

Building our

# SUSTAINABLE FUTURE

SUSTAINABILITY REPORT 2013

Mexichem

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# 1. COMPANY

## PROFILE AND STRATEGY



### 1.1 ABOUT MEXICHEM

Mexichem is a global leader in the chemical and petrochemical industry, with more than 50 years of experience and 30 years of trading on the Mexican Stock Exchange.

It has operations in America, Europe, and Asia; its products are sold in more than 50 countries; and it generated total sales for US\$5.177 billion annually. It has 17,345 employees and contributes to the development of the countries in which it operates. (2.1)

We strive for Mexichem products to have a positive impact on quality of life and progress in society. Our products include goods and services that are essential for society, destined to sectors as dynamic as construction and infrastructure, transporting water and basic sanitation, generating and supplying electricity, transportation, communications, protecting the environment, and caring for health, among many other things.

Our customers are distributed in more than 50 countries and have put their trust in our efficient production to meet their needs. Currently the company is focused on three key production chains: Chloride-Vinyl, Integral Solutions, and Fluorine.

Corporate headquarters are located at

**Río San Javier #10**

**Fraccionamiento Viveros del Río**

**Tlalnepantla, Estado de México**

**54060 México**

(2.4)



**3**  
CHAINS

**86**  
SITES

**70**  
ISO-9001  
CERTIFICATES  
(Quality Management)

**49**  
ISO-14001  
CERTIFICATES  
(Environmental  
Management)

**19**  
OHSAS 18001  
CERTIFICATES (Safety)

## 1.2 OPERATIONAL STRUCTURE (2.3)

The operational structure of Mexichem is made up of three production chains: The Chloride-Vinyl Chain (including Resins, Compounds, and Derivatives), the Fluorine Chain, and the Integral Solutions Chain. Each of the chains is formed by business units that are interrelated, so that the finished product of one unit is the raw material of another. The three chains also complement each other in the course of their operations.

### Corporate Services

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**Finance**

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**Legal**

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**Human Resources**

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**Strategic Planning and Investor Relations**

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**Fiscal**

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**Information Technologies**

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**Comptroller's Office**

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**Research and Development Center**

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**Internal Audit**

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**Communication**

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## Chloride-Vinyl Chain

- Derivatives
- Vinyl resins

- Chlorine-soda phosphates
- Compounds

The Chloride-Vinyl Chain begins with mining salt (sodium chloride), from which chlorine and caustic soda are obtained. Chlorine is then transformed into vinyl chloride monomer—chlorine plus ethylene, a derivative of petroleum—to polymerize it and produce polyvinyl chloride resin or PVC, an extremely versatile plastic, which can be used for innumerable daily applications such as piping for transporting drinking, waste or irrigation water; coatings for electric wires; window, door, front wall or house frames; tiles, floors, and furniture covers in the construction industry; automobile parts and appliances, clothes and shoes, bottles and packing materials, medical supplies, and many other things.

This chain also produces PVC compounds that include the necessary additives to process vinyl resins produced by Mexichem and obtain the functional properties required for each application, thus transforming this polymer into final products.

On the other hand, chlorine is used to purify water for human consumption, to produce cleaners, to disinfect floors and walls, to whiten paper, and to make white pigments that are used as the basis for paints. Soda is used to make soap, shampoo, creams, detergents, and to treat water. Other processes include the production of plasticizers used as additives in flexible PVC products.

## Integral Solutions Chain

- Agricultural solutions
  - Geosystems
- Fluid-conduction
  - Wavin

This chain integrates the Mexichem processes and products with which the general public most often comes in contact with. The most important and most used product is PVC piping, although we also make plastic piping using other polymers. Mexichem is the largest integrated producer of PVC resins in Latin America, which constitutes an unbeatable advantage for us.

Mexichem is the world leader in the production and marketing of piping systems, fittings, and plastic accessories for fluid-conduction, mainly water, and others such as electricity and gas. We focus on the construction markets (residential and commercial) and on infrastructure. We have technical solutions that use geosynthetics such as woven and nonwoven geotextiles, geodrains, geomembranes, and geomeshes. They are all used in civil, environmental, and infrastructure works.

We offer agricultural, civil, and project engineering solutions for handling, using and controlling water in agriculture, livestock, and fishing. We have the largest diversity of solutions, based on our customer needs.

## Fluorine Chain

- Fluorite

- Hydrofluoric acid

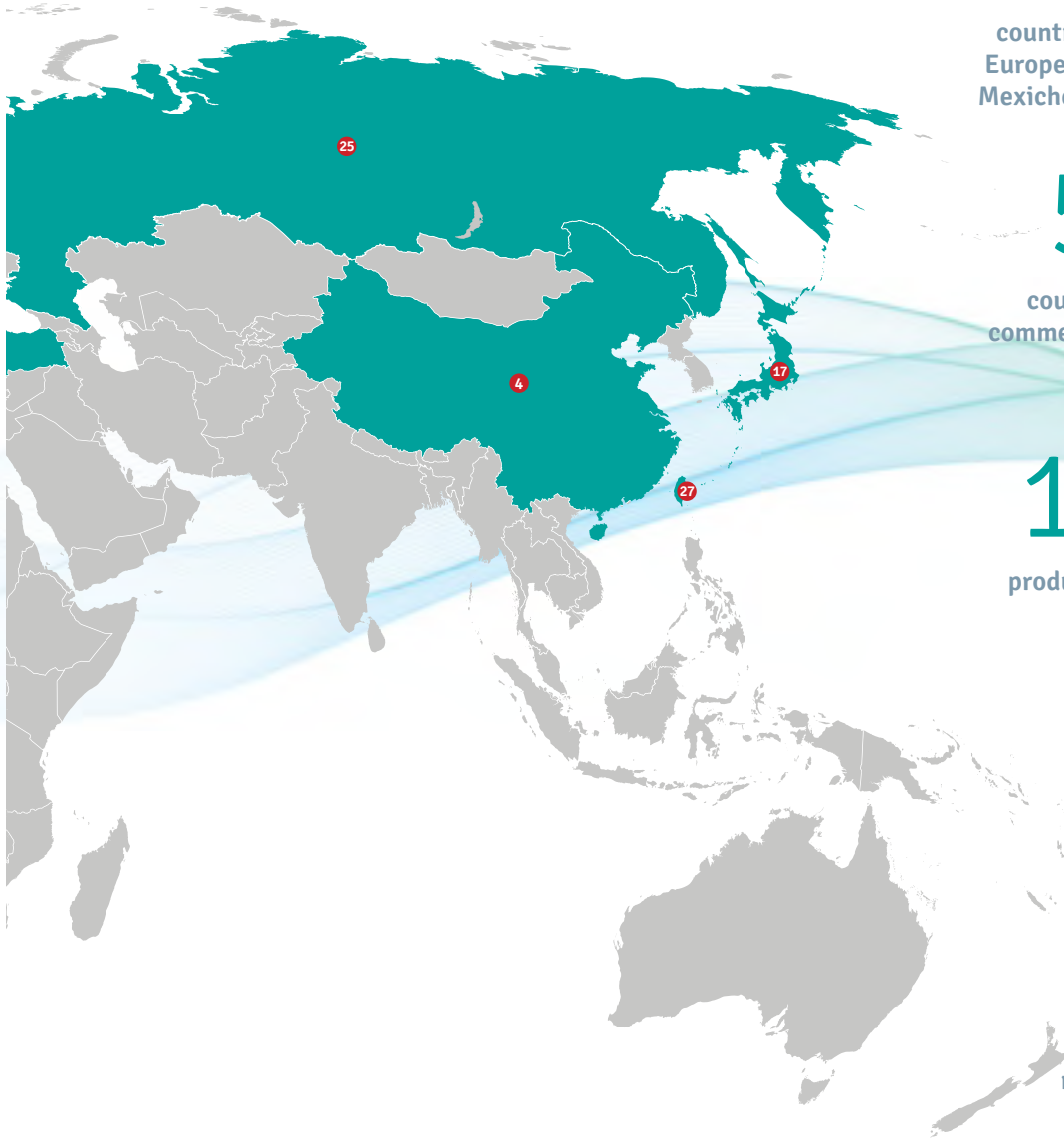
- Aluminum fluoride
- Refrigerant gases

This chain starts with calcium fluoride, better known as fluorite, a nonmetallic mineral whose main function is to act as a flux.

In Mexico, Mexichem has the largest fluorite mine in the world. Fluorite in its natural state is used in the steel, cement, glass, and ceramics industries, generating considerable savings in energy. This type of fluorite is known as metallurgical grade.

Concentrated fluorite, in which impurities have been eliminated, is known as acid grade fluorite, and it is used to produce hydrofluoric acid, which is obtained from the sulfuric acid that comes from sulfur, through chemical processes.

Hydrofluoric acid is used mainly to manufacture refrigerant gases for air-conditioning systems, refrigerators, and freezers. It is also used as a propellant gas in medical equipment, as an input in the production of gasoline, in the production of aluminum fluoride and for stripping stainless steel, in nuclear fuels, to build integrated circuits, in the Teflon industry, and in the production of fluoride salts such as lithium, which is used in batteries, and sodium, used in toothpastes.



31

countries in America, Europe, and Asia where Mexichem operates (2.5)

50

countries with commercial presence

102

production plants

2

mines

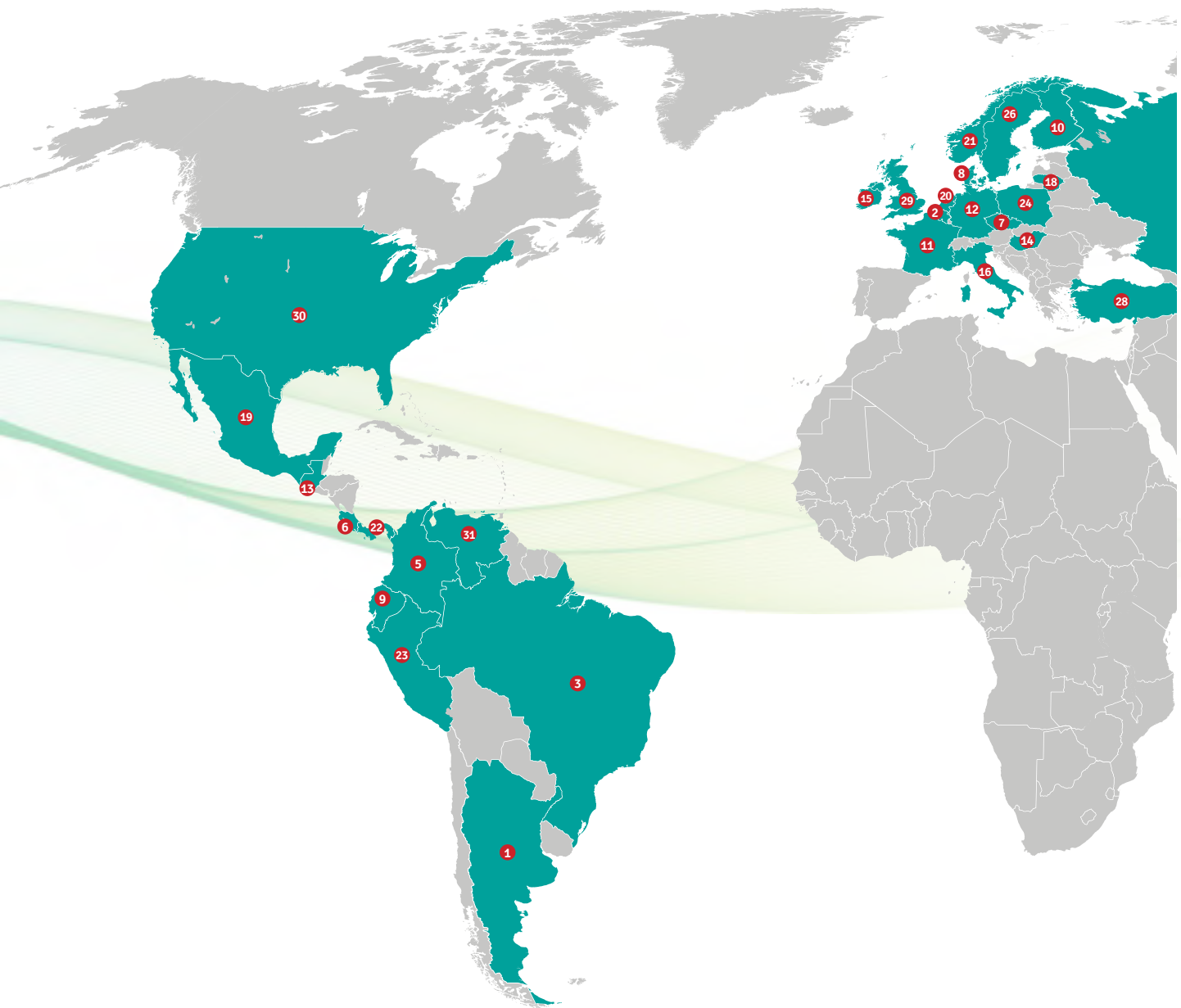
8

research centers

### 1.3 BUSINESS OPERATING SITES

Mexichem has production facilities in Argentina, Belgium, Brazil, China, Colombia, Costa Rica, Czech Republic, Denmark, Ecuador, Germany, Finland, France, Guatemala, Hungary, Ireland, Italy, Japan, Lithuania, Mexico, Netherlands, Norway, Panama, Peru, Poland, Russia, Sweden, Taiwan, Turkey, United Kingdom, United States of America, and Venezuela.

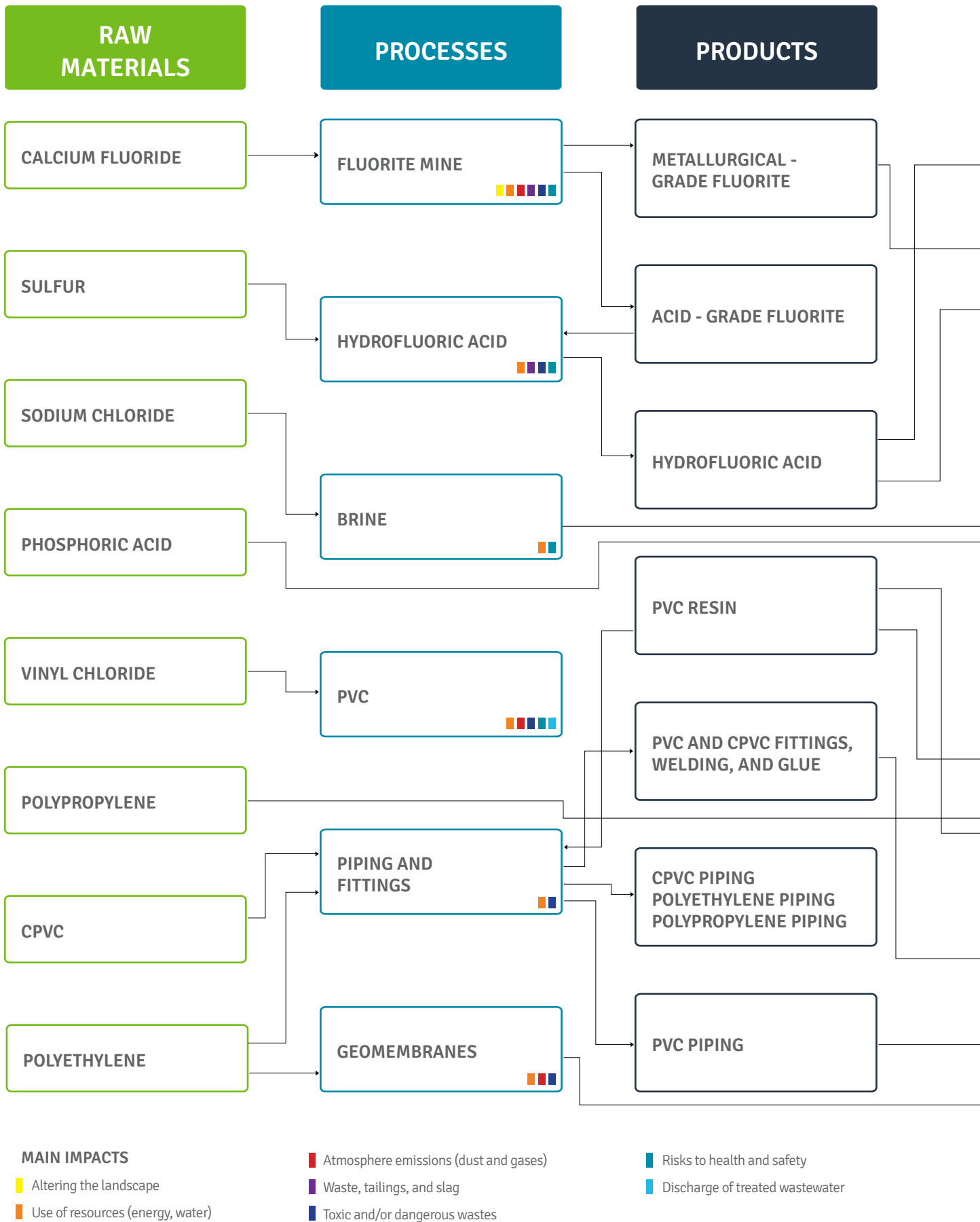
Globally, the Fluorine Chain serves markets in America, Europe, and Asia; the Integral Solutions Chain is also present in America, Europe, and Asia; and the Chloride-Vinyl Chain serves every country in America, and some countries in Asia and Europe. (2.7)

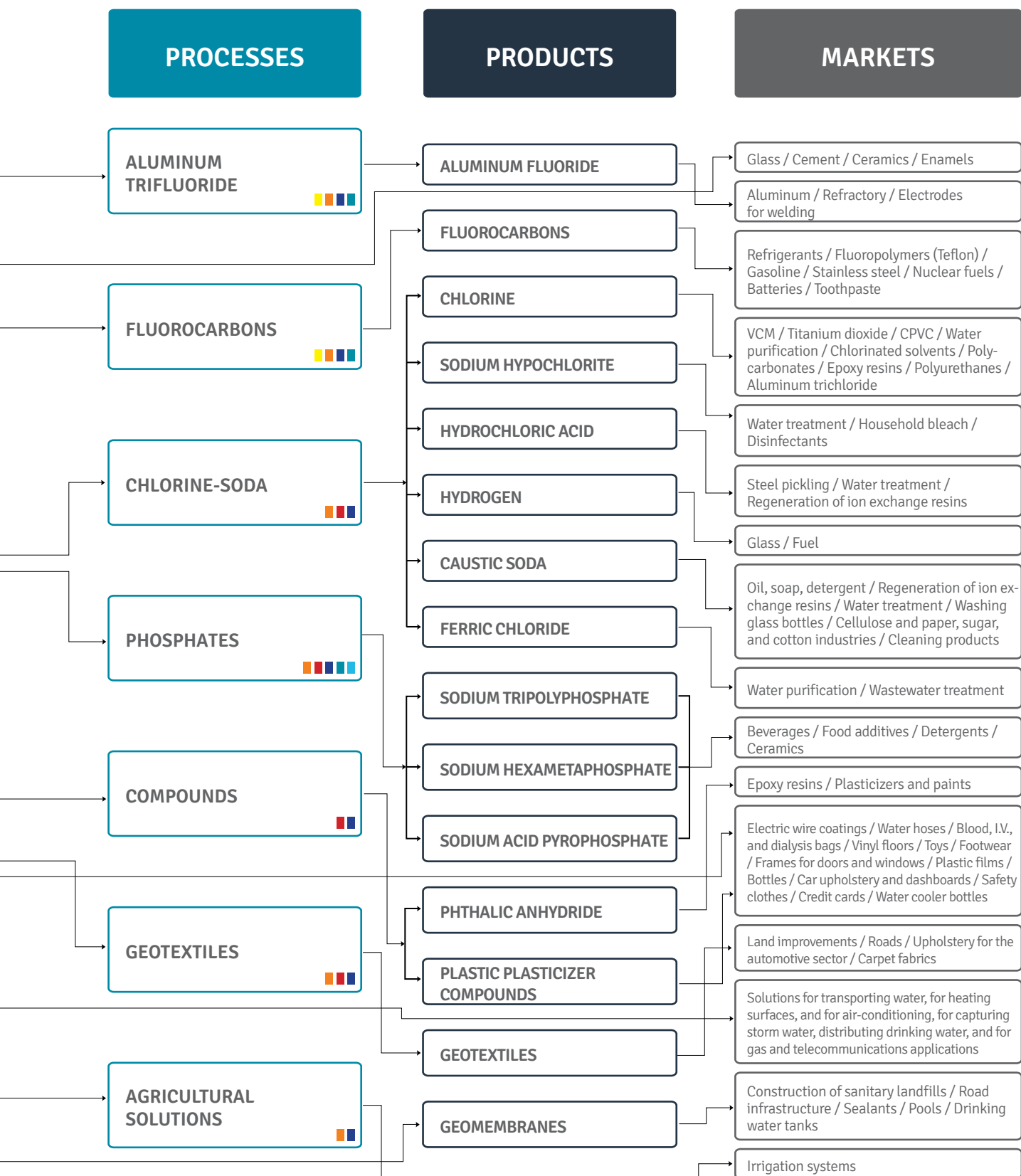


- |                   |                 |                              |
|-------------------|-----------------|------------------------------|
| 1. Argentina      | 11. France      | 21. Norway                   |
| 2. Belgium        | 12. Germany     | 22. Panama                   |
| 3. Brazil         | 13. Guatemala   | 23. Peru                     |
| 4. China          | 14. Hungary     | 24. Poland                   |
| 5. Colombia       | 15. Ireland     | 25. Russia                   |
| 6. Costa Rica     | 16. Italy       | 26. Sweden                   |
| 7. Czech Republic | 17. Japan       | 27. Taiwan                   |
| 8. Denmark        | 18. Lithuania   | 28. Turkey                   |
| 9. Ecuador        | 19. Mexico      | 29. United Kingdom           |
| 10. Finland       | 20. Netherlands | 30. United States of America |
|                   |                 | 31. Venezuela                |



