

ABOUT THE REPORT

One way to live the future is to build it. Polisan Holding has strived since its early days to add value to life, sustain all lives, and create substantial values for future generations. We remind our stakeholders that it is in our hands to build the future by creating new values within the scope of the Sustainable Development Goals.

Future means next generations. And next generations are very precious. With this in mind, we designated our 2019 Sustainability Report message as the "Future is in Our Hands," to remind everyone, all individuals and corporations of our duty to create a future for next generations. We will assume responsibility and continue to create a future for next generations.

The information in the Polisan Holding 2019 GRI Sustainability Report covers the period between January 1st, 2019 and December 31st, 2019. We have prepared our report in accordance with the "core" option of GRI Standards.

Environmental and social performance is presented for our companies Polisan Kansai Boya, Polisan Kimya and Poliport Kimya, and the link to our activity report through which you can follow the economic development of all Polisan companies is shared in the related sections of our report.

[Polisan Holding 2019 Activity Report](#)

One of the most important guides for our sustainability journey is the expectations and opinions of our stakeholders. Therefore, you may share your opinions, questions and recommendations about our sustainability report via the e-mail address yss@polisan.com.tr.

[2015 Polisan Holding GRI Sustainability Report](#)

[2016 Polisan Holding GRI Sustainability Report](#)

[2017 Polisan Holding GRI Sustainability Report](#)

[2018 Polisan Holding GRI Sustainability Report](#)

HIGHLIGHTS OF OUR 2019 PERFORMANCE

- ✓ **1,013** MILLION TL NET INCOME
- ✓ **15.9** MILLION TL R&D EXPENDITURE
- ✓ **2.2** MILLION TL BUDGETED TEYDEB PROJECTS
- ✓ ISO CERTIFICATES
AUTHORIZED ECONOMIC OPERATOR STATUS
BECOMING A TURQUALITY BRAND
- ✓ **1,124** EMPLOYEES
- ✓ **18,373** PERSON-HOUR TRAINING
- ✓ **45%** GREENHOUSE GAS REDUCTION FROM 2012 TO 2019
- ✓ **19.8** MILLION TL HSE* INVESTMENT IN THE LAST 5 YEARS
- ✓ **10.5** MILLION TL FIRE** INVESTMENT IN THE LAST 5 YEARS
- ✓ IN THE LAST 5 YEARS **15.8** MILLION TL PROCESS SAFETY*** INVESTMENT

* HSE; the investments directly concerning health, safety and environmental issues are included under this heading.

** Fire; investments made to directly ensure fire safety are included under this heading.

*** Process safety; investments made in accordance with the Seveso directive with the purpose of preventing large scale industrial accidents, and to minimize the damage to people and the environment from potential accidents; investments seeking to ensure high level, effective and continuous protection, as well as those required by the security controls defined by international standards are included under this heading.

**** Investment expenditures have been recalculated on the basis of the year of realization only.

STEP BY STEP SUSTAINABILITY

Maximizing our contribution to society, the environment and our country's economy, and minimizing the inevitable impact of our business processes are some of the most important aspects of our business strategy. We aim to secure our long-term success with our sustainability approach. We strive to continuously improve our processes, which are in accordance with our Sustainability Policy, the Responsible Care initiative and the UN Global Compact. Our improved scores on third-party sustainability assessments such as the CDP, EcoVadis and Borsa Istanbul Sustainability Index are the fruits of our positive progress. Senior management of the Holding and group companies regularly monitor reports that include sustainability performance results such as the progress reports of sustainability projects, and natural resource consumption and audit reports. In 2019, we have held 27 Sustainability Circle Sessions, where we discussed sustainable business models, best available practices and potential actions for our development areas.

Unit	Number of Circle Sessions	Unit	Number of Circle Sessions
R&D	3	Sales & Marketing	1
Production	2	Maintenance	2
Supply Chain	3	Project	1
Information Technologies	3	Operations and Business Development	4
Health, Safety and Environment	6	Marketing and Channel Strategy	1
Human Resources	1		

USGBC LEED Gold Certificate at our Polisan Kansai Boya GEBKIM Facility

Polisan Kansai Boya GEBKIM Production and Storage Facility, which commenced operations at the beginning of 2019, has been assessed by the US Green Building Council (USGBC) and awarded a LEED Gold Green Building Certificate. The environmental impact of this facility has been minimized, and it became one of the 23 LEED-certified production facilities in Turkey, meeting the criteria for Sustainable Land, Water Efficiency, Energy and Atmosphere, Materials and Resources, Indoor Environmental Quality, Innovation in Design and Regional Priority. We achieved 100% water reduction in landscaping, and we recycle 100% of the rainwater that is collected from the roofs of the indoor areas. Our energy modeling allows us to save 32% in energy.

[LEED Gold Certificate](#)

[LEED Green Building Practices](#)

Our facility was granted the Low Carbon Hero Award at the 6th Istanbul Carbon Summit, which rewards institutions that excel in carbon management.

Global Sustainability Leaders Impact Analysis Assessment

Polisan Holding has been included in the impact analysis project carried out by Argüden Governance Academy, which examines sustainability in corporate governance strategies and business models. During the project evaluation period, we earned the right to be on the Global Sustainability Leaders list thanks to our significant sustainability progress.

[Our Sustainability Governance Scorecard](#)

Borsa Istanbul Sustainability Index Performance

We were granted the right to be listed in the Borsa Istanbul (BIST) Sustainability Index for the third time thanks to our sustainability performance during the October 2018-2019 period. We maintained our position in the index by improving our performance by one level in areas such as climate change and anti-bribery and anti-corruption with the practices we implemented throughout the year. The assessments are carried out by EIRIS (Ethical Investment Research Service), which is an independent auditor on behalf of Borsa Istanbul, and based on international sustainability criteria.

Poliport Kimya Receives a Gold Award From EcoVadis

The sustainability performance of Poliport Kimya was awarded the Gold Award by the global rating platform EcoVadis, in its second assessment this year. The assessment is carried out using 21 criteria grouped under the issues of Environment, Labor & Human Rights, Ethical and Sustainable Procurement. Based on the results of the assessment, our company raised its performance to the top 5%, up from the top 10% in the previous year.

Communication Award for Our Sustainability Report

We received the Gold award in the Sustainability Communication category with our 2018 Sustainability Report at the Istanbul Marketing Awards, which awards the leaders of the marketing and communication world.

Product Life Cycle Analysis Project

In 2016, Polisan Kansai Boya received its first Environmental Product Declaration (EPD) certificates for four paint products following the product life cycle analyses. The products were independently approved in accordance with ISO 14025 and EN 15804 standards. We renewed our Type III environmental labels (EPD) again this year for our new paint factory at GEBKİM with respect to energy and environmental issues.

As part of this process, we have updated the environmental analyses of our products throughout their life cycles, from raw material procurement to customer delivery. Our certificates were approved by an independent third-party institution and published on the International EPD System and EPD Turkey databases. Our updated certificates were the first EPDs in Europe and Turkey prepared in accordance with the new version of the European Building Materials Norm.

[Documents](#)

We Continue to Support Biodiversity

Polisan Kansai Boya has been supporting WWF-Turkey's "The Life of Turkey Program" since 2018. We also participated in the program's fourth-term Selection Committee Meeting this year and decided to support projects aimed at protecting karakovan beekeeping in Hemşin, Rize, sea otters in Fethiye, Muğla, and imperial eagles in Trakya and Bolu.

[Certificate of Participation](#)

Implementation Partner of the Turkish Sustainability Code

Polisan Holding has been selected as an implementation partner of the Turkish Sustainability Code, which was developed based on the Global Reporting Initiative (GRI) key performance disclosures and

various financial indicators. We report to the Turkish Sustainability Code, which is an ESG reporting system, at certain periods.

Greenhouse Gas Emissions Management

Polisan Holding has been reporting its greenhouse gas emissions in accordance with ISO 14064 and GHG protocol standards and monitoring its emission values per functional unit since 2012, as we know that we cannot manage our impact if we do not measure it. In 2018, Polisan Holding's Corporate Carbon Footprint Report and its compliance with the calculation methodology of the standard were verified by an independent third-party accredited organization at a reasonable level of confidence (95%). We created our reports using the same methodology and evaluated our performance this year as well. Furthermore, we ensure that relevant departments measure typical monthly energy consumption at usage points and investigate irregularities. In line with our climate-friendly approach, we also systematically take into account greenhouse gas emissions in the design and development of new products and our investment and purchasing decisions.

Additionally, we calculate our greenhouse emissions every year at Polisan Kimya within the scope of the relevant legal process and have our reports verified by a Ministry-approved authority.

Carbon Footprint Reduction per Product Produced/Handled (2012 – 2019)

	Polisan Kansai Boya
Increase Rate	4%

	Poliport Kimya
Increase Rate	19%

	Polisan Kimya
Reduction Rate	53%

2019 Polisan Holding Corporate Carbon Footprint per Scope (t CO₂e)

	Scope 1	Scope 2	Total
Polisan Kansai Boya	1,998	4,138	6136
Poliport Kimya	377	2,672	3,049
Polisan Kimya	7,538	5,109	12,647
Total	9,913	11,919	21,831

Carbon Disclosure Project (CDP) Statements

Since 2017, Polisan Holding has been participating in the CDP platform, one of the most respected environmental reporting platforms in the world. We are able to present our Climate Change and Water Security performance to our stakeholders through this platform, which represents more than 650 investors and total assets amounting to more than \$87 trillion.

Based on the principles of transparency, accountability and traceability, the evaluation results of our statements on the platform's Climate Change and Water Security programs are as follows:

Category Scores	2018	2019
Value chain engagement	D	D-
Targets	D	C
Scope 3 emissions	D-	D-
Scope 1 & 2 emissions	D	D
Risk management processes	D	C
Risk disclosure	D	C
Opportunity Disclosure	D	C-
Governance	D	C
Energy	D	C
Emissions reduction initiatives	D	D
Business impact & financial planning	D	D

Category Scores	2018	2019
Water-related risk exposure	C	C
Water-related opportunities	C	B-
Water risk assessment	C	C
Water policies	C	B-
Water accounting	C	D
Value chain engagement	C	B-
Targets and goals	C	C
Integrated approaches	C	C
Governance	C	B-
Business strategy	C	D
Business impacts	C	B

Water Footprint Management

Water is used in production and cleaning as well as for tanks and cleaning/heating/cooling of reactors at our facilities. Therefore, it is of fundamental importance in our activities. We carry out sustainable water management in our companies through efficient water use and effective wastewater management. In accordance with the methodology developed by the Water Footprint Network, we calculate our water footprint (composed of gray, blue and green water footprint components) and ensure that relevant departments measure typical water consumption and investigate irregularities.

Water Footprint Components	2018 (m ³ /year)	2019 (m ³ /year)
WF _{grey}	48,054	26,870
WF _{blue}	212,238	167,254
WF_{total}	260,292	194,124

We use the data published by the World Resources Institute (WRI) to assess the water risks of our facilities in Dilovası in the Marmara Basin.

Risk Types	Risk Rating
Qualitative water risk (Quality)	High Risk (3-4)
Quantitative water risk (Volume)	Medium and High Risk (2-3)
Legal regulations and reputational risks	Low Risk (0-1)
Total Water Risk	Medium and High Risk (2-3)

CLIMATE CHANGE*

2019 TARGETS	STATUS	2020 TARGETS
<p>To continue annual reporting by ensuring that a Carbon Footprint Report is prepared based on 2018 data in accordance with the ISO 14064 Standard.</p> 	<p>The ISO 14064 compliant corporate carbon footprint report has been prepared and summary information has been published on the website for all stakeholders.</p>	<p>To maintain the 2019 target.</p>
<p>To prepare the 2018 Water Footprint Report pursuant to the ISO 14046 Standard.</p> 	<p>Our 2018 Water Footprint Report was prepared in line with the ISO 14046 Standard and presented to the CDP Water Safety program.</p>	<p>To maintain the 2019 target.</p>
<p>To have the verification institution approve 2018 Polisan Kimya Greenhouse Gas Emissions after reporting them in line with the Regulation on the Monitoring of Greenhouse Gas Emissions.</p> 	<p>2018 Polisan Kimya Greenhouse Gas Emissions were reported and declared to the Ministry after being approved by the verification firm.</p>	<p>To have the verification institution approve 2019 Polisan Kimya Greenhouse Gas Emissions after reporting them in line with the Regulation on the Monitoring of Greenhouse Gas Emissions.</p>
<p>To make statements for the 2018 Carbon Disclosure Project (CDP), Climate Change and Water programs and create improvement projects in line with assessment reports issued by the CDP platform.</p> 	<p>We participated in the 2019 climate and water programs of the Carbon Disclosure Project (CDP) Turkey application.</p>	<p>To make statements for the 2019 Carbon Disclosure Project (CDP), Climate Change and Water programs and create improvement projects in line with assessment reports issued by the CDP platform.</p>

SUSTAINABILITY PERFORMANCE*

2019 TARGETS	STATUS	2020 TARGETS
<p>To maintain our presence on the Bourse Istanbul (BIST) Sustainability Index.</p> 	<p>Aspects analyzed in line with the 2018 Polisan Holding Profile Report issued by Ethical Investment Research Services (EIRIS) and determined to be open to improvement were reviewed, and improvement works were carried out throughout the year. Thus, Polisan Holding became one of the first 56 companies listed on the Istanbul Stock Exchange Sustainability Index</p>	<p>To maintain the 2019 target.</p>
<p>To share at least 20 posts to increase awareness by using communication tools such as the portal, webpage and LinkedIn.</p>	<p>With a view to increase sustainability awareness, information exchange, and communication, we shared 4</p>	<p>Using in-house and external communication tools to promote sustainability awareness.</p>

	<p>Poliportal Sustainability Corner Bulletins, 12 email newsletters, 9 press releases, and 8 sustainability guides.</p>	
<p>To carry out 38 Sustainability Circle works in order to boost our economic, social and environmental performance and increase efficiency.</p> 	<p>We realized 27 Sustainability Circle works.</p>	<p>To carry out 28 Sustainability Circle works in order to boost our economic, social and environmental performance and increase efficiency.</p>
<p>To canvass the sustainability performance expectations of customers in the distributor group, and the top 50 suppliers by transaction volume, as well as company employees and management through the Stakeholder Dialogue Questionnaire.</p> 	<p>The expectations as to the company's sustainability performance of distributor group customers, the first 50 suppliers in terms of transaction volume, company employees and management were collected and reflected in our sustainability works program and the results were given in our GRI reports.</p>	<p>Asking our top 50 suppliers in terms of volume, our 100 employees, and the corporate senior management of their corporate sustainability performance expectations and presenting their contribution in our current practices.</p>
<p>To prepare a project for the renewal of existing EPD's evaluating the environmental dimensions of products at the new paint factory.</p> 	<p>A project team comprising R&D, environment, logistics, mix system, procurement planning, and manufacturing process managers was formed to expand existing EPD certificates to LCA & EPD certification to cover environmental aspects of the new paint factory.</p>	<p>-</p>
<p>To create inventory data for compliance assessment based on 6 top criteria and 11 sub criteria for obtaining a Type 1 EU Eco-label for 1 existing product decided with Polisan Kansai Boya R&D and Product Managers, and to present substantiating documents to competent authorities.</p> 	<p>The conformity assessment tool has been created on the basis of 6 criteria and 11 sub-criteria.</p>	<p>-</p>
<p>To ensure continuity of support "The Life of Turkey Campaign" (Türkiye'nin Canı Kampanyası) and to ensure effective internal and external communication by following the program.</p> 	<p>We announced the program support to the company and externally, as well as attended the Selection Committee that evaluates candidate projects in its fourth term.</p>	<p>To maintain the 2019 target.</p>
<p>To conduct system reporting by completing a risk analysis and bribery program in line with the guiding indicators set forth by Borsa İstanbul</p>	<p>As part of the corporate program shared on Holding website, we performed risk assessments in compliance with the "UN Global Compact A</p>	<p>Reviewing risk analysis findings and implementing necessary enhancements to the program.</p>

<p>Sustainability Index Research Methodology.</p> 	<p>Guide for Anti-Corruption Risk Assessment” and other national guidelines. Thus, we improved our corporate performance in the relevant category to attain a higher rank in the index.</p>	
<p>To create documentation about the process of participating in national and international sustainability platforms supporting the perspective and management of corporate sustainability.</p> 	<p>We prepared the Sustainability Platforms Participation Guide, including CDP, Ecovadis, GRI, BIST, and EU Ecolabel.</p>	-
<p>To develop a project within the framework of sustainable industry and circular economy. (Participation in at least 2 EU grant and support platforms)</p> 	<p>We interacted with executives in 7 sessions on Turkey’s circular economy platform, Turkey Materials Marketplace, as well as European Union Ecolabel, EPD Environmental Label, and Horizon 2020, the EU Framework Program.</p>	<p>Developing projects within the framework of sustainable industry and circular economy in addition to following EU grant programs and circular economy projects.</p>
<p>To carry out performance support works for the prevention of marine pollution in order to strengthen stakeholder relations. (To realize training and corporate social responsibility works with civil society dialogue.)</p> 	<p>We sustained our membership support to the Turkish Marine Environment Protection Association and closely followed their efforts.</p>	<p>To maintain the 2019 target.</p>
<p>To support sustainability performance with UN Global Compact progress reports. (At least an 8-report analysis) To present a company progress report to the platform in June.</p> 	<p>Based on the Progress Report Guidelines of the Global Compact Network, we performed report analysis on commitments, systems, activities and output (performance) based on samples from 11 companies. In July, we submitted our corporate progress report to the platform.</p>	<p>Reflecting, at least, 3 best practices in our processes and our relevant reporting.</p>

*These tables cover the targets related to the assessment platforms and established methods aimed to measure climate change and sustainability performance only with respect to the issue of sustainability.

OUR APPROACH TO RESPONSIBLE MANAGEMENT

Ethics and Integrity

We regard all of our company values, especially honesty, transparency, accountability and reliability, as integral parts of our corporate culture. We carry out our operations in accordance with the Polisan Holding Code of Business Ethics and Conduct for Suppliers, Disciplinary Procedure, and Irregularities and Security Violations Management Procedure, which form the basis of our business relations with our stakeholders, and the rules in the relevant law.

Polisan employees and executives can notify the internal hotline 7575 regarding irregularities and security violations, and the confidentiality of their identity information is guaranteed by the Board of Directors.

At Polisan Holding, when deciding on suppliers to work with, we evaluate not only their product performance and operating quality but also their responsible management practices and expect them to comply with our Code of Business Conduct and Ethics for Suppliers.

Polisan Holding Code of Business Conduct and Ethics for Suppliers;

Prevention of Child Labor	Prevention of Forced Work	Business Ethics	Prevention of Discrimination	Remuneration
Working Hours	Occupational Health and Safety	Environmental Protection	Anti-Bribery and Anti-Corruption	Fair Competition

As a result of the awareness training and risk assessments conducted as part of our sustainability efforts in accordance with our anti-bribery and anti-corruption program, we have improved our performance in the Borsa Istanbul Sustainability Index in this category compared to the previous index period.

We have reviewed the rules in our Code of Business Conduct and Ethics regarding gifts, representation, hospitality, donations, third parties and procurement by taking account of current needs.

Internal Control and Audit

Polisan Holding Audit Department adheres to the principles of honesty, objectivity, confidentiality and competence when performing audit-related activities. This department serves as a reference and pioneers contributions, allowing Polisan Group to achieve its objectives with a sustainable, measurable and continuously improved road map.

The Audit Committee monitors the effectiveness of all internal and external audit processes, and the functioning and sufficiency of internal systems related to internal control on behalf of the Board of Directors. The Audit Committee is responsible for ensuring that the management monitors compliance with Polisan Group’s Code of Business Conduct and Ethics, carries out misconduct risk assessments and provides training on misconduct and Code of Business Conduct and Ethics. The Committee convenes at least four times a year, once in every quarter, and reports to the Board of Directors.

As part of the internal control and audit activities we carried out during the reporting period, no major anti-bribery or anti-corruption risks were identified in our operations.

STAKEHOLDER RELATIONS AND PRIORITY TOPICS

Our Stakeholders

We define the individuals and groups affected by our company’s operations or the results of our operations as “relevant parties.” Stakeholder communication is a vital element in our corporate governance approach. We ensure that our dialog is systematic, reasonable and practical with all our stakeholders including our employees, vendors, distributors, customers, suppliers, and private and public institutions. In our efforts to build strong relationships using effective methods, we identify who or which institution the relevant party is,

- the reason for their inclusion,
- their needs and expectations,
- our affected processes,
- priority level,
- control method,
- and reference (record/report/note),

and we review any change in the situation in management review meetings and quality circles.

Two-way communication is important for us, as it improves the efficiency of our integrated management systems as well. The following table describes our stakeholder groups and communication methods used to meet their needs and expectations.

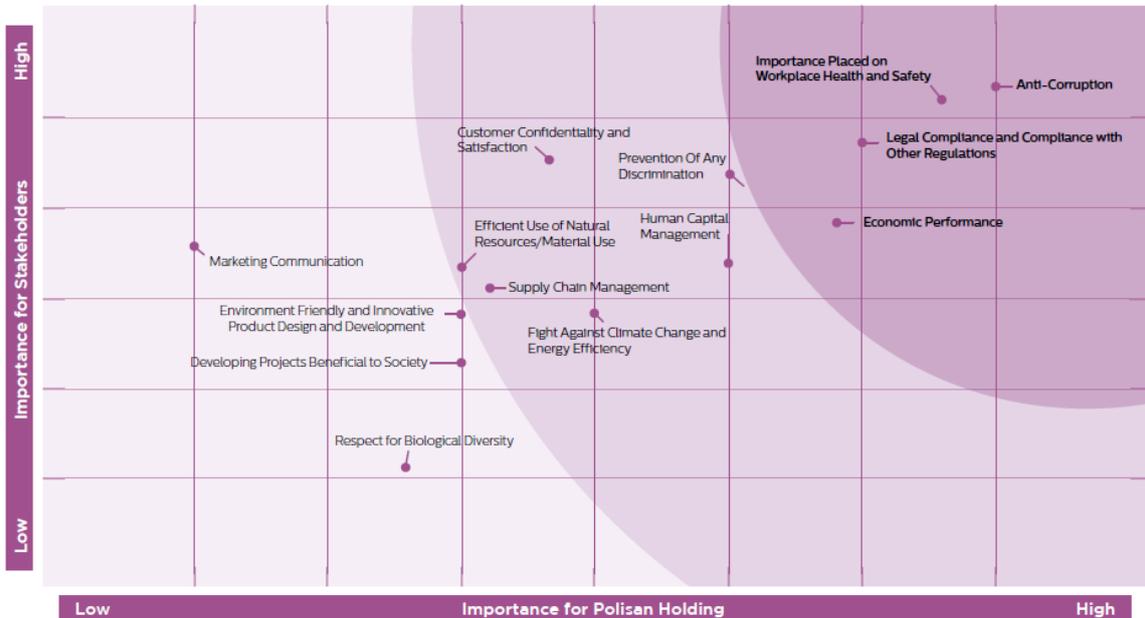
STAKEHOLDER GROUPS	Polisan Employees	Investors	Media	Local Society	Non-Governmental Organizations	Universities	Business Partners	End Users	Distributors	Public Organizations	Suppliers
METHOD OF COMMUNICATION	Corporate Website, Social Media, Media, Corporate Social Responsibility (CSR) Activities, Corporate and Financial Communications, E-Newsletters, Surveys, Communication Boards, Portal	Corporate Website, Corporate and Financial Communications, Financial Reports, Investor Presentations, Financial Performance Reports	Corporate Website, Corporate Social Responsibility (CSR) Activities, Advertising and Marketing Activities, Interviews and Talks, Press Releases	Corporate Social Responsibility (CSR) Activities, Donations and Sponsorships, Activity Reports, Press Releases	Corporate Website, Membership at Various levels, Joint Projects	Corporate Website, Scholarship and Internship Opportunities, Donations and Sponsorships, R&D and other Project Collaborations	Corporate Website, Social Media, Media, Distributor Meetings, Distributor Portal	Corporate Website, Social Media, Media, Fairs	Meetings and Interviews, Activity Reports, Surveys, Distributor Portal	Public Scrutiny, Activity Reports, Meetings and Interviews	Face to Face Meetings, Activity Reports, Supplier Audits

Priority Topics

Every year, we seek the opinions of our stakeholders through the call center and online surveys as part of our stakeholder dialogue, and we prioritize our sustainability efforts accordingly. To better inform our business partners, investors and society, we have identified priority topics, the issues that reflect the significant economic, environmental and social impacts of our company or which affect the evaluations and decisions of our stakeholders substantially. The table below lists the topics at which we have shown the best performance according to our stakeholders. As seen in the table reflecting the general results according to stakeholder groups, performance evaluations vary for each stakeholder.

