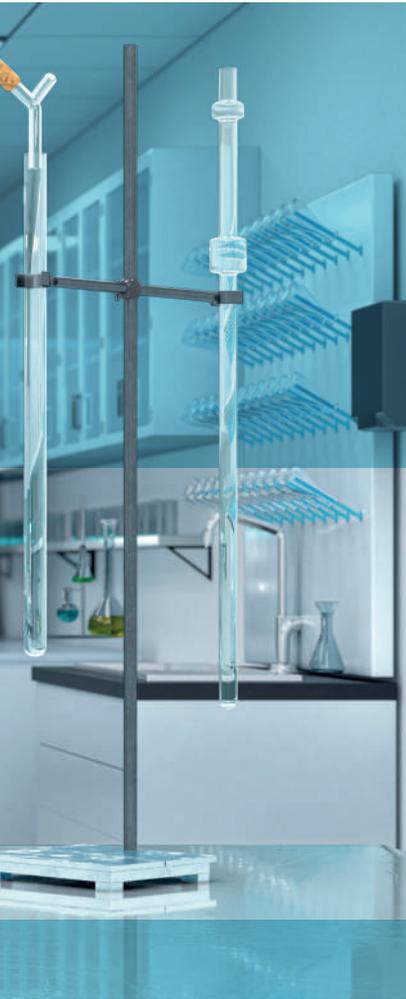
- Animal DNA Detection (Real-Time PCR Method)
- Detection of Porcine (Pig) DNA (Real-Time PCR Method)
- Mold and Yeast Count (ISO 16212)
- Detection and Enumeration of Aerobic Mesophilic Bacteria (ISO 21149)
- Detection of Pseudomonas Aeruginosa (ISO 22717)



# Türkiye's Chemical Industry:

**THE SECOND LARGEST EXPORTING  
SECTOR WITH \$30.8 BILLION IN 2024**

*The chemical industry solidified its position as Türkiye's second-largest exporting sector, achieving an impressive export value of \$30.8 billion in 2024. Accounting for a significant portion of the country's total exports, the industry has reinforced Türkiye's standing in international trade.*



The chemical sector plays an indispensable role in Türkiye's economic development and industrialization. Recognized as a key indicator of a nation's industrial progress, the sector spans a broad product range from plastics to cosmetics, pharmaceuticals to paints, and processes raw materials such as petroleum, natural gas, air, water, minerals, and metals to manufacture over 70,000 different products. From daily consumer goods like cleaning products, paints, and pharmaceuticals to agricultural essentials like fertilizers and pesticides, the sector touches virtually every industrial domain. While 70% of the raw materials used in the industry are imported, 30% are sourced domestically.

With its dynamic and entrepreneurial industrialists, young population, and strategic geographical location, Türkiye has the potential to secure a top position in the global chemical industry. In recent years, various subsectors have undergone rapid transformation and growth. Turkish companies export across a vast geography, from the U.S. to China, while leveraging international trade fairs to explore new opportunities and strengthen global partnerships.

### SUSTAINED GROWTH AMID CHALLENGES

As a fundamental pillar of Türkiye's economy, the chemical sector supports 27 different industries, including automotive, textiles, construction, and agriculture, by supplying essential raw materials, semi-finished, and finished products. Building on the successes of previous years, the industry started 2024 on a strong note. In January 2024, the sector recorded a 2% year-on-year increase, reaching \$2.3 billion in exports. By June, exports had reached \$2.3 billion for the month, bringing the total for the first half of the year to \$15.8 billion, marking an 8% increase compared to the same period in 2023.

Overall, with a total annual export value of \$30.8 billion, the chemical industry emerged as Türkiye's second-largest exporting sector

in 2024, accounting for 13.6% of the country's total exports. Despite global economic challenges, the industry demonstrated resilience by achieving a 1% increase in exports.

### PLASTICS AND DERIVATIVES LEAD THE MARKET

Contributing to Türkiye's foreign trade with its 16 subsectors, the chemical industry saw nine of these subsectors increase their exports in 2024. Among them, plastics and derivatives

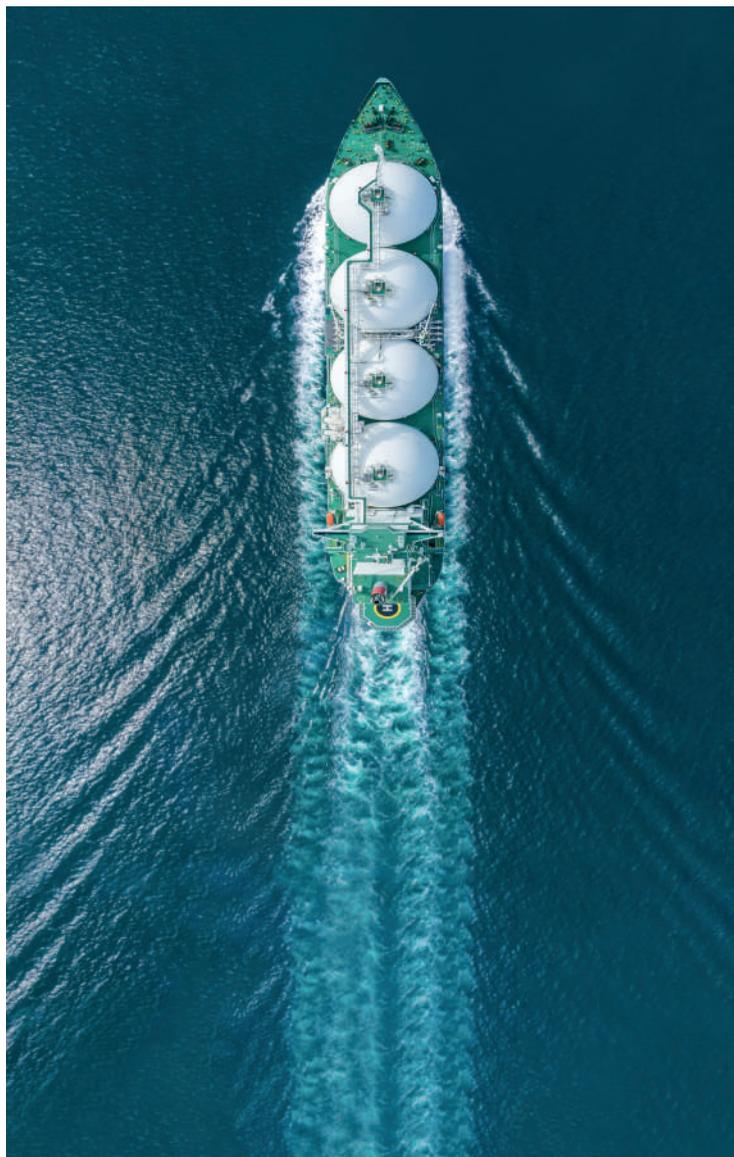
*Nine out of 16 subsectors increased exports compared to the previous year.*

continued to lead in export volume. In 2023, plastics and derivatives exports were recorded at \$9.1 billion, rising to \$9.4 billion in 2024. Mineral fuels and products ranked second with \$7.9 billion in exports, while inorganic chemicals secured the third position

with \$2.7 billion in exports.

### FOLLOWING INORGANIC CHEMICALS, THE TOP TEN SUBSECTORS INCLUDED:

- Essential oils, cosmetics, and soaps: \$2.1 billion
- Rubber and rubber products: \$1.59 billion
- Pharmaceutical products: \$1.55 billion
- Paints, varnishes, inks, and preparations: \$1.52 billion
- Miscellaneous chemical products: \$1.2 billion
- Detergents and washing preparations: \$909 million
- Organic chemicals: \$757 million
- Fertilizers: \$509 million



*IKMIB plans 47 trade events across 25 countries in 2025 to expand export opportunities.*

### **EGYPT EMERGES AS A KEY GROWTH MARKET WITH A 59% SURGE**

Türkiye's chemical exports saw remarkable growth in 2024. The top export destinations from January to December were the Netherlands, Romania, and the U.S. The Netherlands led the list with exports exceeding \$2.1 billion, while Romania recorded a 35% increase, reaching \$1.9 billion. The U.S. also

saw significant growth, surpassing \$1.5 billion with a 32% rise.

Although exports to Italy and Russia declined by 6.42% and 17.27%, respectively, both countries remained crucial markets. Germany's imports from Türkiye dropped by 2.99% to \$1.2 billion, whereas exports to Spain and Iraq increased by 6% and 4%, respectively. The UK remained a strong market with \$882 million in chemical imports. However, the most significant growth was observed in Egypt, where exports surged by an impressive 59.76%, exceeding \$810 million.