## Diagram of processes, products, and uses (1.2, 2.3)





**DEFINITIONS**

CPVC - Chlorinated Polyvinyl Chloride

PVC - Polyvinyl Chloride

Brine - Sodium Chloride in water

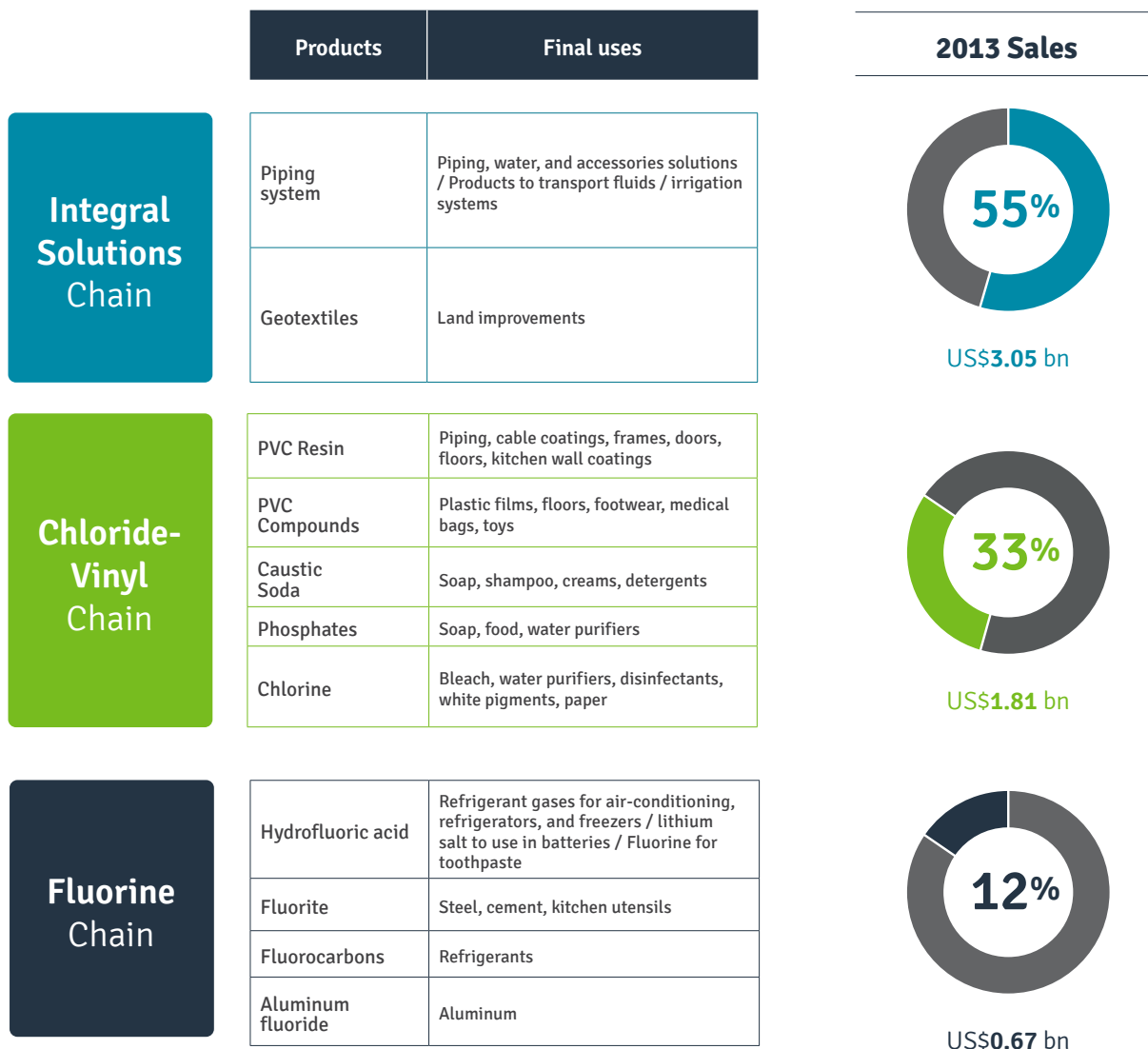
VCM - Vinyl Chloride Monomer

Fluorite - calcium fluoride

**25** products in total

## 1.4 PRODUCTS, BRANDS, AND MARKETS (2.2, 2.7)

Mexichem offers 25 products (2.8)



Our brands are Mexichem, Amanco, Plastigama, Pavco, Bidim, Plastubos, Celta, AlphaGary, Zephex, Klea, Wavin, Arcton, and Colpozos. (2.2)





## 1.5 MEXICHEM CULTURE AND STRATEGY

Mexichem's strategy for growth is based on acquiring companies related to the production chains. This contributes to consolidating our leadership in the value chain and to maintaining geographic presence in the international market in every country that demands our products. Mexichem is the leader in several countries and regions, and has integrated several companies and work cultures.

The triple-bottom-line results the key guideline that integrates economic, social, and environmental aspects in the business strategy is founded on a sustainability model. The framework behind this strategy includes our mission, vision, and corporate values, which apply to all business units in the company. (4.8)



(4.8)

### Vision

To be respected and admired globally as a leading chemical company focused on producing results, contributing to social progress, and improving people's lives.

### Mission

To transform chemicals into innovative products, services, and solutions across widely diverse industrial sectors by focusing on operational excellence and market needs. Our offerings generate ongoing value for our customers, employees, partners, stockholders, and communities and contribute to enhancing the quality of people's life.

### VALUES

To realize our vision and mission, our day-to-day activities are aligned with the following values:

#### LEADERSHIP

We seek to continually drive innovation in our products, processes, and solutions, and to make a positive impact on the market and industry.

#### COMMITMENT

We believe in dedication, focusing on achieving shared goals through teamwork in order to exceed the expectations of our clients and keep our commitment to our partners, employees, and the communities in which we operate.

#### RESPONSIBILITY

We act responsibly and fairly in the communities where we do business. We contribute in the best way possible toward the preservation of the environment through sustainable activities.

#### SAFETY

The health and safety of our people are our priority. We will strive to ensure safety at our facilities, in the communities in which we operate, and in the environment.

#### RESULTS

We believe in operational and financial efficiency and excellence to deliver positive results with sustainable growth and products that make a difference.

#### INTEGRITY

We are committed to being an ethical, honest, and trustworthy company that treats employees appropriately and with respect.

Our strategy strives to strengthen Mexichem's growth and financial health, reduce our environmental footprint, and contribute to the progress of our stakeholders.



## 1.6 MANAGEMENT STRATEGY

Mexichem's corporate strategy is based on a triple bottom line, to create economic, environmental, and social value, based on the following guidelines:

**Sustained, healthy growth:** Creating wealth by rigorously implementing plans for vertical integration, based on our raw materials—salt and fluorite—and taking advantage of the synergies generated by integration to optimize processes, reduce the consumption of resources, and accomplish economies of scale.

**Operational excellence:** To incorporate best practices in management and the most advanced technologies to comply with the most demanding quality, safety, and environmental protection standards.

**Development of human capital:** To promote the company's growth in an environment of cultural diversity, new knowledge, and the expertise of our people, generating conditions that favor development and retention of talent.

**Technological development and innovation:** To establish a culture of generating ideas and innovation to offer value-added products that respond to eco-efficiency and minimize risks in their life cycle.

**Social responsibility:** To commit to effective stewardship of water and vulnerable ecosystems, to support social progress of the self-managing communities where we operate, and to transparently respond to the interests of all parties involved in our business.

Our strategy strives to strengthen Mexichem's growth and financial health, reduce our environmental footprint, and contribute to the progress of our stakeholders. We use an electronic tool to record information of the relevant sustainability indicators, with which we integrate the information of our sustainable development results.

We have developed a plan to establish a management system that will include the strategic goals in order to align them with the operational goals. Furthermore, we will be able to evaluate the triple-bottom-line result, based on examples and success stories. The management system will have the support of the Sustainability Committee, which includes a multidisciplinary group representing the Mexichem chains.

We take the expectations of our key stakeholders into consideration, and identify the challenges and opportunities of our social and environmental responsibility.

The safety of our employees is the key factor driving our performance; the goal is to avoid all accidents and have zero fatalities. Even when our Safety Policy and our whole management are centered on ensuring that there are no accidents in our operation, the responsibility of reaching that goal is in the hands of every one of the company's employees. Toward that goal, operational discipline is a key to reaching world-class levels of safety, health, and environmental protection in our operations: mining, chemistry, and transformation.

Mexichem offers fair and just remuneration, with social benefits, to its employees. Such monetary compensation takes into consideration the functions, responsibilities, and labor market. Benefits offered are above what the local labor law stipulates in every country in which we operate.

We have a Human Rights Policy. We develop information and awareness workshops at all levels of the organization.

Furthermore, we have a human rights policy, and we constantly develop training and awareness workshops at all levels of the organization.

Our Human Rights Policy references the following:

- The principles of the United Nations Global Compact
- The Universal Declaration of Human Rights
- The recommendations of the International Labour Organization

We are against child labor, forced labor, and discrimination, and we respect the agreement of the conventions on Human Rights and Indigenous Peoples. We communicate our policy to all our employees, suppliers, contractors, and distributors, determining guidelines and monitoring to ensure that human rights are respected.

Since our strategy consists of having allies throughout our supply chain, procurement of materials and services for our operations is preferably done from local suppliers, applying quality, service, and competitive pricing criteria.

Mexichem manages the safety of its chemical products by following the principles and practices of Responsible Care®, a voluntary initiative of the chemical industry. Goals in terms of safety of products are reflected in our policies, plans, and procedures.

### Contribution to social progress

Our commitment to the communities in the sites where we are present strives to contribute to their growth and to seize the opportunities to jointly create value. Because social conditions are so diverse, the measures include several forms of participation.

We continue to strive to make our focus less and less on philanthropic organizations and more strategic, to build economic, environmental, and social value together with our stakeholders.

Our central themes in social projects are:

- Education
- Strengthening abilities
- Water supply and sanitation
- Developing housing solutions
- Childcare





We continue to strive to make our focus less and less on philanthropic organizations and more strategic, to build economic, environmental, and social value together with our stakeholders.

## Commitment to the environment

Mexichem is committed to environmental protection. We comply with the legal requirements to care for the environment. The measures taken strive to minimize the impact of our operations, protect the environment, and develop initiatives to create awareness for preserving environmentally valuable areas and natural resources.

We work to efficiently manage the resources we use in our operations, based on the principles of reducing and reusing, and on industrial recycling. We develop risk evaluations and detect opportunities derived from climate change in the regions in which we operate.

Correspondingly, we inventory greenhouse gas emissions in our operations, and make a record of the direct and indirect emissions relating to the consumption of electricity and fossil fuels. The goal behind our commitment to reduce greenhouse gas emissions is to achieve savings and efficiency in the energy we use in our operations, which also involves our employees.

We will continue to develop different plans to save energy, for eco-efficiency in our processes, for technological substitutions, and for analyzing alternate sources of renewable energy.

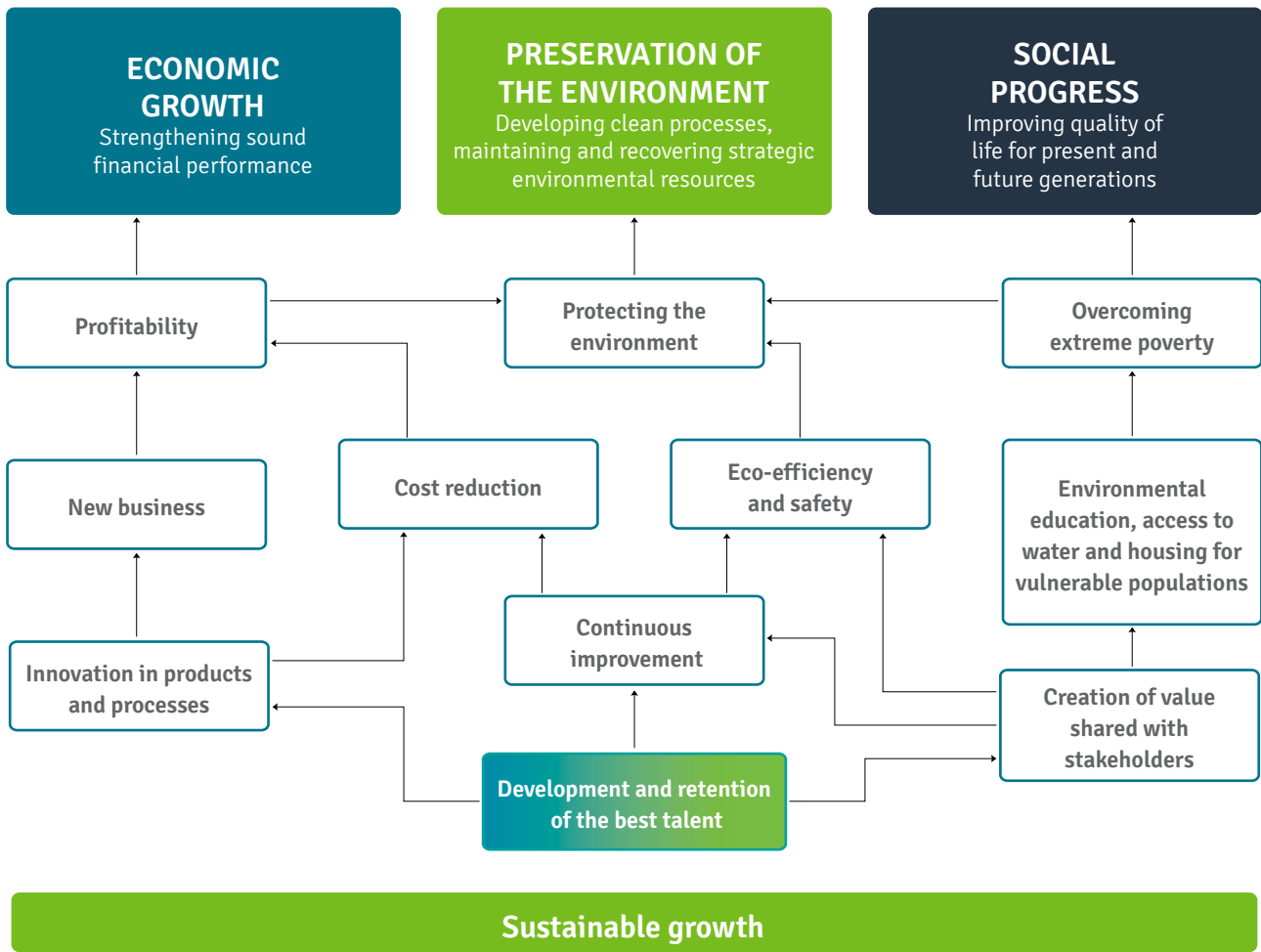
Our commitment to the environment also includes:

- Optimizing the use of water and energy
- Reducing industrial waste
- Controlling atmospheric emissions
- Developing plans for protecting biodiversity, soils, surface water, and aquifers
- Implementing research and development to design and produce safer and more environmentally friendly products

In the economic dimension, the success of our strategy for creating wealth and prosperity will continue to rely on the following:

- Implementing our plans
- Adding value to our raw materials
- Continuing with vertical integration
- Diversifying our markets even more
- Having greater discipline in reducing costs and investments
- Establishing a good relationship with our stakeholders

## Triple-bottom-line sustainability model



### 1.7 IMPACTS, RISKS, AND OPPORTUNITIES: STRATEGIC GOALS

After identifying the main impacts, risks, and opportunities to improve performance and establish a strategy for success based on the triple bottom line, these are shown in the processes, products, and uses diagram.

The business model based on the triple bottom line is focused on mitigating risks and decreasing the environmental footprint. Consequently, the decrease in the environmental footprint (externalities) is proportional to the decrease in risk. We include the metrics for capitalizing opportunities linked to these risks by establishing the performance goals for sustainability performance. (1.2)

In 2013, Mexichem initiated a plan to develop a management system that defines strategic objectives, aligns operating goals, and measures and evaluates triple-bottom-line performance, ensures compliance with GRI requirements, and approves good sustainability practices, establishing the policy of doing what we say we are going to do at all our operating sites.

| TYPE   | GOAL   | TARGET DATE     |
|--|--|-----------------|
| Environment:<br>Energy                       | Reduce the use of electricity coming from fossil fuels by at least 5% by 2018 (baseline year 2009).  | 2018            |
| Environment:<br>Waste                        | Reduce waste sent to landfills by at least 20% by 2018 (baseline year 2011).   | 2018            |
| Environment:<br>Emissions                    | Reduce greenhouse gas emissions (GHG) by at least 5% by 2018 (baseline year 2009).   | 2018            |
| Environment:<br>Biodiversity                 | Neutralize the impact of operations on biodiversity by 2025 (baseline year 2012). Operations initiated or acquired after 2012 will have a period of 10 years to achieve environmental neutrality.            | 2025            |
| Environment:<br>Water                        | Reuse at least 70% of water consumed, by 2018 (baseline year 2011).  | 2018            |
| Environment:<br>Climate change               | Have a strategy for adapting and mitigating the effects of climate change; evaluate the impact of climate change in 100% of the Mexichem operations by 2016.   | 2016            |
| Social:<br>Labor practices                   | Establish a training system on sustainable development and continuous improvement that involves at least 50% of Mexichem's employees by 2016.  | 2016            |
| Social:<br>Labor practices                   | Have zero fatalities; reduce the number of incapacitating accidents, at least 50% by 2016 (baseline year 2012).  | 2016            |
| Social:<br>Stakeholders                      | Establish and promote two-way communication channels with Mexichem's stakeholders. Reach 100% of the primary stakeholders by 2016 and initiate at least one constructive dialogue with each of these groups. | 2016            |
| Social:<br>Environmental product stewardship | Maintain zero claims of impact on the health and safety of our customers or ecosystems caused by safety failures in product handling.  | 2014<br>Ongoing |
| Social:<br>Stakeholders                      | Develop shared-value social projects in the communities in which Mexichem operates. Each of the chains must have at least one new social project by 2016.  | 2016            |
| Social:<br>Ethics and anticorruption         | Train 100% of Mexichem's employees and get their commitment to comply with the company's Code of Ethics and anticorruption policy by 2016.   | 2016            |
| Social:<br>Human rights                      | Get 100% of our contractors to agree to comply with Mexichem's human rights policy by 2016.  | 2016            |

The plan includes different aspects, such as communication with stakeholders, innovation, eco-efficiency, energy efficiency, alternative sources of energy, biodiversity and protecting vulnerable ecosystems, social projects in communities (identifying impacts, meeting needs in issues associated with Mexichem), training, human rights within the company, restoring or restituting possible negative impacts, research and development for safer products, shared-value practices at our business units, and promoting the creation of training groups for continuous improvement and innovation.



We have developed shared-value projects in all of the three chains: Chloride-Vinyl, Integral Solutions, and Fluorine.

## Progress in strategic goals

- **Climate change**
  - We did a study on the impacted geographic areas and climate patterns for all of Mexichem's relevant operations.
- **Shared-value projects**
  - We have developed shared-value projects in all of the three Mexichem chains.
- **Product stewardship**
  - We established a Product Stewardship subcommittee in which employees from the three chains in the United States, Colombia, the United Kingdom, Mexico, and the Netherlands participate. We use the Product Stewardship Guide of the Responsible Care® program of the chemical industry as a baseline.
- **Eco-efficiency**
  - We do diagnostic surveys on energy, water, and waste in the three chains.
- **Biodiversity**
  - We drafted a matrix that identifies the risk analysis and impact to the ecosystems of all our mining operations. Includes carrying out a study and perimeter analysis of noise and light.
- **Training**
  - We have evaluated options to develop the content for training courses on sustainable development and continuous improvement for all Mexichem's employees.
  - We developed the alternative of online courses, so that participants can have access to the content both electronically and offsite.
- **Human rights**
  - We held meetings with the people in charge of the supply chain to define the work plan with key suppliers.

# 2. MESSAGE

## FROM THE CHIEF EXECUTIVE OFFICER (CEO) TO STAKEHOLDERS

(1.1, 3.1, 3.2, 3.3)



### Dear Readers:

It is with great pleasure that I present our 2013 Sustainability Report. 2013 was a year of transformation, a year of transition, and one of the most important years in the history of Mexichem. Our fundamentals have never been healthier, and we have been able to set new and more solid foundations to support the company's future growth.

We strengthened our performance in safety standards, obtaining encouraging results, and we did it while simultaneously increasing production capacity in some of our operations. We decreased the environmental impact in dangerous wastes and water, we controlled our greenhouse gas emissions (GHG), continued evaluating alternative sources of energy such as cogeneration of electricity, and we maintained our commitment to the communities we serve by generating and managing shared-value projects in a framework of respect and promoting human rights.

In spite of the complicated economic environment worldwide, Mexichem registered a 9% increase in sales, to US\$5.177 billion, and an EBITDA of US\$899 million.

### Toward the future

We will continue to offer products that are safe, competitive, and high-quality; we will establish a system for managing sustainability at all our operations; and we will reach all the strategic goals we set for 2018 in safety, energy, waste, emissions, biodiversity, water, climate change, human rights, and labor practices.

We will continue supporting a shared-value social project for better quality of life and opportunities for progress in vulnerable communities in the places where we are present.

We foresee a better business environment for Mexichem in 2014. According to plan, in the Integral Solutions Chain we restructured the Wavin operations in Europe: Among other things, we closed several plants, moved production for some plants to others, redefined the marketing model in some countries, and moved equipment and technology from Europe to Latin America. We expect to see improvements in 2014 as a result of this restructure. Now Wavin has a much leaner cost structure, but the opportunity for margin expansion needs to come from growth tied to better economic conditions. Overall, I am pleased with the progress we made at Wavin in 2013, and I am expecting further improvements in 2014.

In the Chloride-Vinyl Chain, we started two joint ventures to further upstream the company to the production of ethylene, and by doing so, we began the process of capturing the shale gas opportunity in North America. We concluded the acquisition of PolyOne and began increasing PVC resin capacity in our facilities in Mexico and Colombia.

We will continue to support social projects to improve quality of life and opportunities for growth in our communities.



## Significant events in 2013

### SOCIAL SCOPE:

- We reported zero fatal accidents and reduced the number of workdays lost as a result of incapacitating accidents by 32%; we continue to establish a system for managing safety to control operational risks, losses, and harm to our employees.
- We continued to qualify as a member of the Sustainability Index of the Mexican Stock Exchange.
- We began developing a sustainability management system to optimize the triple bottom line.
- We developed and promoted 14 projects supporting communities, with a focus on drinking water and sanitation, dignified housing, education, health, and environmental protection.