Stakeholder Group	Performance Assessment Results
Polisan Management <ul style="list-style-type: none"> ▪ Polisan Holding Management ▪ Polisan Kansai Boya Management ▪ Poliport Kimya Management ▪ Polisan Kimya Management 	1. Legal Compliance and Compliance with Other Regulations 2. Customer Confidentiality and Satisfaction 3. Importance Placed on Workplace Health and Safety 4. Anti-Corruption
Our Employees <ul style="list-style-type: none"> ▪ Polisan Holding Employees ▪ Polisan Kansai Boya Employees ▪ Poliport Kimya Employees ▪ Polisan Kimya Employees 	1. Anti-Corruption 2. Legal Compliance and Compliance with Other Regulations 3. Customer Confidentiality and Satisfaction 4. Importance Placed on Workplace Health and Safety

<p>Our Suppliers, Customers and Distributors</p> <ul style="list-style-type: none"> ▪ Polisan Kansai Boya Distributors ▪ Poliport Kimya Customers ▪ Polisan Kimya Customers ▪ Polisan Kansai Boya Suppliers ▪ Polisan Kimya Suppliers 	<ol style="list-style-type: none"> 1. Importance Placed on Workplace Health and Safety 2. Legal Compliance and Compliance with Other Regulations 3. Marketing Communication 4. Customer Confidentiality and Satisfaction
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OPERATIONAL EXCELLENCE

Process Management

We ensure the sustainability of our products and services through our management systems, which are integrated into all the phases of our business processes. We take into account risks and opportunities in managing our processes and our strategic and operational objectives, and we track our performance with monitoring and measurement activities based on compliance obligations. The seven different management systems that are integrated into our Dilovası, Adana and Samsun facilities as well as the Regional Departments by our Group companies pursuant to the national and international regulatory requirements can be accessed [here](#).

We manage our workflow under a single framework in order to improve efficiency in processes which are in interaction with each other. We strive to make our operational activities measurable, traceable and reliable by analyzing all data entered into our processes through our digital assets such as QDMS, eBA and SAP.

We are improving our process management performance by automating our business processes electronically and ensuring that our processes become independent of individuals through role-based corporate monitoring. We manage many of our processes electronically, including personnel recruitment, authorizations, product design and development, customer complaints and requests, procurement, changes, and project and contract management. We have increased the number of eBA

Workflow processes to 68 this year with the addition of 8. In addition, we improved the performance of our current 16 workflow process in line with needs.

This year, we evaluated the risks and opportunities that affect our process performance and continued managing our operational actions to eliminate and/or minimize risks and realize opportunities with the participation of process owners and teams. Accordingly, we organized 28 quality circles. This year we also carried out a comprehensive project to update the existing authorizations and roles in all business processes according to company policies in line with the needs identified by the Audit Functions and the Early Detection of Risks Committee. The project improved the digital authorizations and roles in accordance with the segregation of duties (SoD) principle, facilitated readjustments for the following years and allowed the changes to be more easily managed. It also enhanced our compliance with our Anti-Bribery and Anti-Corruption Policy, which increases awareness on authorities and roles throughout the company including both employees and managers.

Through third-party audits, we objectively assure compliance with regulations and other terms and requirements as well as identify areas for development. In 2019, external audits such as management system audits, AEO (Authorized Economic Operator) audits, product audits including CE, TSE and VDA, and greenhouse gas verification audits were performed by public and various private platforms in . person-days.

Compliance with 2019 audit plans;

- 100% 5S Audit
- 100% HSE Field Audit
- 91% Subcontractor Field Audit
- 89% Supplier Audit
- 73% Integrated Management Systems Audit
- 100% Greenhouse Gas Monitoring Audit

2019 HOLDING AUDIT PLAN		
AUDIT TYPE	PLANNED	REALIZED
5S Field Audit	7	7
HSE Field Audit	46	45
Subcontractor Audit	33	29
Supplier Audit	44	33
Integrated Management Systems Audit	87	63
Greenhouse Gas Monitoring Audit	6	6
TOTAL	222	183

VARIOUS MANAGEMENT SYSTEMS MONITORING RESULTS



PROCESS MANAGEMENT

2019 TARGETS	STATUS	2020 TARGETS
<p>To realize internal audits in addition to the annual audit plan by Management Systems specialists for the processes with a low 2018 internal audit performance score and to contribute to boosting process performance.</p> 	<p>In accordance with the performance notes, 11 process audits have been planned in addition to the annual internal audit plan. 8 of these have been carried out.</p>	<p>–</p>
<p>To ensure processes are automated through the workflow software program and to realize 10 new processes and 20 process improvement projects.</p> 	<p>Improvements have been made in 19 current eBA processes. Additionally, 7 new eBA processes have been designed and commissioned.</p>	<p>Automating processes with workflow software and carrying out 50 process improvement projects.</p>
<p>To realize 29 quality circle works with at least 90% compliance with the annual plan and complete at least 5 successful projects during the year.</p> 	<p>25 quality circle studies have been carried out with the process owners and 5 projects have been completed.</p>	<p>Carrying out 36 quality circles studies throughout the year, and ensuring that these studies record a minimum 90% compliance rate with the annual plan.</p>
<p>To improve the OHSAS 18001 Workplace Health and Safety Management System in line with the requirements of the ISO 45001:2018 Workplace Health and Safety Management System Standard.</p> 	<p>ISO 45001:2018 version transition training has been conducted with the participation of all company managers. Regarding these studies, new version requirements are now being integrated into the existing system.</p>	<p>Completing the revision transitions of the ISO 10002:2018 Customer Satisfaction Management System and ISO 45001:2018 Occupational Health and Safety Management System standards. Ensuring integration into the existing system.</p>
<p>To create a training plan concerning 2019 Management Systems and Sustainability issues by performing analyses of training needs based on positions and realize training sessions achieving 90% compliance with the plan.</p> 	<p>Of the 23 planned internal training programs, 12 have been conducted according to the plan and 11 have not been conducted due to the number of participants being less than 5.</p>	<p>Developing a training plan by performing a position-based training needs analysis on Management Systems and Sustainability in 2020 and completing training while attaining a minimum 90% compliance rate with the plan.</p>
<p>To conduct surveys to measure management system awareness and develop 3 improvement projects that need to be developed the most according to the output.</p> 	<p>Areas of improvement have been analyzed and 3 improvement projects have been carried out.</p>	<p>–</p>

Supply Chain Management

We manage many issues such as effective and efficient use of financial resources, regular demand forecasts, supply planning, traceability of operating records and supplier performance in our supply chain processes. We believe in the transformative power of the supply chain on the economy, society and the environment, and we aim to continuously improve our ecological and social impact while taking actions to achieve our company's target profitability. This year, we continued our efforts to develop digital infrastructure to improve our ecological and social impact as well developing and implementing projects that increase our operational efficiency on a functional unit basis, such as purchasing, logistics, import and export.

Responsible Purchasing

We expect our suppliers, our key business partners, to maintain commercial relationships that are in line with our environmental and social responsibility principles. In addition to our General Terms of Procurement, we published our Code of Business Ethics and Conduct for Supplier in 2019, taking into account the principles of the United Nations Global Compact and our Sustainability Policy. In the last quarter of the year, we ensured that our critical suppliers, who represent 10% of the transaction volume of Polisan Kansai Boya, are signatories of these rules, and we plan to increase this rate to 20% next year.

During the procurement phases of chemicals and packaging, all environmental, health and safety impacts of the materials, including natural resource consumption, are assessed through the software used by our R&D and Procurement teams, and selection of the material with the least impact is prioritized. We used 18,628 second-hand pallets at our GEBKİM Factory. In this way, we prevented 800 tons of trees from being cut down.

Supplier Management Portal

We are carrying out projects to move our relations with suppliers to a fair and transparent platform and to increase the efficiency and traceability of our procurement operations in terms of cost and time. For this purpose, we developed the PolisanTed Portal, which digitizes our tender and bidding processes.

In the future, we will continue to develop our PolisanTed system to track orders, shipments and deliveries, to evaluate suppliers, and to receive supplier requests and suggestions. Polisan Kansai Boya's 2020 business plan includes holding at least 10 e-tenders on this platform.

Global and Reliable Customs Operations

With the Authorized Economic Operator status we have obtained from the Ministry of Customs and Trade for our companies Polisan Kansai Boya and Polisan Kimya, we are improving critical performance indicators such as the delivery order receiving period, declaration period and registration period. Therefore, we are gaining advantages such as increased operation speed, decreased waiting period for materials at warehouses and cost improvements.

	2017	2018	2019
Clearance periods for goods that arrive by road for Polisan Kansai Boya (hours)	-	4.5	3.7
Average clearance period for Polisan Kimya (hours)	5.0	4.1	3.9

Evaluation of Suppliers

We conduct assessments to measure integration and coordination abilities of our suppliers on issues such as stakeholder expectations, globalization, compliance obligations and information technologies. We carry out our assessment in two categories and measure the international management systems of our suppliers as well as their compliance performance with quality control, shipping period, shipping quantity and delivery criteria. As part of our supplier audit plans, we make bilateral evaluations and determine the areas for development to improve the quality of the products and services we receive with our visits to suppliers at their sites.

Supplier Assessment Results for the Performance Category

We conducted an assessment of the performance of our 1,770 suppliers in meeting delivery times, delivery amounts, delivery criteria and taking action based on quality assurance results as well as their performance in handling non-conformances throughout the year.

Based on the total results, including both categories of the Polisan Holding supplier assessments conducted in 2019, we have decided to continue our partnership with 95% of the suppliers, while we have given 5% of the suppliers with a total score of 60 points or less a chance to improve their processes.



Supply Chain Management at Polisan Kansai Boya

Planning Management

We are improving the corporate memory structure for location-based consumer requests of the previous period in our current ERP system, making it more robust, independent and reliable. This way, we are able to manage the needs that we determine through statistical estimates and production plans more effectively.

	2018	2019
Compliance with monthly demand/sales plan	81%	94%

Effective Inventory Management

We monitor inventories in coordination with our suppliers to ensure the continuity of our production operations, minimize material loss and increase the efficiency of our financial management. This year, our aim was to keep stock on hand for less than 22 days for raw materials and 24 days for finished

products. However, owing to our relocation this year, the duration for raw material inventory remained at <30 and <19.6 days for product inventory.

Improving Material Storage Conditions

We switched to silo and tank systems in all of our chemical raw material storage facilities at our new GEBKIM plant. Thus, we have reduced the use of 2,040 IBC, 620,000 kraft bags and 27,850 bigbags annually and saved a total of 5,931 hours of labor.

With the increase in our material storage areas in Dilovasi, our vehicle-based material handling period shortened by 50%, and our handled product tonnage increased by 50%.

Line Optimization Efforts

This year, we carried out planning to optimize our use of water during product washing processes with the SAP SCM APO module in our production operations and started saving between 430 m³ and 1,080 m³ water per year at our GEBKİM factory.

Logistics Management

We maintain optimum stock aging and regional stock levels through the inventory controls we perform at appropriate intervals. We digitally monitor the placement of handled products on the shelves and our delivery plans with ERP systems, which work fast, minimize human error and measure our efficiency. We have increased our vehicle usage capacity by changing our packaging and pallet standards and using the SAP pallet planning module in our new facility. Our maximum daily shipping rate has increased by 100% compared to our performance in Dilovasi.

We strive to ensure that our logistics team and the employees of the transport company we receive services from have a common HSE culture; we organize training programs, workshops and field audits. Company employees received 969 person-hours of training on issues such as mandatory on-the-job training, orientation, occupational health and safety, environment, 5S and first-aid. Every year, we evaluate the performance of our suppliers based on their compliance with legal requirements and delivery times. In these evaluations, we give great importance to ADR practices, which strengthen safe transportation.

Greenhouse Gas Emission Performance Per Year (g CO₂/tkm*)

2017	2018	2019
0.03	0.03	0.03

(*tkm = refers to the emission per ton-km of transported product)

Planning Management

“The challenges faced by modern societies such as climate change and energy issues make us further realize the importance of sustainability. Therefore, as the Supply Chain team, we aim to act responsibly in economic, environmental and social terms, in line with the sustainability policies of Polisan Kansai Boya.

We are working towards minimizing our environmental impact for a sustainable life while carrying out our manufacturing operations at our new plant. We carry out our supply and product warehouse planning by following environmental and occupational safety rules to improve our product quality and operating speed. This year, we managed to minimize the number of products that required even the smallest degree of manual intervention, and we decreased the amount of waste with our investments

in powder and liquid raw material tanks. We are part of a chain, and our efforts towards operational excellence in our area of responsibility allow our products to be at the correct locations, in the right amount and at the right time. In this way, we improve our performance in resource efficiency and delivery and decrease our carbon footprint from the supply of raw materials to the delivery of the product. Procurement of raw materials is one of the activities with the highest carbon footprint in the product's life cycle, and we are working towards using scarce resources in an optimum manner with good planning as a team."

Şakir OKKAOĞLU

Planning Manager, Polisan Kansai Boya

Supply Chain Management at Polisan Kimya

Regional Growth

As part of our regional growth strategy, we opened our Construction Chemicals Manufacturing Facilities in Adana and Samsun in 2017 to quickly reach our customers and become the dominant producer in the market. Thanks to our facilities, which have been operating for two years, we not only achieved operational gains but also prevented the release of 1,482 tons of transportation-related greenhouse gas emissions.

Safe Filling Performance

We continue to improve our tank-to-tanker product fill times, one of the critical performance indicators in our filling operations, by maintaining the optimum health, safety, quality and environmental conditions. In 2016, we improved our tank-to-tanker product filling time performance by strengthening our mechanical and automation infrastructures. Today, we still maintain this performance at the level of 30 minutes.

Effective Field Operation Management

We identify areas of development and bottlenecks with the PoliSaha Fleet Management System, which we use for effective strategic planning and performance management in our factory field operations. In 2019, we began to automatically transfer our order, transportation and filling information within the scope of our daily shipping plans to our reports, integrated with the SAP system. In this way, we perform our daily reports and retrospective inspections in a faster and more efficient manner.

Delivery Tracking System

We have improved our existing vehicle tracking system and started to monitor product transportation delivery information in real time. Therefore, when an action needs to be taken, we can make instant interventions and give directions from our center. Approximately 85-90% of our delivery vehicles have a vehicle tracking system, which makes the percentage of tracked products amount to 98% of the total product tonnage.

Local Supplier Rates

Year	Purchase Rate from Local Suppliers per Tonnage
2017	47%
2018	52%
2019	79%

Local Supplier Rate for AdBlue

Year	Purchase Rate from Local Suppliers
2017	80%
2018	100%
2019	100%

Supplier Development Works

We have held four-session information seminars on safe, fast, high-quality and economic logistics services to improve all of our transportation service suppliers.

Customer Complaints Due to Transport

Year	Customer Complaints per Transport
2017	1‰
2018	0.3‰
2019	0.26‰

Product Delivery Times and Compliance Performance per Region

Region	Delivery Time (day)	Compliance Performance with Delivery Time
Marmara Region	Same Day - 1 day	100%
Black Sea Region	Same Day - 1 day	100%
Mediterranean Region	1 – 2 days	100%
Aegean Region	1 day	100%
Central Anatolia Region	1 day	100%
Eastern Anatolia Region	1 – 2 days	100%
Southeastern Anatolia Region	1 – 3 days	100%

Our Environment-Friendly Applications

- With efficient planning, raw material and product transfers were carried out using the same vehicle 36% of the time, which decreased our transportation costs, number of vehicles used and carbon footprint resulting from fuel consumption.
- We use recycled IBC and barrels in our operations.

	Recycled IBC Use	Recycled Barrel Use
2017	71%	54%
2018	99%	47%
2019	100%	79%

Supply Chain Management at Poliport Kimya

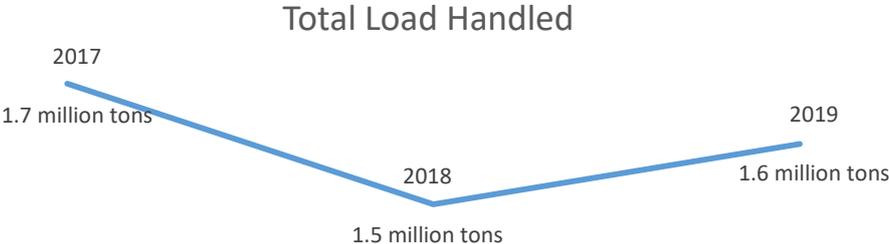
At Poliport Kimya, we are committed to maintaining the service quality of the products we store in tanks and warehouses, which are reserved according to product features, technical specifications and

customer requests. During this process, we develop applications that control storage conditions in our terminal facility with modern technological solutions and integration.

We manage our supplier selection in line with the legal rules on storage and handling of hazardous materials, as well as our assessments based on international norms. As part of our system, we provide continuous professional development to all employees of subcontractors we receive services from, especially regarding incidental and programmed equipment and machinery maintenance, and we standardize safe working conditions.

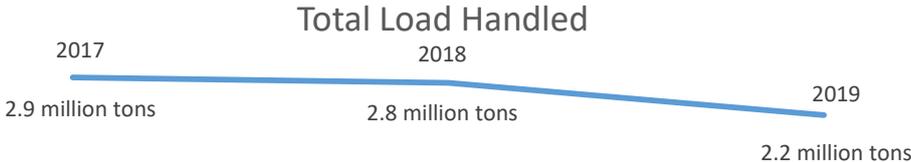
Liquid Bulk Storage Services

2019 Terminal Occupancy Rate: 87%
Annual Handling Capacity of Terminal: 2.5 million tons
Liquid Bulk Storage Capacity: 246,000 m³



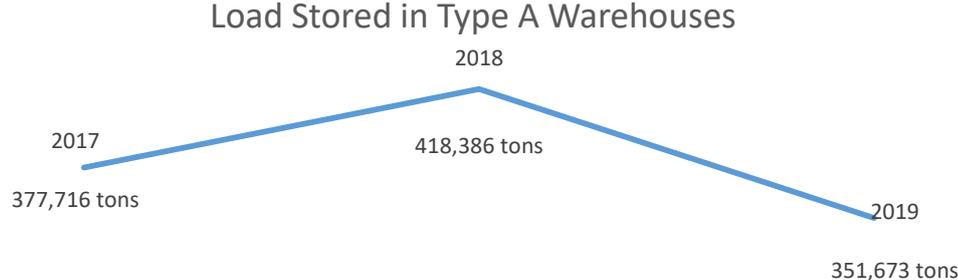
Dry Load & General Cargo Services

Dry Load Handling Capacity: 5 million tons



Warehouse Services

Total Open and Closed Area: 40,430 m²



Process Automation System Modernization

We aim to become the most modern service provider in our region, and therefore we equip our control systems with high-technology systems. By expanding our ability to access our tanks remotely and intervene instantly, we provide improvements in many areas such as occupational health and safety, customer satisfaction and operational efficiency. This year we switched to DeltaV, an innovative process automation system, in our toluene diisocyanate (TDI) and methylene diphenyl diisocyanate (MDI) tanks. To control the entire inventory and integrate it with the SAP platform, we have modernized many of our existing control systems within the DelvaV system, provided more reliable accessibility and minimized human error through a single system.

Facility Asset Inventory Management System

To make effective and transparent business decisions and increase the reliability of our operations with real-time and measurable data, we manage our inventory using a tank gauging system. With our new system, which measures tank level, temperature, pressure, density and volume:

- **We increased our tank volume measurement precision by 20%.**
- **We reduced the duration of level, temperature and pressure measurements by 20%.**
- **We strengthened our compliance with API 650/653 and API 570 maintenance standards by 30%.**

We continue to strengthen our alignment with Industry 4.0 through such systems using interactive data.

Measurement Systems Integration

For fuel products, we have integrated a meter skid system with our SAP and EMRA software platforms. In this way, with our online system accessible to the Customs Office, we have transformed our data management into a more effective, traceable and transparent system with minimized human error.

With two 6-inch fuel oil and one 4-6-8 inch fuel oil blending skid systems and our additional investment, a 12-inch fuel oil skid, **we have the biggest fluid flow meter system among our country's terminals.** As a result, we reduced the duration of our operations by 50%, providing faster services to our customers, and achieved a 30% improvement in terms of costs.

Drive Applications in Our New Tank Projects

In our new tank investments at our terminal facility at Poliport Kimya, we control the speed of pump equipment through variable-speed drives and strengthen our plant automation. Based on the positive results of this application, which we started with 17 tanks in 2019, we are planning to transition our other tanks in the coming years.

New Storage Tank Investments

We increased our liquid bulk storage capacity from 237,000 m³ in 2017 to 271,000 m³ as of the beginning of 2020 with our investments in storage tanks equipped with the latest technologies at our terminal facility. We increased our operating capacity with 17 new tank investments.

Distillation Unit Restoration Project

Following completion of the TDI and MDI ship transfers, we are able to recycle the perchloroethylene, which is used to clean the ship's tank walls and the transfer line, through distillation and reuse it.

We discontinued our existing distillation unit and switched to a system equipped with new technologies that increases our efficiency. In this way, we aim to

- increase our annual perchloroethylene recovery by 30%,
- increase our annual waste product recovery by 45%,
- reduce our distillation unit operating time by 24%.

Effective Warehouse Management

While using ERP systems throughout our operations, we are also conducting work that will ensure more widespread use of barcode and hand terminal systems created with tailored solutions for our customers.

Digital Management of Port Operations

In our ship operations, we inform our customers regarding the operation flow via instant notifications through our PoliKantar system at the intermediate stages of our clearance process and the end of the procedure.