### **ISTANBUL CHEMICALS AND CHEMICAL PRODUCTS EXPORTERS' ASSOCIATION (IKMIB) PLANS 47 TRADE EVENTS FOR 2025**

To further bolster the chemical sector's global reach, the Istanbul Chemicals and Chemical Products Exporters' Association (IKMIB) has outlined an ambitious roadmap for 2025. Aiming to expand export opportunities at the product, country, and regional levels, IKMIB plans to organize 47 export-related events across 25 countries. These initiatives include: 15 national participation organizations, 6 informational stand activities, 4 International Competitiveness Development (UR-GE) projects, 3 UR-GE trade delegations, 19 sectoral trade delegations

With activities spanning a broad geography, including the U.S., Germany, Pakistan, and Australia, IKMIB is set to open new doors for Turkish chemical exporters. Additionally, the organization will focus on 16 subsectors within the chemical industry to inject further dynamism into the sector. This comprehensive agenda for 2025 is expected to not only boost export volumes but also enhance the global recognition and reputation of Türkiye's chemical industry.

As global demand for chemical products evolves, Türkiye's chemical industry is well-positioned to maintain its upward trajectory, leveraging its strategic advantages to compete in the international arena.



## “WE EXPECT A PARTIAL RECOVERY IN CHEMICAL MATERIALS AFTER THE FIRST QUARTER”

**Mustafa GÜLTEPE**  
TİM PRESIDENT

Production and exports play a locomotive role in Türkiye’s economy. The path to developing our country and increasing the welfare of our nation lies in using our resources most effectively, adding value to what we produce, and exporting more. As the Turkish Exporters Assembly (TİM), we have been working with this awareness from the very beginning, mobilizing all our resources to bring more foreign exchange to our country. However, due to the sluggish demand in global markets and the widening gap between input costs and exchange rates domestically, 2024 has been a challenging year for our competitiveness. Despite all adversities, we managed to increase our total goods exports by 2.5% in 2024, reaching \$262 billion.

Chemical materials rank among the top two sectors contributing the most to our exports. In 2023, the sector’s exports stood at \$30.5 billion, increasing by 1% to \$30.8 billion in 2024. Considering the decline in competitiveness, the slow demand in global markets, and the drop in raw material and semi-finished product prices, this result can be considered a success.

As I mentioned earlier, the stable exchange

rate last year negatively affected our competitiveness and, consequently, our exports. The European Union remains our largest market for chemical materials, just as it is for general exports. The low Euro/USD exchange rate in 2024 also had a negative impact on our chemical exports.

We are targeting \$280 billion in exports for 2025. However, the challenges we faced in 2024 seem likely to persist this year as well. The first months of 2025 will be particularly tough due to rising labor costs. Therefore, it is crucial for economic policymakers to develop and implement measures that boost production and support exporters. Issues related to production and exports must be approached from a completely new and different perspective.

For the chemical sector, we anticipate a partial recovery after the first quarter and project that we will close 2025 with around \$31 billion in exports. Meanwhile, we will closely monitor the new era initiated by Donald Trump in the U.S. I believe that potential trade wars between the U.S. and China during Trump’s presidency could have positive impacts on our chemical and other export sectors.

# “OUR GOAL IS TO INCREASE THE COMPETITIVENESS OF THE DOMESTIC CHEMICAL INDUSTRY”

**Adil PELİSTER**  
İKİMİB PRESIDENT



The year 2024 started with significant goals for the chemical industry but was marked by challenges both domestically and globally. Geopolitical risks in our neighboring regions, global inflation, economic slowdown, declining demand, high interest rates, raw material costs, energy, and production expenses emerged as key factors impacting our sector. Additionally, due to inflation, the increase in TL-based domestic costs surpassing the USD/TL exchange rate has made it difficult to remain competitive.

As the Istanbul Chemicals and Chemical Products Exporters' Association (İKİMİB), we are working intensively to provide all kinds of support to our exporters during this challenging period, striving to develop solutions that enhance our sector's competitiveness. The Turkish chemical industry is a strategic sector that supplies raw materials, semi-finished, or finished products to 27 other industries, interacting with all sectors. Despite the difficulties, our industry managed to increase its exports by 1%, reaching \$30.8 billion in chemical products and derivatives. According to the Turkish Exporters Assembly (TİM) data, our sector ranked as the second-largest exporter in 2024, accounting for 13.6% of the country's total exports.

According to the TOBB industrial data,

our sector comprises approximately 13,500 manufacturing companies and employs 693,000 people. However, we are facing challenges in finding and retaining qualified personnel and completing projects. Looking back, despite tough conditions, employment in our sector has consistently increased every year. We hope that in the coming year, employment will continue to grow in line with new capacity expansions and investments in the sector.

For 2025, our chemical industry has significant opportunities in export-driven growth, high-value-added production, and green transformation. However, uncertainties in exchange rates, energy costs, the required investments for green transformation, and the challenge of finding skilled labor remain obstacles. Additionally, global economic slowdown expectations and compliance with regulations such as the European Green Deal will be key factors affecting our exports.

Under our 2030 vision, İKİMİB has prioritized sustainability as a central focus. Increasing R&D investments to develop high-value-added, innovative products is of great importance. This will enable our companies to become more competitive in global markets. We are structuring our initiatives and projects in this direction and are working to inform and guide our exporters

accordingly.

One of our largest projects, the Chemical Technology Center, is set to become operational in 2025. With this center, we aim to support R&D and innovation efforts and enhance the competitiveness of the domestic chemical industry. Additionally, in 2025, we are preparing to organize a major National and International Chemical Summit to collaboratively develop the 2030 Chemical Industry Strategy.

Moreover, we are intensifying efforts to diversify markets, discovering new ones while strengthening our position in existing ones. Keeping a close watch on geopolitical developments in our neighboring regions, we must continue expanding our export network by focusing on emerging markets such as Africa, Asia, and Latin America.

We also believe that establishing the Türkiye Chemical Agency as soon as possible would be highly beneficial for both our sector and our country. Such an agency would play a crucial role in defining the long-term roadmap for our industry and addressing the needs of other sectors that rely on chemicals. As İKİMİB, we are closely monitoring our sector's needs and proactively supporting our exporters. In this context, we prioritize the sustainable growth of our industry and aim to achieve \$35 billion in exports in 2025.

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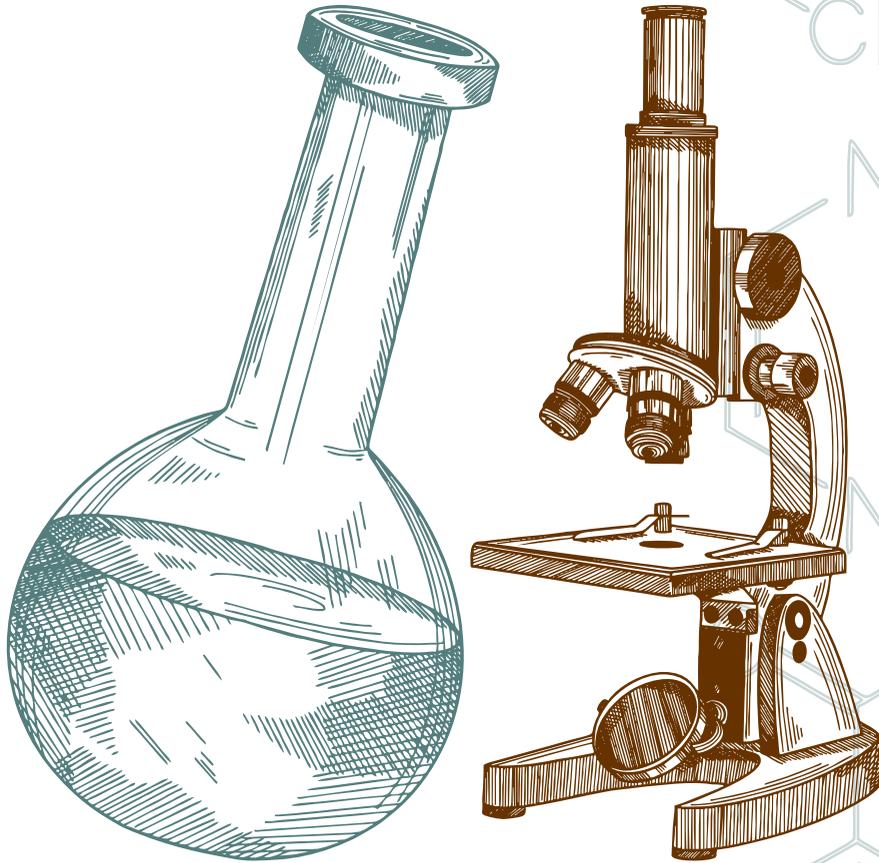
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# The Chemical Industry shaped Türkiye's trade in 2024

Chemical Industry  
exports in 2024

**30,8** billion



## TOP THREE SUB-SECTORS WITH THE HIGHEST EXPORTS

Plastics and  
products:

**\$9.4**  
billion

Mineral fuels,  
mineral oils, and  
products:

**\$7.9**  
billion

Inorganic  
chemicals:

**\$2,7**  
billion

**OTHER SUB-SECTORS CONTRIBUTING TO CHEMICAL INDUSTRY EXPORTS**



Essential oils, cosmetics, and soap

**\$2 billion**



Rubber and rubber products

**\$1,58 billion**



Pharmaceutical products

**\$1,5 billion**



Paints, varnishes, inks, and preparations

**\$1,5 billion**



Various chemical substances

**\$1,2 billion**



Washing preparations

**\$909 million**



Organic chemicals

**\$757 million**



Fertilizers

**\$509 million**



Adhesives, glues, and enzymes

**\$503 million**



Gunpowder, explosives, and derivatives

**\$21 million**



Photographic and cinematic products

**\$14,8 million**



Glycerin, vegetable products, degra, oily substances

**\$2,5 million**



Processed asbestos and mixtures, products

**\$156 million**

**TOP 10 COUNTRIES WITH THE HIGHEST EXPORTS IN THE JANUARY-DECEMBER 2024 PERIOD**

**NETHERLANDS: \$2,1 billion**

**ROMANIA: \$1,9 billion**

**USA: \$1,52 billion**

**ITALY: \$1,46 billion**

**RUSSIA: \$1,41 billion**

**GERMANY: \$1,23 billion**

**SPAIN: \$1,22 billion**

**IRAQ: \$1,1 billion**

**UNITED KINGDOM: \$882 million**

**EGYPT: \$810 million**

# “AGILITY IS IN AKKİM’S CHEMISTRY”

As a leading chemical manufacturer with an annual production capacity of 800,000 tons, Akkim Kimya distinguishes itself with a high percentage of domestic raw material usage. “One of the key factors that sets us apart in the industry is the significant proportion of local resources we use in our production,” says Onur Kipri, CEO of Akkim Kimya.



Onur KİPRİ  
CEO Of Akkim

**W**ith 47 years of experience, Akkim Kimya remains one of Türkiye's most established industrial firms, focusing on innovation and sustainability as core growth strategies. Addressing the country's dependence on chemical imports, Akkim takes pride in its high local sourcing rate while exporting to more than 70 countries. The company contributes strategically to Türkiye's exports with its diverse product range, serving industries from hygiene and cleaning to textiles and construction.

As the 7<sup>th</sup> largest R&D investor in its sector, Akkim Kimya continues to develop high-value projects despite the challenging economic landscape of 2024. We spoke with CEO Onur Kipri about the company's journey, its sustainability priorities, global strategies, and key initiatives for 2024.

**Akkim Kimya has grown significantly since its establishment in 1977. What are the key factors that have enabled the company to maintain its leading position in the industry?**

Akkim Kimya, operating under the umbrella of Akkök Holding, embarked on its journey 47 years ago in Yalova with an initial annual production of 1,000 tons of sulfur dioxide. Today, with a total annual production capacity of 800,000 tons spread across five locations, we are a leading chemical manufacturer. We are market leaders in various product categories, including sodium percarbonate, hydrogen peroxide, chlor-alkali, methylamines, persulfates, carboxymethyl cellulose (CMC), and performance chemicals.

Akkim's leadership in the sector is driven by its ability to seize both organic and inorganic growth opportunities through innovative initiatives. Agility, a key priority for major global chemical players, has been embedded in Akkim's DNA. Over the past decade, we have taken strategic steps, including the acquisition of Akcoat (formerly Gizem Frit) in 2015, making us a significant player in the chemical coatings industry for household appliances, cookware, ovens, enamel, ceramics, and glass. In 2017, we expanded into Europe by acquiring the German chemical sales and marketing company



Dinox, now operating under the Akkim Europe brand.

Further strengthening our global presence, our subsidiary Akcoat acquired Megacolor, a Spanish ceramic printing inks manufacturer, to enhance vertical integration. In 2021, we integrated USK Kimya, Türkiye's largest carboxymethyl cellulose producer, into our structure. The same year, we established Akkim Silikon Kimya and began producing high-tech silicone polymers at our Yalova facilities. In 2024, we are preparing to commission Türkiye's first epoxy resin production facility, marking a critical step toward domestic production of a strategic, import-dependent chemical.

**What differentiates Akkim Kimya from its competitors? How is the company positioned in both the local and global markets?**

Several factors set us apart in the industry. First and foremost, Akkim operates under the umbrella of Akkök Holding, which houses some of Türkiye's and even the world's leading chemical exporters. Being part of such a robust group

*Our 2,700-square-meter R&D center develops innovative chemical solutions for global markets.*

*Our primary export targets are Europe, North America, and Africa.*

provides us with unparalleled confidence and strength.

Another key differentiator is our high level of local resource utilization. The Turkish chemical industry relies on imported raw materials for approximately 78% of its needs. However, at Akkim, we have significantly reduced this dependency, with only 45% of our raw materials being imported. We source essential raw materials such as salt, soda, sulfate, sulfur, and glycerin largely from domestic suppliers, contributing to Türkiye's economic sustainability.

Our extensive product portfolio also strengthens our competitive positioning. We export to over 70 countries across six continents, playing a strategic role in Türkiye's and Yalova's export contributions. Our customers span across multiple industries, including cleaning, hygiene, water treatment, textiles, paper, construction, plastics, food, metal, energy, detergents, drilling, and mining.

Additionally, our strong R&D capabilities and highly skilled workforce play a crucial role. Our accredited R&D center, spanning 2,700 square meters, develops innovative chemical solutions for both national and international industries. We not only enhance our existing products but also engage in strategic projects on a global scale. Through partnerships with leading global firms, research institutions, and universities, we foster the development and application of new technologies.

To date, we have conducted numerous projects funded by our own resources, with nearly 20 projects receiving support from TÜBİTAK-TEYDEB. We have submitted 68 patent applications and obtained 10 patents alongside a registered utility model. In *Turkishtime Magazine's* "R&D 250" survey, Akkim ranked as the 118<sup>th</sup> company with the most R&D proj-



ects in Türkiye and 7<sup>th</sup> in its sector for R&D investments. Over the past five years, we have increased our R&D team by 45%, employing 60 specialists, including 33 researchers with master's and doctoral degrees. In 2023, we allocated approximately 3% of our performance and specialty chemicals revenue to R&D, aiming to raise this to 5% in the near future.

With approximately 1,400 employees across our subsidiaries, Akkim is committed to fostering employee development through training and mentorship programs. Beyond business success, we take pride in our social responsibility initiatives, including projects promoting gender equality, family awareness, community well-being, and youth education.

**Akkim serves more than 70 countries. Which regions are your primary export markets, and what are your future expansion plans?**



*In 2025, our main focus will be the launch of Türkiye's first epoxy resin production facility.*

Our primary target markets are Europe, North America, and Africa. Europe remains a major focus, with Akkim Europe spearheading our growth strategy in the region. In North America, we are expanding our presence in epoxy, CMC, and performance chemicals. Africa is also emerging as a key growth market for our export operations.

**Sustainability has become a critical component of industrial operations worldwide. What are Akkim's key sustainability initiatives?**

At Akkim, we have aligned our sustainability strategy with the United Nations Sustainable Development Goals. We focus on ten key areas: clean water, hygiene, public health, accessible energy, economic growth, industry, innovation, infrastructure, reducing inequalities, responsible consumption, climate action, and

life on land and water. Our dedicated working groups are continuously enhancing our sustainability performance.

Since 2011, we have published annual Sustainability Reports. In 2019, we earned a Silver Medal from Ecovadis, upgrading to Gold in 2020 and maintaining this status. Additionally, we received an A-level Excellent Sustainability Certification from Fortune ESG. Our social responsibility initiatives focus on gender equality, conscious parenting, community awareness, and youth education.

**How was 2024 for Akkim Kimya, and what are your plans for 2025?**

The chemical industry faced a challenging 2024. The sector accounted for nearly 14% of Türkiye's total exports, closing the year at \$30.8 billion, slightly below 2023's \$30.6 billion and significantly lower than the \$33.6 billion peak in 2022. Geopolitical instability, economic slowdowns in Europe and China, global inflation, low demand, excess capacity, and increasing competition defined the year's challenges.

Additionally, the widening gap between inflation and currency exchange rates impacted our competitiveness. If this gap narrows and credit availability increases in 2025, the entire industrial and export sector, including chemicals, will benefit.

For Akkim, our top priority in 2025 is the commissioning of our epoxy resin facility, spanning 30,000 square meters, with an annual production capacity of 50,000 tons of liquid and solid epoxy resins. The facility is expected to become a strategic raw material source for Türkiye and neighboring countries. We plan to launch the first phase by the end of Q1 2025 and the second phase in the summer.