### ENVIRONMENTAL SCOPE:

We reduced our environmental footprint by:

- Reusing 55% of extracted water in our operations
- A reduction vs. 2012 of 22% in dangerous wastes
- We promoted work plans for developing alternative sources of energy and options for cogenerating electricity.
- We established the strategy to protect biodiversity, with 17 programs to identify negative impacts and species at risk of becoming extinct in the places where we operate.

### ECONOMIC SCOPE:

- We had good results, with an increase in sales of 9% vs. 2012, for US\$5.177 billion and an EBITDA of US\$899 million.
- PolyOne, a specialty resins business, was integrated into our Chloride-Vinyl Chain as Mexichem Specialty Resins.

To maximize our strengths, focus on our core business, and face current market conditions in the Fluorine Chain, we restructured the business globally, and by doing so, we established a new platform for its cost structure. This was on top of having negotiated better fluorite prices for the second half of 2014, improving the cost structure, with stable prices in refrigerant gases, and the potential benefit of a final, positive resolution by the authorities of the United States, with respect to the unfair trade practices cases we presented.

Based on our current portfolio, and excluding the Pemex joint venture and our Venezuelan business, we expect sales and EBITDA for 2014 to be higher than they were in 2013, starting in the second quarter and gaining momentum in the second half of the year.

We began 2014 with a strong balance sheet, which gives us the resources and flexibility to invest in organic growth projects and mergers and acquisitions.

We dedicate our report to our stakeholders, and we express our commitment to the principles of integrity and transparency. We will continue with our efforts to make our information respond to your expectations, we will generate social progress, respect for the environment, and growth for our company.

We thank our Board of Directors, our Executive Committee, our stockholders, employees, customers, suppliers, and communities for their interest, collaboration, and support. We will continue to improve our work practices and performance, doing what we say we are going to do to build a future based on managing our triple bottom line.



**Antonio Carrillo Rule**  
Chief Executive Officer (CEO)

# 3. ABOUT THE 2013 SUSTAINABILITY REPORT

(3.1, 3.2, 3.3, 3.5, 3.6, 3.7, 3.8, 3.9, 3.10, 3.11, 3.13)

In the current 2013 Sustainability Report, Mexichem communicates to its stakeholders the progress it has made in its triple-bottom-line management to create economic, environmental, and social value. The report summarizes Mexichem's activities, progress and performance, plans for the future, its policies and goals in subjects such as corporate governance, economic results, labor issues, the safety and health of employees, commitment to the protection of human rights, support for social progress, and the protection of the environment, among other key aspects of the company's operations.



This report was drafted based on the guidelines of the Global Reporting Initiative (GRI).

**A+**  
was the level  
obtained in GRI

This report was drafted based on the Global Reporting Initiative (GRI) guidelines, third generation (G3), using technical protocols and the Supplemental Indicators for the mining sector (2010), and adhering to the AA1000 Accountability standards (2008), besides complying with the principles of relevance or materiality, inclusion, and response for our main stakeholders. The principles of the United Nations Global Compact, the Universal Declaration of Human Rights, and the recommendations of the International Labour Organization also served as a reference. (3.5)

The selection of information presented in the report and its adherence to GRI indicators was completed by the Corporate Sustainability Coordinator, based on an analysis of the facts and data reported by all operating sites (plants) located in America, Europe, and Asia. Plants are located in Argentina, Belgium, Brazil, China, Colombia, Costa Rica, Czech Republic, Denmark, Ecuador, Germany, Finland, France, Guatemala, Hungary, Ireland, Italy, Japan, Lithuania, Mexico, Netherlands, Norway, Panama, Peru, Poland, Russia, Sweden, Taiwan, Turkey, United Kingdom, United States, and Venezuela. (3.6)

The information takes into account the principles related to materiality, stakeholder participation, and relevance in the context of the sustainability of production chains, completeness, balance, comparability, accuracy, periodicity, reliability, and clarity. (3.5)

The information provided in this report covers operations from January 1 to December 31, 2013. (3.1) Historical data from the four previous years (2009 to 2012) is included for comparison purposes and to help identify trends in some key indicators. Our previous report was published in 2012. (3.2, 3.3) There are no considerable changes that affect the ability to compare the information reported, nor was it necessary to modify information presented in prior reports. (3.8, 3.10, 3.11)

The information included in the current report has been compiled with transparency and integrity based on operations developed by our operating sites (plants) in the three main business chains: Integral Solutions, Chloride-Vinyl, and Fluorine, as well as its corporate divisions. The information does not include data from sales offices. (3.6, 3.7)

The data compiled is documented in our electronic information systems, and technical support used for the mathematical calculations is described in the numeric indicators. (3.9) Key performance indicators cover all business units, except for those cases where limitations are indicated in the geographic coverage or in the available information. We included all the triple-bottom-line indicators that have been defined as relevant for the business and for our main stakeholders.

We have relied on the services of Deloitte (Galaz, Yamazaki, Ruiz Urquiza, S.C.) for the third-party review of the 2013 Sustainability Report, ensuring the transparency and reliability criteria of the information. (3.13) Upon carrying out the self-evaluation of this report and based on the GRI Level Application Table, Mexichem obtained an A+ level.

# 4. CORPORATE GOVERNANCE

## 4.1 GOVERNANCE SYSTEM

No government has an equity share in the company. Mexichem, S.A.B. de C.V. is a variable equity corporation, whose bylaws comply with the Mexican General Corporations Law and the Mexican Securities Market Law. (2.1, 2.6)



Our corporate governance principles provide the framework for managing the company and satisfying the needs of our main interest groups. Our corporate governance practices are founded on Mexican legislation and the domestic legislation of the countries in which we operate.

Because Mexichem shares are listed on the Mexican Stock Exchange (BMV), we are governed by the Mexican Securities Market Law. We adhere to the principles of the Code of Corporate Best Practices endorsed by the Mexican Business Coordinating Council (*Consejo Coordinador Empresarial*).

## 4.2 CORPORATE GOVERNANCE STRUCTURE (4.1)

### Board of Directors

The Board of Directors is responsible for determining the corporate strategy, defining and supervising the implementation of the values and vision that characterize us, as well as approving transactions between related parties and those carried out in the ordinary course of business. There are nine independent directors in the highest governance body, five of whom are alternate independent directors. (4.3)

The academic history and professional expertise of the members of the Board of Directors are basically in the areas of economics and business administration. The Chairman of the Board of Directors is not an executive officer at the company. (4.2)

Mexichem's corporate bylaws establish that there need to be three committees: Executive, Audit, and Corporate Practices, which are responsible for helping the Board of Directors carry out its duties. Our Board of Directors establishes the general management policies and monitors the triple-bottom-line performance through the Executive Committee, with support from both the Audit and the Corporate Practices committees. We also have an Internal Audit Division, which reports to the Board of Directors in order to avoid conflicts of interest. (4.6, 4.10)

### Audit Committee

The duties of the Audit Committee are to evaluate the company's internal control and audit systems; to identify and resolve any significant shortcomings; monitor corrective or preventive measures applied with respect to noncompliance with operational and accounting guidelines and policies; describe and evaluate the performance of external auditors; describe and evaluate services rendered by the external auditors, other than auditing; review the company's financial statements; evaluate the effects of any modifications made to the accounting policies approved during the fiscal year; monitor any measures taken with regard to observations made by stockholders, directors, executive officers, employees or third parties regarding accounting, internal control systems, and internal and external audits, as well as any complaints regarding irregularities in management, including anonymous and confidential methods used for handling complaints made by employees; oversee compliance with the resolutions of the general shareholders meetings and of the Board of Directors. (4.6)



The Board of Directors is responsible for determining the corporate strategy, defining and supervising the implementation of the values and vision that characterize us.



## STRUCTURE OF THE BOARD OF DIRECTORS (4.1)

### Honorary Chairman of the Board of Directors for Life

Antonio del Valle Ruiz

### Chairman of the Board

Juan Pablo del Valle Perochena

### Directors

Juan Pablo del Valle Perochena  
Antonio del Valle Ruiz  
Antonio del Valle Perochena  
Francisco Javier del Valle Perochena  
Adolfo del Valle Ruiz  
Ignacio del Valle Ruiz  
Ricardo Gutiérrez Muñoz  
Jaime Ruiz Sacristán

### Alternate Directors\*

María de Guadalupe del Valle Perochena  
María Blanca del Valle Perochena  
Adolfo del Valle Toca  
José Ignacio del Valle Espinosa

### Independent Directors

Divo Milán Haddad  
Fernando Ruiz Sahagún  
Jorge Corvera Gibsone  
Guillermo Ortiz Martínez  
Eduardo Tricio Haro  
Juan Francisco Beckmann Vidal  
Valentín Díez Morodo  
Eugenio Santiago Clariond Reyes  
Adolfo Lagos Espinosa

### Alternate Independent Directors

José Luis Fernández Fernández  
Jorge Alejandro Quintana Osuna  
Arturo Pérez Arredondo  
Francisco Moguel Gloria  
Eugenio Clariond Rangel

### Secretary

Juan Pablo del Río Benítez  
(not a member of the Board)

### AUDIT AND CORPORATE PRACTICES COMMITTEE

Fernando Ruiz Sahagún  
(Chairman)  
Divo Milán Haddad  
Eugenio Santiago Clariond Reyes Retana

Juan Pablo del Río Benítez  
(Secretary, not a member of the Committee)

### Chief Executive Officer

Antonio Carrillo Rule



\*Of the alternate directors on the Board of Directors, 20% are women and 80% are men. They do not belong to any minority group. (LA13)

Directors for the Chloride-Vinyl, Fluorine, and Integral Solutions chains are responsible for implementing the Mexichem strategy in their corresponding business units or services.



### Corporate Practices Committee

The Corporate Practices Committee is responsible for evaluating the performance of the relevant executive officers, reviewing transactions between related parties, reviewing the compensation they receive, evaluating any dispensation granted to directors or relevant executive officers so that they seize business opportunities, and performing the activities required by the Mexican Securities Market Law. Our bylaws establish that all members of the Audit and the Corporate Practices Committees, including their chairman, have to be independent directors. (4.6)

Compensation to the directors is based on the resolutions of the 84th Shareholders Meeting, held on April 26, 2013. The corresponding emoluments to the chairmen of the Board of Directors and to the Audit and the Corporate Practices committees are US\$10,700 for each session they attend; the members of the Board of Directors receive US\$5,380 for attending the sessions of the Board of Directors, and the members of the Audit and Corporate Practices committees receive US\$6,155 for attending the meetings of their corresponding committees. (4.5)

The communication mechanisms with the top corporate governance body include Operations Meetings and meetings of the Board. It is precisely during the annual Board meetings when the financial results and compliance with the social and environmental goals are analyzed. (4.4, 4.9)

### Chief Executive Officer (CEO) and Chain directors

Directors for the Chloride-Vinyl, Fluorine, and Integral Solutions chains are responsible for implementing the Mexichem strategy in their corresponding business units or services, and for overseeing the sustainability, productivity, and safety of the company's operations and products. Every one of the directors in a given chain, except for Internal Audit, report directly to the CEO of Mexichem.

### Research and Development Center

The organization responsible for managing innovation, environmental protection, efficiency, and safety in the Mexichem operations is the Research and Development Center, whose director delegates the executive responsibilities of this post to a Sustainability Corporate Coordinator. The coordinator is responsible for promoting, coordinating, and supporting corporate monitoring of all of the Mexichem sites to reach the goals of the triple bottom line established in the strategy designed by the CEO, to make progress in sustainability. Furthermore, he must collaborate in communicating the targets, indicators, and goals common to all the company's sites, as well as the measures taken to reach them, and monitor compliance with the agreed upon action plans, besides documenting the company's annual results in the Sustainability Report.

Mexichem's R&D Center is responsible for continuous improvement of the products, processes, services, and businesses through technological development, for managing innovation, and for leading projects. He also leads quality, environmental, and safety management in the company's processes, contributing to continually generate value in Mexichem's products, processes, services, and businesses.

### Corporate Director of Human Capital

Responsible for direction and executive support in activities that come under the scope of social responsibility related to labor and human development.

It is strictly prohibited to participate in any act of corruption, which all company employees are aware of, including every one of the business units that make up Mexichem.

0

incidents of corruption in the company



## 4.3 CODE OF ETHICS (4.8)

At Mexichem we encourage openness and transparency in dealing with the government agencies and political organizations with which we have a relationship. The company has policies that help ensure we comply with laws, standards, regulations, and codes, that we are transparent, and that we maintain standards of ethical behavior in areas such as corruption, conflicts of interest, monopolies, bribery, political contributions, and accounting practices.

All employees have been informed of the Mexichem anticorruption policy and procedures. (S03) We have a Code of Ethics, which is communicated to all personnel when they are first hired, and it can be consulted electronically at any time. During 2013, there were no such incidents reported at the company. (S04) Other corporate documents that are also shared with employees when they begin working at the company and which they have to sign and commit to are the Conflict of Interest Agreement and the Confidentiality and Patents Agreement. They are both legally binding.

Our Code of Ethics establishes that company employees cannot receive any kind of compensation from competitors, customers, distributors, suppliers, or government entities for services rendered or negotiations carried out while representing Mexichem. Based on the latter, it is strictly prohibited to participate in any act of corruption, which all company employees are aware of, including every one of the business units that make up Mexichem. (S02, S03) Internal declarations, the behavior of top executives and other employees, as well as work performance are measured based on the Code of Ethics, policies, and protocols. Employee evaluations include compliance with triple-bottom-line practices. (4.8)

Mexichem does not directly participate in establishing or lobbying public policy. It channels its participation through industry organization that represent industrial sectors related to the company's businesses. In Colombia, for example, Mexichem is a member of the Board of CAMACOL (the Colombian Construction Chamber), as well as a founding partner in the Colombian Business Council for Sustainable Growth (CECODES) and the National Association of Companies that offer Home Public Services (ANDESCO). In Mexico we are part of the National Association of the Chemical Industry (ANIQ) and the Mining Chamber; in America and Europe we participate in organizations that represent our industrial sectors. It is important to note that for our operations in Colombia we adhere to the United Nations Global Compact. (S05)

Consequently, we do not make any contributions either in kind or in cash to political parties or related institutions; neither do we influence our employees to participate in or subscribe to any political party in particular. (S06)

In relation to monopolistic and antitrust practices, we do not require any specific evaluations, since the majority of our products are generic and we compete in international markets, in a global environment. Any proposal to acquire a company and integrate it into Mexichem is communicated to the competition authorities in the countries of origin of said company, and we comply with any and all stipulated conditions. Further, we make our intentions known through communication with our stakeholders. During 2013, none of our affiliates received any fines. (S08)

Our commitment to avoid accidents is based on the principle that safety is a responsibility of all.



[http://www.mexichem.com/English/politica\\_seguridad.html](http://www.mexichem.com/English/politica_seguridad.html)

## 4.4 MANAGEMENT POLICIES AND SYSTEMS

Mexichem and its major operating units around the world have established and accredited management systems that meet with the international ISO 9001, ISO 14001, and OHSAS 18001 standards for its three product chains. Likewise, the operating units that produce chemicals (the Chloride-Vinyl and Fluorine chains) are signatories of the Responsible Care® volunteer program, which operates under the supervision of the chemical industry associations in Mexico, Colombia, the United States of America, and the United Kingdom.

Mexichem has a documented comprehensive safety, environmental, and quality control policy, which is communicated to and understood by the entire organization. This policy establishes that:

Mexichem and its subsidiaries view safety as the key factor, and that caring for the environment is very relevant as well when manufacturing products and offering services that meet the requirements of our consumers, and that our employees are the fundamental strength behind our success.

Commitments:

- To avoid accidents based on the principle that safety is a responsibility of all.
- To care for the health of our employees.
- To prevent pollution in our activities, in order to protect the environment.
- To constantly improve the efficiency of our managerial system, pursuing the established objectives.
- To comply with the applicable legislation and other requirements the organization subscribes to in our management system.

To accomplish all this, we encourage our employees, suppliers, and customers to contribute and to allocate the resources needed for excellence.





# 5. ECONOMIC DIMENSION

## 5.1 CREATION OF WEALTH AND PROSPERITY

Total sales at year end were US\$5.177 billion, or 9% higher than 2012. EBITDA (earnings before interest, taxes, depreciation, and amortization) came to US\$899 million or 7% less than the prior year. Cash capital after CAPEX increased 3%, to US\$372 million.



| Mexichem      | 2013   |
|---------------|--------|
| Net sales     | 5,177  |
| Cost of sales | 3,647  |
| EBITDA        | 899    |
| Employees     | 17,345 |

US\$ million (2.8)

| Mexichem (EC1, EC8)  | 2013  |
|--|-------|
| <b>Direct economic value created (EVC)</b>                                       |       |
| a) Income (Net sales)  | 5,177 |
| <b>Economic value distributed (EVD)</b>  |       |
| b) Operating costs (Cost of sales)   | 3,647 |
| c) Wages and employee benefits   | 712   |
| d) Payments to government (Taxes)  | 157   |
| e) Investments in the community  | 1.55  |
| <b>Economic value retained (EVR)</b>   |       |
| EBITDA (calculated as economic value generated minus economic value distributed) | 899   |

US\$ million (EC1)

## 5.2 ECONOMIC PERFORMANCE (EC1)

Total sales in 2013 increased 9%, as compared to 2012, to US\$5.177 billion. This increase was mainly due to the following:

- In the Integral Solutions Chain, in 2012 Wavin was consolidated for only eight months (May through December), while in 2013 it was consolidated for the full year; this represented an additional contribution of US\$466 million in sales.
- In the Chloride-Vinyl Chain, we consolidated seven months of the PolyOne specialty resins business, which added US\$73.3 million in sales, as compared to 2012.

EBITDA as of December 2013 came to US\$899 million, or 7% less than 2012, basically due to:

- A US\$80 million decline in EBITDA in the Fluorine Chain, which was impacted by the prices of refrigerant gases.
- An extended suspension in operations due to maintenance work at the Pemex facility, which impacted the Chloride-Vinyl Chain.
- Eight months of operation in caustic soda and chlorine in 2013 versus 12 months in 2012, because of the beginning of the joint venture with Pemex.
- The impact on the Chloride-Vinyl Chain of the force majeure declaration at Axiall, first in December 2012 and then again in December 2013.
- Delay in infrastructure projects in Latin America, which impacts both the Chloride-Vinyl and the Integral Solutions chains.
- Fluctuations in Latin American currencies, most notably the Brazilian Real, reducing EBITDA by approximately US\$6 million.

EBITDA margin for 2013 was 17%, 3 percentage points below the 20% registered in 2012.

In 2013, we signed historic agreements that will contribute to changing the future of Mexichem and put us closer to achieving our goal of creating long-term value through vertical integration. Mexichem's joint venture with Pemex to produce vinyl chloride monomer (VCM) began operations in September 2013. We expect that the key equipment for the first phase of the renovation of the plant will be installed during the third quarter of 2014. This will substantially increase our VCM production, and we expect

9%

increase in sales

US\$5,177

million in sales

We were able to reduce annual costs for the whole company, to more than US\$70 million in 2013, setting a new foundation from which we will launch in 2014.



this division to contribute to improving our results for 2015 and beyond. We also announced a joint venture with OxyChem in the United States, which once it is operational, in the first half of 2017, will give us access to a crucial source of low-cost ethylene and position us to take advantage of the shale gas opportunity in North America.

2013 was a transition year for Mexichem, since we faced turbulent times in our key markets and in countries in which we operate. Consequently, we were forced to take critical actions to right-size our company structure and prepare it for future growth and margin expansion. Additionally, by reporting reasonable results, considering the economic environment, we made significant progress in executing our strategy geared toward becoming a vertically integrated supplier of high-value specialty chemical products. Our organic growth and acquisitions have given us greater scale and a competitive advantage that helped drive a 9% increase in revenue. We also worked to improve our efficiency and to complete a major restructuring of our Fluorine and Integral Solutions chains in Europe, increasing operating efficiencies in all aspects of the business. The reduction of annual costs by more than US\$70 million across the board was particularly important and set a new foundation from which we will launch in 2014. Gross cash flow generation after CAPEX was US\$372 million, 3% higher than 2012 levels.

During 2013, the National Council for Science and Technology (Conacyt) granted us US\$1.72 million as part of the Mexican Government's policy of providing economic incentives for research and development. (EC4)

It is important to note that the most relevant economic event for Mexichem during 2013 was the acquisition of PolyOne's PVC specialty resins business during the month of May. This acquisition, which is aligned with Mexichem's strategy for vertical integration, strengthens the Chloride-Vinyl Chain with value-added products and complements our portfolio of products, which in turn will allow us to position the company in new markets, build a more competitive company, and expand our opportunities. (2.9)

## 5.3 MARKETS (2.7)

Because our operations are so geographically diversified, we can maintain a leadership position in America and Europe, as well as a presence in Asia, resulting from operating efficiencies and our decision to focus the production of our products on the specific needs in each market, and benefitting from our logistics network of production facilities.

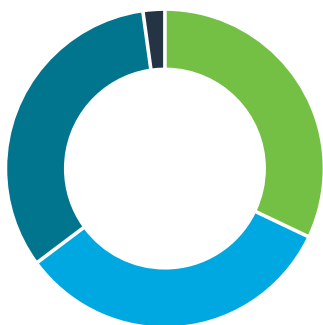
## 5.4 SOCIAL INVESTMENTS (EC8)





Mexichem made social investments in the amount of US\$1.547 million during 2013 for infrastructure and services for public benefit.