SUPPLY CHAIN MANAGEMENT

2019 TARGETS	STATUS	2020 TARGETS
To minimize the average days of inventory on hand for the materials by optimizing stock turnover rates through efficient planning. (Finished product inventories <24 days, raw materials inventory <22 days) 	Following our relocation, inventory turnover rate in packaging and raw material inventories was recorded at <30 days, and <19.6 days in product inventory.	Minimizing storage/inventory turnover rates with efficient planning. (<18 days for product inventory, <22 days for raw material inventory, and <24 days for packaging inventory)
To ensure that coloring in the field reaches a minimum of 35%. 	The 35% painting target for logistics warehouse sites was overachieved as 40%.	-
To reach 3,300 locations in total by creating 100 new mix/module locations. 	The number of mix machines located at domestic and international sales points reached 3,322.	To reach 3,490 locations in total by creating 168 new mix/module locations.
- 	-	Performing quick and timely periodic maintenance of mix machines in 2,500 locations in 18 regions using MixSmart software.
To realize 22 supplier audits in 2019. 	18 supplier audits were performed.	To realize 18 supplier audits in 2020.
To manage supplier relations over the platform by implementing the Purchasing Portal (PolisanTed) system. 	The Purchasing Portal (PolisanTed) was launched at Polisan Kansai Boya.	Launching PolisanTed system at Polisan Kimya.
To make products in the inventory ready for shipping and have them clear the factory within 1 day upon the receipt of the orders	Products in the inventory were discharged from the factory within one day.	To maintain the 2019 target.

		
<p>-</p> 	-	Preparing export orders for shipment within 3 days at the latest.
<p>To increase production efficiency and comply with production plans at a minimum rate of 98%.</p>   	<p>Polisan Kansai Boya followed its production schedule by 90%. We achieved 2.5 times more efficient production performance at Gebkim Factory.</p> <p>Polisan Kimya complied with production schedules by 98%. Employee productivity increased by 10% year-on-year.</p>	<p>Increasing production efficiency. (Polisan Kansai Boya employee productivity >716 kg/person-hours)</p> <p>Attaining 98% compliance with production schedule and >566 tons/person production efficiency at Polisan Kimya.</p>
<p>To organize logistics warehouse technical visits. (At least 2)</p> 	We audited logistics warehouses during 2 comprehensive technical visits and identified areas for improvement.	To organize logistics warehouse technical visits. (At least 1)
<p>To keep our vehicle load level at 19,600 kg on average in order to boost our performance of optimum vehicle capacity use.</p> 	Vehicles were released at an average tonnage of 19,685 kg.	To maintain the 2019 target.
<p>To realize 6 supplier audits.</p> 	5 supplier audits were realized.	To realize 11 supplier audits.
<p>To ensure that customer complaints due to transportation do not exceed 1% of the total dispatch number.</p> 	Transportation-related customer complaints were recorded as <0.26%.	To ensure that customer complaints due to transportation do not exceed 0,5% of the total dispatch number.
<p>To visit at least 2 customers and determine the areas open for development in the accompaniment of the sales department.</p> 	We visited 3 critical customers to assess and report customer processes and construction materials based on the product groups.	-
<p>To keep suspension of production due to materials loss below $\leq 1\%$.</p> 	Material loss-related production shutdown rate was below $\leq 3\%$. (Target could not be reached because of a delay in the overseas supply of a product.)	Improving tonnage loss caused by production shutdowns due to raw material issues by $\leq 10\%$ compared with 2019.
<p>To complete 5 improvement projects in total as departments.</p> 	We completed 8 improvement projects, including the integration of vehicle reservation system into the PoliSaha automation system, investigation of alternative raw materials, and improving transportation vehicle tracking.	Completing, at least, 4 improvement projects.
<p>To ensure that 2018 filling and dispatch periods are maintained and perform an improvement analysis.</p> 	Throughout the year, we analyzed and maintained filling time weekly and monthly. (Filling time <30 minutes)	Maintaining filling and shipping time that of 2019 and performing improvement analysis.

<p>To carry out "Supplier leadership management model" preliminary work and reporting.</p> 	<p>We could not conduct the SLM project because of certain internal priorities.</p>	<p>-</p>
	<p>-</p>	<p>Maintaining the assessment score of contract suppliers above 80 points.</p>

Digitalization and Sustainable Production at Polisan Kansai Paint

We have boosted the sustainability of our production processes and financial stability with our investment in Polisan Kansai Paint GEBKIM Factory, which was founded with a new generation production approach based on speed, flexibility, and efficiency. This facility has not only made us a pioneer of Industry 4.0 in the paints and coatings industry but also enabled us to improve our environmental performance, occupational health and safety, product design and quality, and in particular our resource efficiency. Thanks to the Virtual Plant 4.0 concept we used in our facility's construction phase, we ensured more controlled monitoring of the mechanical, electrical, construction and process systems through the 3D model. The LEED Gold green building-certified offices in our new head office have an ecofriendly structure that focuses on employee comfort.

Bill of Materials (BOM) Automation

We have entered all of our BOMs into our production automation system and ensured more effective monitoring of the products and semi-finished goods in our warehouses. We have improved our traceability performance in each manufacturing phase.

Workforce Productivity

We have increased our productivity with next-generation technologies, high levels of automation, increased batch sizes, and process enhancements.

New Facility 2.5 Times More Efficient

Smart Dosing

We ensure that the feeding of powder raw materials is carried out without any deviation from the amounts specified in product formulas thanks to high-precision valve operations, weighing and automation systems.

Self-Cleaning Filtration System

We used self-cleaning and long-lasting filters instead of disposable ones at our new facility, preventing the use of 320 kilograms of polymer per year that would result from filter replacement.

Automated Washing Systems

At our new facility, we use an automated nozzle system to wash our reactors. When the preset process parameters indicate that cleaning is needed, we ensure a cleaning operation without the use of manpower and through a system that adheres to the strictest occupational health and safety conditions.

Pigging Optimization

We reduced our process times by 5 percent and saved 1,000 kWh annually by optimizing parameters such as reciprocating frequency and duration of the moving equipment in our pigging systems used for cleaning our production lines.

Monitoring Energy Efficiency

We monitor about 85 percent of our energy consumption with our energy analyzers and effectively control our normalized energy values. We increased our efficiency in Dilovası compared to 2018 thanks to our new plant equipped with energy-efficient equipment and systems.

A 16% Reduction in Energy Consumption of Production Machinery and Equipment

Rainwater Collection System

We use the rainwater we collect in our roof cisterns to supply our toilets, reservoirs and the drip irrigation system for our garden plants.

Polisan Improved Water Efficiency by Using 11,500 m³ of Rainwater in 2019

R&D AND INNOVATION AT POLISAN KANSAI BOYA

We build innovative products and process technologies with high raw material, energy and labor efficiency; and draw strategies to become a leader in the global chemical industry. We aim to increase our exports by transforming scientific advancements into innovative solutions, production processes, and high value-added products in collaboration with domestic and international R&D organizations.

We identified our needs to transform our R&D processes into smart systems, and use and protect our data as effectively as possible. We strive to introduce industry 4.0 in all our corporate procedures, and continue to work on the infrastructure and digitization processes of our R&D department to this end. With this transformation process, we aim to:

- create brief innovation cycles,
- respond faster to fluctuating and risky markets,
- comply faster with changing legislation and other requirements,
- and increase our complex and customized products.

Our Works Supporting Our R&D Processes

Our entire R&D participates in all workshop activities, and our team of 55 people supports product and process improvement in various aspects, including customer satisfaction, operational excellence, and OHS. We support our R&D team's technical solutions and business development approaches through workshop activities, including brainstorming and TRIZ principles, which are inspired by creative ideas and problem-solving methods.

We continue to support the R&D staff's competencies and secure more researchers with master's or doctorate degrees. In 2019, we welcomed three new personnel with master's degrees to our research team. Research topics include:

- Examination of the Effects of Different Phosphate Compounds on Paint Blistering,
- Water Solubility Features of Sulfonated Alkyd Resins and Their Impact on the Synthesis of Acrylic Hybrid Emulsions,

- An Innovation in the Turkish Chemical Industry: A Case Study of R&D Centers.

Our New Product Designs

106 NEW PRODUCTS IN THE LAST 6 YEARS

2014	2015	2016	2017	2018	2019
39	22	14	13	8	10

Distribution of Total Raw Materials by Source

For Solvent-Based Alkyd Paint:

- Renewable Raw Materials (bio-based): 20–40%
- Fossil-Based Raw Materials (petrochemicals): 20–30%
- Inorganic Raw Materials: 50%

New Products Added to Our Product Portfolio in 2019

Construction Product Group:

- Super Roof
- Acrylic Shlicht Primer
- Meshi Paint

Our new products in the construction product group include:

Super Roof: Provides excellent rooftop resistance in all weather conditions, rules out roof leaks, and prevents the building from overheating by covering hairline cracks on the roof surface;

Acrylic Shlicht Primary: Prevents damp walls, decreases paint consumption by reducing the water absorbency of plaster, and prevents the formation of hairline cracks on the surface.

Industrial Product Group:

- Wash Primer 4/1
- ABS Paint
- Water-Based Profile Paint
- Surface Tolerant Primer
- Water-Based Rapid
- 3/1 Acrylic Paint
- Silver-Gold-Bronze Special Metal Paint

Our new products in the industrial product group include:

Surface Tolerant Primer: Its high corrosion resistance ensures good adhesion when applied to metal surfaces that have not been cleaned of rust and moisture;

Water-Based Rapid: Low VOC, eco- and human-friendly;

3/1 Acrylic Paint: Has high UV resistance.

Product Safety/Our Biocidal Products

Elegans Extra Soft Matte was developed as part of our biocidal products **to prevent 99 percent of bacteria formation on walls**. It was licensed as “Product Type 2” by the Ministry of Health in 2019. This completes the licensing process for all our wall paints in the Elegans series.

TEYDEB Projects and Collaborations

Corroborating our corporate strategic objectives, we continued to create added value, renew our processes through innovative approaches, and maintain our projects and collaborations in 2019.

Project	Primary Gains	Collaboration	Progress Status
Development of Sustainable Environment-Friendly High-Concentrated Water-Based Mix System Pigment Pastes	<ul style="list-style-type: none"> – Using a single type of paste and improving the coloring performance of the system to achieve the desired accuracy and clearness, – Creating a national paste database, – Further improving our flexible and dynamic production approach. 	Goteks	2017–2019
Development of Water-Based Hybrid Gloss Paints for Universal Surfaces	Developing water-based gloss paint as a substitute for solvent-based gloss paint.	–	2017–2019
Development of Self-Repairing Water-Based Polyurethane Emulsions and Their Use in Anti-Corrosion Paint Formulations	<ul style="list-style-type: none"> – Developing next-generation, corrosion-resistant, low-VOC paint formulas that are eco- and human-friendly with a self-repair feature. We aim to make this the flagship project in its field in Turkey and around the globe. 	Sabancı University	2018–Ongoing
Binder Design, Synthesis and Paint Development for Anti-Fouling Easy-to-Clean Biocide-Free Underwater Hull Paint.	Developing biocide-free marine paint.	–	Pending Application

Our Collaborations with National and International Platforms

Platform	Subject	Primary Outputs
Gebze Technical University and National Boron Research Institute	Anti-Fouling Boron Paint Production and Application	We supported the development of various application areas for boron.
R&D Centers Communications and Cooperation Platform (AR-GEMİP)	Implementation of the Law on R&D and Innovation, and Possible Amendments to the Law	Various recommendations were presented to facilitate R&D center operations and to help R&D center employees apply to master’s and doctorate programs.
The Association of Turkish Paint and Coatings Industry (BOSAD)	Biocidal Product Regulation	We performed technical work for the inventory registration and licensing of anti-fouling paint products.

Turkish Chemical Manufacturers Association (TKSD)	Process Management for Supplier Registration in the Registration, Evaluation, Authorization and Restriction of Chemicals in Turkey (KKDIK)	We contributed to mitigate raw material-related risks.
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Our Products Included in Our Mix System

We are continuously integrating more of our products into our mix coloring system, which grants our customers instant access to their desired product. Recently, we added another product from the interior product line to our mix range in the Water-Based Mix System. In addition,

We finalized the integration of the cellulose furniture product group into the solvent-based Mix System and decreased waste from cleaning solvents by 40%.

Special Color Requests

We are pushing the limits to meet possible requests for colors not available in the Mix System database which includes the formulas of more than 72 thousand colors. We maintain our level of performance by responding to incoming color requests within 1.5 business days in the water-based products group and within 2 business days in the solvent-based products group.

Number of Custom Colors Processed;

2017	2018	2019
6,424	7,095	6,458

R&D Management at Polisan Kansai Paint

“When developing new products, one of our primary focuses is a sustainable future. Our R&D team designs and develops products that will have a minimal environmental footprint throughout their life cycles. We make our plans considering the critical points and results we obtain from our life cycle research. We develop joint projects with our internal and external stakeholders to develop products that have minimal environmental impact throughout their life cycles.

We consider all of our R&D projects as intellectual assets, and create, protect and share our corporate memory with our existing ERP systems.

This year, we successfully adapted all our production processes to our new plant thanks to a collaborative effort from the R&D, Production, Quality Control and Planning teams. We believe that by implementing the experience and knowledge gained from Industry 4.0 to our R&D processes, we will be more agile in our work and continue to achieve national and international success.”

Nuray Cıkıklı YILDIRIM

R&D Supervisor, Polisan Kansai Boya

Main Research

Quality Control

To maintain target quality standards in our products, we have improved our approval process to ensure more effective and faster verification of the compliance of our raw materials, packaging, labels and commercial goods with the relevant conditions.

Zero Customer Complaints on Quality Control About Product Batches Manufactured in the New Plant in 2019

Number of Tests Conducted by the Quality Control Unit

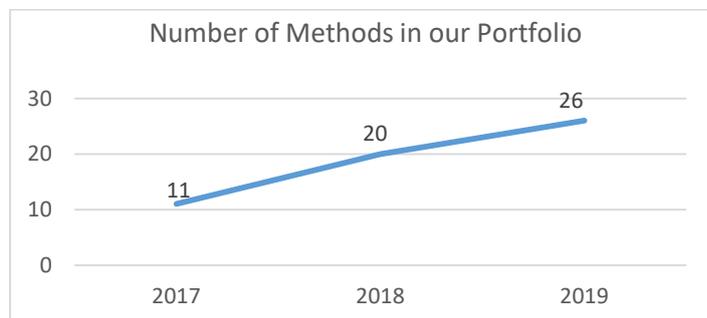
	2017	2018	2019
Raw Material	5,697	4,435	5,261
Packaging	7,580	6,786	8,098
Commercial	1,820	1,468	1,923
Work-in-progress	27,570	22,728	15,560
Finished product	44,633	36,906	28,655

Customer Complaint Types	2018	2019
Complaints Related to GEBKIM Plant Products Quality Control	-	0
Complaints Related to Dilovası & GEBKIM Raw Material Quality Control	%0.07	0
Complaints Related to Dilovası & GEBKIM Packaging, Labeling, Color Chart and Commercial Goods Quality Control	%0.07	%0.06
Complaints Related to Dilovası Products Quality Control	%0.01	%0.04

These ratios are found by dividing the number of quality control batches by the number of complaints.

Accredited Laboratory Services

We use our Main Research Laboratory in accordance with national and international requirements to meet the test requests we receive from inside and outside the company. The number of methods we add to the service portfolio of our ISO 17025 accredited laboratory increases every year. Our success rate in international inter-laboratory comparisons (ICLs), which is an important tool in assessing the technical proficiency of laboratories, is 92 percent.



Our Main Research Laboratory's 2019 Customer Satisfaction Rate was 95 percent

Facility Hygiene Efforts

We have improved our hygiene performance and reduced our use of biocides by updating our plant hygiene strategy at our new plant in GEBKIM, thus taking a further step in protecting nature. In addition, we updated our microbiological pollution measurement method to minimize energy

consumption for mechanical cleaning and conducted method validation works. Our Main Research Laboratories and production, R&D and planning units perform periodic hygiene checks at over 700 locations in our facilities. We conducted a total of 3,251 microbiological analyses in 2019.

Labeling Activities

We got raised our eco-friendly operation standards by switching from paper labeling to the in-mold labeling (IML) system for our product packaging. Thus, we achieved savings and efficiency in paper consumption, waste generation, workforce, and storage and inventory management.

In 2019, we switched to IML for 11 products, thus preventing the generation of 181 kilograms of waste and saving 56 work hours.

Our Heat Insulation Product Group's Compliance with ETA Norms

With our quality control data monitoring system, documentation infrastructure and supplier controls for our heat insulation group products, we have met the European Technical Approval Guidelines (ETAG 004) test requirements since 2015.

Our Academic Studies

An article by our Main Research Laboratory Director entitled "Development of Anti-Aging and Anti-Corrosive Nanoceria Dispersed Alkyd Coating for Decorative and Industrial Purposes" was published in the international journal Coatings in 2019. The author will give a presentation based on the article at the 2020 paintistanbul & Turkcoat Congress.

"The Main Research Laboratory team continues its activities in coordination with other departments and suppliers, with the awareness that high quality is an essential part of our brand's strength. With the ERP systems we have integrated into all our operations, we ensure the protection and traceability of corporate memory, which is an important element of quality. At our new plant, where our control processes have also been integrated into the automation software, we managed to facilitate and improve the monitoring of our process efficiency rates. We started to issue weekly reports instead of monthly reports in our manufacturing department, and initiated product- and source-specific error-type analyses.

We continue to increase our analytical capabilities by developing new environmentally friendly test methods that save time, energy and cost thanks to the new high-tech devices that we add to our facilities every year. We use our own laboratories to carry out all of our performance tests, including volatile organic component (VOC) and carbon permeability tests, to support the development of products that boost sustainability.

We globally monitor the validity of our test results with inter-laboratory comparisons (ILCs) carried out with participants from many countries. We measure the satisfaction of our external customers who receive test services from us with our annual surveys and carry out continuous improvement projects based on the results. With our laboratory, which was accredited by Turkish Accreditation Agency (TÜRKAK) in 2016 for TS EN ISO/IEC 17025, relocated to our R&D center, we aim to provide testing services to our external customers with more than 35 methods for chemical materials, paints and insulation products. As a result, we will be one of the few organizations that can provide accredited reports about paint and auxiliary materials."

Ezgi KIZILKONCA

Main Research Laboratory Supervisor, Polisan Kansai Boya

Mix Center

Our Mix System, with collections including 561-color Colorium Interior, 222-color Colorium Exterior, 2,024-color Colorium Universal and 192 RAL Design Chart colors, allows customers to easily find the desired color without any differences in quality or cost.

We serve our customers with 3,322 mix machines in Turkey and abroad.

	Total Number of Mix Machines in Turkey	Total Number of Mix Machines Abroad	Total Amount of Logistics Warehouses with Mix Production in Turkey (ton)
Su Bazlı Sistem	3,239	73	2,496
Solvent Bazlı Sistem	10	0	98.6

The Smart Machines in Our Mix System

Thanks to our strategic investments, we are increasing the number of our higher-performance and high-tech M2M (capable of inter-machine communication) mixing machines. By remote access to our machines equipped with next-generation systems, we can:

- Receive immediate notification in case of an error,
- Directly inform our field technicians about technical details such as the number and duration of mixes,
- Make more accurate and quicker device failure maintenance interventions thanks to recommendations about possible error causes,
- Plan maintenance periods more efficiently so that machines can be used more effectively, thus extending equipment life.

Big Data Management in the Mix System

We collect, process and analyze millions of lines of data generated in our Mix System efficiently and systematically thanks to our business intelligence application. We monitor production, dealer sales and profitability performance in terms of products, dealers and regions, and reflect the results onto our business processes. Thus, we examine the price-performance relationship in line with customer orientations and update our campaign terms by taking into account the economic sustainability of our dealers, our most important business partners.

Twenty-Six Million Lines of Production Data Analyzed in the Last 3 Years

In 2019, we started to track the dealer-based mix system production data via a machine-based system. As a result, we managed to help our dealers ensure more effective machine positioning and predictive maintenance planning, thus increasing our periodic maintenance by 12.4 percent.

Mix System Color Archive Management

To provide faster data flow to our Mix System sites, we enhanced our color version archive within the Mix Communication Center (MCC) application by improving the sizes of the big data we share in our dealers' systems. In addition, we have improved our operational success in coloring by making our dealers' communication screens more user friendly.

Communication with Machines Located Abroad

In 2019, we installed the Mix Agent system for mix systems located in countries to which we export. We have also integrated color chart and language options to our export machines in line with country-specific customer preferences. As of year-end, we began to communicate instantly and remotely with all our machines located abroad and to transfer current information in shorter times and with minimal error.

Machinery and Software Performance

Since 2017, we have been making improvements by focusing on complaints about machinery and software. With these improvements in our system performance, we have managed to reduce the number of requests and complaints by 75 percent over the last three years.

Rate of Claims and Complaints Resolved Through Remote Access Have Risen to 41% from 34%

	Number of Requests and Complaints Related to the Machine and Software	Number of Complaints and Requests Resolved Through Remote Access	Percentage of Complaints and Requests Resolved Through Remote Access (%)
2017	31,980	7,180	22
2018	10,737	3,696	3
2019	7,993	3,280	41

Remote Access to Data from 93% of Dealer Mix Machines with Digitization Applications

Technology Enhancements and Eco-Friendly Applications

- We shared our observations and assessments in the field with our machinery supplier to help them further develop their technology. We identified a need for improvement for the dispenser mechanism that doses paste to base paint. With this improvement, which also eliminates the need for cleaning shots, we aim to prevent the consumption of approximately 16,600 liters of paste annually. Development and testing are still in progress.
- We determined the optimum operation conditions through long-term research into mixing speeds of pastes, thus reducing the need for breakdown care while also ensuring improvement in quality.
- After putting reusable mixing machines through necessary maintenance and repair programs, we position them at smaller-scale dealers. We thus contribute to the circular economy as part of our responsible production and responsible consumption approach.

R&D AND INNOVATION

2019 TARGETS	STATUS	2020 TARGETS
To implement a coloring project in the mix system together with the project partner in all furniture products. 	We launched our project to paint cellulose-based furniture in the mix system.	-
To apply for at least 6 TEYDEB projects. 	We applied for 2 projects and postponed application for another 2.	-

<p>To maintain the response time to color requests for the water-based products group and solvent-based products group that occurred in the previous year.</p> 	<p>We achieved our target to provide feedback in 1.5 days at the latest for the water-based product group and 2 days at the latest for the solvent-based product group.</p>	<p>To maintain the 2019 target.</p>
<p>To design 10 new, main products that are innovative and contribute to sales.</p> 	<p>10 new products were designed.</p>	<p>To design 3 new, main products that are innovative and contribute to sales.</p>
<p>To develop the software program of the completed project so as to obtain the R&D color formula instantly.</p> 	<p>Senior management decided to postpone the activity for feasibility reasons.</p>	<p>Providing dealers access to the best-selling colors through the Mix Communication Center.</p>
<p>To ensure that the number of customer complaints about formulas is lower than the previous year's number.</p> 	<p>Customer complaints about formulas were reduced at the rate of 12.3% as compared to the previous year.</p>	<p>Ensuring that no customer complaints are received regarding formula and keeping the ratio of color-related customer complaints to about <0.09% of the total color production.</p>
<p>To handle R&D based customer complaints within the defined solution times with 100% compliance, and to provide solutions.</p> 	<p>Customer complaints regarding R&D were resolved with 100% compliance with the terms defined for solutions.</p>	<p>-</p>

R&D Innovation at Polisan Kimya

Innovation, customer demands and expectations, public health and environmental awareness are at the heart of our R&D Center activities. We invest in products with high added value and plan our use of resources accordingly.