# The Role of Aromatic Plants in Industry is Growing

*Since ancient times, plants have always been used as a source of healing. Today, the use of aromatic plants in cosmetics and the pharmaceutical industry is increasing.*



**A**romatic plants, used throughout human history to treat diseases, calm the mind, and preserve beauty, have become indispensable in many fields with the trend of returning to nature worldwide. From ancient civilizations to modern medicine, plants have always been an important resource. Today, the industrial use of aromatic plants has expanded beyond traditional applications to cover a much wider range. Aromatic plants, which have become one of the basic raw materials of modern industry, stand out with their economic value in various fields such as food, pharmaceuticals, cosmetics, cleaning, and agriculture.

Aromatic plants have versatile applications thanks to the essential oils and special compounds they contain. Plants like lavender, thyme, sage, mint, rosemary, rose, and laurel play an important role both in traditional medicine and in modern industry. The natural oils extracted from these plants are valuable raw materials in various industries due to their taste, aroma, and therapeutic properties.

### **THE CORNERSTONE OF THE COSMETICS INDUSTRY**

Cosmetics have been a reflection of humanity's quest for beauty and care for centuries. Since ancient times, natural oils and extracts derived from plants have been essential elements in beauty rituals. In ancient Egypt, rose water and almond oil were used in the royal family's skincare, while in the Roman era, lavender oil was part of relaxing baths. Today, the cosmetics industry has combined this historical legacy with modern technology, expanding the use of essential oils derived from aromatic plants to a much broader range.

The cosmetics industry shows great interest in the essential oils obtained from aromatic plants. Essential oils extracted from plants like lavender, rose, and sage are used in various formulations, from perfumes to skincare, hair care to cleaning products. These oils satisfy consumers seeking natural ingredients and contribute to brands' sustainability goals. Essential oils derived from

organically certified plants stand out even more in the premium product segment. According to global market data, the annual market volume of essential oil-based products is increasing by 10%.

### **AROMATIC PLANTS OPEN THE DOOR TO NEW MEDICINES IN MODERN MEDICINE**

Aromatic plants have been used in traditional medicine for centuries. Today, aromatic plants play a significant role in developing new medicines, both in natural healing methods and pharmaceutical product development. For example, eucalyptus oil is used for respiratory diseases, while mint oil is known for its positive effects on the digestive system. Additionally, the modern pharmaceutical industry continues to actively research the antioxidant, anti-inflammatory, and antimicrobial properties

of compounds extracted from aromatic plants. In recent years, the increase in the number of patents for plant-based medical products demonstrates the dynamism of this field.

### **WITH ITS ENDEMIC PLANT DIVERSITY, TÜRKİYE OUTPACES EUROPE**

Türkiye has a unique position in the world due to its location at the intersection of three different plant geographies. As the only country where the Mediterranean, Euro-Siberian, and Iran-Turan plant geographies intersect, Türkiye harbors a unique treasure of endemic and rare species on its Anatolian soil. While there are about 12,000 plant species across the entire European continent, Türkiye is home to around 12,000 plant species, of which about 4,000 are endemic. This number surpasses the total number of endemic

plants in Europe. Anatolian lands have historically been a natural source of medicinal and aromatic plants. In Türkiye's exports, herbal products such as thyme oil, laurel oil, and lavender oil hold significant importance. Especially the rose oil obtained from Isparta stands out as one of the products that makes Tür-

*The cosmetics industry shows great interest in the essential oils obtained from aromatic plants. Essential oils extracted from plants like lavender, rose, and sage are used in various formulations, from perfumes to skincare, hair care to cleaning products.*





kiye prominent in the global market. Rose oil is considered an indispensable raw material in the perfume industry.

### **TÜRKIYE IS LEADING THE GLOBAL MARKET IN MEDICINAL AND AROMATIC PLANTS**

Thanks to its rich plant diversity, Türkiye occupies a leading position in the global export of medicinal and aromatic plants. In recent years, both production and export in this field have seen significant increases. In 2023, Türkiye exported 132,000 tons of medicinal and aromatic plants, generating 154.5 million dollars in foreign exchange revenue. Additionally, around 120 million dollars' worth of rose and other essential oils are also part of this success.

Sector representatives point out that, with the implementation of good agricultural practices and correct policies, this export figure could reach 1 billion dollars.

Türkiye has a wide range of medicinal and aromatic plants thanks to the advantages of its geography. Products like thyme, laurel leaves, cumin, sage, and poppy are exported to many countries, including the USA, Germany, Vietnam, and the Netherlands. These products are widely used in the food, cosmetics, and pharmaceutical industries. In the last 20 years, Türkiye's medicinal and aromatic plant production has increased from 80,000 tons to 470,000 tons. Key factors supporting this growth include increased domestic demand and the rising needs of foreign markets. Moreover,



the adoption of organic farming and sustainability-focused approaches has also improved the quality of production.

### **THE FOOD SECTOR PROVIDES NATURAL SOLUTIONS WITH AROMATIC PLANTS**

Aromatic plants serve as natural preservatives and antioxidants in food, providing an alternative to additives. Extracts obtained from plants like thyme and rosemary are used as natural preservatives, while herbs like basil and mint are preferred for creating special flavors. In addition, beverages, teas, and spice blends enriched with aromatic plants have gained popularity in line with the healthy living trend. Today, especially herbal teas, which are highlighted in the

tea sector, have created a growing market driven by the healthy living trend. The demand for natural and additive-free products has further increased the importance of aromatic plants in the food industry.

### **AROMATIC PLANTS ARE SHAPING THE FUTURE OF AGRICULTURE**

In Türkiye, the cultivation of aromatic plants attracts the interest of both small farmers and large industrial agriculture companies. Aromatic plants are used as natural pesticides and biological control agents in agriculture. These products, developed as alternatives to chemical pesticides, support organic farming. Plants like lavender, laurel, and sage are preferred due to their low water requirements and ability to grow in tough conditions. Additionally, aromatic plants used as feed additives in livestock are gaining attention for their health-improving effects on animals. At the same time, aromatic plant farming is seen as part of sustainable agriculture projects that seek solutions to global environmental issues. For example, village cooperatives involved in rose farming not only contribute to the local economy but also lead the production of the world's highest quality rose oil.

### **NANOTECHNOLOGY AND BIOTECHNOLOGY ARE ENHANCING THE EFFECTIVENESS OF AROMATIC PLANTS**

Technological developments are enabling aromatic plants to be used in new areas. Advances in nanotechnology and biotechnology are maximizing the effects of components extracted from aromatic plants, allowing these components to be used more efficiently. For example, in skincare products, nanotechnological carriers are used to enhance the penetration of essential oils into the skin, resulting in more effective outcomes. Additionally, through biotechnological methods, the genetic modification of plants optimizes the production of specific aromatic compounds. As a result, it is possible to obtain high-quality products using fewer resources. These innovative approaches have great potential not only in the cosmetics and pharmaceutical sectors but also in sustainability and eco-friendly solutions.

*While the entire European continent has about 12,000 plant species, Türkiye is home to around 12,000 plant species, of which approximately 4,000 are endemic. This number surpasses the total number of endemic plant species in Europe.*



## “OUR COUNTRY HAS A RICH FLORA”

**Dilek MATUR**

R&D and Innovation Group Manager,  
Kurtsan Group of Companies



**T**ürkiye is one of the richest regions in the world in terms of plant species. Due to its geographical location, geological and geomorphological structure, climate diversity, aquatic habitat variety, elevation differences ranging from 0 to 5000 meters, and its position at the intersection of three different phytogeographic regions (Euro-Siberian, Mediterranean, and Irano-Turanian), Türkiye boasts an extremely rich flora. The number of flowering plant and fern species is approximately 10,000. When subspecies, varieties, and hybrids are included, this number reaches around 12,000, one-third of which are endemic. Since this number is constantly increasing, pro-

viding exact figures is challenging, but Türkiye’s plant species diversity far exceeds that of most countries in North Africa, Europe, and large parts of Asia. In fact, the number of taxa in Türkiye’s flora is close to the total number of taxa in all of Europe. This diversity presents a vast potential both for natural ecosystems and agricultural production.

Aromatic plants are used not only in the food industry but also in pharmaceuticals, cosmetics, perfumery, and aromatherapy. Türkiye is one of the countries with the highest number of endemic plant species in the world, which also

applies to aromatic plants. For example, herbs such as thyme, mint, lavender, sage, rose, and linden are highly valuable both for the domestic market and for export. The value-added products that Türkiye can obtain from aromatic plants are also quite diverse. Essential oils, extracts, dried plants, natural cosmetics, and pharmaceuticals are in high demand in the international market. Considering Türkiye’s aromatic plant diversity, natural resources, climate, and agricultural potential, the country has a significant opportunity. Leveraging this potential not only strengthens the local economy

but also enhances competitiveness in the global market.