### Venezuela

- Donated safety and personal protection implements to institutions
- Donated piping and fittings for building social works
- Installed rainwater collection systems
- Repaired sewage water piping in communities

## SALES BY GEOGRAPHIC AREA - ORIGIN (2013)



|   |                           |     |
|---|---------------------------|-----|
|    | Central and South America | 32% |
|    | North America             | 33% |
|   | Europe                    | 33% |
|  | Other                     | 2%  |



<http://www.buk.gmina.pl/pl/aktualnosci/ruszyl-projekt-miasto-i-woda-historie-polaczone.html> (EC8)

### Colombia

- Rehabilitated a school orchard
- Installed and managed urban sewage systems
- Developed environmental education programs and a youth water protection contest
- Implemented sports training programs
- Maintained a recreational park in the community
- Rehabilitated a school orchard for self-sustainable ecological farming
- Made donations to the United Fund of the Mamonal Foundation in Cartagena
- Developed an education program for children and families in Pasacaballos: sports during free time and values education
- Rebuilt a community center
- Sponsored Boomerang youth scholarships for university studies
- Donated a community center in Pasacaballos
- Established a business partnership for the agricultural sector

### Costa Rica

- Implemented social awareness activities in water and energy issues, involving whole families

### Mexico

- Developed an artistic activities workshop for the children of employees and children in the community
- Gave a course for the wives of workers
- Improved conditions in a sports facility to promote sports and healthy participation in the area
- Built a new access road

### Denmark

- Sponsored local sports clubs and events

### Netherlands

- Alpe d'HuZes sponsorship
- 4-Kids Weissensee sponsorship
- Sponsorship of the local soccer club Hardenberg
- Sponsorship of local bicycle sports
- The benefits of the Christmas Lottery were donated to a foundation that offers a home away from home, close to the hospital, for parents of sick children who are hospitalized.

### Sweden

- Sponsorship of sports clubs and events or community fairs
- Sponsorship of an organization that supports children in difficult family situations
- Sponsorship of an organization that offers education and information through the school system to children on drugs
- Sponsorship of a calendar and a lunch

### Russia

- Maintenance for the water cleaning system in two kindergartens. These water-cleaning facilities were installed by Wavin a few years ago

### Poland

- Bought products from local porcelain manufacturers that employ disabled citizens
- Collaborated with the municipality in the "City and Water" project; we installed an information panel in historic sites in the city of Buk about the historic and current importance of water.



# 6. SOCIAL DIMENSION

## 6.1 RELATIONSHIP WITH STAKEHOLDERS

Identifying and analyzing stakeholder expectations  
(4.14, 4.15, 4.16)

The results of the analysis of the expectations of the main stakeholders with which we have a relationship show the opportunities the company has in the development of its social responsibility.





- **Investors:** greater return on their investment through constant, sustainable growth.
- **Employees:** stimulating work environment that is safe, training and growth at work, career plans and opportunities for progress, compensation that reflects the criteria of internal fairness and external competitiveness, monitoring performance, dignified treatment, safety and well-being for their families.
- **Communities:** job opportunities, purchasing from local suppliers, solving basic needs in education, access to clean water and sanitation, dignified housing, support for productive entrepreneurship.
- **Customers:** quality and compliance, competitive prices, business leverage, collaborating on strategic matters for the sustainability of the value chain.
- **Suppliers:** long-term commercial partnerships, mutual support, prompt payment, and better treatment.
- **Governments:** partnerships for community development and protecting public assets.
- **Universities:** support for developing research in science and technology, joint value creation in developing new products and applications, continuous interaction in seeking opportunities, two-way flow of available knowledge (of the university toward the company and vice versa).
- **Communications media:** timely press monitoring and access to industrial knowledge of public interest.

A discussion group composed of citizens representing stakeholder groups pointed out matters that Mexichem should include in the sustainability report, which impact six core issues:

- Three internal ones: human rights, environmental performance, and social performance
- Three external ones: product responsibility, labor practices, and economic performance

More specifically, the expectations of the focal group centered on the following:

1. Environmental performance:
  - I. Emissions, effluents
  - II. Biodiversity
2. Social performance:
  - I. Local communities
  - II. Industrial safety

(3.5, 4.17)







Mexichem and its employees view their customers as strategic allies, whom they support in their growth and development.

## Communication with stakeholders (4.17)

### Investors

Mexichem is committed to providing its shareholders with reasonable, sustained profitability. The mechanisms and media we use to communicate with them are as follows:

- Annual financial report
- Quarterly reports
- Meetings designed by financial brokers for institutional investors
- Presentations for potential investors in North America, South America, and Europe to announce the issuer's recent projects and news
- Our website [www.mexichem.com](http://www.mexichem.com)
- Conference calls
- Scheduled formal meetings (one-on-one)
- Relevant releases made through the Mexican Stock Exchange (BMV)

### Employees

Communications between company management and employees to talk about the direction the company is taking, create awareness of expectations, monitor performance, resolve conflicts, and give general information is carried out through formal channels such as meetings, interactive news sources (the Mexichem website and intranet), dialogue with Union leaders, joint committees, and other available information systems. Other forms of dialogue include the "Mexinet" intranet, mailboxes and e-mail, bulletin boards, and face-to-face meetings with immediate supervisors and other top executives.

### Communities

We make an effort to establish and maintain active communication channels for each stakeholder in the communities where we operate; this allows us to get to know their perception and expectations, to identify opportunities, and to carry out joint projects. We participate in several scenarios that encourage communication, including government and industry work tables, academic events that hold interest to our chains, and meetings with civil associations, opinion leaders, and international organization.

### Customers and suppliers

Mexichem and its employees view their customers as strategic allies, whom they support in their growth and development. We carry out satisfaction surveys that help us identify needs and opportunities for improvement. We work with suppliers that share the highest quality, integrity, and honesty standards, resulting in a mutual benefit, which is more efficient in the vertical integration of our chains. We have a system to evaluate our suppliers through which we can identify common potential for improvement.

## 6.2 MANAGING HUMAN CAPITAL

### 6.2.1 Labor practices and indicators

| December 2013                  |        |
|--------------------------------|--------|
| Employees                      | 17,345 |
| Executive officers             | 60     |
| Managers                       | 501    |
| Department heads               | 982    |
| Other levels                   | 15,802 |
| Women                          | 2,894  |
| Men                            | 14,451 |
| Individual contract            | 7,091  |
| Collective-bargaining contract | 10,254 |

As of December 31, 2013, the Mexichem workforce was composed of 17,345 employees, distributed throughout the countries in which we operate. Male personnel represent 84% of human capital, and 16% are female. (LA2)

All employees have an indefinite full-time work contract that offers employment stability. The table to the left shows the number of directors, managers, heads, and lower level staff. It also includes the number of workers distributed by gender and type of contract: individual (nonunionized workers) or collective (unionized workers). We also have outsourced workers who do freelance or part-time work and who are not included in the data. (LA1)

The highest percentage of our employees with individual contracts is between 25 and 35 years old. Of our employee base—17,345 employees—the turnover ratio of people with individual contracts was 4.26% and of people with a collective-bargaining contract the number was 4.25%; this means that average turnover rate was 4.25%. These numbers were the result of the restructuring of the company to face the global market environment, as well as the reorganization to improve operating efficiency in our operations. (LA2)

#### Percentage of staff turnover at Mexichem

|                                |             |
|--------------------------------|-------------|
| Individual contract            | 4.26        |
| Executive officers             | 5.00        |
| Managers / supervisors         | 3.19        |
| Area heads / coordinators      | 5.60        |
| With no authority              | 4.20        |
| Collective-bargaining contract | 4.25        |
| Women                          | 4.24        |
| Men                            | 4.25        |
| <b>Total</b>                   | <b>4.25</b> |

As can be observed in the above table, rotation for men and women was similar: 4.25% and 4.24%, respectively. (LA2)

#### HUMAN CAPITAL



■ 16% Female  
■ 84% Male

Mexichem pays competitive and fair wages based on market standards and on the dedication of its employees, as well as corresponding with their functions and responsibilities.



Ratio between base salaries for men in comparison to women, by professional category (LA14)

| Range                              | F    | M    |
|------------------------------------|------|------|
| Auxiliaries/<br>Coordinators       | 1.01 | 0.99 |
| Supervisors                        | 0.93 | 1.07 |
| Division heads/<br>Superintendents | 0.98 | 1.02 |
| Managers                           | 0.98 | 1.02 |
| Directors                          | 0.91 | 1.09 |

Average = 1

## 6.2.2 Compensation and benefits

Mexichem pays competitive and fair wages based on market standards and on the dedication of its employees, as well as corresponding with their functions and responsibilities and conditions to which they are committed in performing their job. Correspondingly, an employee with a full-time contract, in comparison to another with a temporary or part-time contract, receives benefits above those established by law, in terms of number of vacation days, vacation pay, food stamps, and savings funds. (LA3) Mexichem offers benefits that exceed those required by current labor law, such as a savings fund, cafeteria service, subsidizing major medical expenses, pension plan, life insurance, productivity bonus, uniforms, and support for recreational and sports activities, among others.

For nonunionized workers, we have a voluntary pension plan that encourages employees to save for retirement, so that they are motivated to build a fund that will become their pension when they are ready to retire. (EC3) We have a well-defined contribution plan, with joint contributions made by the employee and the company. Such contributions are deposited in a financial institution and invested in fixed-rate instruments, through individualized accounts that can be consulted online. A technical committee in charge of managing this plan analyzes the best diversification schemes for fixed-rate investments, in order to obtain the highest return in the market.

Even though labor legislation in each country establishes a value for the local minimum wage, Mexichem offers fair and just compensation, taking into consideration a tabulator that evaluates the labor market, the type of sector, and the functions and responsibilities of the post, based on an established profile that considers expertise and abilities, without discriminating for gender. All things considered, based on the fact that Mexichem has operations in different countries, different industries, different regions and economic zones, the initial standard average salary is between one and three times higher than the local minimum wage. (EC5)

# 59%

of our employees  
have a collective-  
bargaining contract.

# US\$1,014,688

in training  
activities



## 6.2.3 Trade Union membership

59% of our employees (10,254 people) have a collective-bargaining contract. (LA4) Organization changes are opportunely communicated to the unions, and, when the collective contracts are modified, these changes are immediately included once the agreement or collective-bargaining contracts have been revised. (LA5)

## 6.2.4 Training and development

In 2013, there were 467,222 training hours, 63% of which were delivered to workers with a collective contract and 37% to employees with an individual contract. The main issues in training and development this year were human rights, sustainability, safety and health, induction of new employees, corporate culture, and code of ethics, English, process technologies, information technologies, and process management. Total investment was US\$1,014,688. (LA10)

As part of the training to strengthen abilities, we support growth and continuous training for any employee that requires it. This helps increase the company's intellectual capital, enhances job opportunities for our employees throughout their work lives, and contributes to managing the end of their professional career. Because of the experience and training gained, at the end of their career, or because of restructuring, our employees can offer valuable services to other companies and to society as a whole, in other activities. (LA11)

In order to encourage the growth of our human capital, the company carries out an annual performance evaluation process of all nonunionized personnel. All employees receive feedback from their immediate supervisor, and they jointly agree on work goals aligned with the company strategy and their personal improvement and growth goals. These evaluations are the basis for career planning for executives and personnel with high potential and leadership. (LA12)

## 6.2.5 Origin of employees

Hiring people that live in areas close to our business units is a constant practice at Mexichem. With this we support the community by offering jobs and better quality of life and family life, trying whenever possible to minimize commuting time.

As of December 31, 2013, Mexichem had 60 directors working in the company corporate offices, the Integral Solutions, Chloride-Vinyl, and Fluorine chains, with 90% originally from the country in which they carry out their activities as operating leader or top executives in charge of making executive decisions with respect to the most significant operations in the company. (EC7)

## 6.3 EMPLOYEE SAFETY AND HEALTH



The safety of its employees is the most important factor for Mexichem in carrying out its activities.

Our employees, both those holding an individual contract as those holding a collective contract, are represented in the Occupational Health committees. The responsibilities of those committees basically include making proposals that improve safety and protect the health of our employees, verify compliance with established agreements, carry out visits to the plants to detect unsafe conditions, monitor major deviations, comment on accident evaluations, and promote activities to improve the health and safety of our employees. (LA6)

All Mexichem employees are represented in the Safety and Health committees, which are formed basically by executives and lower level personnel. In places with a large number of employees, there can be more than one committee. In general, the committees have an equal number of members from the company and from the Union, thus ensuring equal representation in decision making. The latter responds to legal regulations in the countries where our plants are located. (LA6)

For Mexichem, the most important factor in carrying out our activities is employee safety, and our goal is to prevent accidents and have zero fatalities. Our Safety Policy and our management are geared toward the goal of ensuring an accident-free operation, but the responsibility of reaching that goal is in the hands of every one of the company employees.

### Indicators of operational safety (LA7)

| Range                       | 2009       | 2010       | 2011       | 2012       | 2013       |
|-----------------------------|------------|------------|------------|------------|------------|
| Incapacitating accidents    | 165        | 131        | 180        | 253        | 188        |
| Days lost                   | 3, 251     | 2, 153     | 4, 697     | 8, 777     | 5, 950     |
| Fatal accidents             | 0          | 2          | 1          | 0          | 0          |
| Man-hours worked            | 19,451,891 | 19,558,905 | 22,979,677 | 36,782,516 | 36,855,286 |
| Incidence rate *            | 1.6        | 1.3        | 1.5        | 1.3        | 1.0        |
| Severity or gravity rate ** | 33.4       | 22.0       | 40.8       | 47.7       | 32.2       |

\* Incidence rate = (number of incapacitating accidents / man-hours worked) x 200,000

\*\*Severity rate = (number of days lost / man-hours worked) x 200,000

It is with great satisfaction that we are able to report that during 2013 there were no fatal accidents. (LA7) Incapacitating accidents were down 26% as compared to the prior year, and the number of days lost from incapacitating accidents decreased 32%

Mexichem began this year by implementing the Det Norske Veritas International Safety Rating System to administer safety to manage risks and control losses. During this first year, the work plan focused on 20 Mexichem sites in the Chloride-Vinyl, Fluorine, and Integral Solutions chains. The plan is designed to integrate into one sole system, in a three-year term, to all operating sites with the purpose of defining responsibilities and safety activities for leadership and management issues, planned



**32%**  
less in the number  
of days lost due to  
incapacitating accidents



inspections and maintenance, critical tasks, investigations about accidents and incidents, emergencies, work permits, expertise and abilities, personal protection equipment, health and industrial hygiene, change engineering and management, communications, and safety outside work.

### Education and health prevention programs (LA8)

During the Safety, Health, and Hygiene Week at the different locations where we operate, we offer education, training, and advice in the prevention and control of risks through conferences given by professionals for the families of our employees. Through this program we communicate how important it is for our employees and their families to participate and acquire good habits to improve their own and their family's health.

As part of the activities established in the medical programs, we have information programs for our employees on preventing the most common grave illnesses in different places where we have plants, establishing greater controls so that our employees will be protected. These conferences and campaigns include issues such as high blood pressure, diabetes, obesity, smoking, influenza, stress, alcoholism, cancer, and AIDS, focused on preventive medicine aligned with productivity.

Other initiatives that help us obtain good results in healthcare are our epidemiological security program, periodic medical exams for our workers, vaccination campaigns, supervision of the cafeterias and food, and visits to work places done by our doctors and safety personnel, besides offering information on health and hygiene through newsletters or on billboards.

The work-related diseases prevention program at Mexichem includes the following:

1. Protection and Conservation of Hearing Program (physical exam, ear examination, and audiometry for each worker once a year).
2. Protection and Conservation of the Respiratory Tract Program (physical examination of the lungs, annual spirometry, and examination of the thorax every two years).
3. Protection and Conservation of Sight Program (physical examination, assessment of the eye and its attachments, study of campimetry and visual acuity for farsightedness and nearsightedness once a year).
4. Program for Promoting and Encouraging Health (one talk each month).

The goal behind the safety programs is to protect the health of workers who are exposed to risks, damage, work-related diseases, and/or accidents that could occur at the workplace through preventive and/or corrective measures aimed at improving safety and hygiene. Labor agreements with the Unions include health and safety clauses for workers. (LA9)

The preventive safety programs include:

- Orientation course on safety for all new employees
- Orientation course on safety for all outsourced personnel
- Safe handling of chemical products
- Safety fact-sheets for all materials and for emergency information
- Investigation of accidents and incidents
- First aid
- Major emergencies

## 6.4 SUPPORT AND PROTECTION OF HUMAN RIGHTS

### 6.4.1 Mexichem's Human Rights Policy



At Mexichem we have a Human Rights Policy that has been approved by the CEO and includes references to an attitude of dignity and mutual respect between employees and the company. Employees are aware of this policy, which establishes that we do not tolerate any form of harassment or discrimination. We work with people who are competent and motivated and respect our values, we offer conditions that support human and professional growth for our employees, and we guarantee the right to work under safe and healthy conditions.

In order to create awareness about our Human Rights Policy at all levels of the organization, we have had communication and awareness workshops on this issue. In 2013, 27,653 hours were allocated to sharing Mexichem's policies and procedures concerning human rights and our Code of Ethics with employees. (HR3) There were no incidents of discrimination reported during the year. (HR4)

The policy covers the rights listed in the International Letter on Human Rights and the principles of the fundamental rights established in the ILO Declaration. It sets the criteria for respect for diversity, nondiscrimination, and the protection of the rights of employees in the workplace, with no distinctions for age, gender, race, religion, nationality, physical characteristics, social standing, sexual orientation, political beliefs, or any other factor. It also establishes parameters for protecting the environment and respect for the communities in which Mexichem does business. The commitment applies to employees, suppliers, and contractors.

We will continue to communicate our policies to employees, suppliers, contractors, and distributors.



[http://www.mexichem.com/English/politica\\_derechos\\_humanos.html](http://www.mexichem.com/English/politica_derechos_humanos.html)

# 27,653

employee training  
hours on human rights

We do not hire underage workers, and we comply with the International Convention on Human Rights.



[http://www.unglobalcompact.org/system/attachments/69661/original/Informe\\_de\\_Progreso\\_Pavco\\_-\\_Mexichem\\_2013.pdf?1395069468](http://www.unglobalcompact.org/system/attachments/69661/original/Informe_de_Progreso_Pavco_-_Mexichem_2013.pdf?1395069468)

## 6.4.2 Implementing the policy

### a) Human rights in agreements requiring considerable investments

The goal of Mexichem is to ensure that the growth of its operations is based on the respect for human rights in all its acquisitions. Consequently, during the due diligence process for the acquisition of new assets, the social and human rights aspects are reviewed by experts in these matters. A clear example of this was the acquisition of PolyOne, prior to which we carried out a full review of the human rights criteria in the investment agreement. (HR1)

### b) Human rights at the company

The right to free association and to belong to collective agreements or contracts is based on the activity or position each employee holds, and we see to it that this is complied with. Free association is granted in collective contracts, and there are no risks affecting that liberty. (HR5) Some of the obligations of unionized and labor teams include facilitating the communication process in every business unit, analyzing improvements on the work systems, resolving differences, and handling conflicts, which is all done during scheduled meetings with the human resources representatives and the Union committees. These measures have contributed to stopping strikes or suspensions in operation during the year. (MM4)

Based on our procedures and the labor law, we only hire people who are 18 years old or older. We do not hire underage workers, and we comply with the International Convention on Human Rights. Minimum working age is clearly stipulated in the collective work contracts and the same criteria apply for our suppliers. No actions were required nor was any risk of incident detected with regard to child labor. (HR6)

There are no risks of forced labor or compulsory risks at any of our operations; consequently, no actions have been required. (HR7) We believe there is no need to carry out a systematic analysis by an external organization to identify Mexichem operations that could imply a risk of forced or compulsory labor, since that evaluation is carried out by the Safety and Hygiene Committees. These committees, which include the same number of company representatives as representatives for the workers, carry out monthly reviews of the plants to detect forced labor and unsafe acts or conditions. Afterward, they draft a report on the results of the visit and assign responsibilities to verify that unsafe conditions are corrected. Additionally, any employee can present to top management any complaint or report abuse through the suggestions box, either anonymously or openly, via e-mail or physical mailboxes. Our contracts comply in every aspect with the International Convention on Human Rights and the standards of the International Labour Organization. (HR7)

Safety and supervision personnel that work for the company receive training on human rights, trust issues, and values. This training helps prevent reputation risks and litigation from inappropriate actions or approaches not tolerated by our company. During 2013, 207 people who make up our security staff received training on the human rights policy and procedures at Mexichem. (HR8)

Maintaining a good relationship with the community is part of our business philosophy and good neighbor policy.



- Comisión Nacional de Derechos Humanos (National Human Rights Commission) <http://www.cndh.org.mx>
- Human and Business Rights Resource Centre <http://www.business-humanrights.org/Home>
- Media monitoring services through FACTIVA
- Universal Declaration of Human Rights
- Fundamental Principles on Occupational Health and Safety: [http://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/@publ/documents/publication/wcms\\_093550.pdf](http://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/@publ/documents/publication/wcms_093550.pdf)

### c) Analysis of human rights in suppliers

Mexichem strives to permeate its Human Rights Policy to its whole value chain and to evaluate suppliers based on their respect for the guidelines of this policy. The company's largest supplier is Pemex, which adheres to the United Nations Global Compact, and expresses and reiterates its commitment to promoting and procuring the human rights principles. Occidental Chemical, another one of our great suppliers, continually reports how it manages and handles the protection of human rights in its GRI sustainability reports.

Mexichem has established a method to monitor communications, which includes reviewing suppliers in cases related to human rights. We can then opportunely detect any violations and complement the evaluation of performance on this subject. We identified that the impact on the rights of workers is the most vulnerable area.

Since Mexichem is structured based on vertically integrated production chains, starting from the raw materials extracted from nature, its affiliates become intercompany customers and suppliers: The finished product of one plant becomes the raw material for another and so on until it gets to the final consumer. For these intercompany suppliers, which are viewed as internal customers within the organization, we carried out workshops to communicate the policy and knowledge about human rights in their relationship with the business. The top HR executives in each business unit participated in the workshops, and they in turn trained others within our own company.

To this date we have analyzed 50% of our main suppliers, and no actions have been required as a result of the review of human rights issues. (HR2)

### d) Relationship with communities

Maintaining a good relationship with the community is an important part of our business philosophy and good-neighbor policy. Our hiring policy gives preference to local people. During the year of this report, there were no incidents related to violations of the rights of local communities at sites where we operate. (HR9)







We give preference to local suppliers when purchasing materials and services to operate the Mexichem plants as long as they meet quality and service standards and their price range is competitive.

## 6.5 RELATIONSHIP WITH SUPPLIERS

We give preference to local suppliers when purchasing materials and services to operate the Mexichem plants as long as they meet quality and service standards and their price range is competitive. We define local suppliers as those that are geographically near our facilities or within the same state.

A distinctive managerial characteristic is that Mexichem is structured on vertically integrated chains. This means that by using raw materials extracted from nature, Mexichem's affiliates become at the same time customers and suppliers among themselves: The finished product of one plant becomes the raw material for another and so on until it gets to the final consumer. If the complementary inputs required are available locally, they are acquired there, as long as they comply with the criteria described above.