We conducted two Technology and Innovation Funding Programs Directorate (TEYDEB) projects with a budget of 1 million Turkish lira in 2016 and two TEYDEB projects with a budget of 800,000 Turkish lira in 2017. In 2018, we conducted five TEYDEB projects with a budget of 2 million Turkish lira. This year, we applied for a TEYDEB project with a budget of 1 million Turkish lira.

In light of Green Chemistry principles, we continuously improve our processes with safe chemical design, energy- and water-efficient process planning, and pollution prevention and control efforts.

We are expanding our eco-friendly product portfolio with low-emission resins used in the production of interior and exterior construction materials. In line with customer demand, we are formulating resins that are compatible with the VOC content and formaldehyde emission limits developed by the California Air Resources Board (CARB).

Twenty percent of our existing products meet the standards for low emission Class E1 and below.

Thanks to our recent R&D efforts in the field of construction chemicals, we offer environmentally friendly solutions that also help stakeholders in our value chain reduce their operational consumption of natural resources.

We have saved 495,000 tons of water with our chemical additives and foam chemicals that reduce water consumption needs.

In addition to saving water, we also prevented damage to tunnel boring machines by using the foam chemicals we produced, saving our customers 300,000 Turkish lira in depreciation costs.

In accordance with the standards, we revised the ecological management and intellectual property rights sections in the design files that document the project development and operation steps in our R&D process management.

We completed five projects that we started in 2018 to strengthen our collaboration with universities and the industry.

10. We presented the study entitled “Effect of Main Chain Length of Polycarboxylate-Based High Range Water Reducing Admixture on Fresh State Properties of Cementitious Systems” at the International Concrete Conference & Exhibition.

Our New Products

Polisan Kimya developed 28 new products in the resin products group, 16 new products in the underground products group, 39 new products in the concrete products group and 15 new products in the cement products group in 2019.

New Products Developed in the Resin Product Group

- POLIFEN LAM CP: Phenol-formaldehyde resin used in kraft paper impregnation,
- POLIFEN LAM POSTFORM/POSTFORM 54: Phenol-formaldehyde resin used in the production of paper laminate and kraft paper impregnation,
- POLIFEN 48 HPL/CPL: Phenol-formaldehyde resin used in the production of paper laminate and in kraft paper impregnation used for HPL/CPL process
- POLIFEN 47 WR: Phenol-formaldehyde resin used in exterior and marine-grade plywood production with a suitable hardener,
- POLIFEN 765 TD WU: Phenol-formaldehyde resin used in foam production,
- POLIFEN WU 40-T/52/50/S2/T1: Phenol-formaldehyde resin for use in rock wool production,
- ULTRAFOAM UF: Phenol-formaldehyde resin used in foam production,
- **MUFP8-ECO: E0 melamine-urea-formaldehyde resin for use in the production of pallet blocks*,**
- MUFP HV: High-viscosity MUF resin,
- POLİÜRE HV: High-viscosity urea resin,
- **POLİÜRE C1: Urea resin used in the production of CARB-compliant chipboard*,**
- **POLİÜRE C2: Urea resin used in the production of CARB-compliant MDF*,**
- MUF ASD: MUF resin used in the production of paper laminate and in kraft paper impregnation used for CPL process
- MUF ULTRA-2: MUF resin used in the production of chipboard and MDF with high melamine content,
- **MUF5-C: E0 MUF resin used in plywood production*,**
- POLİMİN LAM: High brightness impregnated paper melamine resin,
- **MUF KAS: MUF resin used in the production of CARB-compliant chipboard*,**
- POLİÜRE 60 DOR: Urea resin used in plywood production,
- MUF23-K: High melamine content MUF resin used in the production of chipboard and MDF,

- POLIÛRE 65 A: Urea-formaldehyde resin developed to improve customers' production efficiency,
- **MUFP LF: E0 MUF resin used in chipboard production***, and
- PoliÛre XI 69: High-viscosity urea resin used as artificial wood adhesive.

* Products that belong to our eco-friendly portfolio.

New Products Developed in the Underground Product Group

- ULTRAFOAM 35/10: A two-component phenolic foam with a 35- to 50-fold rise and 7- to 15-second reaction time for filling large gaps and cavities rapidly,
- ULTRAFOAM 35/60: A two-component phenolic foam with a 35- to 50-fold rise and 50- to 70-second reaction time for filling large gaps and cavities rapidly,
- ULTRAFOAM 25/5: A two-component phenolic foam with a 50- to 80-fold rise and 3- to 10-second reaction time for filling large gaps and cavities rapidly,
- ULTRAFOAM 70/60: A two-component phenolic foam with a 20- to 35-fold rise and 50- to 70-second reaction time for filling large gaps and cavities rapidly,
- POLIDRILL POLYMER: A polymer used as a drilling fluid (mud) viscosity adjuster,
- POLIDRILL FOAM: A foam used as a lubricant in drilling operations,
- UNDERTON APS: An admixture with high waterproofing properties used for the prevention of cement segregation,
- UNDERFOAM UGP 4: A double-component, ground-conditioning admixture for aqueous grounds to be used for tunnel boring machines (TBMs),
- UNDERPUMP: A concrete pump grout used for concrete pumping,
- POLICOLOR B/BLACK/G/R: Blue/black/green/red coloring admixtures for (use with) concrete,
- SUPERTON 400 UA: Highly water reducing, strength improving and superplasticizing concrete admixture for shotcrete applications.
- SUPERTON 400 UC: Highly water reducing, strength improving superplasticizer using for dirty aggregate shotcrete applications
- SUPERTON 400 UE: Superplasticizing concrete admixture for shotcrete applications.

New Products Developed in the Concrete Product Group

- We developed 22 new products in our POLITON product range. POLITON products are polycarboxylate-based high-performance water reducer superplasticizer concrete admixtures that increase all types of strength and significantly improve the workability time of fresh concrete.
- We developed 17 new products in our SUPERTON product range. SUPERTON products are high-performance water reducer superplasticizer chemical concrete admixtures that are made of specially selected modified-sulfonate raw materials and increase strength.

New Products Developed in the Cement Product Group

- Three new products in the POLICEM GA range, which consists of admixtures that facilitate grinding for cement production,
- Two new products in the POLICEM KA range, which consists of chemical admixtures that increase the initial strength of cement,

- Ten new products in the POLICEM PA range, which consists of admixtures that increase the initial and final strength of cement and facilitate grinding.

OUR R&D CENTER PROJECTS

Project Name	Purpose	Outcome	Progress in 2019
Synthesis of PCE with Monomers Containing Different Anionic Functional Groups and the Effects of These Groups on the Performance of PCE	Analysis of the effects of different anionic functional groups on concrete performance as superplasticizers	Corporate know-how increased	Completed
Investigation of the Effects of Set Retarders on Cement Mortar	Analysis of the effects of organic-based set retarder admixtures on the properties of cement mortars	The suitability of different set retarders for use in various cement mortars was determined.	Completed
Research to Develop Set Retarder Admixtures to Prevent Cold Joints in Concrete Road Applications	Research to develop a product to prevent cold joints encountered in roller-compacted concrete (RCC) road paving projects.	A superplasticizer and set retarder admixture will be developed for RCC road paving projects.	The project is in progress.
Development of Microcapsules that Can Be Used in Paint Production Processes	The project aims to develop materials that make a controlled and long-term scent release from surfaces on which the paint is applied.	Development of capsule materials to enable the use of existing resin products in products with high added value	The project is in progress.
Development of a Silty and Sandy Ground Conditioner Admixture with High Water Content for Tunnel Boring Machines (TBMs)	Development of a TBM foam admixture with water retention properties for ground conditions with high water content	The water retention performance of the current TBM chemicals has been improved.	The project is in progress.
Development of Melamine-Phenol-Formaldehyde Copolymers to Prevent Laminate Bending in Continuous Pressure Laminate (CPL) Process	Development of a binder formula to solve the bending problem encountered in the continuous pressure laminate production process	Combining two different resin formations in one product A new product will be developed for a new industry.	The project is in progress.
Development of Floral Foam Production Formulation and the Phenol-Formaldehyde	The project will analyze the phenol-formaldehyde resin used for producing floral foam and the effect	After determining all the parameters of floral foam production, a new phenol-formaldehyde	The project is in progress.

Resin Needed for This Formulation	of the technical values of this resin on floral foam properties.	resin with high export potential, which will provide high added value to our country, will be added to the Polisan Kimya product range.	
Development of a Low-Temperature Curing Sandpaper Binder for Use in Latex-Impregnated Paper Bearing with High Water Resistance	Development of a two-component low-temperature curing binder used for high water-resistance sandpaper production	As a result of the project, a new resin, which sandpaper manufacturers can use for base impregnation, will be developed. Thanks to the project, Polisan Kimya will improve its technical know-how in the abrasive industry and the sandpaper production process, adding another product to its product portfolio for the abrasive industry.	The project is in progress.

OUR TEYDEB PROJECTS

Project Name	Purpose	Outcome	Progress in 2019
Development of Monomers Functioning as Glucose and Use of These Monomers in the Synthesis of Polycarboxylate	Development of polycarboxylate ether polymer derivatives that can perform in the presence of clay aggregates	A hyper admixture with high clay tolerance has been developed.	The project was completed successfully.
Development of a Non-Alkali, Fast Setting "Shotcrete" Admixture and Pilot Production	This non-alkali and homogeneous cement admixture aims to reduce costs and improve quality. Also, it does not have any harmful impact on the environment and human health, extends the shelf-life of the cement mixture and accelerates setting.	An alkali-free, transparent shotcrete admixture with a long shelf-life has been developed, and a shotcrete laboratory has been established.	The project was completed successfully.

Development of a Biomaterial-based Foam Formulation Containing Phenol - Formaldehyde Resin with High Fire Resistance and Rapid Curing Times	The manufacturing of phenolic foams developed utilizing renewable alternative resources with suitable structural characteristics, instead of petroleum-based phenolic compounds, for use as an alternative to phenol-formaldehyde foams	A fireproof, two-component phenolic foam formulation has been developed for use in coal mines as a filling material.	The project was completed successfully.
Development of EO/PO-based polymeric surfactants for concrete admixtures	The development of surfactants that improve impermeability and freezing-thawing resistance with the controlled air entrainment method to be used in superplasticizer admixtures	A hyperplasticizer admixture has been developed that improves the impermeability and freezing-thawing resistance of concrete chemicals.	The project was completed successfully.
Development of a Softener Containing Encapsulated Perfume that Conforms to the Specifications for Industrial Laundry Practices	The aim is to develop softeners that will ensure high perfume performance in industrial washing conditions. The project's objective is to develop an encapsulation material that is resistant to washing at a temperature range of 40–60°C, drying at a temperature range of 120–200°C, wet ironing at 40 bar pressure, and a spinning speed of 750 rpm.	Melamine-formaldehyde resin has been used in different industries.	The Polisan Kimya part of the project has been completed.
Development of Brake Linings with High Temperature Resistance with the Use of Boron-Doped Novolac-Type Phenol-Formaldehyde Resin	Development of novolac resins to be used to produce high temperature-resistant brake linings	Polisan Kimya aims to develop powder novolac resin and offer it for use in the production of brake linings — a new industry for our company.	The draft project proposal and plan have been prepared. Referee assessments have been completed.

R&D AND INNOVATION

2019 TARGETS	STATUS	2020 TARGETS
To realize at least 1 project for reducing the consumption of natural resources such as waste, emission, natural gas, electricity, water and waste water and design eco-friendly products with at least 1 sustainable resource. 	We completed 2 projects; we conducted R&D studies on lignin and molasses, wastes of paper and sugar factories respectively, and included our findings in our product formulas.	To maintain the 2019 target.

<p>To finalize at least 3 of the TEYDEB projects executed in 2018 successfully and to realize at least 2 new TEYDEB projects.</p> 	5 TEYDEB projects were completed.	-
<p>To complete 4 R&D Center projects that were started in the previous year and begin executing 4 new R&D Center projects.</p> 	We finalized 2 and initiated 6 new R&D Center projects.	-
<p>To design at least 4 new, customer oriented products in the resin and construction chemicals product group.</p> 	9 new products focused on customers were designed in the resin products group.	To design at least 6 new, customer oriented products in the resin and construction chemicals product group.
<p>To realize joint project with at least 1 National/International supplier, as Resin R&D.</p> 	A joint project with 3 National/International suppliers was realized.	-
<p>As resin R&D, to file at least 1 patent application and publish at least 3 scientific papers, posters or reports.</p> 	We obtained pre-approval for our patent application, and started formulating. We published 2 declarations, 1 article and one poster.	Publishing, at least, 2 scientific publications, posters, or declarations as part of the Construction R&D.
<p>To develop at least 16 new customer-focused products in the concrete and cement groups.</p> 	26 new products in the concrete products group, 4 new products in the cement products group were developed.	-
	-	Developing new products to attain a minimum five% turnover ratio of new products/new industry to the total turnover.
<p>To manage at least 3 projects in line with the customer expectations for export in all product groups.</p> 	We implemented 1 project in all export product groups based on customer expectations.	To maintain the 2019 target.
<p>To execute at least 2 projects in the customer field for the use of new products by new customers or in sectors.</p> 	We conducted 3 targeted projects on resin and underground chemicals product groups in the customers' field.	.

Polisan Kimya Responsible Production Approach

In addition to parameters such as economic profitability, customer satisfaction, operational performance, and occupational health and safety, we also consider resource efficiency as an input to our process performance and take actions for the efficient use of natural resources as part of our responsible production approach.

- ✓ Thanks to the optimum operating conditions we provide by analyzing our operating parameters online at our oxide facility, we reduced our resource consumption in the process

by 27 percent and saved approximately €33,000.

- ✓ With our new investment in a 14-cubic-meter reactor, we lowered our energy consumption by 33 percent by improving cycle times. As a result, we reduced our total **electricity consumption by 54,632 kWh and CO₂ emissions by 24,173 kilograms.**
- ✓ We renewed our heat transfer equipment at our silver facility and reduced our electricity consumption by **35,000 kWh and CO₂ emissions by 15,490 kilograms.**
- ✓ We have planned additional improvements in our seawater and cooling water pumps that will save 708,660 kWh per year.

Thanks to our R&D efforts, we have been using the distillate water released during resin production for our product formulas since 2018. Thus, we saved nearly 12,540 cubic meters of water.

We Signed CEFIC's Voluntary Agreement

Polisan Kimya has signed the Voluntary Agreement launched by the European Chemical Industry Council (CEFIC) to limit the formaldehyde exposure of the workers in the industry. In line with this agreement launched by Formacare, the formaldehyde sector group of the European Chemical Industry Council (Cefic), we began producing resins compliant to the E0 standard (the lowest level of formaldehyde emission).

Energy Recovery from Emission Treatment

At our silver facility, we put the waste gas released from production operations through a combustion process to convert it to cleaner and more suitable emission values. This way, we not only treat our gas emissions but also recover the heat generated by heat exchangers.

We Saved 2.66 Million Cubic Meters of Natural Gas in 2019 with Waste Heat Recovery

Integrated Time Studies

This year, we integrated the time studies in our SAP system into our Polisaha software. We will monitor their impact on personnel and machinery/equipment efficiency in our production processes.

Polisan Kimya Production Management

"In 2019, we reviewed all of our OHS, Process Safety, Energy and Production Efficiency processes at our facilities in Turkey and abroad. We carried out many successful projects, which brought us more efficient results under safer conditions.

We increased the number of OHS and Process Safety meetings. We reviewed each of the Unsafe Situation/Behavior and Near Miss reports and saw that these reports are the most effective training tools. We included all of our team's recommendations regarding process safety, production and energy efficiency in the agenda of our meetings.

This year, our production modernization efforts and the machinery and equipment investments in the Dilovası Building Chemicals facility increased our efficiency by 25% for some product groups. We reduced our annual electricity consumption by 1,800 kWh by reducing the number of production batches by 22%. Furthermore, our VAP project aimed at improving energy efficiency increased our resource utilization effectiveness. Last year, we increased our energy savings by 48% thanks to batch

utilization. We also achieved 33% higher process efficiency thanks to improved cooling water performance. In the last two years, we have recovered approximately 12,540 m³ of wastewater by recycling process wastewater to be used in production.

We have improved our monitoring and measurement performance by integrating the time study activities in our SAP system into our current PolisaHA digitization project. We will be guiding our works in the coming year with the outputs of this project, in which we closely monitor all our production operations.”

Ahmet Fatih TASMAKIRAN

Production Manager, Polisan Kimya

Information Systems Management

Integration of Automation and ERP Systems

We have integrated the production automation system of our new paint facility in GEBKIM with SAP. This integration with our automation suppliers established through the SAP Manufacturing Integration and Intelligence (MII) solution maximized our traceability and response capability at every stage of production. With the SAP MII module, which combines production processes and production management systems (MES) with SAP and operates as a bidirectional data center, we can view all production data such as orders, materials, machine conditions and product quality in real time.

Digitization in Logistics Supply

Digital Contract Management

With the improvements in SAP, we digitalized the calculation of the costs arising from our transportation services and enhanced their reliability. This year, we automated our invoice generation procedures, which are based on many different parameters such as route, trip type, logistics supplier, vehicle type, weight, number of customers and ADR document, thus eliminating human errors. As a result, purchase requests subject to the invoice are created and submitted for approval automatically, saving time.

SAP Integration

We have integrated the ERP system of our logistics supplier with our existing SAP Materials Management (MM) module. The supplier company can thus access relevant information about the inventory in our warehouses and product entry and exit orders. As a result, we ensured a faster, more reliable and error-free process.

Information Security

We are constantly improving our Information Security Management System to ensure the confidentiality, integrity and accessibility of information assets. We ensure business continuity by identifying and classifying our information assets, detecting and managing any risks that threaten them, and complying with relevant obligations.

At Polisan Holding, we take the highest possible security measures to ensure the collection, storage and sharing of personal data in accordance with the law and to protect their confidentiality.

To effectively implement the regulations that will be introduced as part of compliance with the PDPL in line with the principles of superior service quality, respect for the rights of individuals, transparency and honesty, we have prepared the following policies and procedures:

- Policy on the Protection and Processing of Personal Data,
- Personal Data Storage and Disposal Procedure,
- Definition of the Duties and Responsibilities of the Personal Data Committee,
- Personal Data Inventories,
- Employee Consent Letters,
- Statements on the Processing of Personal Data,
- PDPL Data Owner Application Forms, and
- Supplier Protocols.

Customer Relations

We receive customer requests and suggestions through the most appropriate channels in line with the principles of objectivity, a customer-oriented approach and access to information. In line with our target of 100 percent customer satisfaction, we evaluate customer complaints and manage them in accordance with international standards in the shortest resolution time possible.

Channels Through Which We Listen to the Complaints, Requests and Expectations of Our Customers

Polisan Kansai Boya Call Center 444 83 80

Whatsapp line 0533 144 83 80

eBA Customer Complaint/Request Process

Customer Visits

Through the following company websites:

<https://www.polisan.com.tr/en/>

<https://www.poliport.com/en/index-en.html>

<https://www.polisankimya.com.tr/en/index-en.html>

www.policlubextra.com

Sales Channel

PoliclubExtra Mobile App

Mix Communication Center (MCC)

Polisan Kansai Boya Main Research Laboratories

www.polisanlab.com

CRM (Customer Relations Management)

Social Media Tools

Customer Satisfaction Management

We specify resolution times for Polisan Kansai Paint, Polisan Kimya and Poliport Kimya according to customer complaint types.

Type of Complaint	Resolution Time
Commercial Practices/Pricing	5 days
Delays in Loading/Unloading and Product Shipment	5 days
Delays in Provision of Support and Services	5 days
Defective/Damaged Products	15 days
Inaccurate/Insufficient Information	5 days
Main Research Laboratory	5 days

Other*	5 days
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* The resolution time for other complaints (insufficient information and technical support) at Polisan Kimya is one day.

We meticulously analyze all suggestions, requests and complaints received by our call center and continuously improve our services through feedback. We share these assessments objectively within the ISO 10002 Customer Satisfaction Management System.

For Polisan Kansai Boya, the Call Center;

Received a total of 20,656 relevant calls in 2019. The average call answering time is 26 seconds.

All Incoming Calls; 7% Informative, 41% Complaints, 52% Customer Requests.

Loyalty Programs and Payment Systems

We equip our collection processes with the best technology processes that can help our customers and dealers. In addition to conventional POS devices, we also use a virtual POS system, which we implemented in 2016 to offer our sales representatives an alternative to access our fast and secure payment systems 24/7. This also ensures easy monitoring of dealer transactions.

In 2018, we transferred all paint master purchasing behaviors to our customer relations management software. As a result, we:

- Enhanced the effectiveness of our campaign management with the right data models,
- Adopted the approach of directing the right target audience to the right products and provided more effective information about the products that paint masters are interested in,
- Kept track of current behaviors and made improvements that would benefit paint masters by identifying their needs and expectations,
- Increased the efficiency of our integrated sales activities, which allow us to manage big data from one place.

As of the end of 2019, the number of members registered in the Policlubextra system is 44,130.

We developed a gift system in which our paint master can receive bonus points. The system is accessible via mobile devices as well as through the Policlubextra website. As a result, gifts are not limited to printed catalogs only. We offer an unlimited number of gift options that are easily accessible from the mobile app. A user-friendly app and a pleasant customer experience resulted in customers spending 58 percent more bonus points (on an order basis).

Polisan Shop Concept Store Project Registered

We are expanding our Polisan Shop concept across the country, which we launched in 2008 to support the economic sustainability of our dealers and position our corporate identity in our sales channels accurately and effectively.

We transform the classic “hardware store” image of our sales points into a “concept store” image to make them more comfortable and enjoyable, especially for female consumers.

Despite the economic contractions in the domestic market this year, we maintained our efforts in this respect and increased our hardware store improvement projects by 15 percent year-on-year.

In 2019, we registered and protected the layout and display elements in our Polisan Shops, the only “Concept Store” at this scope and scale in the paints and coatings industry in Turkey.

We organize dealer and hardware shop visits to evaluate our customer portfolio and product range, and also strive to offer a different customer experience with special boutique projects tailored to

specific needs. In 2019, we visited 594 locations. During our visits, we share our field experiences that involve market dynamics and expectations so that our dealers can reach their target audiences more quickly and effectively. We also share materials and technical tips for applicator dealers, painters and contractors.

Savings of 415,000 TL from the Reuse of Returned Shelves and 215 Tons of Steel Recycled

Paint Master Development Works

To strengthen the dialog with our paint masters, we identified a sales representative for each paint master from 2020 onwards so that they can be in direct and continuous communication.

During the year, we helped 1,862 paint masters receive Professional Competency and Practical Training, which provide them with the opportunity to prove their professional knowledge and skills.

Customer Relations at Polisan Kimya

We become a solution partner for our customers with our after-sales support activities, increasing our efficiency in the total value chain. In 2019, we organized more than 100 national and 20 international technical customer visits, focusing especially on customer process developments, product trials and feedback assessments.

We support academic studies in various fields such as construction chemicals, resin and AdBlue with our R&D laboratory, production infrastructure, scientific experience and know-how. In 2019, we provided project materials, equipment and know-how support to eight journals included in the international Science Citation Index (SCI) and two journals covered by the Turkish Academic Network and Information Center.

We Reduced the Delivery Time of our Products to Foreign Customers by 10 Percent Compared to 2018.