### **“DEMAND FOR NATURAL AND ORGANIC PRODUCTS HAS INCREASED”**

Aromatic oils derived from aromatic plants hold a significant place in the cosmetics and cleaning products industries. The increasing interest in natural ingredients, along with the rise in sustainability and health-conscious consumer trends, has further popularized these oils. Today, as consumers gravitate towards more natural and organic products, aromatic oils are widely used in cosmetics to meet this demand.

These oils also play a crucial role in cleaning products. Consumers seeking natural cleaning solutions tend to avoid chemical ingredients and prefer aromatic oils instead. In recent years, the demand for natural and organic products has risen significantly. Consumers are increasingly avoiding products containing chemical substances and turning to natural alternatives. This trend strengthens the role of aromatic oils in both the cosmetics and cleaning sectors.

### **“AROMATIC OILS ARE RECOGNIZED AS A NATURAL HEALING METHOD”**

The increasing demand for products derived from aromatic plants in the cosmetics and pharmaceutical industries is not only driven by rising awareness of health and environmental issues but also by growing consumer interest in natural and organic products. Aromatic plants are cultivated using sustainable methods that help preserve biodiversity. Their eco-friendly nature makes them highly attractive in both the cosmetics and pharmaceutical industries.

The health and therapeutic properties of aromatic plants have been recognized in traditional medicine for centuries. Today, alternative medicine practices

have gained popularity. Aromatic oils and plant extracts are increasingly acknowledged as natural healing methods and are in high demand in both the cosmetics and pharmaceutical sectors. To make these plant-derived products even more appealing, cosmetic and pharmaceutical companies are continuously developing new innovations. Research and development (R&D) efforts expand the effectiveness and applications of these products.

### **“TÜRKIYE’S EXPERTISE CAN BOOST ITS GLOBAL RECOGNITION”**

Türkiye has immense potential in aromatic plants and their derived products. To enhance its competitiveness in international markets, the country can adopt various strategies and initiatives. Increasing the production of value-added products such as essential oils, natural extracts, herbal medicines, aromatherapy products, and cosmetics from aromatic plants is a key step.

Participation in international trade fairs can enhance Türkiye’s visibility in the aromatic plant and essential oil sectors. These events serve as effective platforms for promotion, establishing new business collaborations, and strengthening customer relations.

The aromatic plant and essential oil sector can become more efficient through scientific research and innovation. R&D investments play a critical role in increasing Türkiye’s international competitiveness in this field. Particularly in markets where interest in natural products and aromatherapy is growing, awareness campaigns highlighting the benefits and unique properties of these products can be highly effective. Türkiye’s expertise in this field can contribute to greater global recognition in the health and beauty industries.

Collaboration between universities, research institutions, and the private sector should be encouraged. Through such partnerships, the chemical compositions of aromatic plants can be explored in greater depth, and their health benefits can be scientifically validated. Additionally, the use of biotechnological and biochemical processes can enhance the efficacy of these products.

The implementation of sustainable agricultural techniques in areas where aromatic plants are cultivated can increase production efficiency. By focusing on organic farming and environmentally friendly practices, Türkiye can improve product quality and offer globally competitive, eco-friendly products.





# TURKISH COSMETIC PRODUCTS RISE ON GLOBAL SHELVES

*Türkiye, which is a net exporter in the cosmetics sector, is making a strong impact in the global market by exporting to more than 200 countries with a wide range of products, from skincare and makeup to perfumes and hair care.*

*The cosmetics and personal care products market in Türkiye has been growing at an average rate of 10% annually, in parallel with economic developments.*



**\$73**  
**billion**  
Global export volume of  
cosmetic products in 2023.



**C**osmetics have emerged as a tangible reflection of humanity's pursuit of beauty and aesthetics throughout history, forming an industry with a deep-rooted past. The cosmetics sector, which plays a significant role in both economic and social aspects, is a vital part of millions of people's lives worldwide. In 2023, global exports of beauty, cosmetics, and skincare products reached \$73 billion. The five largest exporting countries played a key role in international trade. France, South Korea, the USA, Singapore, and Germany accounted for 48.8% of the total global exports of beauty, cosmetics, and skincare products.

On a continental basis, European countries dominated in 2023 with \$35.3 billion in exports, making up 48.4% of the global total. Asian countries followed with 37.1%, while North America ranked third with an 11.8% share. Among the fastest-growing exporters between 2022 and 2023, China led with a 32.7% growth rate, followed by Denmark (32.5%), Türkiye (29%), and Canada (25.6%).

### **TÜRKİYE SIGNS OFF ON \$3 BILLION EXPORTS IN 2024**

Türkiye is positioned as a net exporter in the cosmetics industry. With a rapidly growing market, Türkiye exports its products to nearly 200 countries. While the majority of exports go to European countries, the sector has recently gained momentum in Central Asia, the Middle East, South and Central America, and North Africa. The industry closed 2023 with \$2.7 billion in exports and finished 2024 at \$3 billion. The target for 2025 is set between \$3.2 billion and \$3.3 billion.

Thanks to its rich plant diversity and strategic geographical position, Türkiye possesses significant potential in the cosmetics sector. Domestic brands are developing strategies to meet local market demands while also increasing their export shares. In particular, natural and organic cosmetic products are driving demand abroad.



### TÜRKİYE RECORDS STEADY GROWTH IN COSMETICS

Türkiye’s cosmetics and personal care market continues to grow by an average of 10% annually in parallel with economic developments. Although natural cosmetics and personal care products currently account for around 5% of the market, this figure aligns with global trends. Only 10% of the products sold in Türkiye are domestically produced, but hair care products hold the largest share in the industry, with shampoos leading the category at approximately 59%.

Türkiye plays a crucial role in the cosmetics sector not only through local brands but also as a production hub for multinational companies. Many globally recognized cosmetic brands continue their production and marketing activities in Türkiye. Multinational cosmetic companies see Türkiye not just as a marketing destination but also as a manufacturing base. Licensing agreements, advertising and marketing activities, production, and

distribution agreements make Türkiye an essential part of these brands’ global strategies.

### E-COMMERCE BOOSTS THE INDUSTRY

With the rise of e-commerce, small-scale local brands are gaining visibility alongside global giants in the cosmetics industry. The widespread use of social media platforms and digital advertising has made it easier for these brands to reach international consumers. Trends such as “clean beauty” and “natural products” have contributed to the emergence of an ecosystem reflecting consumers’ conscious choices.

E-commerce platforms are leveraging technologies such as artificial intelligence and data analytics to offer personalized solutions to consumers. Innovations like personalized product recommendations, virtual makeup applications, and skincare analysis are transforming how consumers interact with beauty products. These developments not only enhance customer satisfaction but also drive sales growth.

### IKMIB HELPS TURKISH COSMETIC INDUSTRY EXPAND INTO NEW MARKETS

Türkiye’s cosmetics industry continues to make its mark in international markets with its dynamic structure and innovative products. The Istanbul Chemicals and Chemical Products Exporters’ Association (IKMIB) plays a key role in bringing exporters together and enhancing the industry’s foreign trade potential. By organizing sectoral trade delegations, IKMIB helps Turkish cosmetic brands establish a stronger presence in global markets.

The national participation events and trade delegations organized by IKMIB throughout the year bring Turkish cosmetics manufacturers together with potential buyers, opening doors to new business collaborations. Events held in target regions such as Europe, the Middle East, and the Far East help increase the visibility of Turkish cosmetic brands in these markets.

*Türkiye plays an important role in the cosmetics industry not only with local brands but also as a production base for multinational brands. Many globally recognized cosmetic brands continue their production and marketing activities in Türkiye.*

**\$3**  
**billion**  
Turkish cosmetics and personal care sector exports (2024).



Levent KAHRIMAN  
KÜAD President

# “TURKISH COSMETICS INDUSTRY KEEPS UP WITH GLOBAL GROWTH”

*Stating that the Turkish cosmetics industry has strong potential with its entrepreneurial, innovation-driven, and young producer profile, KÜAD President Levent Kahrıman said, “The high number of technical employees, the organization of three to five congresses annually, and the intensity of scientific activities strengthen our sector.”*

**W**e discussed the current state of the industry, its international competitiveness, sustainability initiatives, and future strategies with Levent Kahrıman, President of the Association of Cosmetic Manufacturers and Researchers (KÜAD), who emphasized the need for more international collaborations, innovative product development, and investment in digital marketing to enhance the competitive strength of the Turkish cosmetics sector.