During 2013, 70% of the orders in the Chloride-Vinyl Chain were allocated to local suppliers, and the average of the labor force hired from local contractors was 90%. In the Fluorine and Integral Solutions chains, the ratio of expenses in acquisitions from local suppliers was 68%. The selected suppliers were preferably those that show commitment to the protection of the environment and are socially responsible companies. (EC6)

## 6.6 PRODUCT STEWARDSHIP

Mexichem manages the safety of its products by following the principles and practices of Responsible Care, a voluntary global initiative of the chemical industry. Compliance at the company level is reviewed by the CEO, and in each operation site this task falls on the managing, internal audit, and performance review systems in the corresponding indicators. We created a Product Stewardship Committee made up of the relative executives who are experienced in the issue, who draft the safety strategy for the products of all three production chains. These strategies include all the stages of the life cycle and are reflected both in corporate policies and in the plans and procedures of each subsidiary, including:

- Using and developing safer and environmentally sensible materials and products.
- Evaluating risks associated with each product, with the communication relevant to the interested parties, as well as recommendations on the adoption of control measures to limit the potential impact.
- Complying with the applicable standards and regulations in manufacturing.
- Pursuing safety in warehousing, transportation, and distribution of products, to protect the people, the environment, and property.
- Accompanying products during transformation for the customer, the uses, and final disposal, to minimize adverse impacts.
- Promoting post-industrial and post-consumer recycling.

As can be observed, constant monitoring of the performance of suppliers, contractors, and transportation companies, the technical advice for customers and the initiatives pertaining to recycling products post-consumption, are proof of Mexichem's commitment in procurement, warehousing, distribution, use, and final disposal. (PR1)





We have complied with the prerequisites for more than 55 substances, and we finalized the registration process for eight substances that are classified as priority under REACH.



<http://echa.europa.eu/web/guest/regulations/reach>

In the Fluorine Chain, fluorite stewardship and in the Chloride-Vinyl Chain, salt, includes handling, transportation, and use of the mineral as a metallurgical-grade flux and acid grade fluorite, and as brine for salt. In both cases, the mineral is incorporated into the newly formed product, and the waste generated from the chemical transformation of the mineral is used as materials for filling and compacting. (MM11) Transporting products and other inputs such as raw materials and auxiliary materials used in the operations, as well as the transportation of personnel, is done by third parties.

### Risk evaluation and control

All the relevant Mexichem products are subject to evaluation, in order to seize opportunities for improvement and minimize their risks for health and the environment. This involves all activities related to managing the product, from the initial research and development up until its final disposal, including manufacturing, marketing, warehousing, and distribution, performance when used, and final disposal, reuse, and recycling. It is important to point out that during the evaluation process we do not test our products on animals. (PR1)

### Compliance with voluntary regulations or codes

Since 2008, Mexichem has met the requirements of the European REACH (Registration, Evaluation, and Authorization of Chemicals) rulings for all substances produced or imported by subsidiaries in its Fluorine and Chloride-Vinyl chains. We have complied with the prerequisites for more than 55 substances, and we finalized the registration process for eight substances that are classified as priority. During this process, Mexichem Fluorine UK led the knowledge of the risks to document the registration files. During 2013, Mexichem registered a second group of substances.

All the chemical products used and supplied by Mexichem comply with the requirements of a risk-communication program based on the guidelines of Responsible Care, which include labeling and the adequate classification, as well as updated safety fact sheets. The corporate procedure for reviewing and validating the safety fact-sheets was based, as a standard of reference for their content, on the Globally Harmonized System. The content of the label and safety fact sheets of our products adheres to the requirements of the laws and regulations of every country in which we operate, including information pertaining to the chemical composition of the product, its physical properties, and recommendations for safe handling, warehousing, use, and adequate disposal practices. Further, we offer our customers and users personal technical assistance when they require help or additional information about how to handle the products safely, including their use in critical applications such as those that need to be in contact with substances for human consumption, or any other that the customers need for the purpose of their businesses. (PR3) There were no recorded incidents of failure to comply with product labeling regulations during the period covered by this report. (PR4)

Mexichem is committed to updating, completing, and making public the risk evaluations of all the substances it produces. The Chemical Safety Reports on the substances already registered under REACH are available on the website of the European Chemical Agency (ECHA).

Further, Mexichem has updated information on the risks of all the substances it handles or produces, which it communicates to different stakeholders through different media, including digital or printed documents, specialized training sessions, and direct responses about any questions raised by employees, customers, authorities, or users in general.



<http://www.mexichem.com.co/CloroVinilo/ResinasColombia/pvc.html>

Mexichem does not use stabilizing systems that contain lead in the production of PVC piping.



During 2011 there were no incidents of noncompliance with regulations or voluntary codes related to the impact of our products or services on health and safety. (PR2)

### Developing safer, environmentally sound products

The Mexichem Research Center, which includes the support of experts in all of the company's production chains in all the countries in which we operate, is leader in the research and development that backs our leadership in the supply of chemical products and integral solutions with a smaller environmental footprint. This contributes to saving resources such as water and energy, to favoring the reduction of greenhouse effect emissions, making progress more viable by using more economic inputs, and offering solutions that are essential for society. It is important to note that at Mexichem we do not use lead-based stabilizers in the production of piping. (PR1)

### Customer health, safety, and satisfaction

Quality-management systems established in all Mexichem subsidiaries comply with ISO 9001 standards and, consequently, include having periodic surveys to measure customer satisfaction. These surveys are given to a significant number of customers, who evaluate several aspects of the commercial relationship and offer a numeric grade to reflect the satisfaction or dissatisfaction status in regards to products and services.

The surveys evaluate the following aspects:

| Chloride-Vinyl             | Fluorine                          | Integral Solutions                      |
|----------------------------|-----------------------------------|---|
| a. Product characteristics | a. Customer service               | a. Service                              |
| b. Service                 | b. Service                        | b. Punctuality                          |
| c. Communication           | c. On-time delivery               | c. Quality and on-time delivery         |
| d. Logistics               | d. Characteristics of the product | d. Frequency of visits from salespeople |
| e. Technical support       | e. Quantity                       | e. Variety of products offered          |
| f. Response to complaints  |                                   | f. Technical assistance                 |

Survey results show customer satisfaction ranging between 90% and 96%. (PR5)

Mexichem has internal controls to prevent leaks of client information, as well as the company's own information, to third parties.

### Communication with the market

Mexichem adheres to the codes of ethics and transparency principles in the information it communicates to different stakeholders. Marketing communication and, in general, all the information published by the company adheres to the policies documented by the Legal Department at Mexichem and the Investor Relations division. Regulation specialists in every country in which we operate review local communications to ensure that they comply with local laws and regulations, based on the company's Code of Ethics and policies. This review includes market information published on the websites, the technical literature of the products, press releases, information presented at business fairs, as well as the information contained in product labels, and any other included in advertising, promotion, or sponsorship activities.

On the other hand, we keep informed about issues in the industry through our relationship with industry associations, their participation in regulatory processes, and other mechanisms included in the management of the safety of products, social concerns, and new restrictions that could influence the markets. In this way we are ensured of having the necessary knowledge to act responsibly when justified concerns or legal limitations arise.

Some of the products Mexichem manufactures have been the subject of controversies by certain stakeholders because of their imagined or real risks to health or the environment. Mexichem continues to produce and promote sales based on the best scientific information and risk assessments available, endorsed by regulations that accept the safety of these products in their various uses and applications. (PR6) No incident of failure to comply with regulations regarding communications, marketing, advertising, and sponsorship was identified during the reporting period. (PR7)

### Customer privacy

Mexichem has internal controls to prevent leaking client information, as well as the company's own information, to third parties. The company did not receive any complaints during the reporting period that would indicate a violation of client privacy. Nor were there any incidents reported for noncompliance with regulations pertaining to communication in sales or claims from clients with respect to privacy or leaks of their personal information. (PR7, PR8) Consequently, we didn't have any fines or non-compliance claims for the supply and use of our products. (PR9)



## 6.7 CONTRIBUTING TO SOCIAL PROGRESS

### 6.7.1 Responsibility in our communities



The commitment of Mexichem to the communities in which we operate is to benefit their growth, by seizing the opportunities for the creation of shared value. The measures we have taken include different ways of participating, based on the different stakeholders with whom we interact, including helping, managing, and encouraging them to manage their own growth. With these tasks we stimulate the initiative and volunteer work of our employees, favoring social progress in the communities.

Our main areas of interest are education, strengthening natural abilities, water supply and sanitation, developing housing solutions, and caring for children. In the strategy for managing our relationship with the communities, we established the following guidelines, which contribute to strengthening the relationship and improving the continuity of projects:

- Responding to priority needs in areas related to the interests of the business.
- Establishing partnerships with public and private organizations to enhance efforts. Ensuring tangible results by defining and monitoring indicators in each project. (4.16)

In the corporate program known as Redoubling Efforts for My Community, the Mexichem plants evaluate the impacts of their operation over the localities established in their area of influence and identify opportunities for creating shared value, taking into consideration the priority needs of the vulnerable population and the ecosystem. In order to satisfy these needs, we formulate and do projects with the participation of the local or regional authorities, and they contribute up to 50% of the resources required, in as much as Mexichem and its employees contribute with an equivalent amount. The program is strategically oriented to the interests of the business and the community: supply of drinking water and basic sanitation, housing, education and recreation for children and young people, healthcare, protection of water, and biodiversity and civic culture.

### Operating structure





## 6.7.2 Accomplishments of the Kaluz Foundation

The Kaluz Foundation, sponsored jointly by Mexichem and other companies of Grupo Kaluz, promotes the comprehensive growth of the person and human values, promoting access to education, water and sanitation, dignified housing, and a healthy environment. The Kaluz Foundation was created to improve quality of life by implementing high-impact economic and social programs in the communities where the group's companies operate.

“Redoubling Efforts for My Community” is the central theme of the programs, which receive support from the Kaluz Foundation, which identifies and supports social responsibility initiatives that benefit our communities through such mechanisms as the Kaluz Foundation Prize, which motivates projects in which the group's companies, their top executives and employees, the corresponding governments, and the benefited community participate. In its fourth edition, the 2013–2014 Kaluz Foundation Prize supports projects that benefit communities in different countries in Latin America and Europe. Mexichem participates in the contest with 14 projects it currently has operating, which are led by employees of the business units in different countries. The participating projects are described in the following table:



<http://www.gek.com.mx/en/foundation.html>





## 6.7.3 Summary of social initiatives for community development and participation, 2013 (4.12, 4.16, S01)

|                                       |  |                                  |
|---------------------------------------|--|----------------------------------|
| <b>Education</b>                      | <b>Education, sports, and health for the community of Pasacaballos</b>   |                                  |
|                                       | <b>Location:</b> Cartagena, Colombia   | <b>Chain:</b> Chloride-Vinyl     |
| <b>Goals</b>                          | To educate the children and families of the Pasacaballos community by sponsoring annual sports tournaments and activities that encourage them to make adequate use of their free time, strengthen family ties, and care for the environment. |                                  |
| <b>Community participation</b>        | Parents attend the events, participate in them, and support them.  |                                  |
| <b>Government participation</b>       | The community council finds the locations for the sports events and the classrooms for the workshops, select teachers, and organize the teams.   |                                  |
| <b>Employee-company participation</b> | Economic resources for buying uniforms and snacks and for paying the teachers; they accompany parents and children at the workshops.   |                                  |
| <b>Housing</b>                        | <b>Volunteers for housing and recycling</b>  |                                  |
|                                       | <b>Location:</b> Cartagena, Colombia   | <b>Chain:</b> Chloride-Vinyl     |
| <b>Goals</b>                          | To use wood from pallets to rebuild houses for families in extreme poverty.  |                                  |
| <b>Community participation</b>        | Hand labor.  |                                  |
| <b>Government participation</b>       | The district ministry of Participation and Social Development manages the state resources and facilitates the project.   |                                  |
| <b>Employee-company participation</b> | Donate materials considered to be waste products (the wood from pallets); training and integrating the volunteers.   |                                  |
| <b>Ecology</b>                        | <b>Aquatic Park for Children</b>   |                                  |
|                                       | <b>Location:</b> Guayaquil, Ecuador  | <b>Chain:</b> Integral Solutions |
| <b>Goals</b>                          | To create an aquatic park for children using our experience in handling and recycling water.   |                                  |
| <b>Community participation</b>        | Hand labor.  |                                  |
| <b>Government participation</b>       | Machinery, land.   |                                  |
| <b>Employee-company participation</b> | Plastic waste products and/or products that have been discontinued because they don't sell fast enough.  |                                  |
| <b>Water</b>                          | <b>Water that You are to Drink; You will be Able to Have</b>   |                                  |
|                                       | <b>Location:</b> Buenos Aires, Argentina   | <b>Chain:</b> Integral Solutions |
| <b>Goals</b>                          | To provide drinking water and sanitation improvements for different schools and community centers in the islands around the delta of the Paraná River, in the province of Buenos Aires, Argentina.   |                                  |
| <b>Community participation</b>        | Labor force.   |                                  |
| <b>Government participation</b>       | Technology, high-cost transportation to the island, machinery, and conference rooms for launching presentations.   |                                  |
| <b>Employee-company participation</b> | Labor force and materials for the sanitation system.   |                                  |

|                                       |  |                                  |
|---------------------------------------|--|----------------------------------|
| <b>Health</b>                         | <b>To build an urban sewage system in the municipality of Guachené (Cauca Department), Colombia</b>  |                                  |
|                                       | <b>Location:</b> Guachené - Colombia   | <b>Chain:</b> Integral Solutions |
| <b>Goals</b>                          | To optimize and increase coverage of the domestic sewage system for the urban area of the municipality of Guachené, ensuring that wastewaters are totally discharged in the treatment plant, in order to protect both the environment and health, particularly for children.   |                                  |
| <b>Community participation</b>        | 50 youngsters in the region participated in the training given by Pavco to install piping; community representatives formed a committee to supervise the works (donating their time).  |                                  |
| <b>Government participation</b>       | Donated US\$594,000 of the budget from the municipality of Guachené, which is in charge of supervising the works through the Ministry of Infrastructure.   |                                  |
| <b>Employee-company participation</b> | Donated US\$230,000, corresponding to a local tax break allocated to this project. Drafted the bidding rules and contracting processes.  |                                  |
| <b>Education</b>                      | <b>CELTA sports schools</b>  |                                  |
|                                       | <b>Location:</b> Soledad (Atlántico Department), Colombia  | <b>Chain:</b> Integral Solutions |
| <b>Goals</b>                          | To promote and develop sports programs that contribute to the cognitive, emotional, and physical development of boys, girls, and young people, promoting their growth as upstanding people and leaders in their communities.   |                                  |
| <b>Community participation</b>        | Parents and the community working to build and upgrade the sports stadium.   |                                  |
| <b>Government participation</b>       | The mayor of the city of Soledad will allocate the land.   |                                  |
| <b>Employee-company participation</b> | Economic resources to pay for the trainers' salaries and part of the sports equipment. Guidance and participation in the teaching and training process.  |                                  |
| <b>Tradition and culture</b>          | <b>COCO ARTE, artisanal background for vulnerable youngsters (Phase II)</b>  |                                  |
|                                       | <b>Location:</b> Bogotá, Colombia  | <b>Chain:</b> Integral Solutions |
| <b>Goals</b>                          | <ol style="list-style-type: none"> <li>1. To teach young people who live in vulnerable conditions to carry out productive activities.</li> <li>2. To train them to develop business initiatives.</li> <li>3. To create handcrafted pieces, accessories, and ornaments that can later be sold.</li> <li>4. Reuse ecological raw materials.</li> </ol>   |                                  |
| <b>Community participation</b>        | The Christian Association of Young People is responsible for recruiting the young participants. It lets them use their classrooms.   |                                  |
| <b>Government participation</b>       | The Bogota Chamber of Commerce offers the participation of some of its professionals in training activities for entrepreneurship.  |                                  |
| <b>Employee-company participation</b> | Economic resources to buy materials. The Pavco Foundation participates in the entrepreneurship training and fund-raising.  |                                  |
| <b>Ecology</b>                        | <b>Ecological restoration of the Neuta wetland (Soacha – Cundinamarca)</b>   |                                  |
|                                       | <b>Location:</b> Bogota, Colombia  | <b>Chain:</b> Integral Solutions |
| <b>Goals</b>                          | <ol style="list-style-type: none"> <li>1. To carry out the process to ecologically restore the wetland, with the support of the community, in order to ensure the protection and conservation of the ecosystem.</li> <li>2. Generate sensitizing and awareness activities so that the community can understand the benefits and environmental service the wetland offers.</li> <li>3. To design campaigns and carry out works to upkeep the wetland, such as recovering the water mirror, cleanup of green areas, reforestation, and construction of education areas.</li> </ol> |                                  |
| <b>Community participation</b>        | The neighbors and community councils work in the cleaning, reforestation, and planting efforts.  |                                  |
| <b>Government participation</b>       | The Autonomous Regional Corporation of Cundinamarca contributes with technical advice and expertise.   |                                  |
| <b>Employee-company participation</b> | Economic resources to buy materials. The Pavco Foundation, as the strategic unit for Pavco, handles the relationship with the community and accompanies them in the sensitizing, inviting, participating, and educating processes.   |                                  |

|                                       |   |                                  |
|---------------------------------------|---|----------------------------------|
| <b>Education</b>                      | <b>Eco-orchards</b>   |                                  |
|                                       | <b>Location:</b> Bogota, Colombia   | <b>Chain:</b> Integral Solutions |
| <b>Goals</b>                          | <ol style="list-style-type: none"> <li>1. To promote and offer training to plant organic orchards.</li> <li>2. Use the training process as an education tool to generate awareness about the adequate use of natural resources.</li> <li>3. To encourage the optimized use of resources.</li> </ol> |                                  |
| <b>Community participation</b>        | The neighbors and community councils work in the cleaning, reforestation, and planting efforts.   |                                  |
| <b>Government participation</b>       | The Bogota botanical garden will steward the project and give technical advice and some inputs. The District Institute for Recreation and Sports donates the land for building the model orchard.   |                                  |
| <b>Employee-company participation</b> | Economic resources.<br>Expertise and time allocated to the training process.  |                                  |
| <b>Housing</b>                        | <b>Amanco emergency camps in the Guatemalan high plateaus</b>   |                                  |
|                                       | <b>Location:</b> Guatemala  | <b>Chain:</b> Integral Solutions |
| <b>Goals</b>                          | To design and implement their own resilient solutions in emergencies for families affected by tropical storms or earthquakes, complying with the norms of the humanitarian network and local authorities.   |                                  |
| <b>Community participation</b>        | Labor force.  |                                  |
| <b>Government participation</b>       | Permits.  |                                  |
| <b>Employee-company participation</b> | Donate Plycem and latrines, support and technical talks on temporary and long-term housing, training for local army reserves, installation manuals, and maintenance posters.  |                                  |
| <b>Ecology</b>                        | <b>To process water to make it drinkable in the community of Monte Carlos</b>   |                                  |
|                                       | <b>Location:</b> Guatemala  | <b>Chain:</b> Integral Solutions |
| <b>Goals</b>                          | To give continuity to the project for managing rainwater (which consisted of placing permeable pavement to capture rainwater to the ground) thus making water clean enough for drinking.  |                                  |
| <b>Community participation</b>        | Labor force.  |                                  |
| <b>Government participation</b>       | Permits.  |                                  |
| <b>Employee-company participation</b> | Economic resources to buy materials and systems that the company provides.  |                                  |
| <b>Ecology</b>                        | <b>Water: Fountain of smiles</b>  |                                  |
|                                       | <b>Location:</b> San Salvador, El Salvador  | <b>Chain:</b> Integral Solutions |
| <b>Goals</b>                          | <p>To provide drinking water to a community of 100 families.</p> <p>To support the community in education on the good use of water.</p>   |                                  |
| <b>Community participation</b>        | Labor force.  |                                  |
| <b>Government participation</b>       | Permits.  |                                  |
| <b>Employee-company participation</b> | Economic resources, labor and advice, awareness workshops.  |                                  |

|                                       |   |                                  |
|---------------------------------------|---|----------------------------------|
| <b>Housing</b>                        | <b>Building community with El Barrial</b>   |                                  |
|                                       | <b>Location:</b> San Salvador, El Salvador  | <b>Chain:</b> Integral Solutions |
| <b>Goals</b>                          | Building 90 new housing solutions and strengthen community abilities.   |                                  |
| <b>Community participation</b>        | Labor force.  |                                  |
| <b>Government participation</b>       | Permits and construction support.   |                                  |
| <b>Employee-company participation</b> | <ol style="list-style-type: none"> <li>1. Donating construction materials to build housing (piping and fittings).</li> <li>2. Participating as volunteers in the construction of housing and in the process of building abilities with the families.</li> <li>3. Cash donations.</li> </ol> |                                  |

|                                       |  |                                  |
|---------------------------------------|--|----------------------------------|
| <b>Housing</b>                        | <b>Building Dreams Together, phase II</b>  |                                  |
|                                       | <b>Location:</b> Choloma, Cortes, Honduras   | <b>Chain:</b> Integral Solutions |
| <b>Goals</b>                          | To build homes through synergies between Mexichem and Plycem Honduras, and to participate as relevant actors in the community with which we interact, motivating other private companies to participate. |                                  |
| <b>Community participation</b>        | Support in the construction of housing.  |                                  |
| <b>Government participation</b>       | Permits.   |                                  |
| <b>Employee-company participation</b> | Economic resources and donating materials for housing (piping and fittings).   |                                  |



## 6.8 AWARDS, CERTIFICATIONS, AND DISTINCTIONS (2.10)

During the year, Mexichem obtained the following prizes, distinctions, and certifications:

- Clean Industry certificate granted by the environmental authority in Mexico
- Socially Responsible certificate granted by Cemefi (philanthropy organism)
- Self-management in Safety and Health certificate, granted by the labor authority in Mexico
- Kosher certificate, granted by Calidad Kosher, S.C.
- ISO 9001: Quality Management System
- ISO 14001: Environmental Management System
- ISO 22000: Food Safety Management System
- OHSAS 18001: Occupational Health and Safety Management System
- NSF: NSF International is an independent and objective nonprofit organization dedicated to product testing and certification, and it establishes global performance standards for a wide variety of products for home and industry
- SARI: Responsible Care® Management System, granted by the National Association of the Chemical Industry in Mexico
- ICONTEC: Colombian Institute of Technical Standards
- NORVEN: Certifier of final product quality in Venezuela
- SEDAPAL: Potable water and Sewage Services of Lima
- INEN Seal of Quality
- INASSA Seal of Quality
- Exame 2013 Guide

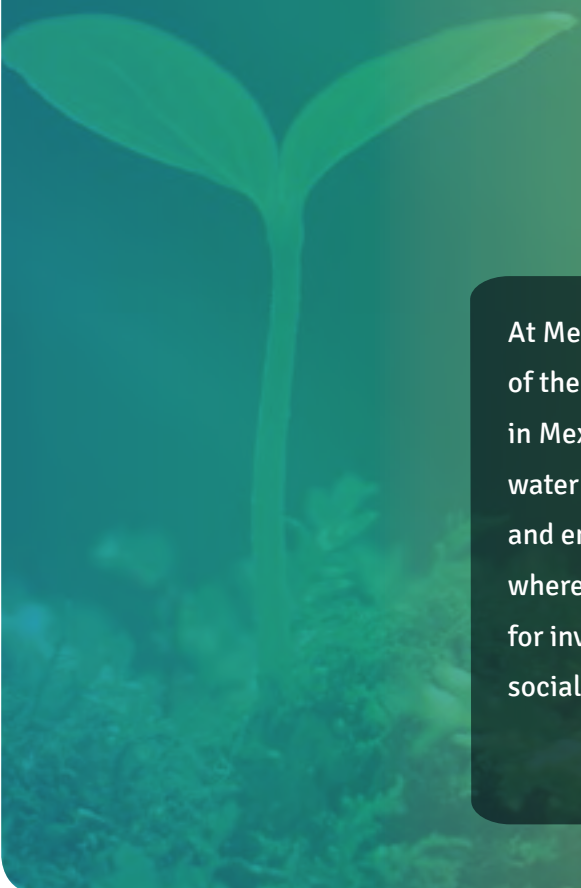
We also obtained distinctions for Environmental Leadership for Competitiveness, granted by the Mexican Federal Office for Environmental Protection (Profepa); Social Responsibility in Family Companies, granted by the Mexican Department of Labor; Safety, Voluntary Environmental compliance, and safety and health in the work place, and the Colombian distinction in environmental excellence to generate sustainable growth, elite category, granted by the government of Colombia.