In 2019, we organized 500 person-hours of training on construction chemicals for our customers and dealers as part of our sales channels development activities. We both strengthened our corporate communications and improved our sales and marketing activities with these training sessions.

Business Intelligence (BI) and Digital Customer Relations Applications

As part of our sales and marketing activities, we effectively interpret numerous data flows in our processes through reports we produce on our business intelligence platform, thus correctly understanding the market and taking the right steps. Through the application, we monitor the performance indicators related to factories, customers and location-based sales and profitability.

Using the CRM application, we closely monitor our interactions with current and potential customers to increase their satisfaction by meeting their expectations and demands effectively. The reports kept on CRM for each visit provide significant input for our processes.

Surveys

We maintain long-term relationships with our customers by prioritizing the principle of satisfaction. Customer satisfaction surveys are one of our methods to address customer needs and expectations. We conduct these surveys via one-on-one interviews organized at least once every three years through a research company. The results provide input for our product and service development processes.

In Polisan Kansai Boya's Customer Satisfaction Surveys

Technical Information:

- Rate of satisfaction with the explanation provided: 95%
- Rate of satisfaction with the turnaround speed: 98%

Product Complaints:

- Rate of satisfaction with the explanation provided: 73%
- Rate of satisfaction of the callers with the call center employees' level of understanding and knowledge of the subject: 83%
- Rate of satisfaction with the turnaround speed: 94%
- Likelihood of calling our hotline again in case of need: 89%

In Polisan Kimya's Customer Satisfaction Surveys

We ask our customers to evaluate us in three categories:

- **Our product** diversity, ability to meet industry needs, price-quality performance, ease of application and eco-friendliness,
- **Our company's** brand recognition, innovation, ability to handle customer requests and complaints effectively, appropriate and timely delivery, and inventory and technical support,
- **Our employees' knowledge and level of authority regarding the services and products they provide, customer orientation and ethical conduct.**

	Product Properties	Personnel Services	Company Properties and Services
Extremely Successful	78%	63%	60%
Very Successful	15%	24%	28%
Successful	3%	9%	11%
Not Successful	4%	1%	1%
Not Successful at All	0%	3%	0%

In Poliport Kimya's Customer Satisfaction Surveys

We ask our customers to evaluate us in three categories:

- **Being** a reliable, recommended, innovative, proactive company; actively handling customer requests and complaints; and providing technical support,
- **Adequacy of our terminal, port and warehouse services'** capacity, ability to respond to changing demands quickly, offering adequate conditions, compliance with health, safety and environmental requirements,
- **Our employees' customer focus, competency and ethical conduct.**

	Company Properties and Services	Terminal, Port and Warehouse Properties and Services	Terminal, Port and Warehouse Personnel Services
Extremely Successful	77%	80%	71%
Very Successful	16%	15%	20%
Successful	6%	5%	9%
Not Successful	1%	0%	0%
Not Successful at All	0%	0%	0%

“We manufacture construction chemicals in the Dilovası, Adana and Samsun plants in Turkey and the Maroc plant in Morocco, and sell them in Turkey and eight other countries. The cement industry closed 2019 with a 22% contraction year-on-year, and this was also reflected in our sales tonnage. In this challenging period, we continued to develop products in line with customer expectations and completed the development of 1,138 products. We thus managed to reduce the amount of water and energy used in concrete production and increased product performance.

Thanks to the contribution of chemical admixtures technology in recent years, more waste can now be used in the production of concrete and cement. This means we also create an indirect positive effect on the environment with our admixtures.

In addition, we sponsor university-industry collaboration projects and support various academic publications through joint projects we have developed throughout the year to create social benefit. In 2019, we contributed to 21 publications and six projects. We organized seminars, technical trips and nearly 500 person-hours of training sessions for university students and industry members.”

Gökhan YILMAZ

Concrete Admixtures Sales Manager, Polisan Kimya

CUSTOMER RELATIONS

2019 TARGETS	STATUS	2020 TARGETS
To ensure 100% customer satisfaction. 	The customer satisfaction rate which we measured through one to one contact via our call center was 89%.	To maintain the 2019 target.
To help at least 2,000 painters obtain a professional competency certificate. 	This year, we helped 1,862 paint masters receive Professional Competency and Practical Training.	To help at least 3,000 painters obtain a professional competency certificate.
100% compliance with the ISO 10002 principles (transparency, accessibility, objectivity and accountability).   	Compliance with the principles of the ISO 10002 Customer Satisfaction Management System was maintained; the document renewal process was completed with zero non-compliance.	To maintain the 2019 target.
To address and solve customer complaints within the defined timeframe with 100% compliance.   	The customer complaints received for Polisan Kansai Boya and Poliport Kimya processes were handled with 100 percent compliance with the defined periods and resolved. Customer complaints regarding Polisan Kimya processes were concluded 4 days above the defined average period for all complaint categories.	To maintain the 2019 target.
To complete at least 2 improvement projects in Polisan Kansai Boya and Polisan Kimya and at least 1 improvement project in Poliport Kimya with respect to the customer satisfaction process.	We achieved our target through improvement projects on social media and customer communication channels.	-

 		
<p>To realize the initial response to customer at the latest within 1 day for technical demands, and within 3 days for complaints.</p> 	<p>An initial response to customers was given at the times defined</p>	<p>To maintain the 2019 target.</p>
<p>To realize projects to improve new hardware shops and revise current hardware shops in 2019. (300 hardware shops in total)</p> 	<p>We executed improvement and renovation projects in 594 new and existing hardware stores.</p>	<p>Undertaking improvement and renovation projects in 350 new and existing hardware stores.</p>
<p>To conduct a survey among at least 100 customers to measure customer satisfaction of locations where a Polisan Shop Transformation was realized and to achieve customer satisfaction of at least 90%.</p> 	<p>Surveys were conducted at 365 locations where improvements were made; 98% customer satisfaction was achieved on average.</p>	<p>-</p>
<p>To carry out at least 18 technical visits to customers in order to determine customer and market needs and expectations; to try new products and develop current products.</p> 	<p>We organized technical visits to 23 resin and construction chemicals customers and mutually identified improvement areas per product, followed by project initiation.</p>	<p>To carry out at least 28 technical visits to customers in order to determine customer and market needs and expectations; to try new products and develop current products.</p>
<p>To give 2 hour/man training to all team members who are in contact with the customer by the customer relations management representative.</p> 	<p>We provided 2 hours/person training to the entire relevant team.</p>	
<p>To maintain a customer satisfaction ratio at last year's level (>2018 customer satisfaction ratio of 98%)</p> 	<p>Satisfaction rate was determined to be 99% based on the customer satisfaction survey results.</p>	<p>To ensure 100% customer satisfaction.</p>
<p>To analyze at least 5 potential customers in existing, or new markets/to contribute to growth by producing an analysis evaluation report for each customer.</p> 	<p>7 new customers were added to the portfolio at the end of the potential customer analyses works.</p>	<p>-</p>
<p>To carry out technical visits to 6 customers at the Warehouse and Port and 5 potential and 10 current customers at the Terminal.</p> 	<p>Technical visits to 14 customers at the Warehouse and Port and 6 potential and current customers at the Terminal were realized; customer requests were collected.</p>	<p>-</p>

FOR A LIVEABLE ENVIRONMENT

Environmental Management covers all of our business areas within the Holding, and the services we provide to our customers and receive from subcontractors. We conduct risk analyses for the aspects of our operations that interact with the environment and perform the necessary improvements in our processes to eliminate or, if not possible, reduce environmental impacts resulting from these activities in line with the relevant regulations.

We always take into account natural resource efficiency and environmental factors that need to be managed cautiously and strengthen our compliance with legislation. On the other hand, we aim to meet the requirements of sustainable development in line with our strategic goal of “Sustainable Production and Sustainable Development.”

Waste Management

We aim to effectively manage our workflows and use of raw and other materials and thus minimize waste generation at its source. Our waste management process covers the collection and sorting of waste at the source, disposal and/or recovery of waste in the temporary waste storage area in accordance with the relevant regulations, evaluation of disposal and/or recycling options, and ensuring its transportation to licensed waste disposal and recycling firms and monitoring this process. We manage this process in accordance with the norms of relevant national and international initiatives, particularly the ISO 14001 Environmental Management System standard.

Amount of Non-Hazardous Waste Per Product Manufactured/Handled (Ton/Ton, %)

	2017	2018	2019
Polisan Kansai Boya- Dilovası Facility	1.34	1.37	0,84
Polisan Kansai Boya- GEBKİM Facility	-	-	
Poloport Kimya	0.03	0.05	0.02
Polisan Kimya	0.09	0.11	0.08

Amount of Hazardous Waste Per Product Manufactured/Handled (Ton/Ton, %)

	2017	2018	2019
Polisan Kansai Boya- Dilovası Facility	0.57	1.00	1.99
Polisan Kansai Boya- GEBKİM Facility	-	-	2.65
Poloport Kimya	0.11	0.12	0.15
Polisan Kimya	0.10*	0.18	0.20

* Since the Wastewater Treatment Facility at our Dilovası campus of Polisan Kimya is an auxiliary facility, it also serves group companies. For this reason, the distribution of the treatment sludge is not included in this table.

Ratio of Waste According to Recycling Type (Tons of Waste/Tons of Production - Amount of Products Handled x 100)

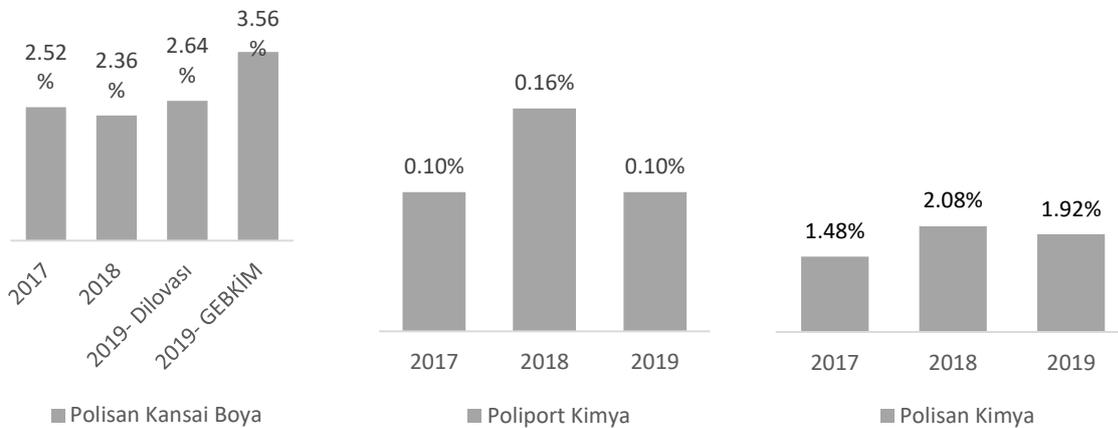
Recycling Processes	Polisan Kansai Boya				Poloport Kimya			Polisan Kimya		
	Dilovası Facility			GEBKİM Facility	2017	2018	2019	2017	2018	2019
	2017	2018	2019	2019						
R1 Energy Generation	0.014	-	0.035	-	0.0335	0.0074	0.0053	0.008	-	0.007
R2 Solvent Recycling/ Re-production	0.407	0.350	0.473	0.030	0.0264	0.0443	0.0341	0.018	0.030	-

R12**	1.972	1.984	2.048	2.359	0.038	0.0439	0.0445	0.133	0.311	0.835
R13 Waste Storage	0.111	0.026	0.033	1.174	0.0044	0.0105	0.0119	1.294	1.739	1.075
R4 Metal Recycling	0.010	-	0.006	-	-	0.0530	-	-	-	-
R5 Reclamation of Inorganic Materials	-	-	-	-	0.0024	-	-	0.022	-	-
R9 Oil Recycling	0.008	0.005	0.043	-	-	-	-	-	0.002	-
TOTAL	2.52	2.36	2.64	3.56	0.10	0.16	0.10	1.48	2.08	1.92

The table provides both the amount of waste produced during the year and the amount of waste carried forward from the previous year that is recycled during the reporting year.

**R12: Exchange of wastes for submission to any of the operations numbered R1-R11.

Ratio of Waste Recycled



Ratio of Waste According to Disposal Type (Tons of Waste/Tons of Production-Amount of Products Handled x 100)

Type of Disposal	Polisan Kansai Boya			Poliport Kimya			Polisan Kimya		
	2017	2018	2019	2017	2018	2019	2017	2018	2019
Incineration	0.03	0.001	-	0.040	0.071	0.022	0.004	0.02	0.08
Landfill	0.02	-	0.03	-	-	-	0.001	-	-
Physical-Chemical Treatment	0.00011	0.00005	0.00019	0.000001	-	-	0.00001	0.00001	-

This table provides the total amount of recycled hazardous and non-hazardous waste.

Amount of Waste Collected by ÇEVKO (Tons)

Waste categories	Polisan Kansai Boya			Polisan Kimya		
	2017	2018	2019	2017	2018	2019
Plastic (PET)	145.9	130.1	96,8	-	-	-
Paper and Cardboard	213.7	171.9	191,7	-	-	-
Wood (Pallet)	159.1	185.8	423,6	-	-	1,5

WE CONTRIBUTED TO THE RECYCLING OF 713.6 TONS OF PACKAGING WASTE IN 2019 AND 1,720 TONS OVER THE LAST THREE YEARS.

Water and Wastewater Management

Different types of water usage in our facilities, such as process, tank washing and surface cleaning, require different water qualities. With the strategic advantage of the location of our Dilovası facility, we have access to groundwater and seawater as well as mains water. Sustainable water supply is very important for our operations to continue without interruption. On the other hand, we design recovery projects to protect water resources and treat the wastewater we discharge in accordance with the legal limits.

Water Consumption per Product Manufactured/Handled (L/Ton)

We monitor our industrial water consumption annually based on the values we normalize by comparing our consumption to the number of products produced or handled throughout the year. Our use of industrial water includes the amount of water we use for operational activities and water remaining in the product according to product formula.

	2017	2018	2019
Polisan Kansai Boya Dilovası Facility*	228	234	234
Polisan Kansai Boya GEBKİM Facility	-	-	428
Poliport Kimya	8	11.3**	12.6
Polisan Kimya	426	347	392

* As of 2019, this facility mainly produced solvent-based paint. At our GEBKİM facility, we produce water-based paint only.

** Updated due to factual errors.

At Poliport Kimya, nearly the same level of water was consumed for road cleaners, forklifts and floor washes as last year, although the number of handled products decreased. This accounts for the difference in the normalized value compared to the previous year.

The formaldehyde resins and AUS32 business lines, in which Polisan Kimya operates, have been negatively affected by increasing competition, while the construction chemicals product group was negatively affected by contraction in the industry. While the production volumes in these business lines decreased, water consumption did not decrease proportionally, and this is the reason for the deviation in the normalized values.

Amount of Wastewater Per Product Manufactured/Handled (L/Ton)

We monitor our wastewater generation annually based on the values we normalize by comparing our wastewater output to the number of products produced/handled throughout the year. Wastewater resulting from employee's personal water consumption is not included in our total industrial wastewater amount. Wastewater generated from washing tanks at Poliport Kimya does not enter the treatment facility and is transferred to IBCs to be sent to hazardous waste disposal facilities.

	2017	2018	2019
Polisan Kansai Boya Dilovası Facility	74	69	119
Polisan Kansai Boya GEBKİM Facility	-	-	237
Polisan Kimya	72	40	41

As of the end of 2018, we started to produce water-based paint at our GEBKIM facility, and water-based paint production at the Dilovası facility was significantly reduced. However, approximately the same amount of water was needed to wash some fixed equipment, such as boilers and tanks. This accounts for the significant change in normalized values.

Wastewater Discharge at Dilovası Wastewater Treatment Facility by Year

Year	Discharge Values of Industrial Wastewater Treatment Facility (to DOSB system)		DOSB Limit Values	
	KOİ (mg/L)	AKM (mg/L)	KOİ (mg/L)	AKM (mg/L)
2017	2,020	310	<6,000	<2,000
2018	3,725	155	<6,000	<2,000
2019	4,660	52	<6,000	<2,000

The location for water-based paint production changed in 2019. As a result, suspended solid matter amounts in wastewater and the removal of oxidizable materials that can be treated by coagulation decreased. Thus, the value of chemical oxygen demand (COD) in wastewater increased compared to previous years.

Wastewater Discharge at GEBKIM Wastewater Treatment Facility by Year

We continue our efforts to optimize our processes at our new wastewater treatment facility.

	Discharge Values of Industrial Wastewater Treatment Facility (to the Gebze Organized Industrial Zone system)			GEBKIM Organized Industrial Zone Limit Values		
	KOİ (mg/L)	Azot (mg/L)	Fosfor (mg/L)	KOİ (mg/L)	Azot (mg/L)	Fosfor (mg/L)
2019	2,038	<40	<8	<4,000	<40	<8

Operational Air Quality Management

We control the emission sources that may result from our operations in line with the Regulation on the Control of Industrial Air Pollution. We commission accredited organizations to measure our emissions for the detection of pollutants more frequently than legally specified periods.

Our Treatment Methods

Plant	Emission Source	Pollutant	Treatment Method
Polisan Kansai Boya-Dilovası Facility	Dust from manufacturing operations	Dust	Dust Filtration
Polisan Kansai Boya-Dilovası Facility	Waste gas from manufacturing operations	Volatile organic compound	Scrubber System
Polisan Kansai Boya-GEBKIM Facility	Waste gas from manufacturing operations	Volatile organic	Jet Pulse Filter System

		compound, dust	
Polisan Kimya	Waste gas from manufacturing operations	Volatile organic compound, dust	Scrubber System
Polisan Kimya	Formaldehyde production	Volatile organic compound, dust	Gas combustion system
Polisan Kimya	Construction Chemicals Production	Volatile organic compound, dust	Filter system
Poliport Kimya (Terminal)	Loading/unloading of solvent tanks	Volatile organic compound, dust	Nitrogen Blanket
Poliport Kimya (Terminal)	Loading/unloading of acrylate, phenol, formic acid and HMD tanks	Volatile organic compound, dust	Scrubber System
Poliport Kimya (Terminal)	Loading/unloading of TDI and MDI tanks	Volatile organic compound, dust	Activated Carbon Tank Ventilation System
Poliport Kimya (Dry Bulk)	Dust from ship operations	Settled Dust	Spray Water Jet Systems

Considering the negative impact of VOC emissions on human health and the environment, it is part of our corporate social responsibility, not just a legal obligation, to minimize our VOC emissions. For this purpose, our gas treatment systems, which are selected according to the physicochemical and thermodynamic properties of process inputs and outputs in our terminal tanks containing volatile products, and our scent removal units for chemicals with low scent thresholds are designed according to the best techniques available. We calculate the emissions from tank ventilators with EPA TANKS software, which takes into account tank properties, liquid composition, temperature and local conditions at the tank's location, and report it to the Ministry of Environment and Urbanism.

The results of measurements made by accredited institutions at our flue-gas stacks are below the limits determined by the Regulation on the Control of Industrial Air Pollution (RCIAP). We carry out measurements every two years, as required by law. We also make interim measurements to monitor the performance of our emission treatment units.

Flue-Gas Stack Measurement Results - VOC (kg/h)

	Polisan Kansai Boya	Polisan Kimya	Poliport Kimya
2016	1.381	0.066	0.039
2018	0.960	0.001	0.023
The limit value according to Annex-2 of RCIAP is 30 kg/h.			

Passive Measurement Results - TVOC (Class I, II, and III) (μm^3)

Polisan Kimya's:

	Long-Term Measurement Result	Long-Term Limit Value	Short-Term Measurement Result	Short-Term Limit Value
2016	51	90	64	140
2018	51	90	64	140

Poliport Kimya's:

	Long-Term Measurement Result	Long-Term Limit Value	Short-Term Measurement Result	Short-Term Limit Value
2016	25	90	48	140
2018	4	90	6	140

Flue-Gas Stack Measurement Results - NO_x (kg/h)

	Polisan Kansai Boya	Polisan Kimya	Poliport Kimya
2016	0.38	1.2	0
2018	0.36	1.9	0
The limit value according to Annex-2 of RCIAP is 40 kg/h.			

Flue-Gas Stack Measurement Results - SO₂ (kg/h)

	Polisan Kansai Boya	Polisan Kimya	Poliport Kimya
2016	0.02	0.001	0
2018	0.36	0	0
The limit value according to Annex-2 of RCIAP is 60 kg/h.			

Flue-Gas Stack Measurement Results - Dust (kg/h)

	Polisan Kansai Boya	Polisan Kimya	Poliport Kimya
2016	0.02	0.036	0.006
2018	0.24	0.082	0.007
The limit value according to Annex-2 of RCIAP is 10 kg/h.			

Noise Control

Noise in the working environment is another factor affecting human health. We evaluate the selection and modification of machinery and equipment that may be a source of noise in our change management process, measure the noise they generate in operation and prepare noise exposure maps. We take necessary measures to ensure adequate protection in case the measurement results exceed the specified exposure limits. To strengthen our compliance with the legislation, we perform on-site measurements with our technical staff at regular intervals.

WASTE AND WASTEWATER

2019 TARGETS	STATUS	2020 TARGETS
<p>To finalize all legal declarations in a timely and complete manner.</p> 	<p>Legal declarations were fully completed.</p>	-
<p>To comply 100% with the wastewater discharge criteria by ensuring that the wastewater treatment plant is operated in line with standards.</p> 	<p>Our wastewater treatment plants were operated by achieving 100% compliance with DOSB and GEBKIM wastewater acceptance criteria.</p>	To maintain the 2019 target.
<p>To realize works as the Construction Chemicals R&D Department to reduce return/mixed production waste tonnage by 50% as compared to the previous year. To provide >2 tonnage waste aggregate recovery as the R&D unit.</p> 	<p>Construction Chemicals R&D Department reduced return/mixed production waste tonnage by 54% as compared to the previous year. Waste aggregate construction chemicals of >6.5 tonnage were recovered through R&D works.</p>	Maintaining blend usage rates below 0.5% for Resin and Construction Chemicals.
<p>To issue reports in line with the requirements of the Ministry of Environment Zero Waste Management System.</p> 	<p>-We devised actions within the scope of the program's "scoring criteria for buildings and settlements." Application will be made following the publication of the communiqué.</p>	Implementing the Zero Waste Management System project.

Energy Management

We consume energy for many purposes, including operating machinery and equipment, lighting, heating, cooling, loading, unloading, product preparation and cleaning. In operation-intensive areas, we monitor electricity consumption in relation to the volume of products manufactured/handled each

month. In case of a deviation from the values determined for comparison purposes, corrective action is taken by our facility managers.

We classify all our electrical equipment according to energy efficiency. In line with this classification, we develop process-based energy efficiency and energy-saving projects such as purchasing, design and maintenance for significant energy volumes.

Electric Energy Consumption per Product Manufactured/Handled (kWh/ton)

	2017	2018	2019
Polisan Kansai Boya Dilovası Facility	53	57*	99**
Polisan Kansai Boya GEBKİM Facility	-	-	48
Poliport Kimya	1.04	1.19	1.29
Polisan Kimya	65	54	74

*The data has been corrected due to factual errors.

** Water-based paint has been produced at the new plant in GEBKİM since the completion of the transition process in 2019. This significant change in the normalized value results from a significant decrease in production volume at the Dilovası facility and the fixed consumption of the current equipment.