**How is the Turkish cosmetics industry positioned in international markets?**

The cosmetics industry is one of the fastest-growing sectors globally, and with the impact of digitalization, this growth has accelerated further. E-commerce platforms, personalized product demands, and sustainability trends have given the industry an innovative direction. The Turkish cosmetics industry has also kept pace with this growth. Turkish cosmetic products, particularly with their emphasis on naturalness and high-quality ingredients, have become preferred in the European, Middle Eastern, and Asian markets. Our export figures are increasing every year, but more investment is needed to boost international brand awareness.

**What activities does KÜAD undertake to support the sector’s development in Türkiye?**

KÜAD approaches the industry through five main areas: technical issues, regulations, quality standards, marketing, and community building. It operates like an “academy” with the reflexes of a non-governmental organization. Through EU projects and B2B delegations, we enhance our international visibility. With initiatives such as “International Cosmetic Congresses” and “The Voice of Turkish Cosmetics,” we aim to expand our global presence.

*Turkish cosmetic products have gained a strong position in the European, Middle Eastern, and Asian markets due to their emphasis on naturalness and high-quality ingredients. Our export figures are increasing every year, but more investment is needed to boost international brand awareness.*

**International competition is intense. How do you evaluate the competitiveness of the Turkish cosmetics industry on the global stage?**

One of the biggest advantages of the Turkish cosmetics industry is its entrepreneurial and innovative young producer profile. Our manufacturers have largely embraced the spirit of change and have a strong production infrastructure. The high number of technical employees, the organization of 3-5 congresses annually, and the density of scientific activities are key advantages. Additionally, our geographical location allows easy access to European, Asian, and Middle Eastern markets.

However, to enhance our competitiveness, we need to focus more on international collaborations, innovative product development, and digital marketing investments. We must also reach global consumers through advertising and PR campaigns to boost brand awareness. I believe we need to undertake high-impact initiatives that will establish us as a “cosmetic country.” This can be defined as “reputation management.” In this regard, “location market-





*The Turkish cosmetics industry is taking important steps in sustainable packaging, energy efficiency, and waste management.*

ing” is quite advantageous for the cosmetics sector. Our country offers great potential for this. The “ethnocosmetics” approach—which we can define as the relationship between human communities and beauty—holds a crucial position in location marketing and becoming a leading cosmetics nation.

**How is the rise of natural, organic, and vegan products shaping Türkiye’s competitiveness?**

The demand for natural, organic, and vegan products has led to a significant transformation in the industry. Consumers are turning to cleaner products with greater health and environmental awareness. This trend pushes brands to use sustainable raw materials and invest in eco-friendly production processes—including environmentally friendly packaging.

These developments create new business opportunities and investment prospects, along with unique brand narratives. Thanks to its rich natural resources, Türkiye has significant potential in this area. However, the number of organically certified products must increase, and these products need greater visibility in global markets. The biggest risk here is the “greenwashing” trap. Brands must genuinely embrace this philosophy rather than just using it as a marketing strategy.

**R&D plays a crucial role in developing innovative products and gaining a competitive edge in the**

**industry. Are Türkiye’s investments in cosmetics R&D sufficient?**

We know that some Turkish cosmetics companies have established “R&D centers.” There are actually significant government incentives in this regard. However, the fast-changing dynamics of the industry—similar to fashion—may lead brand owners to think short-term.

More budget and resources should be allocated to innovative product development and patent acquisition. Conducting scientific research to prove the effectiveness of natural ingredients can help us become more competitive in the global market. Increasing university-industry collaborations will significantly enhance the approach to patent acquisition. Setting an annual patent target could be an effective strategy in this process.

**Which markets should the cosmetics industry focus on in 2025 and beyond? What makes these markets attractive?**

From 2025 onwards, the Asia-Pacific, Middle East, and Africa markets offer significant opportunities. Asia-Pacific, particularly South Korea and Japan, presents collaboration opportunities with major cosmetic industry players, while the Middle East and Africa stand out due to their rapidly growing young population and increasing cosmetics consumption potential. Additionally, the rising interest in sustainable and vegan products in these markets creates a competitive advantage for Turkish companies.



## OUR PRODUCTS

- Pearl Pigments.
- Titanium Dioxide (TiO<sub>2</sub>).
- Blanc Fixe (Synthetic Barium Sulfate).
  - Lithopone.
  - HEC & HPMC.
- Poly Vinyl Alcohol (PVA) 24-88, 26-88, 24-99, 26-99.
  - Iron Oxide.
- Organic Pigments.
- Hydrocarbon Resin (C9 & C5).
  - Alcohol Ester.
    - Glitter.
  - Sodium Alginate.
  - Glass Beads.
- Ammonium Persulfate.



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# ISTANBUL MINING AND METALS EXPORTERS' ASSOCIATION AT THE 29<sup>TH</sup> CONFERENCE OF PARTIES (COP29)



Dr. S. Armağan YURDU  
General Secretary of İMMİB

This year's United Nations Climate Change Conference, COP29, was hosted by Baku, the capital of Azerbaijan, in November. The conference was often referred to as the "Finance COP," and expectations regarding climate finance were quite high. An agreement was reached to provide \$300 billion annually to developing countries; however, this amount is considered insufficient compared to actual needs. Whether this funding can compensate for the slow progress in developed countries remains a major concern for developing nations. Climate actions require a significant transformation, and such transformation is unlikely to occur without adequate financial support. Consequently, climate finance decisions are closely related to industrial sectors.

The steel industry, responsible for approximately 7-9% of global greenhouse gas emissions, is one of the most carbon-intensive sectors. Thus, it plays a crucial role in

shaping climate actions. As İMMİB, we are aware that climate policies will impact our industrial sectors, and we take this into account in our activities. In addition to organizing training programs, we also participate in international conferences. At COP29, we held a session at the Türkiye Pavilion discussing the future of the steel sector, which





is frequently highlighted in climate change mitigation efforts. Our session took place on November 14, coinciding with the official agenda's Finance, Investment, and Trade Day. As the Secretary General of İMMİB, I moderated the session, which featured esteemed participants from the private sector and civil society. Among the speakers were Uğur Dalbeler, Vice President of the Steel Exporters' Association; Hasan Akbulut from the Turkish Steel Producers Association; Dursun Baş from Istanbul Policy Center; and Alice Tipping from the International Institute for Sustainable Development. The session examined both the global and Turkish steel industries while also addressing critical challenges such as decarbonization, the EU's Carbon Border Adjustment Mechanism (CBAM), and other carbon regulations worldwide.

As highlighted in the discussions, the global steel industry, with an annual production of 1.8 billion tons and a market size of \$1.8 trillion, faces economic challenges alongside environmental ones. The sector is influenced by factors such as declining global purchasing power, tight monetary policies,

political uncertainties, reduced demand, and protectionist policies. It was noted that the estimated financial requirement for this transformation is approximately \$3.5 trillion annually, translating to a total investment of \$78 trillion by 2050. In Türkiye, a significant portion of the steel industry operates with electric arc furnaces, emitting between 0.4 and 0.6 tons of carbon dioxide per ton of steel produced. While this presents an advantage in terms of decarbonization, rising energy prices and external factors like the Russia-Ukraine conflict impact production capacity. Additionally, regulatory changes under the EU's CBAM affecting scrap imports and exports are of particular importance to the Turkish steel industry.

Regarding decarbonization efforts, it was emphasized that efficient use of resources and energy offers both economic and environmental benefits. Utilizing waste heat recovery systems could reduce energy consumption by 20-25%, significantly lowering carbon emissions. Furthermore, international collaborations were highlighted as a means to facilitate producers' transition to sustainable production techniques. Various countries are implementing trade policies to reduce carbon emissions, with border carbon regulations being one such measure. These regulations aim to impose an equal carbon cost on imported goods based on their production emissions, aligning them with locally produced goods. Currently, sectors such as steel, aluminum, and cement are subject to these regulations. The session also assessed that border carbon regulations are no longer limited to the EU's CBAM; other countries, including Japan and Taiwan, are considering similar policies as part of their increasing carbon pricing mechanisms.

In conclusion, the session at COP29 on the future of the steel sector provided an in-depth analysis of the industry's challenges and decarbonization process. As İMMİB, we will continue working towards mitigating the impacts of climate change on our industrial sectors by fostering international collaborations and developing innovative solutions.

# “WE ARE CHANGING THE CHEMISTRY OF CEMENT”

*Plustechno, a leading provider of high-tech, eco-friendly solutions to Türkiye’s top cement producers, has reduced carbon emissions with its high-performance cement developed using local raw materials.*



Özlem AKALIN  
Plustechno Founder

Plustechno was founded with the vision of developing high-performance cement to supply concrete companies and construction projects with high-quality, environmentally friendly products. Founder Özlem Akalin states, “ECO-CEM is an ecological and economical cement production method. In cement production, we reduce the amount of clinker used within the limit values of the TS-EN 197-1 standard and maximize the amount of waste minerals. This allows us to develop mineral-added cements with higher values than those containing 95% clinker.”