Socially Responsible  
Certificate, ESR,  
Certificate of self-  
management with  
safety, Icontec  
certificate, INEN  
Quality Seal,  
INASSA Seal.





# 7. ENVIRONMENTAL DIMENSION



At Mexichem, we believe that because we are one of the most environmentally committed companies in Mexico, we are obligated to optimize our use of water and energy. We have developed eco-efficiency and environmental protection programs in the places where we operate, which we consider to be an asset for investors who assign additional value to corporate social responsibility.



We have established environmental management systems to identify and control relevant issues, develop improvements in the operation, and incorporate good industrial and mining practices.

The following are among the initiatives we have implemented to minimize our environmental impact:

- Optimizing the use of water and energy
- Reducing industrial wastes
- Controlling emissions into the atmosphere
- Designing plans to protect biodiversity, soil, surface water, and aquifers
- Using research and development to design and manufacture safer and more environmentally sound products (EN26)

We implement environmental management programs which help us identify and control the most relevant issues, improve our operations, and incorporate industrial and mining best practices. We are taking the necessary measures at the facilities that have not yet been certified in order to comply with Mexichem's corporate strategy of having all operations certified.

## 7.1 INVESTMENTS IN ENVIRONMENTAL PROJECTS

During 2013, we invested a total of US\$4.17 million in environmental control projects, mostly in energy optimization and savings, water treatment systems, protecting against chemical spills, reducing noise, and managing industrial wastes. (EN30)

### Mexico

- Built a discharge water treatment plant (PTAR) with a capacity of 4,000 m<sup>3</sup>
- Installed a slurry concentration unit with a reverse osmosis system to reduce emissions
- Replaced regular lamps with energy-saving lamps
- Replaced equipment with ecological coolant
- Channeling effluent and stormwater
- Recovered chlorine fumes produced during the process of filling tanker trucks with diluted sulfuric acid
- Reengineered the ECVS (Emergency Chlorine Vent Scrubber) to optimize operation
- Implemented a portable system to prevent chemical spills into the sewage system
- Reengineered the containment system for emergencies caused by chemical spills
- Developed a control system for the acid fumes produced during the process of filling tanker trucks with hydrochloric acid
- Developed a dechlorinated water-management system
- Developed a system to reuse boiler regeneration water
- Installed a system to absorb chlorine spills during the process of filling tanker trucks

### Peru

- Optimized the pneumatic transport system for mixtures to eliminate particle leaks

### Venezuela

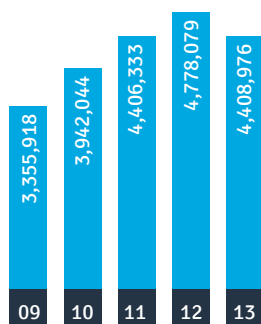
- Improved ventilation in extrusion and injection areas
- Repaired the fire detection and extinguishing system

### Colombia

- Developed a slurry recovery project
- Installed equipment for emergency response and for detecting emissions

## 7.2 USE AND CONSUMPTION OF NATURAL RESOURCES AND MATERIALS

The basic raw materials used to manufacture Mexichem products are essentially salt (sodium chloride) and fluorite (calcium fluoride). These two raw materials are obtained through extraction processes in mines the company owns in Mexico. The rest of the raw materials are basic chemical products, petrochemicals, commodities, and auxiliary chemical products. In all, we consume 4,408,976 tons of raw materials. (EN1)



**Raw materials**  
Ton/year

### Consumption of raw materials, 2009-2013

|                                | 2009      | 2010      | 2011      | 2012      | 2013      |
|--------------------------------|-----------|-----------|-----------|-----------|-----------|
| Raw materials in tons per year | 3,355,918 | 3,942,044 | 4,406,333 | 4,778,079 | 4,408,976 |

(EN1)

During 2013, we suspended operations in the sulfur extraction facility in Veracruz, due to market conditions, and because in the future we will be reexamining extraction and identifying areas where the mineral is more accessible. In addition, this facility did not meet our eco-efficiency and productivity criteria. From the environmental perspective, closing this operation reduces by 100% the impact on water consumption at this site. (EN26) The plan to close the sulfur mining facilities includes reforestation and monitoring during 10 years to compensate for the environmental impact in the drilling areas. (MM10)

# 12%

INDUSTRIAL RECYCLING

We achieved an average industrial recycling percentage of 12%, with the best performance in the Integral Solutions Chain, where the out-of-specification PVC residues are recovered and then reincorporated into the process, thus closing the product's life cycle. (EN2)

Mexichem uses state-of-the-art technology to produce PVC resins, which includes closed-cycle processes to recover the unpolymerized fraction of the vinyl chlorine monomer and put it back in the process for use in future production shifts. This way, we optimize efficiency and minimize losses of raw materials in the PVC plants, resulting in a safer work environment for our employees.

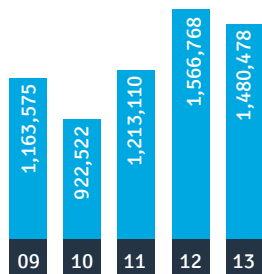


## 7.3 EFFICIENT USE OF ENERGY AND WATER

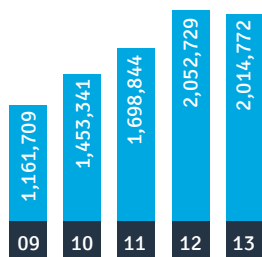
### Use of energy

Mexichem consumes basically two types of energy: electricity and natural gas, which are mostly supplied by external companies. We also use gas, and in lesser proportion, steam, diesel, and LP gas. In order to generate the energy we consume, the companies that supply us use thermoelectric, hydroelectric, coal-generated electric, geothermal electric, wind-generated electric, nuclear-generated electric, and biomass plants. (EN4)

We have invested in process technologies and preservation strategies to improve efficiency in energy use, resulting in economic savings, competitive advantages, and market differentiation. In our environmental-impact assessments, energy use plays a significant role. Consequently, we have developed a culture of responsible energy use that relies on energy-saving programs led by technical staff at our facilities, in which all our employees participate. Successful measures are replicated in the different chains.



**Electric energy**  
Gcal/year



**Natural gas**  
Gcal/year

Mexichem has an Energy Efficiency Program operating in the top facilities of the Chloride-Vinyl Chain. The program has been implemented at other operation sites, and as a result, over the last years we have obtained recognitions in several categories of the Energy Saving Award granted by the Mexican Commission for Energy Savings.

During 2013, we continued reducing energy consumption and gaining savings. We used 5.5% less energy obtained through third parties than last year, in spite of the growth of our operations and the subsequent increase in production activity.(EN4)

### Electric energy consumption (Gcal/year) (EN4)

1 cal = 4.1841 J

|                              | 2009      | 2010    | 2011      | 2012      | 2013      |
|------------------------------|-----------|---------|-----------|-----------|-----------|
| Electric energy in Gcal/year | 1,163,575 | 922,522 | 1,213,110 | 1,566,768 | 1,480,478 |

Burning fossil fuels such as natural gas is a significant source of GHG emissions. The natural gas used to generate energy in our plants is the main source of CO<sub>2</sub> emissions produced directly by Mexichem. Our direct energy consumption coming from natural gas in 2013 was close to the same level as the previous year, in spite of an increased production activity. Our direct energy consumption coming from natural gas was 1% lower than last year's.

(EN3)

### Natural gas consumption (Gcal/year) 1 Cal = 4.1841 J

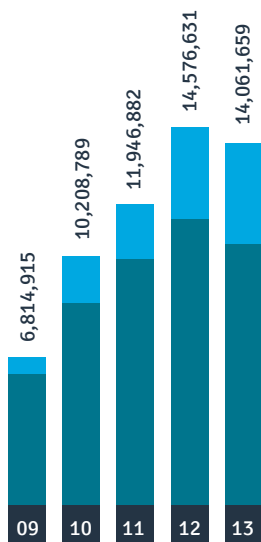
|                          | 2009      | 2010      | 2011      | 2012      | 2013      |
|--------------------------|-----------|-----------|-----------|-----------|-----------|
| Natural gas in Gcal/year | 1,161,709 | 1,453,341 | 1,698,844 | 2,052,729 | 2,014,772 |

Mexichem is evaluating the use of renewable sources of energy to ensure the sustainability of its operations. The Altamira plant, which produces PVC resins in Mexico, currently produces 72% of its electric energy through cogeneration. In Coatzacoalcos, where the main facility to produce chlorine is located, we conducted a viability study to use alternate sources of energy, such as wind power and solar energy. (EN6)

Greater savings will depend on the development of alternative energies—such as installing high-efficiency LED lamps to provide energy to the public lighting network—at the Coatzacoalcos and Altamira facilities in Mexico. We are also evaluating the possibility of building a cogeneration plant in Coatzacoalcos. During 2013, we saved 1.5% in energy due to conservation programs and enhancements in the operational efficiency. (EN5)

# 1.5%

SAVINGS IN ENERGY



**Water consumption in our operations (m<sup>3</sup>)**

■ Surface water  
■ Groundwater

Some of the activities we carried out to save energy include:

- Installing highly energy-efficient engines
- Installing speed controllers in engines
- Installing PVC resin-drying equipment, with increased energy efficiency
- Suspending the process in peak hours
- Insulating chilled water pipes (EN7, EN18)

Other energy-saving investments applied in our facilities include improved technology in the electrolytic diaphragm cells to reduce current flow in the production of chlorine-soda; substituting high-efficiency engines for electric engines; substituting LED bulbs for incandescent bulbs; changing seals in the cooling tower cells; and installing more efficient chilled-water equipment. We have also implemented operational practices such as reductions in production line equipment and in the number of ventilators in the cooling towers during the winter months. (EN7)

### Water consumption

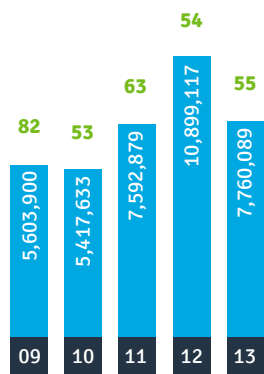
Water consumption at the Mexichem operations is subject to the authorization of government agencies, which grant permissions, licenses, and/or water concession titles in compliance with the environmental laws of each country. The water we consume is mainly used in extraction, transformation, and general operations. Our facilities have closed-loop water circuits, and all of them include wastewater-treatment systems, both of which result in the recovery of 55% of this resource. To further contribute to reducing water consumption and mitigating shortage risks, we have set the goal of increasing recirculation and reuse in all our facilities. (EN26, EN10)

During 2013, we consumed 14,061,659 cubic meters of first-use water. Water extraction from surface bodies was at 75% and at 25% from aquifers. This means that 75% of the water consumed by Mexichem comes from the natural runoff of the water cycle into rivers, lakes, creeks, and water vessels. Therefore, there is a natural replenishment of these water supply sources. Only 25% comes from ground sources, whose natural replenishment is more complicated. (EN8)

### Water consumption in our operations (m<sup>3</sup>) (EN8)

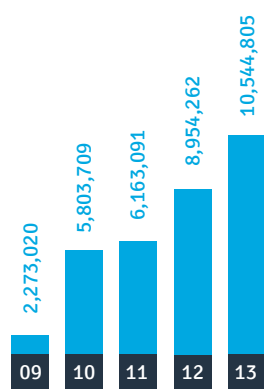
|                        | 2009      | 2010       | 2011       | 2012       | 2013       |
|------------------------|-----------|------------|------------|------------|------------|
| Surface water          | 6,214,158 | 8,604,753  | 10,082,410 | 11,442,723 | 10,634,625 |
| Groundwater            | 600,757   | 1,604,036  | 1,864,472  | 3,153,909  | 3,427,034  |
| Total water extraction | 6,814,915 | 10,208,789 | 11,946,882 | 14,576,631 | 14,061,659 |





**Recycled and reused water**  
(m<sup>3</sup>/year)

■ % of the total extracted



**Wastewater discharged into rivers, creeks, municipal drainage, and seepage**

We have no knowledge of water sources that have been significantly affected by water extraction for Mexichem's use. (EN9)

We currently recycle and reuse 55% of the water, mostly in the mineral concentration process of our fluorite mine. (EN10) Currently only 45% of the water is first-use.

### Water recovery in our operations

|   | 2009      | 2010      | 2011      | 2012       | 2013      |
|---|-----------|-----------|-----------|------------|-----------|
| Recycled and reused water (m <sup>3</sup> per year)     | 5,603,900 | 5,417,633 | 7,592,879 | 10,899,117 | 7,760,089 |
| Recycled and reused water (as % of the total extracted) | 82        | 53        | 63        | 54         | 55        |

(EN10)

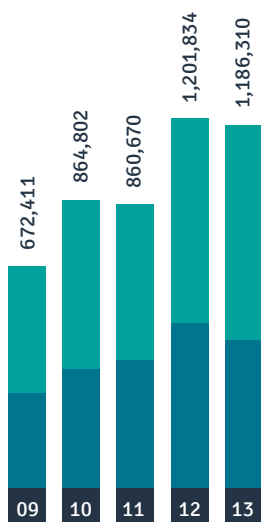
All of Mexichem's plants have facilities to treat wastewater prior to discharge. Treatment meets and exceeds the standards required by legislation in each country where we operate. We returned 10,544,805 m<sup>3</sup> of treated water to surface bodies, municipal drainage, and seepage. This number includes runoff water collected during the rainy season in the plants that have artificial dams or vessels. (EN21) In conducting a total soil-water balance, we did not quantify losses from evaporation or natural collection of rainwater in our tailings dam, which could change our water figures by up to 15%.

### Total discharge of wastewater (m<sup>3</sup>)

|   | 2009      | 2010      | 2011      | 2012      | 2013       |
|---|-----------|-----------|-----------|-----------|------------|
| Wastewater discharge into rivers, creeks, municipal drainage, seepage | 2,273,020 | 5,803,709 | 6,163,091 | 8,954,262 | 10,544,805 |

## 7.4 CONTROL OF EMISSIONS AND INDUSTRIAL WASTE

Mexichem continuously and periodically monitors gas and particle emissions in all of its facilities in order to guarantee the health and safety of its personnel and neighboring communities, and to protect the environment.



**Total greenhouse gas emissions**  
(ton CO<sub>2</sub>e/year)

■ Indirect emissions of GHG  
■ Direct emissions of GHG

## Greenhouse gas emissions

Since 2007, Mexichem keeps an inventory of the GHG sources of its operations and records direct and indirect emissions related to electric energy consumption. To calculate these emissions, Mexichem uses the World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD) methodologies, considering the emission factors from the Federal Electricity Commission (CFE) recorded in the Mexico GHG program (<http://www.geimexico.org/>) and in the International Energy Agency (CO<sub>2</sub> Emissions from Fuel Combustion 2010 Edition). Values from 2009 to 2013 have been calculated in accordance with the WRI and WBCSD criteria and the International Energy Agency factors. These calculations include values of NOx emissions and the consumption of fuels such as natural gas, LPG, diesel, and gasoline, in both fixed and mobile sources, converted into equivalent CO<sub>2</sub> tons. (EN16, EN17) During 2013, NOx and SOx combined emissions equaled 2,141 tons. (EN17, EN20)

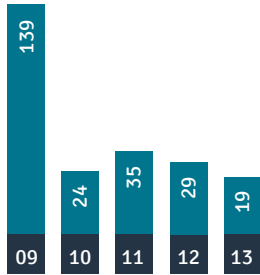
## Total greenhouse gas emissions (ton CO<sub>2</sub>e/year) (EN16)

|                        | 2009    | 2010    | 2011    | 2012      | 2013      |
|------------------------|---------|---------|---------|-----------|-----------|
| Direct GHG emissions   | 286,171 | 357,084 | 385,575 | 498,184   | 450,613   |
| Indirect GHG emissions | 386,240 | 507,718 | 475,095 | 703,650   | 735,697   |
| Total GHG emissions    | 672,411 | 864,802 | 860,670 | 1,201,834 | 1,186,310 |

At Mexichem we are committed to reducing GHG emissions and have established energy saving goals at our operations, office buildings, and industrial facilities. Furthermore, we have developed projects to use renewable sources of energy that will allow us to reduce our carbon footprint. During 2013, we registered a reduction of 15,524 tons of GHGs, as compared to 2012.

We will continue to develop several process eco-efficiency plans and technological substitutions and to evaluate alternative renewable energies. (EN18) Some of our current initiatives include the following:

- Using preemptive maintenance tools with thermography and vibration analysis to reduce electric risk due to thermal fatigue in fittings, therefore eliminating dissipation points from fitting or component failures.
- Controlling downtime and scrap in the production process.
- Training employees about the rational use of electricity based on a savings culture that stresses that equipment should not be kept on unnecessarily.
- Controlling transportation contractors by an initial and periodic evaluation that requires them to provide evidence that their vehicles have been properly checked and comply with emissions verification.
- Substituting energy-efficient engines and speed changers. (EN18)



**Emissions of ozone-depleting substances (ton)**

## Emissions of ozone-depleting substances

As a result of using best practices in managing ozone-depleting substances, in compliance with the Montreal Protocol agreements, Mexichem has been able to accomplish significant reductions since 2007. In 2013, emissions of these substances came down to 19 tons. (EN19) On the other hand, in our Fluorine Chain we carried out the thermal destruction of 1,150 tons of cooling flour-carbonated gases that have high greenhouse effect potential. (EN17)

### Emission of ozone-depleting substances, in weight (EN19)

|   | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|------|------|------|------|------|
| Emissions of ozone-depleting substances (ton) | 139  | 24   | 35   | 29   | 19   |

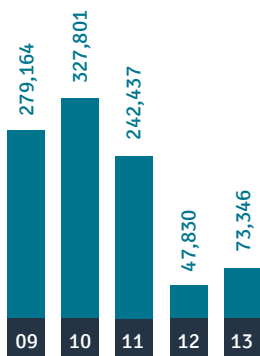
## Managing industrial waste

Our operations basically generate wastes that require special handling but are not categorized as hazardous, including used oil, tires, glass, plastic, paper, cardboard, biodegradable organic matter, wood, and others. Some of these residues are categorized by their use, such as the industrial oil used as fuel in the cement industry; other wastes are reused, including wood, cardboard, and paper; and others, such as plastic, are recycled.

In 2013, we generated 73,346 tons of waste, out of which 99% was nonhazardous. The disposal methods used were 80% sanitary landfill and compacted waste cells, 2% incineration, 17% reuse and recycling, and 1% industrial containment. (EN22)

In some cases, because they come from industrial operations, wastes such as process by-products need special handling. Mexichem has action plans in place for waste that requires special handling, which describe their sustainable use and/or final destination, such as road paving or filling and compacting materials. (EN22)

13% of the packing materials used for product distribution are recovered at the end of their useful life. These materials include bags made of paper or industrial plastics, pallets, and containers. (EN27)

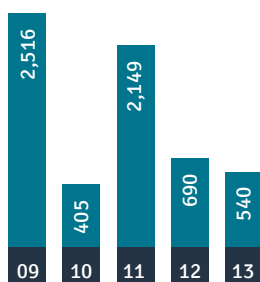


**Total weight of waste managed (ton)**

### Total wastes handled (EN22)

|                                     | 2009    | 2010    | 2011    | 2012   | 2013   |
|-------------------------------------|---------|---------|---------|--------|--------|
| Total weight of managed waste (ton) | 279,164 | 327,801 | 242,437 | 47,830 | 73,346 |

The hazardous waste generated by Mexichem's operations is handled locally in temporary warehouses and is subsequently sent either to controlled confinement sites or for stabilizing or recycling treatment, in compliance with the environmental regulations of each country. In 2013, Mexichem did not transport any hazardous waste internationally. We generated and transported 540 tons of hazardous waste locally. (EN24)



**Dangerous waste transported locally for treatment (ton)**

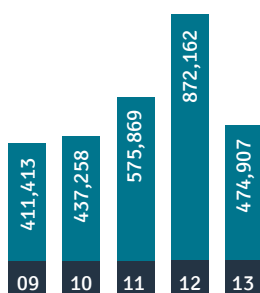
### Hazardous waste transported locally for treatment and disposal in confinement sites (EN24)

|   | 2009  | 2010 | 2011  | 2012 | 2013 |
|---|-------|------|-------|------|------|
| Hazardous waste transported locally for treatment (ton) | 2,516 | 405  | 2,149 | 690  | 540  |

During 2013, there were three accidental chemical product spills (two in Mexico and one in Costa Rica) for a total of 6 m<sup>3</sup>. These spills and their impact on the environment were effectively contained, and the materials were either recovered or neutralized. (EN23) Mexichem's plants have detailed plans and trained personnel to respond to accidental spills, both within our facilities and for accidents occurring during transportation.