ENERGY MANAGEMENT

2019 TARGETS	STATUS	2020 TARGETS
<p>To report the monthly analysis of nominal values of waste, wastewater, emission, use of natural resources, and natural resource consumption to be analyzed, Not to exceed the determined deviation ratios, To initiate the necessary corrective actions at the required points.</p> <p>Furthermore, to improve the current SAP energy normalization reporting system.</p> 	<p>The analyses of the deviation rates determined by the nominal values have been evaluated monthly with the businesses, and the necessary corrective activities have been started for the deviations. Integration efforts are ongoing to improve the current SAP energy normalized reporting system.</p>	<p>Maintaining the 2019 target.</p>
<p>To initiate infrastructure works for following up the normalized steam consumption.</p> 	<p>Monitoring of nominal values for normalized steam consumption has commenced.</p>	<p>Completing the installation of the online steam consumption tracking system and preparing the counter installation infrastructure of the 4 units with high steam consumption at the plant.</p>
<p>To renew air and thermal leak measurements; to take necessary actions.</p> 	<p>Measurements to detect air and thermal leaks have been completed. With the relevant maintenance and repair work, 256,338 kWh of electricity and 76,362 m³ of natural gas savings have been achieved.</p>	<p>Maintaining the 2019 target.</p>
<p>To perform an efficiency analysis based on design values in E1 type pumps (>75 kW and >18 hours) according to the Polisan Energy Classification Matrix.</p>	<p>Efficiency analysis has been performed for 5 seawater and 5 cooling water pumps. Areas of improvement have been identified to achieve a saving of 708,660 kWh/year.</p>	<p>Ensuring replacement with seawater pumps that are more efficient and fitting for the process (at least one).</p>

		
<p>To renew the spare diesel boiler used for heating purposes to ensure an increase in efficiency.</p> 	<p>Project and infrastructure work has been prepared. The renewal work has been planned for the following year at the behest of senior management.</p>	<p>Efficiency areas have been identified. The target will be set in 2021 and the project has been postponed.</p>
<p>To renew CondenStop efficiency measurements; to realize the actions needed.</p> 	<p>Efficiency measurements of 156 steam traps have been made. With the relevant maintenance and repair work, a 328,445 m³/year natural gas saving has been achieved.</p>	<p>Completing the efficiency measurements of at least 150 steam traps and ensuring the completion of the relevant maintenance and repair work.</p>
<p>To conduct efficiency analyses of fans above 20 kW.</p> 	<p>Efficiency analysis has been performed for fans above 20 kW. Areas of improvement have been identified to save 39,600 kWh/year.</p>	<p>Updating the efficiency analysis of fans above 20 kW and ensuring the completion of the relevant maintenance and repair work (three of them).</p>
<p>To perform at least 7 projects to increase efficiency at Repair, Maintenance and Auxiliary Sites.</p> 	<p>Accordingly, fans' and seawater pumps' efficiency analysis, steam trap maintenance, thermal measurements, pressurized air system improvements and boiler room feasibility studies have been conducted.</p>	<p>Carrying out at least 4 projects aimed to increase efficiency.</p>
<p>To have the energy consumption verified by independent institutions with an energy analyzer during the period when the compressor is used the most intensively.</p> 	<p>Energy measurement was performed within the scope of the Efficiency-Increasing Project (EIP). Accordingly, the compressor's flow rate measurement and consumption verification was completed; the Ministry approval has been obtained.</p>	<p>–</p>
<p>To realize energy saving projects by preferring IE3 type electric motors with high efficiency class.</p> 	<p>Products belonging to higher energy efficiency class have been preferred for the supplied materials and energy-efficient projects have been carried out.</p>	<p>Ensuring that the pump, which operates at 55 kW with a 200 m³/h flow rate, to be supplied to Polipiort is selected as an IE3 type motor. Ensuring that IE3-type products belonging to higher energy efficiency class with inverters are preferred for the 22 pumps to be supplied to the new 16+1 tank space. Ensuring that LED products with a high-energy efficiency are preferred for the lighting fixtures to be supplied to the new 16+1 tank space.</p>
<p>To monitor energy performance according to base energy consumption values of E1 class (>75 kW and >18 hours) devices at GEBKIM Factory according to the Polisan Energy Classification Matrix; to avoid exceeding the deviation</p>	<p>The system infrastructure has been designed to automate the monitoring of 6 electric motors at 250 kWh, which causes the highest power consumption, with energy analyzers.</p>	<p>Efficiency areas have been identified. The target will be set in 2021 and the project has been postponed.</p>

values previously specified and to initiate corrective actions if exceeded and when deemed necessary. 		
- 	-	Completing the preliminary feasibility studies for the installation of the unlicensed Solar Power Plant (SPP) system. (Approximately 1.5–2 megawatts of installed power)

The Management of Chemicals

We are meticulously implementing the national and international regulations with a risk-focused perspective to protect human and environmental health in the purchasing, handling, storage, use and transportation of chemicals.

We perform the purchasing controls in our chemical procurement procedures in a safe and integrated manner according to the SDS information defined in our ERP system, the referral criteria in our internal procedures and ADR provisions.

The handling of each chemical in the storage areas is carried out in line with safe working principles determined according to the potential hazards of the materials such as reactive, environmental or health.

We label each chemical in the facility, especially in storage areas, by name, hazard class, date of use and expiry date, in a way that fulfills the obligations and provides necessary information appropriately and reliably.

- We are working to update our data in accordance with the Regulation on the Registration, Evaluation, Authorization and Restriction of Chemicals (KKDİK), which will enter into force in 2021. We aim to complete 100 percent of our declarations to the Chemicals Registration System in 2020.
- We have updated our four Exposure to Risk Assessments for the operation and production units, which are used to conduct process-based risk analyses of the health and safety effects of the chemicals we use.
- We are making improvements to the Polisahha Fleet Management System to improve our Safe Chemical Transportation Performance. To ensure compliance with the ADR hierarchy in our tank filling operations, this year we started to enter the tank codes specified in the vehicle inspection reports to our system.
- This year, we provided 2,960 person-hours of IMDG Code and refresher training for our hazardous substance operations at our shore facilities and sea transportation operations.

MANAGEMENT OF CHEMICALS

2019 TARGETS	STATUS	2020 TARGETS
To provide all new personnel with the necessary training under the scope of IMDG code (4 days/new personnel).	New personnel have been trained within the scope of the IMDG code. (Four days/new staff.)	Maintaining the 2019 target.

		
<p>To provide 23 training sessions for the management of chemicals.</p> 	<p>Training has been provided in 36 sessions.</p>	<p>–</p>
<p>To update Chemical Exposure Risk Assessments.</p> 	<p>Four Exposure Risk Assessments have been updated.</p>	<p>–</p>
<p>To ensure 100% compliance with the requirements of carriage of dangerous goods by road and renew the activity certificates.</p> 	<p>Accordingly, the necessary training has been provided to all new employees and personnel with expired training periods, and their certificates have been renewed.</p>	<p>Maintaining the 2019 target.</p>

Our Efficiency-Oriented Projects and Investments

Maintenance and Repair Management

At Polisan, we consider the effective management of the integrity and reliability of our mechanical systems in the field as a precondition for our operational excellence performance. Our maintenance strategy is based on equipment performance, production quality and efficiency, occupational health and safety, and environmental awareness.

Asset Records and CMMS Improvement

In accordance with the ISO 14224 (Petroleum, petrochemical and natural gas industries — Collection and exchange of reliability and maintenance data for equipment), we have created asset records on the Computerized Maintenance Management System (CMMS), on which we effectively control the maintenance and repair works of our facility. By doing this, we improved our planned and predictive maintenance tracking and inter-business coordination performance.

Predictive Maintenance of Equipment through Failure Mode and Effects Analysis (FMEA) Increases 21% in 2019 YoY

We have updated 50 percent of our maintenance plans in accordance with our manufacturer data, current failure frequency and field experience to improve equipment usage times.

A 25% YoY Increase in Predictive Maintenance Such as Proactive Oil Analysis and Thermal Measurements

Safety Culture in Maintenance Works

We continue to undertake many activities, especially workshops and training sessions, to reinforce the safety culture in our maintenance operations. For this purpose, we carried out the following in 2019:

- We organized 500 person-hours of workshop sessions with our operators and maintenance officers on issues such as asset tree creation, criticality analyses, error modes and impact analyses, malfunction and occupational accident root cause analyses, and
- We conducted five Learning from Incidents (LFI) case studies with our maintenance operators.

Equipment Reliability

In 2019, we carried out the following major work to maintain the reliability of equipment and components in our facility and their capacity to function within a certain time, under certain conditions are as follows:

- Carrying out process safety-critical equipment analysis and reliability enhancements to ensure that backups comply with the system hierarchy,
- Reviewing current inventory and reserves,
- Updating some piping and instrumentation diagrams (P&IDs) that show process flow,
- Carrying out vibration measurements of 73 operating-based equipment items to ensure early detection and intervention of potential breakdowns,
- Autonomous maintenance practices: operators performing maintenance and repair activities with low experience requirements and no security risks in units such as water production chamber, water treatment chamber and boiler room.

Compressed Air System Improvements

For five years, we have been conducting proactive leak detection and repair work in hoses, pipe inserts, quick fitting elements, filters and valves to save energy, protect air-operated equipment and extend the life of compressed air system equipment.

Amount of Energy Saved with the Anti-Leak Program (kWh)

2017	2018	2019
114,840	112,016	256,338

Thermal Measurements

We have conducted thermal insulation studies based on thermal measurements made in steam collectors, condensate lines, valves and pipelines. **Thus, we saved 76,362 cubic meters of natural gas per year.**

Steam Trap Efficiency Measurements

We had our 156 steam traps inspected to improve our system efficiency while maintaining steam temperature. According to the results of the inspection, we performed necessary maintenance and repairs on these devices, which are important for energy efficiency as well as for process safety. **Thus, we saved 328,445 cubic meters of natural gas per year and increased our process safety in the steam boilers and lines.**

Fan Efficiency Analysis

We have completed fan efficiency analyses based on flow rate, static pressure and total pressure values to compare fans and to determine the ratio of energy transferred to the fluid in the fan shaft. We identified revisions that will save 39,600 kWh/year and included them in our plans.

Pump Efficiency Analysis

As a result of the efficiency analyses carried out on five seawater and five cooling water pumps, we identified improvements that will save 708,660 kWh per year and included them in our plans.

Project Management Process

We follow the Project Management Body of Knowledge (PMBOK®) standards, one of the most widely accepted tools in the field of project management, in our operations. We implement this method in our processes in areas such as project management systems, project groups, expert opinions, meetings, focus groups, collective creativity techniques, prototypes, decision-making techniques, brainstorming, product analyses, alternative definitions, parametric estimates, Gantt charts, work breakdown structures and activity lists.

Subcontractor Management System Enhancements

We are digitizing our processes to ensure a more systematic assessment of our subcontractors for the required safety, health, environment, energy and performance criteria and to enable competence-based controls. We have added Supplier Ethics and Code of Conduct principles to our General Contractor Agreement, provided that we stay on the safe side.

Green Building-Certified New Head Office

The offices in our new LEED Gold green building-certified headquarters focus on resource efficiency and employee comfort. Key features of the new head office include:

- 47 percent water efficiency indoors and 60 percent water efficiency outdoors,
- 24 percent annual efficiency according to energy modelling,
- Low-emission paint, coating, glue and floor materials,
- Cooling fluids with a lower impact on global warming and ozone layer depletion compared to equivalents,
- 30 percent higher indoor ventilation flow rate,
- LED luminaires used for lighting and air conditioners with heat recovery features used for ventilation.

Virtual Plant 4.0 Application at Polisan Kansai Paint GEBKIM Plant

In parallel with digitization, one of our corporate strategies, we utilized the Virtual Plant 4.0 concept in the construction of our new paint plant based on advanced technology and automation. We increased our control by monitoring construction activities through 3D models thanks to the visualization of mechanical, electrical, construction and process systems.

Improvements in Heat Transfer Equipment

We renewed the coils (the heat transfer equipment of our reactor) in our silver facility. Thus, we reduced potential **maintenance requirements by 10 percent and increased our energy efficiency by 35,000 kWh** per year.

Driver Applications in Our New Tank Projects

In our tank bottom and manifold pumps of our new tank investments in terminal operation, we ensure speed control according to variable flow rates by means of the driver system and strengthen our plant automation.

OUR STRENGTH: OUR EMPLOYEES

Human Resources

We consider human resources to be our intellectual capital and one of the most important factors behind our financial achievements. In this respect, creating a qualified, results-oriented, agile-thinking and team-player human resources structure that takes initiative in times of uncertainty is the core of our business strategy. We aim to increase the expertise, loyalty and organizational effectiveness of our employees through training and development practices in line with our medium- and short-term objectives. We ensure that our practices in the fields of working time, remuneration, leave and other health and personal insurance are in line with the Labor Law and are transparent and fair.

Thanks to our recruitment performance, we received the “Respect for People Award” at the Human Resources Summit, which recognizes companies that receive the highest number of applications, provide the most employment opportunities and reply to candidates as quickly as possible.

As a commercial institution, we strive to prevent and mitigate negative effects that may arise from our operations and business relations as part of our responsibility to respect human rights, which is a universal principle of management. Our risk assessments on environmental activities, occupational health and safety, anti-bribery and anti-corruption, and risk and opportunity analyses of our processes, and subsequent actions, form the basis of our stakeholder relations.

Performance and Career Management

We simplify our business objectives determined according to our strategic objectives as individual business targets. In our Performance Evaluation System, individual business and competency objectives and actions are discussed annually. The process is monitored via SAP and consists of three sub-processes: Goal Mapping, Interim Assessment (Monitoring, Feedback, and Orientation) and Assessment. We strive to ensure the planned development of our employees and managers with objective and accurate assessments while aiming to maximize their contribution to business results through SMART (specific, measurable, attainable, realistic, and timely) target definitions. Additionally, our assessments contain need-based, corrective, proactive and/or constructive feedback on key competencies such as flexibility, communication and customer-centricity as well as functional competencies such as awareness-raising, effectiveness and efficiency.

Total Rate of Employees Subject to Regular Performance and Career Development Assessment by Gender (%)*

	2019
Female	5%
Male	1.16%

Total Rate of Employees Subject to Regular Performance and Career Development Assessment by Employee (%)*

	2019
Blue Collar	-
White Collar	3.8%

* Ratios determined by taking into account the number of performance-based promotions and appointments. All of our white-collar employees were included in the performance evaluations.

Training Management

We regard our training programs as an investment in our company and ensure that they play a role in achieving our business goals. In all of our educational activities, we focus on improving employee performance and instilling corporate culture.

We redesigned and digitalized the in-class Occupational Health and Safety training programs provided to Polisan Holding and its employees using next-generation learning techniques. In doing this, we aim to provide more compact training opportunities that are accessible regardless of place and time.

We reached 204 people and completed our training reviews thanks to the opportunity to compare preliminary and final test results on the main topics, and an easy-to-follow program structure.

	2017	2018	2019
Total Cost of External Training (TRY)	655,644	461,414	787,502
Total Number of Employees	1,400	1,393	1,124
Number of Employees Attending Training	1,356	1,201	1,011
Cost Per Person (TL)	468*	353*	700*
	483**	546**	778**
**Refers to the amount of investment based on total number of employees.			
***Refers to the amount of investment based on number of employees attending training.			

Total Hours of Training (Person-Hours)

2017	2018	2019
33,428	21,057	18,373

Total Cost of Internal Training (2019)

Total Cost (TL)	Number of Employees Attending Training	Cost Per Person (TL)
342,760	2,894	118,44

Collective Agreements

2019	Total Number of Employees	Number of Employees Who are Union Members	Percentage of Employees Who are Union Members
Polisan Kansai Boya	686	235	34%
Polisan Kimya	254	192	76%
Poliport Kimya	184	143	78%

Internship Programs

In the last three years, 285 students have benefited from our “Vocational Training Internship” and “Summer Internship” programs, in which we support the career plans and individual development of young people.

<p>“Starting from day one, I was impressed by the corporate structure at Polisan Holding as well as the team spirit and devoted attitude of my colleagues. The experience I gained in an industry-leading, professional, results-oriented company that values its employees guided me on how to use my skills in my career plan.</p> <p>Kubilay Kul Çanakkale 18 Mart University / International Trade, Logistics and Business Management</p>	<p>Working alongside employees who have mastered the details of their job, constantly improve themselves and make a difference at Polisan Holding, one of the leading companies in its sector, boosted my motivation to work and guided me in my career plan.</p> <p>Berkay Serim Middle East Technical University / Department of Economics</p>
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<p>Polisan Holding has given me a memorable experience that will influence my future career planning. As an institution with vision and mission, it broadened my horizon.</p> <p>Aydeniz Ateş Marmara University / Department of Economics</p>	<p>I feel ready for professional life thanks to the experience I gained during my internship at Polisan Kansai Paint.</p> <p>Batuhan Tanrıver Bahçeşehir University/ Department of Industrial Engineering</p>
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HUMAN RESOURCES

2019 TARGETS	STATUS	2020 TARGETS
<p>To conduct needs analysis during the foundation and opening process of the new paint factory of Polisan Kansai Boya, incompliance with legal procedures.</p> 	<p>We identified and addressed our requirements to comply with the legal procedures.</p>	-
<p>To prepare a training program by doing title-based training needs analysis and to ensure 100% compliance with the program.</p>   	<p>Even though we completed the first training package, the new package could not be completed in 2019.</p>	<p>Updating the title-based training needs analyses and formulating a training program for 2020.</p>
<p>Starting assessment central application and managing skill pool.</p>   	<p>We conducted inventory studies for the talent pool and included designated employees in relevant pools. Development training programs are suspended because of different economic priorities.</p>	<p>Analyzing performance evaluation results to career plan for and promote employees in the talent pool.</p>
<p>To ensure continuous improvement by reviewing the HR Performance Management System.</p>   	<p>We improved the current reporting in SAP HR system and developed new reporting options.</p>	-
<p>Reviewing and revising the management and sales premium system.</p>   	<p>We reviewed, revised, and communicated the management and sales bonus system.</p>	<p>Updating the Performance Management Bonus principles in Polisan Kansai Boya, ascertaining the KPIs and monitoring them during the relevant periods.</p>
<p>Determining a retirement policy and seniority principles; creating a backup plan.</p>   	<p>The work is ongoing.</p>	<p>Completing the ongoing work.</p>
<p>To conduct needs analysis during the foundation and opening process of the new paint factory of Polisan Kansai Boya, incompliance with legal procedures.</p> 	<p>We concluded the budget module testing in SAP HR system and launched it in July 2019.</p>	-

WORKPLACE HEALTH AND SAFETY

Process Safety Management System

We have been working since 2015 to prevent and mitigate the effects of major accident hazards within the framework of the SEVESO directives. For the last two years, we have been fortifying these efforts and our Security Management Systems with our Process Safety Management Program. Our activities in this scope in 2019 were as follows:

- Training 53 staff at foremen and operator levels in our Behavior-Based Process Safety Leadership program,
- Providing 4,725 person-hours of workshops to support our Process Management System,
- Planning 1,281 person-hours of training with the participation of 258 employees as part of our Process Safety Competency Training,
- Providing refresher training for 41 employees on Change Management Procedure,
- Making a presentation at the Process Safety Symposium about maintenance practices at Polisan of the future, asset management and reliability, e-Transformation management design and memory of change.
- Providing 1,000 person-hours of workshops as part of Asset Integrity Management,
- Presenting four different accident investigations to a maintenance team of 20 members as part of the Learning from Incidents (LFI) event.

Field Visits

To strengthen our OHS culture and eliminate accidents caused by behavior and environment, we have made our safety-focused field visits more systematic and made 46 visits at 28 sites.

During these visits, we focused on utilizing supportive culture to turn misbehavior into positive behavior. In this context, we emphasized the importance of monitoring unsafe behavior, planning improvements and monitoring their application. With this dialectical method, we increased the awareness of our employees in the field.

Safety Training Simulations

We trained 255 Dilovası employees in the simulators deployed in our Dilovası site to raise awareness about road safety, seat belt use and working at high altitudes. We thus achieved a 104% increase in reporting of unsafe conditions.

OHS Forum Theater Event

We carry out interactive theater events that allow us to see the problems encountered in occupational health and safety practices from different perspectives and develop possible solutions based on the cases performed on stage. This year, we included the employees of Polisan Holding in the interactive theater play event, which was attended only by Poliport Kimya employees in 2017. A total of 195 employees participated in this event, which helped us develop many skills such as increasing solutions-oriented behavior models and emphasizing effectiveness in communication.

OHS Performance of Subcontractor Companies

We share the responsibility with our subcontractors to prevent occupational accidents and diseases at our sites. For this reason, we closely monitor the occupational health and safety performance of our subcontractors with our unannounced site visits, announced audits and various other controls. In our 34 audits and 19 field visits this year, we provided feedback to support them in improving their areas of development.

Poliport Kimya Gas and Fire Detection System

As part of our risk management efforts at Poliport Kimya, we have completed installation of our detectors and commissioned our system. The location, type and quantity details of the detectors are given below:

Location	Gas Detectors	Liquid/Leakage Detectors	Flame Detectors
Manifold	11	2	15
Storage Tank Farms	29	5	-
Loading Platform	14	-	-

OHS E-Learning Platform

We transferred our OHS training programs on Basic OHS, Basic Health, Hazard Awareness and Risk Detection, Emergency and Fire, Fire Line and Work Permit to the next-generation e-learning platform. With the objective of making safe behaviors a habit, we helped our employees to receive relevant e-training independent of time and location. This year, 33 percent of our employees benefited from our e-learning system, the transition to which is still in progress.

Our other OHS efforts in 2019:

- 46 internal audits through announced site tours,
- 59 Pre-Project Risk Assessments specific to investment projects,
- 34 site audits for our regular subcontractors,
- Emergency response drills including six fire drills, two environmental spillage drills and two coastal facility drills to ensure emergency preparedness,
- 14,587 person-hours of training on Basic OHS, Basic Health, Hazard Awareness and Risk Detection, Emergency and Fire, Fire Line and Work Permits,
- 2,688 person-hours of training for our new personnel, 2,520 person-hours of training for subcontractor employees and 274 person-hours of facility orientation training,
- Ergonomic and OHS risk assessments at Polisan Kimya production facilities,
- Poliport Kimya Warehouse OHS risk assessments,
- OHS risk assessments in the production, raw material warehouse, quality control, shipment and joint operations departments at Polisan Kansai Paint GEBKIM facility.

Number of Unsafe Situations and Behaviors

2016	2017	2018	2019
353	436	535	1,088*

* We achieved an increase thanks to our awareness-raising practices such as Simulated Safety Training, OHS Forum Theater event and employee participation in field tours.