**Plustechno uniquely combines female entrepreneurship with innovation. Can you introduce Plustechno and its fields of activity?**

The success of Plustechno in merging fe-

male entrepreneurship with innovation comes from my perseverance in continuing my master’s and doctoral studies while working, following my undergraduate degree in Chemical Engineering at METU. Each phase of development has formed a new stepping stone for us.

Plustechno started as a technical consultancy in the field of construction chemicals and later evolved into a chemistry company focusing on raw material representation, distribution, and the production of cement, concrete, and construction chemical additives. I can confidently say that we have successfully transformed knowledge into value and achieved growth as entrepreneurs. What started as a solo venture has now grown into a team of 10, along with a strong group of expert consultants. We contribute significantly to many industrial enterprises in Türkiye.

**Your local solutions to reduce carbon emissions in cement production have a major environmental impact. How would you describe the journey of the ECO-CEM project from its inception to the present?**

Every innovation starts with an idea and evolves into a ready-to-implement technology. If you are not simply transferring technology but developing it, this process can take about 10 years—from conception to realization. This was also the case in our field.

While working at a ready-mix concrete company, I developed and produced chemical admixtures for concrete and monitored their effects. At the same time, I kept up with theoretical advancements through scientific publications and international conferences. Asking myself, “Where is the world, and where

are we?” helped shape my progress. Cement producers, concrete manufacturers, and construction companies operate under the same industry umbrella but approach their work from different perspectives. Even scientific publications and conferences were conducted separately.

As I was developing chemical additives for concrete, I realized that the starting point of the process was clinker, mineral additives, and cement. The idea of “developing high-performance cement to provide concrete companies and construction projects with high-quality, eco-friendly products” started forming in my mind. During my technical consultancy, I had the opportunity to bring this idea to life by collaborating with companies through my systematic R&D methodology.

ECO-CEM is not a product name but a method. Since each cement producer has different raw materials, mineral compositions, and production technologies, we create custom formulas tailored to their needs. ECO-CEM is an ecological and economical cement production method. In cement production, we reduce the clinker amount used within the limit values of the TS-EN 197-1 standard and maximize the amount of waste minerals (such as slag, fly ash, pozzolan, and limestone). This enables us to develop mineral-added cements such as CEM II, CEM III, and CEM IV, which have higher values than CEM I cement containing 95% clinker. In short, we are changing the chemistry of cement.

Clinker, the primary raw material in cement production, is responsible for significant carbon dioxide emissions. Producing 1 ton of clinker emits approximately 700–800 kg of carbon dioxide. Greenhouse gas emissions and climate change are critical issues that the cement industry must address. With ECO-CEM, we developed a cement that reduces clinker usage by 20–40% while enhancing performance. This cement decreases water and chemical additive use in concrete while increasing the use of mineral waste. With our patented technology, we provide added value to our customers and create further opportunities through joint R&D projects.

**What are the key benefits of your innovations for the environment, the industry, and users? How do you define the long-term impact of these developments?**

The cement and concrete sectors not only hold a

significant market share in Türkiye but also have a strong presence in export markets. With an annual production of 80 million tons, Türkiye ranks in the top three in Europe and the top seven worldwide. While these industries are known for their high consumption of natural resources, they are undergoing a green transformation by incorporating recycled and recovered materials. However, for this transition to be successful, it is essential to implement these practices correctly from the initial stages of production. Urban planning, standardized production, and the adoption of new technologies allow for the construction of long-lasting and durable structures. Advances in chemistry play a crucial role in the application of these technologies.

Today, sustainability introduces innovative approaches such as recycling, green transformation, water conservation, energy efficiency, and zero-carbon initiatives to ensure the efficient and effective use of resources. Companies are seeking new solutions in response to these evolving needs. As a company, we aim to stand out by embracing innovation and making a difference in this transformation process.

**How important is sustainability for Plustechno?**

Sustainability is only possible if you have a team that maintains the founder’s passion, even in a corporate structure. Curiosity, learning, working with passion, and never giving up are fundamental to Plustechno’s longevity. Every challenge presents an opportunity for innovation. The more we engage and communicate, the more ideas and possibilities emerge.

While our primary goal is to support domestic producers in our field, we also aspire to become a globally recognized brand.

**In which areas do you plan to grow through innovation and R&D investments in the coming years?**

We aim to strengthen our R&D team and collaborate with researchers from different disciplines in international projects. Thanks to TÜBİTAK’s support, companies can take significant steps by applying for such projects. Our goal is to develop innovative chemical products that add value to our customers.

Additionally, the chemical sector offers many opportunities for growth, especially in areas supported by government policies. Moving forward, we envision making substantial investments in production and establishing a strong presence in the global market.

*Plustechno started as a technical consultancy in the field of construction chemicals and later evolved into a chemistry company focusing on raw material representation, distribution, and the production of cement, concrete, and construction chemical additives.*

# CHEMISTRY IS BEING RESHAPED BY THE ENERGY OF YOUTH

*The interest of young people in the chemistry sector plays a significant role in shaping the future. With their rapid adaptation to technology, sustainability-focused approaches, and strong skill sets, chemical engineering students are preparing to shape not only today's but also tomorrow's chemistry landscape with their energy and determination.*



From food safety to drug development, from energy transformation to environmental sustainability, chemistry has a profound impact on various aspects of our lives. As a field that allows young minds to explore new horizons with their creative thinking, chemistry is not limited to theoretical knowledge but also fosters analytical thinking through hands-on experience. Education, reinforced with laboratory work and projects, aims to introduce innovative individuals to the industry. The innovative approaches and creative ideas of young people inject energy into the transformation that will define the sector's future. In this dynamic and ever-evolving industry, valuing young perspectives paves the way for the emergence of inspiring ideas for the future.

With this in mind, Chemist magazine has gathered insights from chemical engineering students about their perspectives and suggestions for the industry. Emphasizing how chemistry—present in every aspect of life—inspires them and fuels their passion for discovery, Efe Atmıř, Miray Helvacı, and Fatih Osman Özdemir, students from Istanbul Technical University (ITU) Chemical Engineering Department, shared with us how they bring innovative solutions to the current dynamics of the sector and what steps they plan to take in the future. By offering different perspectives on how they can make a difference in the world of chemistry, these students once again highlighted the importance of youthful energy in the industry.

# “UNIVERSITY-INDUSTRY COLLABORATION ENHANCES STUDENTS’ PASSION FOR THE SECTOR”

Efe ATMIŞ

ITU Chemical Engineering Student



*“I believe that, along with our country’s geopolitical position and advancing technology, the next generation will achieve great success in this field.”*

For me, chemistry is a branch of science that forms the building blocks of nature. During my high school years, I approached chemistry with a much greater dedication because I learned that it is not just about laboratory experiments but is present in every aspect of our lives. The fact that it is a crucial field for sustaining human life and that the outcomes of research can be seen in tangible ways ignited my passion for this subject. This passion made me want to spend more time exploring the deep world of chemistry.

The Turkish chemical industry is growing day by day, and when we look at its future, we can speak with optimism. Considering the investments made and the fact that these investments will yield results over time, I believe that the future of Türkiye’s chemical industry is promising. Along with our country’s geopolitical position and advancing technology, I think that the next

generation will achieve great success in this field.

Through university-industry collaborations, students have the opportunity to put the theoretical knowledge they learn in lectures into practice. These collaborations can increase students’ passion for the sector and help them adapt more easily after graduation through hands-on experience. By producing more projects and increasing diversity within the sector, these collaborations can become even more productive.

My goal in the field of chemical engineering is to work on innovative projects in the energy sector that will make human life more sustainable. One of my greatest aspirations is to contribute to a world that is less dependent on environmentally harmful and depleting resources. I want to conduct research and development on how sustainable and renewable energy can be produced more efficiently and effectively.

# “GIVING STUDENTS A VOICE WILL ENHANCE THE SUCCESS OF THE TURKISH CHEMICAL INDUSTRY”



Miray HELVACI  
ITU Chemical Engineering Student

*“Chemistry, with its fundamental principles, helps us answer the question of how we can benefit humanity.”*

For me, chemistry is the foundation of life itself; everything we see, hear, or touch is chemistry. I have had a special interest in chemistry since high school—reactions, compounds... However, while studying chemical engineering, I realized that chemistry is much greater than all of these. Chemistry, with its fundamental principles, helps us answer the question of how we can benefit humanity. My passion for this field stems from the power of chemistry to provide solutions that make life easier for living beings. Its multidimensional nature allows me to continuously improve myself both theoretically and practically, and being a part of this process deeply motivates me.