### Generating and handling tailings and waste-rock dumps

Most of the waste that comes from mining operations is tailings, also known as slag or sterile material. These materials are disposed of in designated spaces such as tailing dams and patio reservoirs inside our facilities, all of which have been approved by the proper authorities. Tailings are neither hazardous nor special-handling waste. Our tailing dams do not produce acidic leachate. (MM3)



**Total tailings, slag, waste-rock dumps, and sterile materials (ton)**

### Amount of tailings

|   | 2009    | 2010    | 2011    | 2012    | 2013    |
|---|---------|---------|---------|---------|---------|
| Total tailings, slag, waste-rock dump, and sterile material (ton) | 411,413 | 437,258 | 575,869 | 872,162 | 474,907 |

None of the mining operations are conducted in or adjacent to indigenous communities. The federal government grants a concession for the land that has been evaluated by the Mexican Geological System, and the land is privately owned or owned by communal farms. The land used for mining operations is regulated through a land lease contract with the communal landowners. (MM5) No conflicts exist with regards to the use of the land, since the concessions have been granted by the Mexican government for extraction of minerals, thus avoiding any controversy related to land use. (MM6, MM7)

Since 2012 and by mutual consent, Mexichem suspended operation in all its mines and processing plants run by a small group of individual miners, because they did not agree to adhere to the company's safety and environmental protection measures and standards governing mining operations. (MM8) The families of these miners were not relocated, as there were no settlements on Mexichem's land. (MM9)

No fines or sanctions were imposed on Mexichem for noncompliance with environmental regulation.



### Compliance with applicable environmental regulation

During 2013, Mexichem was not fined or sanctioned for failing to comply with environmental regulation. (EN28) Furthermore, the company did not register any significant environmental or logistic impact as a result of transporting products or personnel during the year covered by this report. (EN29)

We have adopted a precautionary approach regarding our medical and food industries products. The Food and Drug Administration (FDA) validates our new raw materials by performing physicochemical, bioaccumulation, cytotoxicity, microbiological, melamine, metallothionein, genetic, and bioavailability tests. (4.11)

## 7.5 PROTECTING VULNERABLE ECOSYSTEMS AND BIODIVERSITY

### Protected or restored habitats

Mexichem owns areas of land in Mexico that are rich in biodiversity and where it carries out mining and ore processing operations for nonmetallic minerals such as fluorite and salt.

For our company, ensuring the integrity of the natural habitats that surround our mining operations plays a key role in securing the availability of natural resources and the continuity of our business. A major success story is the work we have done at the town of Alamos de Martínez, in the Mexican state of Guanajuato, which has been part of the Biosphere Reserve of the Sierra Gorda since 2007. Without causing any damage to the reserve, this site functions as an area where fluorite is extracted from waste discarded by operations prior to Mexichem coming to the zone in 2008. (EN11)

The industrial operations of the Chloride-Vinyl and Integral Solutions chains are carried out mostly in industrial areas designed and selected by public policies within areas where environmental impact has been reduced by the measures taken by local authorities. We do not include any such measures for these types of operations.

Mexichem's biodiversity strategy is focused on its extraction-mining and fluorite processing operations, which could have an environmental impact. Based on Mexichem's sustainability vision, fluorite extraction and recovery operations are executed jointly with a biodiversity protection strategy from three perspectives:

1. The operation itself, through which we reduce the waste volume disposed of in its area and comply with the statutes established by the Mexican Department of the Environment (Semarnat) and the Mexican General Law for the Prevention and Integral Management of Waste.
2. Not altering the ecosystem to exploit the mine, since the activity consists of recovering fluorite from already exploited residues.
3. Implementing a plan for recovering and protecting biodiversity in the area. (EN13)





## Strategies and actions for limiting negative impacts on biodiversity (EN14)

Mexichem's commitment to biodiversity protection is clearly stated in its Human Rights Policy and corporate ethics.

The most significant impacts of Mexichem's mining operations are:

- Producing waste and tailings
- Altering the ecosystem
- Altering biodiversity (EN12)

In the areas where future operations will be established, we carry out environmental impact studies in order to determine the measures we need to take to protect or re-store the natural habitats and species located in the area surrounding the facility. The strategies to manage biodiversity impact are the following:

(EN14)

| Focus                                       | Actions  |
|---|--|
| Species that inhabit the region             | <ul style="list-style-type: none"> <li>• Monitoring</li> <li>• Recording the events related to each species</li> </ul>   |
| Quality of air and water                    | <ul style="list-style-type: none"> <li>• Monitoring</li> </ul>   |
| Waste                                       | <ul style="list-style-type: none"> <li>• Ensuring proper management and the best possible recovery of waste</li> </ul>   |
| Communities                                 | <ul style="list-style-type: none"> <li>• Supporting organizations that preserve biodiversity</li> <li>• Establishing efficient communication channels with stakeholders</li> </ul>     |
| Invasive species                            | <ul style="list-style-type: none"> <li>• Monitoring and control</li> </ul>   |
| Native vegetation                           | <ul style="list-style-type: none"> <li>• Reforesting</li> <li>• Monitoring and control of restored population density</li> </ul>   |
| Physical, chemical, and temporal dimensions | <ul style="list-style-type: none"> <li>• Study of physical and chemical indicators</li> <li>• Studies of toxicity</li> <li>• Study of bioindicators of environmental health</li> </ul> |

## Endangered species whose habitats are located in areas affected by our operations (EN15)

Mexichem is concerned for the species that live in the areas surrounding its mining facilities. Consequently, we believe it is important to understand them and determine the degree to which they are threatened. During this process, we have identified six species with different degrees of extinction risk, according to the National Commission for Knowledge and Use of Biodiversity (Conabio): In the area surrounding one mine and two fluorite extraction sites in Mexico—Villa de Zaragoza and Río Verde in San Luis Potosí; and Álamos de Martínez in Guanajuato—two species are vulnerable, two are threatened, and two are endangered.

|                   | Subject to special protection      |                           | Threatened   |                           | Endangered  |                            |
|-------------------|------------------------------------|---------------------------|--------------|---------------------------|-------------|----------------------------|
| Río Verde         | Skunk                              | <i>Spilogale pygmaea</i>  |              |                           | Rattlesnake | <i>Crotalus molossus</i>   |
| Álamos            | Biznaga barril de acitrón (Cactus) | <i>Ferocactus histrix</i> | Golden eagle | <i>Aguila Chrysaetos</i>  | Quail       | <i>Colinus virginianus</i> |
|                   |                                    |                           | Sparrow      | <i>Spizella wortheini</i> |             |                            |
| Villa de Zaragoza | Skunk                              | <i>Spilogale pygmaea</i>  |              |                           | Rattlesnake | <i>Crotalus molossus</i>   |

### Biodiversity of water resources and related habitats (EN25)

Mexichem conducts environmental impact studies to determine the size, state of protection, and biodiversity value of the water resources in order to plan the necessary prevention measures. Mexichem reports that there are no aquifers affected by wastewater discharges coming from its operations because the water in its mining facilities is managed within a closed loop. On the other hand, chemical and transformation plants have wastewater treatment systems that comply with and exceed water discharge parameters.

In the case of the fluorite extraction mine in Río Verde, in the Mexican state of San Luis Potosí, it has been determined that no biodiversity will be affected in the runoff areas. In the operations at Álamos de Martínez, Guanajuato, Río Verde, and Villa de Zaragoza, water is handled in a closed-loop cycle.

### Management plans for protecting biodiversity (MM2)

Mexichem carries out environmental impact analysis in its mining operation sites, and based on the diagnosis, formulates biodiversity protection plans. This is also a legal requirement that Mexican agencies like Semarnat establish as a prior condition for extraction in any deposit.

The following aspects are considered in the environmental impacts analysis:

- The scale of the impact that exploiting the mine or recovering materials from the deposits will have.
- The level of sensitivity of the area where the facilities are located.
- The use of the biodiversity by the local community.
- The importance that communities and employees give to environmental protection and biodiversity.
- Identifying protected areas where mines are located.
- Measures to compensate and protect the area.
- Measures for properly closing the mining zones once the operations are suspended.

Resulting from the environmental impact evaluations carried out for all of Mexichem's mines, we identified the measures that the company is committed to fulfill, based on its own biodiversity management plans:



| MINE OPERATION PHASES                 | REQUIREMENTS   | STEPS THAT MEXICHEM NEEDS TO TAKE   | Río Verde | Álamos | Patío San Luis | Villa de Zaragoza | Múzquiz |
|---------------------------------------|--|---|-----------|--------|----------------|-------------------|---------|
| Exploration and planning of a deposit | Buffer area and compensation plan  | Conducting a risk analysis for the ecosystems: <ul style="list-style-type: none"> <li>Includes evaluating the probable negative effects resulting from exposure to one or more environmental stressors.</li> </ul>  | *         | *      |                | *                 | *       |
|                                       | Identifying endangered species   | Identify presence of species in the field, their type and the risks to which they are exposed.  |           | *      |                | *                 | *       |
|                                       | Level of acoustic and light pollution for species  | Conduct a study and perimeter analysis of noise and light (including acoustic levels in the area housing the installations and their exterior, as well as light pollution).   | *         | *      | *              | *                 | *       |
|                                       | Protecting the species (Mitigating adverse effects in the reproduction phase of protected and vulnerable species)          | Designing programs to protect species located in operation sites.   | *         | *      | *              | *                 | *       |
|                                       | Conservation of recharge levels in aquifers  | Study for aquifer recharging, including: <ul style="list-style-type: none"> <li>Rational management of water resources</li> <li>Comprehensive use of rainwater, recharge of aquifers</li> <li>Mechanisms for preserving natural resources.</li> </ul> Drafting a strategic plan that considers ecosystem restoration and includes: <ul style="list-style-type: none"> <li>Current control</li> <li>Reducing soil-erosion processes</li> <li>Sustainable development of the natural resources, taking socioeconomic and sociocultural aspects into consideration.</li> </ul> |           | *      |                | *                 | *       |
|                                       | Evaluating efficiency in the compensation plans  | Compliance with conditions established by the authorities.  | *         | *      |                | *                 | *       |
|                                       | Monitoring buffer zones, ecosystem health, and level of surrounding biodiversity   | Creating a biodiversity program that includes the distribution of species of flora and fauna species, spatial distribution, and population density.   | *         | *      |                | *                 | *       |
|                                       | Training stakeholders on how to care for and protect threatened species and how to act if they come into contact with them | Creating a communication and training program that includes: <ul style="list-style-type: none"> <li>Communicating knowledge</li> <li>Monitoring involved plant employees and external players located close to the facility.</li> </ul> Creating community workshops that include: <ul style="list-style-type: none"> <li>Best practices for community relations</li> <li>Conferences, workshops, courses, and projects supporting the local population.</li> </ul>   | *         | *      | *              | *                 | *       |
|                                       | Supporting NGOs that protect endangered species  | Establishing a relationship with NGOs to protect flagship species within the area where facilities are located.   | *         |        |                |                   | *       |
|                                       | Avoiding erosive processes (paying attention to the degree of slope of the embankments)                                    | Adapting the warehouses for tailings waste-adapting embankments in compliance with the NOM-141-Semarnat-2003 norm.<br>Performing a safety-factor study on the embankments.  | *         | *      | *              | *                 | *       |

| MINE OPERATION PHASES                                 | REQUIREMENTS  | STEPS THAT MEXICHEM NEEDS TO TAKE   | Río Verde | Álamos | Patio San Luis | Villa de Zaragoza | Múzquiz |
|---|---|---|-----------|--------|----------------|-------------------|---------|
|   |   |   |           |        |                |                   |         |
|   | Monitoring air quality  | Study and program for monitoring suspended particles, including: <ul style="list-style-type: none"> <li>Toxicity level of suspended particles at the site and in surrounding areas</li> <li>Negative effects that affect the ecological balance.</li> </ul>   | *         | *      |                | *                 | *       |
|   | Monitoring the quality of discharges of different types of water  | Keeping a logbook of wastewater discharges and water quality analysis for discharges.   | *         | *      |                |                   | *       |
|   | Calculating emissions   | Obtaining the Exclusive Environmental License, which includes on-site measurement of emissions and workplace environment.   | *         | *      | *              | *                 | *       |
| Reincorporating deposits to the surrounding ecosystem | Monitoring reforestation actions  | Developing and executing a reforestation program that includes recovering endemic species, as well as monitoring and controlling the population density of the reintroduced species.  | *         |        | *              | *                 | *       |
|   | Reintegrating into the ecosystem prior to the shutdown of mine operations (not necessarily when all operations have been suspended) | Designing and implementing the site restitution program.<br>The program considers restitution measures, starting during the operation all the way through complete shutdown, under several guidelines: <ul style="list-style-type: none"> <li>NOM-157-Semarnat-2009, establishes the guidelines for closing down mining operations.</li> <li>NOM-141-Semarnat-2003, establishes environmental protection requirements for storing waste tailings from fluorite recovery operations in warehouses.</li> </ul>  | *         |        | *              | *                 | *       |
|   | Monitoring the health of the ecosystem reintroduced in the area   | Study on physical indicators, including the physical properties of the soil (structure, compactness, texture, apparent density, porosity, water retention capability, infiltration, depth, hydraulic conductivity, etc.).   | *         |        | *              | *                 | *       |
|   | Biochemical monitoring of the soil  | Study of chemical indicators and regulations, including: <ul style="list-style-type: none"> <li>Mobility and bioavailability based on the properties and degradability of the environment (presence of intermediate compounds or final degradation products), trace elements.</li> <li>Maximum value limits according to NOM-147-SEMAR-NAT/SSA1-2004.</li> </ul> Study on toxicity: <ul style="list-style-type: none"> <li>Includes bioavailability of any organic or inorganic pollutant present in the soil, expressed in terms of toxicity, biodegradability, and extractability over time.</li> </ul> | *         | *      | *              | *                 | *       |



Strategy and actions planned and implemented to manage impact on biodiversity.

Our main mining operation is the fluorite (calcium fluoride) extraction mine located in the village of La Salitrera in the municipality of Villa de Zaragoza, in San Luis Potosí, Mexico. It has an estimated surface of 500 hectares, out of which approximately 50 are destined for mineral extraction and 450 have not been used. The mineralized bodies currently being exploited are located southeast of Sierra de Álvarez, in the western portion of the eastern side of the Sierra Madre, but outside the boundaries of the polygon the Mexican government has declared as a protected natural area. The area where this mine is located has a natural mining vocation, due to geological and physiographic qualities that have fostered mining activities since the 1950s. It has the environmental characteristics of arid zones, where the features that determine its mining potential are: the type of arid soil, a mountainous topography, and limited water resources. (MM1, EN11)

The natural resources that were altered for the original construction and start-up of the processing plant were soil and flora, because dirt was moved for leveling and for removing vegetation. However, biodiversity is not protected since it was declared an industrial use area.

The habitat consists mainly of the typical arid zone birds, small mammals, and reptiles. Current damage to the fauna is considered to be limited, since the largest displacement of fauna occurred with the first human settlements and before the mine was ever installed.

The strategy and measures taken to manage the effects of the mine's operation on biodiversity are mostly of low magnitude, and we have put mitigation measures in place to reduce them further.

No natural resources that require special attention were identified, with the exception of the biznaga de lana cactus, that has a special protected status and grows in the mine's surroundings in an area that is not currently affected nor do we expect to be affected by future mining operations. (EN11, EN12, EN13, EN14, EN15)

There are plans (50% chance) to shut down the fluorite mine in San Luis Potosí; we have already suspended mining operations in Jáltipan, Veracruz. We acquired the Múzquiz, Coahuila mine in 2012, and its environmental protection plans are now underway. (MM10)





To open new niches and markets and introduce products that contribute to adapting to and mitigating impacts of climate change.



## 7.6 PREPARING FOR CLIMATE CHANGE (EC2)

The effects of climate change in the sites where Mexichem has operations or market presence are desertification and drought, rising of sea level, changes in rain patterns, decrease in water availability, deforestation, and diseases.

Although climate change could represent additional costs—resulting from the potential need to adapt operations to the increase in prices for energy and inputs, shutting down affected operations and relocating suppliers, implementing protection measures for natural disasters (like building dikes in sea-level facilities, or protection against floods or fire), relocating facilities to sites with better conditions, and even tighter environmental regulations—it could also present interesting business opportunities:

- Create new niches and markets for products that contribute to adapting to and mitigating the impact of climate change
- Endurance and positioning resulting from consumer preference for companies committed to protecting the environment and to corporate social responsibility

We can foresee both opportunities and threats for businesses, operations, and facilities that are subject to the effects of climate change, and they will have to adapt to the trends. A reduction in precipitation in the surrounding areas could represent a business opportunity for Integral Solutions, due to an increase in demand for water extraction and irrigation systems. A drastic reduction in precipitation could force farmers to move their operations to other regions or countries, and related business would benefit from moving along with its customers.

Some facilities will need to undergo physical modifications also as a result of the effects of climate change. Coastline protection at sea-level facilities, for example, could be threatened by a higher sea level or more extreme meteorological events. Some operations could also be modified or strengthened in order to adapt. They could, for instance, consider different options that would affect logistics as little as possible if a hurricane were to hit nearby.

### Risks

The main risks that can be expected are physical risk to current and future facilities, as well as the availability of the water they need to operate. We need to perform a risk assessment for both our facilities and the surrounding communities. Depending on where the facilities are located, the following risk dimensions should be considered:

- Protecting coastal facilities from the increase in sea level and the number and intensity of extreme weather events
- Fires caused by droughts
- Storms, flooding, and landslides

Mexichem has identified and mitigated risks to its operations in areas at sea level.

It is important to monitor the progress of diseases emerging in regions where historically they had never been present before, because the impact they could have on the workforce or their food supply would directly impact company performance.

Mexichem will also need to foresee future regulations regarding climate change that could affect operations. Water supply and taxes on GHG emissions are issues that will be included in the legislative agenda in the short-term.

At Mexichem, we have identified and mitigated operating risks in sea-level areas by constantly monitoring hurricanes, based on forecasting models provided by the National Water Commission and the National Center of Hurricanes of Miami. This allows us to plan measures that need to be taken within the supply chain and plant operations in order to prevent problems that these events can generate.

Extreme weather events can also have serious repercussions on the company's logistics. Production units could become isolated and not able to receive or ship products by land or sea. The flow of materials could also be interrupted in nonrelated sites that are strategic for transporting products (a closed port in the United States or an inaccessible border crossing due to floods in Europe, for example).

The Intergovernmental Panel on Climate Change (IPCC) forecasts that extreme meteorological events will tend to grow in intensity and number. Mexichem will draft contingency plans to respond to these events, striving to reestablish operations as soon as possible through new logistics options. Redundant options in transportation, different routes, and logistics or emergency inventories are some examples of our contingency plans. If we are able to operate in an almost normal fashion during these events, we will have a clear advantage over our competition, if they do not have these plans in place.

### Opportunities

Water is an essential resource for the extraction, transformation, and general operations of Mexichem. Consequently, many of our plants have closed-loop circuits, and all of them are equipped with wastewater-treatment systems that can recover more than 50% of water.

Studies conducted by the Mexican Institute of Ecology (INE) and the Mexican Department of the Environment (Semarnat) show that extreme variations in temperature are one of the consequences of climate change. These changes can represent an area of opportunity if we see a growth in the demand for air-conditioning equipment and in the use and production of more efficient coolants.



Mexichem is investing in research in the United Kingdom to develop refrigerants that contribute less to global warming.



#### Integral Solutions Chain

Changes in rain patterns derived from climate change are expected. Reduced precipitation could raise the demand for water extraction and irrigation services in agricultural fields. However, if the reduction in precipitation is such that aquifers are drained, higher temperatures would directly affect productivity in the fields.

Human settlements that depend on basins where less precipitation is expected will also push demand for alternative methods for extracting water for both household and industrial use. Our Integral Solutions chain will be able to serve this growing market.

#### Chloride-Vinyl Chain

The Chloride-Vinyl Chain offers comprehensive solutions for wastewater treatment. In areas where less precipitation is expected, we can predict that water availability for household and industrial use will also decrease. To face this problem, the industrial sector will need to become more efficient in using this resource, either by modifying operation facilities to make them a closed-loop circuit or by using wastewater. In both situations, they will be forced to install water-treatment systems. We expect that demand for wastewater treatment systems will increase significantly in these regions, both in the private and public sectors, since they will need more chlorine for water treatment and caustic soda for regenerating treatment resins.

#### Fluorine Chain

Mexichem Fluorine supports worldwide regulation to contain and reduce the growth of HFC emissions. It is imperative that decisions are made in order to use HFC correctly, because they have a wide array of applications that can provide safe and efficient cooling. HFC in heat pumps contributes to reducing demand for fossil fuels and increases the use of renewable energies. Mexichem conducts research in the United Kingdom to develop coolants that are as or more efficient than those available today, but have less global-warming potential.

To date, Mexichem has a portfolio of projects in the three chains that take into consideration climate change, market trends, and product demand, as well as other factors, to achieve operational sustainability.



The work consisted of installing 4,000 linear meters of main collectors with their corresponding home connections and inspection boxes.

## Indirect economic impact (EC9)

### Strategy

Our triple-bottom-line management model includes the involvement and development of the communities in which we operate. Correspondingly, our actions have different impacts on our neighboring settlements; when the impact is positive, we have a virtuous cycle of growth.

**Awareness.** When evaluating the vulnerability of our facilities and surrounding communities, we are able to identify those that require immediate attention. It is less expensive to protect or relocate the operations or workforce in the area than to restore the damage caused by a possible disaster, and this also protects human lives.