Frequency of Lost Workday Accidents:

	2015	2016	2017	2018	2019
Polisan Kansai Boya	1.06	2.5	1.38	0.21	2.97
Poliport Kimya	2.34	2.5	1.06	1.03	2.08
Polisan Kimya	0.57	3.25	0.79	0.85	0.94
Subcontractor	1.14	1.60	3.03	1.01	1.1

Location-Based Lost Day Accident Frequencies

	2019 Accident Frequency Rate
Dilovası Facility	1.56
GEBKIM Facility	3.04
Poliport Kimya	2019 Accident Frequency Rate
Warehouse	0
Dry Bulk	0
Terminal	3.88
Polisan Kimya	2019 Accident Frequency Rate
Dilovası Facility	0.94
Adana Facility	0
Samsun Facility	0

Workplace Accident Severity Rate

	2015	2016	2017	2018	2019
Polisan Kansai Boya	0.08	0.02	0.08	0.06	0.09
Poliport Kimya	0.08	0.14	0.16	0.11	0.06
Polisan Kimya	0.07	0.16	0.03	0	0.21

	Legally Required Number of Representatives to be Present on the OHS Board	Current Number of Representatives
Polisan Kansai Boya	3	3
Polisan Kimya	3	4
Poliport Kimya	3	5

OCCUPATIONAL HEALTH AND SAFETY

2019 TARGETS	STATUS	2020 TARGETS
0 accident frequency. 	Accident frequency is 2.97, 2.08 and 0.94 at Polisan Kansai Boya, Poliport Kimya, and Polisan Kimya, respectively.	0 accident frequency.
To complete the process safety management system works with 100% compliance with the project plan. 	We performed various activities toward our target, including design of a 20-item model for Critical Control Points (CCPs), Behavioral Safety Leadership Program, Process Management System workshop, Change Management Procedure follow-up training, Asset Integrity Management workshop, and Learning from Incidents (LFI) activities.	Completing the last phase of the Process Safety Management System and finalizing the project. Performing effective management. Attaining, at least, 80% compliance with the performance criteria for the Operation Process Safety Index.
To strengthen legal compliance management; to manage production and service processes according to national and international standards.	We report on regulatory compliance audits and progress status. In 2019, we updated two of the most comprehensive legislative studies, Polisan Kimya and Poliport Kimya	To maintain the 2019 target.

	<p>HAZOP studies, and included them in the Safety Reports.</p>	
<p>To prepare the training program by performing an analysis on the health, safety and environment training needs per position and ensure 100% compliance with the program. (175 trainings/year)</p> 	<p>100% compliance with the training plan was achieved.</p>	<p>Updating the position-based health, safety, and environmental training needs analyses as living systems, preparing the required training program and attaining 100% compliance.</p>
<p>To ensure 100% compliance with the contractor audit plan. (33 audits/year)</p> 	<p>29 audits were realized with 88% compliance with the related audit plan.</p>	<p>To ensure 100% compliance with the contractor audit plan. (32 audits/year)</p>
<p>To prepare the Procedure on the Prevention of Major Industrial Accidents.</p> 	<p>Safety Reports were completed. We will be undertaking updates in compliance with new communiqués regarding the related legislation.</p>	<p>Completing the update work based on the new communiqués. Reflecting necessary changes to the Safety Management System. Completing necessary work in accordance with the soon to be published Internal Emergency Plan Communiqué.</p>
<p>To realize ergonomic risk assessments for Poliport Kimya and Polisan Kansai Boya GEBKİM Factory.</p> 	<p>We completed ergonomic risk assessments for Poliport Kimya and Polisan Kansai Boya Gebkim Factory.</p>	<p>-</p>
<p>To set up a Behavior Oriented Observation System under the scope of "Zero Accident" projects.</p> 	<p>We formulated and launched questionnaires for the behaviour-oriented observation system.</p>	<p>-</p>
<p>To report 150 unsafe conditions/actions as the HSE Department.</p> 	<p>The HSE Department logged 152 unsafe status/movement notifications.</p>	<p>To report 195 unsafe conditions/actions as the HSE Department.</p>
<p>To execute at least 4 behavior development/amendment projects via new methods.</p> 	<p>We conducted 4 behavioral improvement/correction projects.</p>	<p>-</p>
<p>To issue weekly HSE bulletins and assess them with employees for 30 minutes in every work unit at 15-day intervals and hold conversations about WHS issues.</p> 	<p>Weekly HSE newsletters were published. Each department held workshop discussions on HSE in every 15-30 days.</p>	<p>Publishing 20 newsletters a year to raise OHS awareness.</p>

“We encourage continuous development and adopt a proactive approach in line with international occupational health and safety practices. We ensure that all employees and subcontractors take full responsibility and participate in decision-making processes for effective risk control.

In 2019, we implemented many practices both in occupational safety and occupational health. We provided simulated safety training to 255 employees to increase risk management awareness. In addition, we made it possible for 195 employees to share all occupational safety rules and solution suggestions on a common platform with the forum theater event. We have increased our use of communication tools and next-generation e-learning platforms to increase awareness of and internalize OHS culture within the company.

We attach great importance to field visits, where we focus on the OHS strengths and weaknesses of our field workers. We have also seen that reviewing the current situation on site together and planning the necessary improvements contribute to continuous development.”

Emre BAŞKAL

Occupational Health and Safety Supervisor, Polisan Kimya

SOCIAL BENEFIT

OUR SOCIAL RESPONSIBILITY PROJECTS AND SPONSORSHIPS

“Every Voice One Breath” with the Theme “Hear Me, Help Me Breathe”

Our “Every Voice One Breath” project, which aims to raise solution-oriented social awareness about women’s issues, focused on the theme “Hear Me, Help Me Breathe” in this year’s campaign. Our campaign made its voice heard with impressive music specially designed for Polisan. We tried to attract attention to all kinds of violence and inequality against women including physical and mental violence, femicide and all kinds of discrimination against women.

Bazaar - Art For Every House

Polisan Kansai Paint continued to sponsor the Bazaar Exhibition, which brings talented and young art students and art lovers together with the idea of “Art in Every Home” (Her Eve Bir Sanat) since 2011. The exhibition aims to remind everyone that art is not a luxury and show that it is accessible. In addition, we awarded one of the paintings, which was exhibited under the theme of violence against women, with the Polisan Special Prize.

Quantitative Analysis Laboratory Project

As a company that cares about the development of vocational and technical education in parallel with the industry, we have undertaken the construction of the Industrial Quantitative Analysis Laboratory of GEBKIM Vocational and Technical Anatolian High School. With this support, we believe that we will contribute to the development of knowledge, skills and competencies of students who will become the chemists of the future.

Other sponsorships in 2019:

- Sponsoring the “Evren’in Teni” Exhibition
- Sponsoring Diliskelesi Sports Club, a football team in the Amateur League

Find out more about our activities in previous years in our previous [report](#).

OUR SUSTAINABILITY PERFORMANCE

OUR ECONOMIC PERFORMANCE

(million TL)	2017	2018	2019
Net Income	749.6	1163.3	1013.1
Cost of Sales	623.2	972.7	848.9
Research and Development Costs	2.3	2.4	5.3
Marketing, Sales and Distribution Costs	30	13.6	13.4
General Administrative Costs	31.3	45.2	76.7
Tax Expenses for the Period	11.7	28.8	9.3

OUR ENVIRONMENTAL PERFORMANCE

Energy Consumption (kWh)		2017	2018	2019
Polisan Kansai Boya		6,506,359	5,795,194	8,880,497
Poliport Kimya		5,955,932	6,096,843	5,734,425
Polisan Kimya		13,345,159	11,815,276	10,964,911
Waste by Type (tons)				
Hazardous Waste		5,260	2,815	4,488
Non-Hazardous Waste		2,638	3,491	1,697
Total		7,897	6,306	6,185
Water Consumption (m ³) *				
Municipal Water		150,410	178,406	134,125
Reverse Osmose Water		90,640	63,829	46,348
Carbon Footprint (tCO ₂ e)				
	2012	2017	2018	2019
Scope 1	19,538	12,045	9,073	9,913
Scope 2	10,873	11,465	10,534	11,919
Total	30,411	23,510	19,607	21,831

* This table includes the water consumption of Rohm and Haas Kimyasal Ürünler Üretim Dağıtım Tic. A.Ş., in which Polisan Holding has a 40 percent share.

OUR SOCIAL PERFORMANCE- POLİSAN KANSAI BOYA

Distribution of Employees by Gender (Number)		2017	2018	2019
	Blue-collar female employee	4	4	1
	Blue-collar male employee	373	366	327
	White-collar female employee	76	76	87
	White-collar male employee	279	285	271
Distribution of Employees by Contract Type (Number)				
	Female Employees with Fixed Term Contract	0	0	0
	Male Employees with Fixed Term Contract	71	44	101
	Female Employees with Indefinite Term Contract	80	80	88
	Male Employees with Indefinite Term Contract	581	607	497
	Female Employees Under Collective Labour Agreement	4	4	1
	Male Employees Under Collective Labour Agreement	345	346	234
Distribution of Employees by Employment Type (Number)				
	Full Time Female Employee	80	80	88
	Full Time Male Employee	652	651	598
	Part-Time Female Employee	0	0	0
	Part-Time Male Employee	0	0	0
	Permanent Female Employee	80	80	88
	Permanent Male Employee	581	607	598
	Subcontracted Female Employee	0	0	0
	Subcontracted Male Employee	0	0	0

OUR SOCIAL PERFORMANCE- POLİPORT KİMYA

Distribution of Employees by Gender (Number)		2017	2018	2019
	Blue-collar female employee	0	0	0
	Blue-collar male employee	2	2	143
	White-collar female employee	44	3	1
	White-collar male employee	77	40	40
Distribution of Employees by Contract Type (Number)				
	Female Employees with Fixed Term Contract	0	0	0
	Male Employees with Fixed Term Contract	0	0	0
	Female Employees with Indefinite Term Contract	44	3	1
	Male Employees with Indefinite Term Contract	79	42	183
	Female Employees Under Collective Labour Agreement	0	0	0
	Male Employees Under Collective Labour Agreement	0	0	143
Distribution of Employees by Employment Type (Number)				
	Full Time Female Employee	44	3	1
	Full Time Male Employee	79	42	183
	Part-Time Female Employee	0	0	0
	Part-Time Male Employee	0	0	0
	Permanent Female Employee	44	3	1
	Permanent Male Employee	79	42	183
	Subcontracted Female Employee	0	0	0
	Subcontracted Male Employee	0	0	0

OUR SOCIAL PERFORMANCE- POLİSAN KİMYA

Distribution of Employees by Gender (Number)		2017	2018	2019
	Blue-collar female employee	3	2	1
	Blue-collar male employee	403	395	206
	White-collar female employee	9	8	8
	White-collar male employee	55	44	39
Distribution of Employees by Contract Type (Number)				
	Female Employees with Fixed Term Contract	0	1	0
	Male Employees with Fixed Term Contract	6	8	0
	Female Employees with Indefinite Term Contract	12	9	9
	Male Employees with Indefinite Term Contract	452	431	245
	Female Employees Under Collective Labour Agreement	0	0	0
	Male Employees Under Collective Labour Agreement	369	359	192
Distribution of Employees by Employment Type (Number)				
	Full Time Female Employee	12	10	9
	Full Time Male Employee	458	439	245
	Part-Time Female Employee	0	0	0
	Part-Time Male Employee	0	0	0
	Permanent Female Employee	12	9	9
	Permanent Male Employee	452	431	245
	Subcontracted Female Employee	0	0	0
	Subcontracted Male Employee	0	0	0

OUR SOCIAL PERFORMANCE- POLISAN HOLDING

Distribution of Employees by Gender (Number)		2017	2018	2019
	Blue-collar female employee	3	3	3
	Blue-collar male employee	51	57	52
	White-collar female employee	4	43	31
	White-collar male employee	16	65	67
Distribution of Employees by Contract Type (Number)				
	Female Employees with Fixed Term Contract	0	0	0
	Male Employees with Fixed Term Contract	0	0	0
	Female Employees with Indefinite Term Contract	7	46	34
	Male Employees with Indefinite Term Contract	67	122	119
	Female Employees Under Collective Labour Agreement	3	3	3
	Male Employees Under Collective Labour Agreement	45	49	47
Distribution of Employees by Employment Type (Number)				
	Full Time Female Employee	7	46	34
	Full Time Male Employee	67	122	119
	Part-Time Female Employee	0	0	0
	Part-Time Male Employee	0	0	0
	Permanent Female Employee	7	46	34
	Permanent Male Employee	67	122	119
	Subcontracted Female Employee	0	0	0
	Subcontracted Male Employee	0	0	0

OUR SOCIAL PERFORMANCE- POLİSAN KANSAI BOYA, POLİPORT KİMYA, POLİSAN KİMYA

Leaving Employees by Gender (Number)		2017	2018	2019
	Blue-collar female employee	1	1	3
	Blue-collar male employee	320	192	279
	White-collar female employee	17	15	10
	White-collar male employee	71	45	38
Leaving Employees by Age Groups (Number)				
	Blue-collar <30	162	123	106
	Blue-collar 30-50	151	64	143
	Blue-collar >50	8	6	33
	White-collar <30	27	7	6
	White-collar 30-50	57	48	36
	White-collar >50	4	5	6
Employees Return to Work After Parental Leave by Gender (Number)				
	Female	5	8	3
	Male	59	86	59
Annual Average Training Hours per Employee by Gender and Job-Type (hr/person)				
	Blue-collar	25.12	18.28	22.9
	White-collar	10.22	10.45	11.9
	Female	24.23	12.71	12.05
	Male	23.82	15.38	18.67

METHODOLOGY

OUR CALCULATION METHODS

CARBON FOOTPRINT

When measuring Polisan's carbon footprint, emission data was calculated according to type of activity, and carbon dioxide equivalent values were obtained by utilizing the data from Polisan Kansai Boya, Poliport Kimya and Polisan Kimya companies within the Holding. Carbon dioxide equivalent is derived by multiplying the amount of a given greenhouse gas with its global warming potential. The table below provides the greenhouse gases and global warming potential values as defined by the Kyoto Protocol, including carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFC), perfluorocarbons (PFC) and sulphur hexafluoride (SF₆). The emission factor data used in the calculation was taken from the IPCC Climate Change - 5th Assessment Report (2013). Carbon footprint is calculated for the activities within the limits of Scopes 1, 2 and 3 as defined by the GHG Protocol. This calculation work has been prepared based on the emissions falling under Scopes 1 and 2.

LIFE CYCLE ASSESSMENT, LCA

The LCA study carried out for Elegans Extra Semi-Matte and Perla Semi-Matte interior paints and Exelans Flat and Perla Silicone exterior paints covers the pre-production, production and end-of-life stages of the products.

OHS ACCIDENT CALCULATIONS

The following formula is used to calculate accident frequency:

Accident Frequency = (Number of Accidents x 200,000)/Total Number of Actual Working Hours

For the calculation of frequency of lost workday accidents, only those accidents for which the worker having the accident is on sick leave for 1 day or more are included in the calculation. For the calculation of total accident frequency, all accidents resulting in an injury, including accidents for which first-aid treatment is administered, are included in the calculation.

The following formula is used to calculate workplace accident severity rate:

Workplace accident severity rate = (Total Number of Lost Workdays x 8 x 100)/(Total Number of Actual Working Hours within One Year)

ENERGY CONSUMPTION

The energy consumption figures include electricity, steam, natural gas, fuel oil and LPG consumption between 1 January and 31 December 2019 and refer to direct and indirect consumption.

Direct energy consumption figures are provided in kWh per ton of products manufactured for Polisan Kansai Boya and Polisan Kimya products, while they are provided in kWh per ton of products handled for Poliport Kimya products.

WATER CONSUMPTION

Well water, city water and reverse osmosis consumption figures for the period between 1 January and 31 December 2019 are provided. Water consumption figures are provided in kWh per ton of products manufactured for Polisan Kansai Boya and Polisan Kimya products, while they are provided in m³ per ton of products handled for Poliport Kimya products.

WASTEWATER

The wastewater discharged during the period between 1 January and 31 December 2019 has been classified as industrial and domestic wastewater and the total figures for Polisan Kansai Boya, Poliport Kimya and Polisan Kimya are provided.

AMOUNT OF WASTE PER TYPE

The provided total amount of waste generated by Polisan Kansai Boya, Poliport Kimya and Polisan Kimya during the period between 1 January and 31 December 2019 has been classified as hazardous and non-hazardous waste.

The amount of hazardous waste refers to the amount of waste that is classified as hazardous and recycled/disposed of accordingly outside the company as per the Regulation on Waste Management.

The amount of non-hazardous waste refers to the amount of all solid and liquid waste that is recycled/disposed of outside the company, excluding hazardous waste as well as wastewater. The waste has also been classified according to the type of recycling and disposal.

BREAKDOWN OF EMPLOYEES AND EMPLOYEES LEAVING THEIR JOBS

This contains details about the employees working for the company, such as gender, status, type of contract and type of employment. Employment contracts of the employees have been split into two categories: definite and indefinite. Employees have been classified as blue-collar and white-collar employees. The employees leaving their jobs have been classified according to their gender, status and age (employees under 30 years of age, employees between 30 and 50 years of age, and employees older than 50 years of age). The figures on yearly average hours of training are provided in the form of hours/person according to the status and gender of the employees.

Index and Communication on Progress to the UN Global Compact

Principles of the UN Global Compact	Place of Performance Information in Report
Human Rights	
Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and	Human Resources, Our Sustainability Policy, Occupational Health and Safety, We Became a Signatory to the UN Global Compact, Ethics and Integrity, 3rd Party Audits,
Principle 2: make sure that they are not complicit in human rights abuses.	Ethics and Integrity, Our Sustainability Policy, Polisan Holding Code of Business Ethics and Conduct for Supplier, Our Social Responsibility Projects and Sponsorships, Anti-Bribery and Anti-Corruption Program, Irregularity and Security Violations Evaluation Committee, 3rd Party Audits,
Labor	
Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;	Collective Labor Agreements, Polimevzuat Tracking System,
Principle 4: the elimination of all forms of forced and compulsory labour;	Ethics and Integrity, Our Sustainability Policy, Polisan Holding Code of Business Ethics and Conduct for Supplier, 3rd Party Audits,
Principle 5: the effective abolition of child labour; and	Ethics and Integrity, Polisan Holding Code of Business Ethics and Conduct for Supplier, Polisan Holding General Purchasing Conditions, 3rd Party Audits,
Principle 6: the elimination of discrimination in respect of employment and occupation.	Ethics and Integrity, Our Sustainability Policy, Polisan Holding Code of Business Ethics and Conduct for Supplier, 3rd Party Audits,

Environment

Principle 7: Businesses should support a precautionary approach to environmental challenges;

Our Commitment to Responsible Care,
Our Certificates,
Our Quality, Health, Safety and Environment Policy,
Our Sustainability Policy,
Environmental Analyses,
Waste Management at Polisan Holding,
Water and Wastewater Management,
Management of Chemicals,
3rd Party Audits,

Principle 8: undertake initiatives to promote greater environmental responsibility; and

Our Sustainability Journey,
Our Management Systems,
Our Sustainability Policy,
Environmentally Responsive Applications,
Cooperation with ÇEVKO in Waste Management,
Greenhouse Gas Emission Performance,
3rd Party Audits,

Principle 9: encourage the development and diffusion of environmentally friendly technologies.

Digitalization and Sustainable Production,
R&D and Innovation At Polisan Kansai Boya,
Our Efficiency Focused Projects and Investments,
LEED Green Building Applications at GEBKİM Factory,
Responsible Use of Resources in Production,
System Support Management,
Mix Center,
3rd Party Audits,

Anti-Corruption

Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.

Our Anti-Bribery and Anti-Corruption Policy,
Our Anti-Bribery and Anti-Corruption Procedure,
Anti-Bribery and Anti-Corruption Program,
Anti-Bribery and Anti-Corruption Risk Assessment,
Global and Reliable Customs Operations,
3rd Party Audits,

GRI STANDARDS CONTENT INDEX

GRI Standard	Disclosure Number	GRI Disclosure Title	Disclosures / Page Number(s) and Explanations
GRI 101: Foundation 2016			
GRI 102: General Disclosures 2016	Organizational Profile		
	102-1	Name of The Organization	Polisan Holding A.Ş.
	102-2	Activities, Brands, Products, And Services	Polisan Holding 2019 Annual Report , p.9 (section: General Overview)
	102-3	Location of Headquarters	Istanbul / Turkey
	102-4	Location of Operations	Kocaeli/Turkey,
	102-5	Ownership and Legal Form	Polisan Holding 2019 Annual Report , p.9 (section: General Overview)
	102-6	Markets Served	For Polisan Kansai Boya; Turkey, Israel, Iraq, Cyprus, Kosovo, Montenegro, Netherlands, Uzbekistan, Turkmenistan, Georgia, Azerbaijan, Russia, France, Nakhichevan, Qatar. For Polisan Kimya; Turkey, Egypt, Moldova, Bulgaria, Greece, Australia, Morocco, Israel, Serbia, Chile, United Arab Emirates, Algeria, Georgia, Romania, Iraq, North Cyprus, Kosovo, Germany, England, Italy, Norway, Ukraine.
	102-7	Scale of The Organization	Polisan Holding 2019 Annual Report , p.10-11 (section: 2019 Financial and Operational Outlook) Our Social Performance,
	102-8	Information on Employees and Other Workers	Our Social Performance,
	102-9	Supply Chain	Supply Chain Management,
102-10	Significant Changes to the Organization and Its Supply Chain	Polisan Holding 2019 Annual Report , pp.12-13 (section: Milestones) Polisan Holding 2019 Annual Report , p.19 (section: Polisan Holding Board of Directors)	

102-11	Precautionary Principle or Approach	The Management of Chemicals, R&D and Innovation at Polisan Kansai Boya, R&D Innovation at Polisan Kimya, Process Management, Workplace Health And Safety, For A Liveable Environment, Ethics And Integrity,
102-12	External initiatives	Step By Step Sustainability,
102-13	Membership of Associations	Polisan Holding 2017 GRI Sustainability Report , p.31 (section: Our Memberships)
Strategy		
102-14	Statement From Senior Decision-Maker	Messages From Executive Management, CEO Message, Polisan Holding 2017 GRI Sustainability Report , p.54-55 (section: Our Polisan Holding Policies)
102-15	Key Impacts, Risks, and Opportunities	Polisan Holding 2019 Annual Report , p.105 (section: Risk Management and Internal Control Mechanism) Process Management, Polisan Holding 2019 Annual Report , pp.105-107 (section: Polisan Holding Internal Control System and Internal Audit Activities)
Ethics and Integrity		
102-16	Values, Principles, Standards, and Norms Of Behavior	Polisan Holding 2017 GRI Sustainability Report , pp.14, 53, 54, 55 (Sections: Our Values, Our Ethical Values, Our Policies) Ethics and Integrity, Anti-Bribery and Anti-Corruption Program,
102-17	Mechanisms For Advice and Concerns About Ethics	Anti-Bribery and Anti-Corruption Program, p.10 (Section: Notice of Bribery and Corruption Violations, Violations of Anti-Bribery and Anti-Corruption Rules and its Consequences, Irregularity and Security Violations Assessment Committee)