When we look at the current state of the Turkish chemical industry, we see a growing trend. However, I strongly believe that there is even greater potential for development. Increasing domestic

production capacity and encouraging investments in research and development are essential. Türkiye, with its geographical advantages and young population, has excellent opportunities to make the chemical industry more competitive on an international scale. In this context, focusing on sustainability-oriented technologies and raising awareness of chemical engineering while giving students a voice will, in my opinion, enhance the success of the Turkish chemical industry.

University-industry collaborations serve as bridges that integrate the theoretical knowledge students acquire in school with practical experience, and I believe they are highly valuable for both students and the industry. Theoretical knowledge is, of course, important, but industrial experience allows students to develop perspectives on real-world problems and find solutions. At the same time, the industry benefits from the in-

novative perspectives of young minds. To establish more effective collaborations, internship programs should be expanded, university-industry research projects should be increased, and academic knowledge should be more closely linked to industrial applications.

My goal in the field of chemical engineering is to develop innovative solutions in the pharmaceutical industry and contribute to meeting society's healthcare needs. I want to make drug production processes more efficient, minimize their environmental impact, and improve accessibility to these medications for more people. To achieve this, I plan to engage in research and development projects to enhance my skills and gain diverse perspectives through international experiences. In the long run, my aim is to use the knowledge and experience I acquire to lead sustainable projects that benefit human health.

# “IT IS CLEAR THAT AN ACADEMIC PERSPECTIVE CAN DEVELOP INDUSTRIES”

**Fatih Osman ÖZDEMİR**  
 ITU Chemical Engineering Student



*“As a future chemical engineer, my goal in the chemical engineering sector is to work in the production field, striving to make production processes more efficient.”*

Humanity needs fundamental sciences to better understand the world, living beings, and the laws of the universe. Chemistry, as one of these fundamental sciences, holds a special position due to its close interactions with the other two fundamental sciences—physics and biology. Understanding chemistry also means gaining a significant understanding of physics and biology. For me, chemistry is essentially a book that helps me better understand the universe. From the early years of my high school education, when I read the preface of this book, my passion for chemistry was ignited. As I had the opportunity to turn more pages during my university years, my passion grew exponentially. No person who has ever lived or will ever live can finish this book. However, how well one understands the universe is closely linked to how far they can progress within this book.

It can be said that the current state of the Turkish chemical industry is far from where it should be. However, there is no doubt that it is advancing toward its rightful position with rapid steps. It is crucial to accelerate these steps because, in today’s world, technology is evolving at an incredibly fast pace, and the rapid transformation of global trends means that the target position is continuously moving further away. University-industry collaborations are of critical importance in speeding up this progress. These collaborations introduce students to the sector at an early stage, preparing them for professional life. As a result, more competent graduates emerge, leading to increased efficiency in industries. The relationship between industries and university professors is also of particular importance. It is clear that an academic perspective can contribute significantly to the development of industries. Fur-

thermore, making these collaborations more efficient is entirely possible. This efficiency can be achieved by creating more platforms that bring together the chemical industry and university students, as well as increasing internship opportunities. One of the biggest challenges faced by chemical engineering students today is the difficulty in finding internship opportunities.

As a future chemical engineer, my goal in the chemical engineering sector is to work in the production field, striving to make production processes more efficient.

# WE ARE GENERATING NEW KNOWLEDGE TO CONTRIBUTE TO FUNDAMENTAL SCIENCE”

Doç. Dr. Çağatay DENGİZ  
Middle East Technical University  
(METU)



*Emphasizing the importance of increasing knowledge and technology sharing between academia and industry, Assoc. Prof. Çağatay Dengiz from Middle East Technical University (METU) states:*

Assoc. Prof. Çağatay Dengiz, a faculty member at Middle East Technical University (METU), was awarded the 2024 Science Academy Young Scientist Award Program (BAGEP) in the field of Chemistry. Renowned for his innovative work spanning organic synthesis to materials chemistry, Dengiz has made significant contributions to the field of chemistry. We spoke with him about the latest advancements in chemistry.

**Can you tell us a little about yourself?**

I started my journey at the Department of Chemistry at METU in 2006, a decision that completely transformed my life. I completed my undergraduate degree in 2010 and had my first experience outside my comfort zone in 2009

during a mandatory international internship at the University of Minnesota (Minneapolis).

In 2011, I completed my master's degree at METU under the supervision of Prof. Dr. Metin Balci. My thesis earned me the "METU Thesis of the Year Award" for the 2011-2012 academic year, presented by the Mustafa N. Parlar Education and Research Foundation.

From 2012 to 2016, I conducted my doctoral studies at ETH Zurich in Switzerland under the supervision of Prof. Dr. François Diederich. After earning a prestigious postdoctoral research fellowship from the Swiss National Science Foundation (SNSF), I pursued postdoctoral research at the Massachusetts Institute of Technology (MIT) from 2016 to 2018, working with Prof. Timothy M. Swager.

In 2018, I returned to METU as an Assistant Professor under the TÜBİTAK 2232 Returning Scientists Fellowship Program and began my independent research. Since 2023, I have been serving as an Associate Professor in the same department.

Our research, conducted alongside my students, who are the true heroes behind our work, has been recognized with several prestigious awards, including:

- The Turkish Academy of Sciences – Outstanding Young Scientist Award (2022)
- The Science Academy BAGEP 2024 Award
- The Mustafa N. Parlar Education and Research Foundation 2024 Research Incentive Award

#### What is the main focus of your research?

##### What topics do you explore?

Our research is positioned at the intersection of organic synthesis, computational chemistry, and materials chemistry. Currently, we focus on the rapid and high-efficiency synthesis of functional materials using click-type reactions. Our primary motivation is to generate new knowledge that contributes to fundamental science. Additionally, we aim to apply our synthesized compounds in various fields, such as nonlinear optical materials and photocatalysts.

##### What do you consider to be the most significant advancement in chemistry today?

It is quite difficult to pinpoint a single most significant advancement in chemistry because the field is constantly evolving and encompasses a wide range of disciplines. However, I would like to highlight two key areas:

1. Artificial Intelligence (AI) in Chemistry
2. Sustainable and Green Chemistry

Despite initial skepticism, AI has started to reshape the field of chemistry just as it has in other aspects of our lives. Machine learning algorithms now have the potential to predict reaction outcomes, optimize chemical processes, and aid in molecular design. Research in this area is set to revolutionize chemical processes, making them faster and more accurate.

Sustainability has become one of the top priori-



ties in chemistry. Topics such as:

- Chemical energy storage from renewable sources (e.g., hydrogen or battery technologies)
- Development of environmentally friendly catalysts
- Recycling industrial waste

...demonstrate chemistry's potential to address environmental challenges. The EU's goal of net-zero carbon emissions by 2050 and the U.S. Environmental Protection Agency's increasing chemical regulations are further accelerating research in green chemistry.

These advancements are not only crucial for environmental protection but also essential for making economic and industrial processes more sustainable.

**The chemical industry is undergoing a major transformation due to environmental awareness and sustainability goals. How do you**

*In our industry collaborations, we prioritize the development of green mechanochemical methods that eliminate the need for toxic solvents.*



**evaluate this process, and how do your academic studies contribute to this transformation?**

I see this transformation as a significant opportunity due to the growing visibility of environmental issues and increasing global awareness. The chemical industry accounts for approximately 5% of global CO<sup>2</sup> emissions, making it a key player in achieving the 2050 net-zero carbon emissions goal.

Many countries, especially in the EU, have adopted ambitious policies based on green chemistry principles to address these challenges. Massive funding is being allocated to sustainability research, and academia-industry collaborations are playing a critical role in this process. In our academic research, we focus on developing green and sustainable solutions for the chemical industry. Our industry collaborations prioritize the development of green mechanochemical methods that eliminate the need for toxic solvents. Additionally, we are working on photocatalytic methods to reduce waste generation and minimize

*Following someone else's path does not always guarantee success. The strongest key to success is discovering one's own potential and moving forward accordingly.*

the environmental impact of chemical reactions.

Our click-type synthesis methods, known for their atom economy and high efficiency, contribute significantly to sustainability efforts. Through such innovative and eco-friendly approaches, we aim to support the transformation of the chemical sector.

**What advice would you give to young researchers and students for a successful career?**

A good scientist must also be a good science communicator. They should never forget the importance of effectively conveying their research to the public, as this is just as vital as the research itself. Effective science communication enhances the impact of scientific work

and increases its visibility.

Success is not limited to academic achievements—social skills and effective communication abilities provide significant advantages in a scientist's career.

Regardless of the field they work in, they should always strive to do their best. Work ethics and integrity are crucial values, and researchers who uphold these principles will always be more respected and preferred.

Moreover, everyone has their own unique career path. While it is beneficial to have role models, young researchers must pave their own way and stand on their own feet. Following someone else's path does not always guarantee the same success. The key to achieving one's full potential is to discover personal strengths and build a career accordingly.

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