		Polisan Holding 2017 GRI Sustainability Report , p.5 (section: Anti-Bribery and Anti-Corruption Procedure, Violation Notifications)
Governance		
102-18	Governance Structure	Polisan Holding 2019 Annual Report , p.9 (section: General Overview)
102-20	Executive-Level Responsibility For Economic, Environmental, and Social Topics	Polisan Holding 2017 GRI Sustainability Report , p.41 (section: Sustainability Management)
Stakeholder Engagement		
102-40	List of Stakeholder Groups	Stakeholder Relations and Priority Topics,
102-41	Collective Bargaining Agreements	Collective Agreements,
102-42	Identifying and Selecting Stakeholders	Stakeholder Relations and Priority Topics,
102-43	Approach to stakeholder engagement	Stakeholder Relations and Priority Topics,
102-44	Key Topics and Concerns Raised	Priority Topics
Reporting Practice		
102-45	Entities included in the consolidated financial statements	About the Report, Polisan Holding 2019 Annual Report , pp.10-11 (section: 2019 Financial and Operational Outlook)
102-46	Defining report content and topic Boundaries	About the Report, Contents, Priority Topics, Polisan Holding 2017 GRI Sustainability Report , (section: Policies)
102-47	List of material topics	Priority Topics,
102-48	Restatements of information	Water Consumption Per Product Manufactured/Handled, Electric Energy Consumption Per Product Manufactured/Handled, Investments,

	102-49	Changes in reporting	There are no significant changes in the Scope or Topic Boundaries.
	102-50	Reporting period	January 1 and December 31, 2019
	102-51	Date of most recent report	January 1 and December 31, 2018
	102-52	Reporting cycle	Annual
	102-53	Contact point for questions regarding the report	Management Systems and Sustainability Department, yss@polisan.com.tr .
	102-54	Claims of reporting in accordance with the GRI Standards	This report has been prepared in accordance with the GRI Standards: Core option.
	102-55	GRI content index	GRI Standards Content Index,
	102-56	External assurance	Polisan Kimya 2019 Greenhouse Gas Verification Report, Polisan Holding 2017 GRI Sustainability Report , p.13 (Section: Our Greenhouse Gas Monitoring Plan) 3rd Party Audits, Polisan Holding 2019 Annual Report , pp.115-209 (section: 2019 Consolidated Financial Statements and Independent Auditor's Report)
GRI 200: Economic Standards Series			
	Economic Performance		
GRI 103: Management Approach 2016	103-1	Explanation of the Material Topic and Its Boundary	Polisan Holding 2017 GRI Sustainability Report , p.13 (Section: Our Strategic Priorities)
	103-2	The Management Approach and Its Components	Messages From Executive Management, CEO Message, Polisan Holding 2019 Annual Report , p.9 (section: General Overview) Polisan Holding 2017 GRI Sustainability Report , p.100 (Section: Composition of Board Committees) Polisan Holding 2017 GRI Sustainability Report , p.54-55 (Section: Our Policies)
	103-3	Evaluation of the Management Approach	Highlights of Our 2019 Performance, Our Economic Performance,

			Polisan Holding 2019 Annual Report , p.10 (section: Polisan Holding 2019 Combined Financial Results)
GRI 201: Economic Performance 2016	201-1	Direct Economic Value Generated and Distributed	Highlights of Our 2019 Performance, Polisan Holding 2019 Annual Report , p.10 (section: Polisan Holding 2019 Combined Financial Results))
	201-3	Defined benefit plan obligations and other retirement plans	Polisan Holding 2019 Annual Report , p.126 (section: Provisions for employee termination benefits)
	201-4	Financial assistance received from government	Polisan Holding 2019 Annual Report , p.91 (section: Incentives) Highlights of Our 2019 Performance, Polisan Holding 2019 Annual Report , p.80 (section Turquality Support Program) TEYDEB Projects,
Indirect Economic Impacts			
GRI 103: Management Approach 2016	103-1	Explanation of the Material Topic and Its Boundary	Our Commitment to Responsible Care, Polisan Holding 2017 GRI Sustainability Report , p.55 (Section: Our Sustainability Policy), We Signed the United Nations Global Compact,
	103-2	The Management Approach and Its Components	Polisan Holding 2017 GRI Sustainability Report , p.92 (Section: New Production And Storage Facility at Global Standards) Our Social Responsibility Projects and Sponsorship, Polisan Holding 2017 GRI Sustainability Report , p.55 (Section: Our Polisan Holding Policies)
	103-3	Evaluation of the Management Approach	Messages From Executive Management, CEO Message, Highlights of Our 2019 Performance, Our Efficiency-Oriented Projects and Investments, R&D Expenditures, R&D Expenditures,
GRI 203: Indirect Economic Impacts 2016	203-1	Infrastructure Investments and Services Supported	Highlights of Our 2019 Performance, LEED Green Building Practices, Our Efficiency-Oriented Projects and Investments, Our Social Responsibility Projects and Sponsorship,
Procurement Practices			

GRI 103: Management Approach 2016	103-1	Explanation of the Material Topic and Its Boundary	Polisan Holding 2018 GRI Sustainability Report , p.24 (Section: Purchase Management)
	103-2	The Management Approach and Its Components	Process Management,
	103-3	Evaluation of the Management Approach	Evaluation of Suppliers, Customer Complaints Due to Transport, Poliport Kimya Receives a Gold Award From EcoVadis,
GRI 204: Procurement Practices 2016	204-1	Procurement Practices	Local Supplier Rates,
Anti-Corruption			
GRI 103: Management Approach 2016	103-1	Explanation of the Material Topic and Its Boundary	Polisan Holding 2017 GRI Sustainability Report , p.52 (Section: Our Anti-Bribery and Anti-Corruption Policy) Polisan Holding 2017 GRI Sustainability Report , p.52 (Section: Our Anti-Bribery and Anti-Corruption Procedure) Polisan Holding 2018 GRI Sustainability Report , p.15 (Section: Polisan Holding Ethical Principles Book)
	103-2	The Management Approach and Its Components	Polisan Holding 2017 GRI Sustainability Report , p.52 (Section: Our Anti-Bribery and Anti-Corruption Policy) Anti-Bribery and Anti-Corruption Program, Polisan Holding 2018 GRI Sustainability Report , p.15 (Section: Polisan Holding Ethical Principles Book) 3rd Party Audits, Polisan Holding 2019 Annual Report , pp. 115-209 (section: 2019 Consolidated Financial Statements and Independent Auditor's Report) Global and Reliable Customs Operations,
	103-3	Evaluation of the Management Approach	Polisan Holding 2017 GRI Sustainability Report , p.52 (Section: Our Anti-Bribery and Anti-Corruption Procedure, Application Stages) Borsa Istanbul Sustainability Index Performance, Poliport Kimya Receives a Gold Award From EcoVadis,

			We Signed the United Nations Global Compact,
GRI 205: Anti-Corruption 2016	205-1	Operations Assessed for Risks Related to Corruption	Polisan Holding 2017 GRI Sustainability Report , Anti-Bribery and Anti-Corruption Program, p.52, (section: Main Risk Areas for Acts of Bribery and Corruption)
	205-2	Communication and Training About Anti-Corruption Policies and Procedures	Polisan Holding 2017 GRI Sustainability Report , Anti-Bribery and Anti-Corruption Program, (section: Education), Polisan Holding 2017 GRI Sustainability Report , Anti-Bribery and Anti-Corruption Program, (section: Review)
GRI STANDARD	DISCLOSURE NUMBER	GRI DISCLOSURE TITLE	DISCLOSURES / PAGE NUMBER(S) AND EXPLANATIONS
GRI 300: Environmental Standards Series			
Materials			
GRI 103: Management Approach 2016	103-1	Explanation of the Material Topic and Its Boundary	Our Commitment to Responsible Care, Polisan Holding 2017 GRI Sustainability Report , p.55 (Section: Our Sustainability Policy), We Signed the United Nations Global Compact, The Management of Chemicals, Our Environmental Labels,
	103-2	The Management Approach and Its Components	Waste Management,
	103-3	Evaluation of the Management Approach	Ratio of Waste According to Recycling Type, Waste Collected by ÇEVKO, Borsa Istanbul Sustainability Index Performance, Poliport Kimya Receives a Gold Award From EcoVadis,
GRI 301: Materials 2016	301-2	Recycled input materials used	Our Environment-Friendly Applications, LEED Green Building Practices,
	301-3	Reclaimed Products and Their Packaging Materials	Waste Collected by ÇEVKO,
Energy			
GRI 103: Management Approach 2016	103-1	Explanation of the Material Topic and Its Boundary	Our Commitment to Responsible Care, Polisan Holding 2017 GRI Sustainability Report , p.55 (Section: Our Sustainability Policy),

			We Signed the United Nations Global Compact, Polisan Holding 2017 GRI Sustainability Report , p.55 (Section: Our Energy Management Policy)
	103-2	The Management Approach and Its Components	Energy Management, USGBC LEED Gold Certificate, Digitalization and Sustainable Production, The Smart Machines in Our Mix System, Monitoring Energy Efficiency, Greenhouse Gas Emissions Management,
	103-3	Evaluation of the Management Approach	Our Targets- Energy Management, Our Environmental Performance- Energy Consumption, Borsa Istanbul Sustainability Index Performance, Poliport Kimya Receives a Gold Award From EcoVadis, We Signed the United Nations Global Compact,
GRI 302: Energy 2016	302-1	Energy Consumption Within the Organization	Our Environmental Performance- Energy Consumption,
	302-3	Energy Intensity	Electric Energy Consumption Per Product Manufactured/Handled,
	302-4	Reduction of Energy Consumption	LEED Green Building Practices, Our Targets- Energy Management, Polisan Kimya Responsible Production Approach, Our Efficiency-Oriented Projects and Investments,
	302-5	Reductions in Energy Requirements of Products and Services	R&D and Innovation at Polisan Kansai Boya, R&D Innovation at Polisan Kimya, Polisan Kimya Responsible Production Approach,
Water			
GRI 103: Management Approach 2016	103-1	Explanation of the Material Topic and Its Boundary	Water and Wastewater Management, Our Commitment to Responsible Care, Polisan Holding 2017 GRI Sustainability Report , p.55 (Section: Our Sustainability Policy), We Signed the United Nations Global Compact,

	103-2	The Management Approach and Its Components	Our Carbon Disclosure Project (CDP) Statements, USGBC LEED Gold Certificate, New Products,
	103-3	Evaluation of the Management Approach	Our Targets- Waste and Wastewater, Our Targets- Our Sustainability Performance, Our Targets- R&D and Innovation at Polisan Kimya, LEED Green Building Practices, Borsa Istanbul Sustainability Index Performance, Poliport Kimya Receives a Gold Award From EcoVadis,
GRI 303: Water 2016	303-1	Water Withdrawal by Source	Water and Wastewater Management,
	303-3	Water recycled and reused	Polisan Kimya Responsible Production Approach,
Biodiversity			
GRI 103: Management Approach 2016	103-1	Explanation of the Material Topic and Its Boundary	Our Commitment to Responsible Care, Polisan Holding 2017 GRI Sustainability Report , p.55 (Section: Our Sustainability Policy), We Signed the United Nations Global Compact,
	103-2	The Management Approach and Its Components	Environmental Analyses,
	103-3	Evaluation of the Management Approach	Our Targets- Our Sustainability Performance,
GRI 304: Biodiversity 2016	304-3	Habitats Protected or Restored	We Continue to Support Biodiversity,
Emissions			
GRI 103: Management Approach 2016	103-1	Explanation of the Material Topic and Its Boundary	Our Commitment to Responsible Care, Polisan Holding 2017 GRI Sustainability Report , p.55 (Section: Our Sustainability Policy), We Signed the United Nations Global Compact,
	103-2	The Management Approach and Its Components	Environmental Analyses, Greenhouse Gas Emissions Management, Our Carbon Disclosure Project (CDP) Statements, European Technical Approval (ETA),

			As Polisan Holding, We Were Granted the “Low Carbon Hero” Award,
	103-3	Evaluation of the Management Approach	Our Targets- Energy Management, Our Targets- Our Sustainability Performance, Greenhouse Gas Emission Performance, Borsa Istanbul Sustainability Index Performance, Poliport Kimya Receives a Gold Award From EcoVadis,
GRI 305: Emissions 2016	305-1	Direct (Scope 1) GHG emissions	Greenhouse Gas Emissions Management, Methodology,
	305-2	Energy indirect (Scope 2) GHG emissions	Greenhouse Gas Emissions Management, Methodology,
	305-4	GHG Emissions Intensity	Greenhouse Gas Emissions Management,
	305-5	Reduction of GHG emissions	Greenhouse Gas Emissions Management, LEED Green Building Practices, Carbon Footprint Reduction, Our Efficiency-Oriented Projects and Investments,
Effluents and Waste			
GRI 103: Management Approach 2016	103-1	Explanation of the Material Topic and Its Boundary	Our Commitment to Responsible Care, Polisan Holding 2017 GRI Sustainability Report , p.55 (Section: Our Sustainability Policy), We Signed the United Nations Global Compact,
	103-2	The Management Approach and Its Components	Wastewater Management, Waste Management, Environmental Analyses, Our Carbon Disclosure Project (CDP) Statements, Our Targets- R&D and Innovation at Polisan Kimya,
	103-3	Evaluation of the Management Approach	Our Targets- Waste and Wastewater, LEED Green Building Practices, Our Environmental Performance, Borsa Istanbul Sustainability Index Performance, Poliport Kimya Receives a Gold Award From EcoVadis,

GRI 306: Effluents and Waste 2016	306-1	Water Discharge by Quality and Destination	Water and Wastewater Management,
	306-2	Waste by Type and Disposal Method	Waste Management,
	306-3	Significant spills	There were no major environmental accidents during the reporting period.
GRI STANDARD	DISCLOSURE NUMBER	GRI DISCLOSURE TITLE	DISCLOSURES / PAGE NUMBER(S) AND EXPLANATIONS
Environmental Compliance			
GRI 103: Management Approach 2016	103-1	Explanation of the Material Topic and Its Boundary	Process Management,
	103-2	The Management Approach and Its Components	ISO 9001 Quality Management System, ISO 14001 Environmental Management System, For A Liveable Environment,
	103-3	Evaluation of the Management Approach	Global Sustainability Leaders Impact Analysis Assessment,
GRI 307: Environmental Compliance 2016	307-1	Non-compliance with Environmental Laws and Regulations	There were no environmental fines during the reporting period.
Supplier Environmental Assessment			
GRI 103: Management Approach 2016	103-1	Explanation of the Material Topic and Its Boundary	Polisan Holding 2018 GRI Sustainability Report , p.24 (Section: Purchase Management) Supply Chain Management, Polisan Holding Code of Business Ethics and Conduct for Supplier,
	103-2	The Management Approach and Its Components	ISO 14001 Environmental Management Systems, ISO 50001 Energy Management Systems, ISO 9001 Quality Management Systems, Greenhouse Gas Emission Performance,
	103-3	Evaluation of the Management Approach	Evaluation of Suppliers, 2019 Holding Audit Plan, Process Management,

			Our Targets- Supply Chain Management, Borsa Istanbul Sustainability Index Performance, Poliport Kimya Receives a Gold Award From EcoVadis,
GRI 308: Supplier Environmental Assessment 2016	308-1	New Suppliers that were Screened Using Environmental Criteria	Evaluation of Suppliers, Management of Chemicals,
GRI 400: Social Standards Series			
	Employment		
GRI 103: Management Approach 2016	103-1	Explanation of the Material Topic and Its Boundary	Polisan Holding 2017 GRI Sustainability Report , p.55 (Section: Our Sustainability Policy),
	103-2	The Management Approach and Its Components	ISO 9001 Quality Management Systems, Human Resources,
	103-3	Evaluation of the Management Approach	Polisan Holding 2018 Annual Report , p.71 (section: Awards) Our Targets- Human Resources, Our Social Performance-Polisan Kansai Boya, Our Social Performance-Poliport Kimya, Our Social Performance-Polisan Kimya, Our Social Performance-Polisan Holding, Poliport Kimya Receives a Gold Award From EcoVadis,
GRI 401: Employment 2016	401-1	New Employee Hires and Employee Turnover	Our Social Performance,
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	Polisan Holding 2018 Annual Report , p.86- (section: Human Resources Policy) Polisan Holding 2018 Annual Report , p.74- (section: Employee and Worker Flow) Collective Agreements,
	401-3	Parental Leave	Our Social Performance,
	Occupational Health and Safety		
GRI 103: Management Approach 2016	103-1	Explanation of the Material Topic and Its Boundary	Our Commitment to Responsible Care, Polisan Holding 2017 GRI Sustainability Report , p.55 (Section: Our Sustainability Policy),

			We Signed the United Nations Global Compact,
	103-2	The Management Approach and Its Components	OHSAS 18001 Occupational Health and Safety Management Systems, Workplace Health and Safety, Supply Chain Management, Polisan Holding 2018 GRI Sustainability Report , p.24 (Section: Purchase Management)
	103-3	Evaluation of the Management Approach	2019 Holding Audit Plan, Number of Unsafe Situation and Behaviors, Frequency of Lost Workdays Accident of Subcontractor, Frequency of Lost Workdays Accident, Workplace Accident Severity Rate, Borsa Istanbul Sustainability Index Performance, Poliport Kimya Receives a Gold Award From EcoVadis,
GRI 403: Occupational Health and Safety 2016	403-1	Workers representation in formal joint management–worker health and safety committees	Number of Employee Representatives Included in the OHS Board, Collective Agreements,
	403-2	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	Frequency of Lost Workdays Accident of Subcontractor, Frequency of Lost Workdays Accident, Workplace Accident Severity Rate,
	403-3	Workers with high incidence or high risk of diseases related to their occupation	Workplace Health and Safety,
	403-4	Health and Safety Topics Covered in Formal Agreements with Trade Unions	Polisan Holding 2018 GRI Sustainability Report , p.125 (section: Collective Agreements)
Training and Education			
GRI 103: Management Approach 2016	103-1	Explanation of the Material Topic and Its Boundary	Human Resources,

	103-2	The Management Approach and Its Components	Our Management Systems, Performance and Career Management, Training Management,
	103-3	Evaluation of the Management Approach	Training Management, Our Targets-Our Sustainability Performance, Paint Master Development Works, Poliport Kimya Receives a Gold Award From EcoVadis,
GRI 404: Training and Education 2016	404-1	Average Hours of Training per Year per Employee	Annual Average Training Hours per Employee,
GRI STANDARD	DISCLOSURE NUMBER	GRI DISCLOSURE TITLE	DISCLOSURES / PAGE NUMBER(S) AND EXPLANATIONS
	Non-discrimination		
GRI 103: Management Approach 2016	103-1	Explanation of the Material Topic and Its Boundary	Polisan Holding 2018 GRI Sustainability Report , p.15 (Section: Polisan Holding Ethical Principles Book) Polisan Holding 2017 GRI Sustainability Report , p.14, 53, 54, 55 (section: Our Ethical Values) Polisan Holding 2017 GRI Sustainability Report , p.55 Section: Sustainability Policy) We Signed the United Nations Global Compact, p.3
	103-2	The Management Approach and Its Components	Polisan Holding 2017 GRI Sustainability Report , p.143 (Section: Human Resources Policy)
	103-3	Evaluation of the Management Approach	Poliport Kimya Receives a Gold Award From EcoVadis,
GRI 406: Non-discrimination 2016	406-1	Incidents of Discrimination and Corrective Actions Taken	Polisan Holding 2017 GRI Sustainability Report , p.143 (section: Human Resources Policy)
	Child Labor		
GRI 103: Management Approach 2016	103-1	Explanation of the Material Topic and Its Boundary	Polisan Holding Code of Business Ethics and Conduct for Suppliers,
	103-2	The Management Approach and Its Components	Ethics and Integrity, 3 rd Party Audits, We Signed the United Nations Global Compact,

	103-3	Evaluation of the Management Approach	We Signed the United Nations Global Compact, Poliport Kimya Receives a Gold Award From EcoVadis,
GRI 408: Child Labor 2016	408-1	Operations and suppliers at significant risk for incidents of child labor	Polisan Holding Code of Business Ethics and Conduct for Suppliers,
Local Communities			
GRI 103: Management Approach 2016	103-1	Explanation of the Material Topic and Its Boundary	Polisan Holding 2017 GRI Sustainability Report , p.55 (section: Sustainability Policy)
	103-2	The Management Approach and Its Components	ISO 9001 Quality Management Systems, ISO 14001 Environmental Management Systems, ISO 5001 Energy Management Systems, ISO 10002 Customer Satisfaction Management Systems, Our Carbon Disclosure Project (CDP) Statements, Management of Chemicals,
	103-3	Evaluation of the Management Approach	Poliport Kimya Receives a Gold Award From EcoVadis,
GRI 413: Local Communities 2016	413-2	Operations With Significant Actual and Potential Negative Impacts on Local Communities	No operations with significant actual or potential negative impacts on local communities identified.
Customer Health and Safety			
GRI 103: Management Approach 2016	103-1	Explanation of the Material Topic and Its Boundary	Polisan Holding 2017 GRI Sustainability Report , p.55 (section: Sustainability Policy) Polisan Holding 2017 GRI Sustainability Report , p.55 (section: Our Polisan Kansai Boya Policies, Customer Satisfaction Policy), Polisan Holding 2017 GRI Sustainability Report , p.55 (section: Our Polisan Kansai Boya Policies, Quality, Health, Safety and Environment Policy), Polisan Holding 2017 GRI Sustainability Report , p.55 (section: Our Polisan Kansai Boya Policies, Laboratory Quality Policy), Polisan Holding 2017 GRI Sustainability Report , p.55 (section: Our Poliport Kimya Policies, Quality, Health, Safety and Environment Policy),

			<p>Polisan Holding 2017 GRI Sustainability Report, p.55 (section: Our Poliport Kimya Policies, Customer Satisfaction Policy),</p> <p>Polisan Holding 2017 GRI Sustainability Report, p.55 (section: Our Poliport Kimya Policies, Our Extensive Industrial Accident Prevention Policy),</p> <p>Polisan Holding 2017 GRI Sustainability Report, p.55 (section: Our Poliport Kimya Policies- Security Policy),</p> <p>Polisan Holding 2017 GRI Sustainability Report, p.55 (section: Our Polisan Kimya Policies- Quality, Health, Safety and Environment Policy),</p> <p>Polisan Holding 2017 GRI Sustainability Report, p.55 (section: Our Polisan Kimya Policies- Customer Satisfaction Policy),</p> <p>Polisan Holding 2017 GRI Sustainability Report, p.55 (section: Our Polisan Kimya Policies- Our Extensive Industrial Accident Prevention Policy),</p>
	103-2	The Management Approach and Its Components	ISO 9001 Quality Management Systems, ISO 10002 Customer Satisfaction Management Systems, ISO 27001 Information Security Management Systems, Customer Satisfaction Management,
	103-3	Evaluation of the Management Approach	Surveys, Our Efficiency-Oriented Projects and Investments, Management of Chemicals, Poliport Kimya Receives a Gold Award From EcoVadis,
GRI 416: Customer Health and Safety 2016	416-1	Assessment of the Health and Safety Impacts of Product and Service Categories	Process Management, R&D and Innovation at Polisan Kansai Boya, R&D and Innovation at Polisan Kimya,
Material Topics That Are Not Covered by the GRI Standards			
Digitization			
GRI 103: Management Approach 2016	103-1	Explanation of the Material Topic and Its Boundary	Information Systems Management,
	103-2	The Management Approach and Its Components	ISO 27001 Information Security Management Systems, Messages From Executive Management,

			Information Systems Management,
	103-3	Evaluation of the Management Approach	Process Management, Digitalization and Sustainable Production, Process Automation System Modernization, Facility Asset Inventory Management System, Measurement Systems Integration, Effective Warehouse Management, Digital Management of Port Operations, The Smart Machines in Our Mix System, Big Data Management in the Mix System, Mix System Color Archive Management, Communication with Machines Located Abroad, Loyalty Programs and Payment Systems.