**Protection.** It is important to monitor the progress of diseases that could put our workforce and their income at risk. As part of this process we will also have to monitor the water supply, and our operations will need to be efficient and include a high percentage of recycling or closed-loop water circuits.

At Mexichem, we have programs that foster social and economic growth in the communities. The economies of scale that we have created in the communities neighboring the fluorite mine are an example of this. People who own machinery and dump trucks have formed a local partnership to transport the mineral that Mexichem extracts. (EC9, SO1)

## CASES

### Public-private partnerships, a new vision for creating social value

We completed the project to build urban sanitary sewage in Guachené, at Cauca, Colombia, as a result of a partnership between the municipal government, the community, and Mexichem Pavco.

The project consisted of installing 4,000 linear meters of main collectors with their corresponding household connections and inspection boxes, benefitting nearly 5,000 people, with an investment of US\$1.13 million. The local government contributed 57% and Mexichem Pavco the remaining 43%.

Mexichem Pavco was in charge of the studies and design of the sewage system, and supervised construction. We installed new generation 8 inches to 20 inches Novafort Pavco piping, as well as cameras and Novocam inspection boxes, a Mexichem Wavin technology.

The mayor of Guachené, Francisco José Paz, said, “The partnership for basic sanitation to build an urban sewage system helped us solve a sanitation problem we have had for 40 years. Before, when it rained, the streets flooded and the excretions flowed back to the homes of our people. Today, we are able to tell the community that we have solved 100% of the sanitation problem, and we have the public-private partnership to thank for that.”

With this project focused on social and environmental responsibility, we were able to concentrate wastewater in the treatment plant and eliminate direct discharges to the Palo River, which generated erosion and pollution problems that threatened the health of the community. Once the sewage network is renewed and installed, the local government will be able to pave the streets.

Mexichem Resinas Colombia surpassed its own record of more than 400 days without incapacitating accidents in its PVC facility in Cartagena.

### Achievements in safety

Mexichem Resinas Colombia surpassed its own record of more than 400 days without incapacitating accidents in its PVC facility in Cartagena. This is proof of our employees' commitment to safety as well as a level of motivation that has produced the process to form leaders and facilitators for implementing the Total Control of Losses System, ISRS. We are convinced that an accident-free operation is possible when we act with knowledge and responsibility and apply the best practices to protect health and the environment, as well as the assets that belong to us all.



### HYDROS

In the framework of World Water Day (March 22), we launched the Hydros Project platform in all countries where the Kaluz Group is present. The launching ceremony consisted of simultaneously presenting a speech by the president of the Kaluz Foundation, Francisco del Valle, and a video of Mexichem's Chairman of the Board, Juan Pablo del Valle, in which they highlighted the importance of the project, motivating the company's water ambassadors to raise awareness for water care and protection around the globe.

During World Environment Day (June 5, 2013) we launched the Hydros website, the Hydros Game, and the Hydric Footprint application for Mexichem's employees and the general public. These electronic applications include messages to raise awareness of the rational use of water in a fun way. Both applications are available in the iOS and Android platforms.

During 2013, Hydros was presented in more than 80 schools to almost 7,000 children. A total of 24 videos for the "Water in one minute" contest, also for schools, were shown in over 70 companies, expos, trade shows, associations, and in a shopping mall, with an estimated impact on more than 50,000 viewers. There were also other special projects, such as Hydros-inspired videos on Brazilian television, the Youth Water Protecting Award 2013, and the "Mexichem Family Leader in Water Saving," both in Colombia.



<http://www.proyectohydros.com/>



## Index of GRI indicators (3.12)

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| 3.8                            | Basis for reporting on joint ventures, subsidiaries, leased facilities, outsourced operations, and other entities that can significantly affect comparability. | 18, 19     | FULLY |
| 3.9                            | Data measurement techniques and the bases of calculations.   | 18, 19     | FULLY |
| 3.10                           | Explanation of the effect of any restatements of information provided in earlier reports.  | 18, 19     | FULLY |
| 3.11                           | Significant changes from previous reporting periods in the scope, boundary, or measurement methods applied in the report.                                      | 18, 19     | FULLY |
| 3.12                           | Table identifying the location of the Standard Disclosures in the report.  | 72         | FULLY |
| 3.13                           | Policy and current practice with regard to seeking external assurance.   | 18, 19     | FULLY |
| 4                              | <b>GOVERNANCE, COMMITMENTS, AND ENGAGEMENT</b>   |            |       |
| 4.1                            | Governance structure of the organization.  | 21, 22     | FULLY |
| 4.2                            | Indicate whether the Chair of the highest governance body is also an executive officer.  | 21         | FULLY |

**MEXICHEM  
INDICATORS GRI 3.1**

| GRI ID                                 | DISCLOSURE   | Page       |       |
|--|--|------------|-------|
| 4.3                                    | Number of members of the highest governance body that are independent.   | 21         | FULLY |
| 4.4                                    | Mechanisms for communicating with the highest governance body.   | 23         | FULLY |
| 4.5                                    | Compensation of members of the highest governance body, including triple bottom line.  | 23         | FULLY |
| 4.6                                    | Processes in place for the highest governance body to ensure conflicts of interest are avoided.  | 21, 23     | FULLY |
| 4.7                                    | Process for determining the qualifications and expertise required for members of the highest governance body to guide the organization's strategy on economic, environmental, and social aspects.  | 21         | FULLY |
| 4.8                                    | Internally developed statements of mission or values, codes of conduct, and principles relevant to economic, environmental, and social performance and the status of their implementation.   | 9, 24      | FULLY |
| 4.9                                    | Procedures of the highest governance body for overseeing the organization's identification and management of economic, environmental, and social performance, including relevant risks and opportunities, and adherence or compliance with internationally agreed standards, codes of conduct, and principles. | 23         | FULLY |
| 4.10                                   | Procedures for evaluating the highest governance body's own performance with respect to the triple bottom line.  | 21         | FULLY |
| 4.11                                   | Explanation of whether and how the precautionary approach or principle is addressed by the organization.   | 61         | FULLY |
| 4.12                                   | Social, environmental, and economic programs or initiatives developed externally (cases).  | 47         | FULLY |
| 4.13                                   | Principal associations of which the organization is a member.  | 81         | FULLY |
| 4.14                                   | List of stakeholder groups engaged by the organization.  | 30         | FULLY |
| 4.15                                   | Basis for identification and selection of stakeholders with whom to engage.  | 30         | FULLY |
| 4.16                                   | Approaches to stakeholder engagement, including frequency of engagement by type and by stakeholder group.  | 30, 45, 47 | FULLY |
| 4.17                                   | Results from stakeholder analysis.   | 31, 32     | FULLY |
| <b>ECONOMIC PERFORMANCE INDICATORS</b> |  |            |       |
| EC1                                    | Direct economic value generated and distributed, including revenues, operating costs, employee compensation, donations, etc.   | 27         | FULLY |
| EC2                                    | Financial implications and other risks and opportunities for the organization's activities due to climate change.  | 67         | FULLY |
| EC3                                    | Coverage of the organization's defined benefit plan obligations.   | 34         | FULLY |
| EC4                                    | Significant financial assistance received from government.   | 28         | FULLY |
| EC5                                    | Range of ratios of standard entry-level wage compared to local minimum wage.   | 34         | FULLY |
| EC6                                    | Policy, practices, and proportion of spending on locally based suppliers at significant locations of operation.  | 41         | FULLY |
| EC7                                    | Procedures for local hiring and proportion of senior management hired from the local community at significant locations of operation.  | 35         | FULLY |
| EC8                                    | Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind, or pro bono engagement.   | 27, 28, 29 | FULLY |

**MEXICHEM  
INDICATORS GRI 3.1**

| GRI ID                                      | DISCLOSURE  | Page   |       |
|---|---|--------|-------|
| EC9   | Understanding and describing significant indirect economic impacts, including the extent of impacts   | 70     | FULLY |
| <b>ENVIRONMENTAL PERFORMANCE INDICATORS</b> |   |        |       |
| EN1   | Materials used by weight or volume.   | 54     | FULLY |
| EN2   | Percentage of materials used that are recycled input materials.   | 54     | FULLY |
| EN3   | Direct energy consumption by primary energy source.   | 55     | FULLY |
| EN4   | Indirect energy consumption by primary source.  | 54, 55 | FULLY |
| EN5   | Energy saved due to conservation and efficiency improvements.   | 55     | FULLY |
| EN6   | Initiatives to provide energy-efficient or renewable-energy-based products and services, and reductions in energy requirements as a result of these initiatives.  | 55     | FULLY |
| EN7   | Initiatives to reduce indirect energy consumption and reductions achieved.  | 56     | FULLY |
| EN8   | Total water withdrawal by source.   | 56     | FULLY |
| EN9   | Water sources significantly affected by withdrawal of water.  | 57     | FULLY |
| EN10  | Percentage and total volume of water recycled and reused.   | 56, 57 | FULLY |
| EN11  | Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.  | 61, 66 | FULLY |
| EN12  | Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.                                     | 62, 66 | FULLY |
| EN13  | Habitats protected or restored.   | 61, 66 | FULLY |
| EN14  | Strategies, current actions, and future plans for managing impacts on biodiversity.   | 62, 66 | FULLY |
| EN15  | Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk.  | 62, 66 | FULLY |
| EN16  | Total direct and indirect greenhouse gas emissions by weight.   | 58     | FULLY |
| EN17  | Other relevant indirect greenhouse gas emissions by weight.   | 58, 59 | FULLY |
| EN18  | Initiatives to reduce greenhouse gas emissions and reductions achieved.   | 56, 58 | FULLY |
| EN19  | Emissions of ozone-depleting substances by weight.  | 59     | FULLY |
| EN20  | NOx, SOx, and other significant air emissions by type and weight.   | 58     | FULLY |
| EN21  | Total water discharge by quality and destination.   | 57     | FULLY |
| EN22  | Total weight of waste by type and disposal method.  | 59     | FULLY |
| EN23  | Total number and volume of significant spills.  | 60     | FULLY |
| EN24  | Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally. | 59, 60 | FULLY |
| EN25  | Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff.                          | 63     | FULLY |

**MEXICHEM  
INDICATORS GRI 3.1**

| GRI ID  | DISCLOSURE  | Page       |       |
|---|---|------------|-------|
| EN26  | Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation.  | 53, 54, 56 | FULLY |
| EN27  | Percentage of products sold and their packaging materials that are reclaimed by category.   | 59         | FULLY |
| EN28  | Monetary value of significant fines and total number of nonmonetary sanctions for noncompliance with environmental laws and regulations.  | 61         | FULLY |
| EN29  | Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce.       | 61         | FULLY |
| EN30  | Total environmental protection expenditures and investments by type.  | 53         | FULLY |
| <b>LABOR PRACTICES AND DECENT WORK PERFORMANCE INDICATORS</b> |   |            |       |
| LA1   | Total workforce by employment type, employment contract, and region.  | 33         | FULLY |
| LA2   | Total number and rate of new employee hires and employee turnover by age group, gender, and region.   | 33         | FULLY |
| LA3   | Benefits provided to full-time employees that are not provided to temporary or part-time employees, by major operations.  | 34         | FULLY |
| LA4   | Percentage of employees covered by collective-bargaining agreements.  | 35         | FULLY |
| LA5   | Minimum notice period(s) regarding significant operational changes, including whether it is specified in collective agreements.   | 35         | FULLY |
| LA6   | Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs. | 36         | FULLY |
| LA7   | Rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities.  | 36         | FULLY |
| LA8   | Education, training, counseling, prevention, and risk-control programs in place to assist workforce members, their families, or community members regarding serious diseases.     | 37         | FULLY |
| LA9   | Health and safety topics covered in formal agreements with trade unions.  | 37         | FULLY |
| LA10  | Average hours of training per year per employee by gender, and by employee category.  | 35         | FULLY |
| LA11  | Programs for skills management and lifelong learning that supports them in managing the end of their professional careers.  | 35         | FULLY |
| LA12  | Percentage of employees receiving regular performance and career development reviews.   | 35         | FULLY |
| LA13  | Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity.   | 22         | FULLY |
| LA14  | Ratio of basic salary and remuneration of women to men by employee category.  | 34         | FULLY |
| <b>HUMAN RIGHTS PERFORMANCE INDICATORS</b>                    |   |            |       |
| HR1   | Significant investment agreements that include clauses incorporating human rights.  | 39         | FULLY |
| HR2   | Percentage of significant suppliers, contractors and other business partners that have undergone human rights screening, and actions taken.                                       | 40         | FULLY |

**MEXICHEM  
INDICATORS GRI 3.1**

| GRI ID   | DISCLOSURE   | Page       |       |
|--|--|------------|-------|
| HR3  | Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained.                                     | 38         | FULLY |
| HR4  | Total number of incidents of discrimination and corrective actions taken.  | 38         | FULLY |
| HR5  | Operations and significant suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and actions taken to support these rights. | 39         | FULLY |
| HR6  | Operations and significant suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to the effective abolition of child labor.                               | 39         | FULLY |
| HR7  | Operations and significant suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination.   | 39         | FULLY |
| HR8  | Percentage of security personnel trained in the organization's policies or procedures concerning aspects of human rights.  | 39         | FULLY |
| HR9  | Total number of incidents of violations involving rights of indigenous people and actions taken.   | 40         | FULLY |
| <b>SOCIAL PERFORMANCE INDICATORS</b>                 |  |            |       |
| SO1  | Impact of the company's operations on communities, including entering, operating, and exiting.   | 47, 70     | FULLY |
| SO2  | Percentage and total number of business units analyzed for risks related to corruption.  | 24         | FULLY |
| SO3  | Percentage of employees trained in organization's anticorruption policies and procedures.  | 24         | FULLY |
| SO4  | Actions taken in response to incidents of corruption.  | 24         | FULLY |
| SO5  | Public policy positions and participation in public policy development and lobbying.   | 24         | FULLY |
| SO6  | Total value of financial and in-kind contributions to political parties, politicians, and related institutions.  | 24         | FULLY |
| SO7  | Actions related to monopolistic and anticompetitive practices.   | 24         | FULLY |
| SO8  | Fines and total number of nonmonetary sanctions for noncompliance with laws and regulations.   | 24         | FULLY |
| <b>PRODUCT RESPONSIBILITY PERFORMANCE INDICATORS</b> |  |            |       |
| PR1  | Life cycle stages in which health and safety impacts of products and services are assessed for improvement.  | 41, 42, 43 | FULLY |
| PR2  | Total number of incidents of noncompliance with regulations and voluntary codes concerning health and safety impacts of products and services during their life cycle, by type of outcomes.                        | 43         | FULLY |
| PR3  | Type of product and service information required by procedures, and percentage of significant products and services subject to such information requirements.  | 42         | FULLY |



**MEXICHEM  
INDICATORS GRI 3.1**

| GRI ID  | DISCLOSURE   | Page   |       |
|---|--|--------|-------|
| PR4   | Total number of incidents of noncompliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes.  | 42     | FULLY |
| PR5   | Practices related to customer satisfaction, including results of surveys measuring customer satisfaction.  | 43     | FULLY |
| PR6   | Programs for adherence to laws, standards, and voluntary codes related to marketing communications, including advertising, promotion, and sponsorship.   | 44     | FULLY |
| PR7   | Total number of incidents of noncompliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship by type of outcomes.                              | 44     | FULLY |
| PR8   | Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data.   | 44     | FULLY |
| PR9   | Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services.  | 44     | FULLY |
| <b>MINING AND METALS SECTOR SUPPLEMENTAL INDICATORS ICMM/GRI 2010</b> |  |        |       |
| MM1   | Amount of land (owned or leased, and managed for production activities or extractive use) disturbed or rehabilitated.  | 66     | FULLY |
| MM2   | The number and percentage of total sites identified as requiring biodiversity management plans according to stated criteria, and the number (percentage) of those sites with plans in place.                             | 63     | FULLY |
| MM3   | Total amounts of overburden, rock, tailings, and sludges and their associated risks.   | 60     | FULLY |
| MM4   | Number of strikes and lockouts exceeding one week's duration, by country.  | 39     | FULLY |
| MM5   | Total number of operations taking place in or adjacent to Indigenous Peoples' territories, and number and percentage of operations or sites where there are formal agreements with Indigenous Peoples' communities       | 60     | FULLY |
| MM6   | Number and description of significant disputes relating to land use, customary rights of local communities and Indigenous Peoples.   | 60     | FULLY |
| MM7   | The extent to which grievance mechanisms were used to resolve disputes relating to land use, customary rights of local communities and Indigenous Peoples, and the outcomes.   | 60     | FULLY |
| MM8   | Number (and percentage) of company operating sites where artisanal and small-scale mining (ASM) takes place on, or adjacent to, the site; the associated risks and the actions taken to manage and mitigate these risks. | 60     | FULLY |
| MM9   | Sites where resettlements took place, the number of households resettled in each, and how their livelihoods were affected in the process.  | 60     | FULLY |
| MM10  | Number and percentage of operations with closure plans.  | 54, 66 | FULLY |
| MM11  | Programs and progress relating to materials stewardship.   | 42     | FULLY |

## GLOSSARY OF TERMS AND ACRONYMS

**AQUIFER:** Water-bearing porous rock.

**BIODIVERSITY:** Biodiversity includes various living organisms, genetic and habitat diversity. Different species of plants, animals, fungi, and microbes interact with each other in diverse ecological processes to form ecosystems. Biodiversity is important because the combination of different life forms has made Earth a unique place that sustains human life and life itself.

**BRINE:** Solution of sodium chloride in water.

**CARBON COSTS:** The virtual price of carbon that is used to assess the increase or decrease of greenhouse-effect gases (GHG) as a result of a specific policy. In simple terms, this virtual value “sets a price” for damage caused by climate change resulting from each additional ton of GHG emissions, expressed as equivalents of carbon dioxide (CO<sub>2</sub>e) to facilitate comparison.

**CLOSURE PLAN:** Plan that is required for mines to obtain an operating license. It includes the procedures for closing the site, with a schedule of the stages of remediation, the revegetation or stabilization of land program, and the proposal for monitoring, maintaining, and using the site after closing the mine.

**CO<sub>2</sub>e:** CO<sub>2</sub> Equivalent.

**CPVC:** Chlorinated polyvinyl chloride.

**CSR:** Corporate Social Responsibility.

**DIRECT USE OF ENERGY:** Consumption of primary energy sources owned or controlled by Mexichem.

**ECO-EFFICIENCY:** Level of efficiency associated with operating processes, expressed as a combination of economic and environmental performance. Eco-efficiency is commonly expressed in terms of the monetary value of the product or service, divided by the monetary cost of its environmental impact.

**ENVIRONMENTAL AUDIT:** Analysis of the operation of a company with respect to the contamination it generates and the associated risks, as well as its degree of compliance with environmental regulations. These audits specify the preventive and corrective measures necessary to protect the environment.

**EQUATOR PRINCIPLES FROM THE WORLD BANK:** Constitutes the framework that financial entities use to evaluate environmental and social risks associated with the financing of projects. These projects are evaluated according to the following criteria:

### • **Category A**

**A.1** Significant impact on people (involuntary relocation, economic displacement, issues affecting indigenous population).

**A.2** Loss or degradation of habitat in preserved ecosystems.

**A.3** Adverse impact on cultural heritage.

**A.4** Different substantial impacts, in combination with all of the above.

### • **Category B**

Projects whose activities take place in natural habitats, with a specific land-use. Impacts are local, can be mitigated, and do not trigger any Category A policies.

### • **Category C**

Refinancing of projects, expansions with minimal or nonadverse environmental impact.

**FATAL ACCIDENTS:** Accidents that result in the loss of human life.

**FOSSIL FUEL:** Product of the partial or complete decomposition of prehistoric animals and plants, found as crude oil, coal, natural gas, or heavy oils, which were created as a result of their exposure to intense heat and high pressure under the earth’s crust for millions of years.

**G3:** Global Reporting Initiative indicators (third generation) that are the basis of this report.

**GREENHOUSE GASSES (GHG):** Gases in the lower part of the atmosphere (troposphere) that cause the greenhouse effect (increase in temperature). They include carbon dioxide, chlorofluorocarbons, ozone, methane, and nitrous oxides. These gases, once released into the atmosphere through the burning of fossil fuels and through other means, are the primary cause of world climate change.

**GRI:** Global Reporting Initiative; the most common methodology for presenting sustainability reports. It lists 79 indicators that act as a guide for companies when reporting on their economic, environmental, and social performance. For this report, we used the third-generation GRI Guide, known as G3.

**HUMAN RIGHTS:** Concept that affirms human beings have universal rights or statuses, irrespective of jurisdiction or other distinctive factors, such as ethnic group, nationality, or gender.

**ICMM:** International Council on Mining and Metals.

**INCAPACITATING ACCIDENTS:** Accidents that result in a loss of faculties or skills and which make it impossible for a person to perform his or her job for a period of a least one full work shift, subsequent to the date the accident occurred.

**INCIDENCE RATE:** This is the number of incapacitating accidents within the number of man-hours worked in the period, multiplied by 200,000.

**INDIGENOUS GROUPS:** Cultural groups and their descendants who have a historic relationship with a specific region. They share cultural identity and, as minorities, can be vulnerable to current social and economic systems.

**INDIRECT ECONOMIC IMPACTS:** As defined in the Economic Indicators Protocols of the GRI, these impacts are the result, often non-monetary, of direct economic impacts (transactions between the company and its stakeholders).

**INDIRECT USE OF ENERGY:** Energy used by Mexichem, generated by sources owned and controlled by other companies (electricity, heat, or imported steam).

**INTEGRATED RESPONSIBILITY:** Global, voluntary initiative from the chemical industry, whose goal it is to make member companies, in their normal course of business, continually take measures to improve safety, protect health, and be stewards of the environment in accordance with the principles of sustainable development.

**INTEREST GROUPS:** Groups of people that can be positively or negatively impacted by the financial, environmental, health and safety, and social aspects of our operations, as well as those who have an interest in or influence on our activities. This term is also known as stakeholder communities.

**IPCC:** Intergovernmental Panel on Climate Change.

**ISO 14001:** International standard governing environmental management systems.

**IUCN:** International Union for the Conservation of Nature.

**LOST DAYS:** Work days that are lost as a consequence of a resulting inability to perform a job due to working accidents.

**MAN-HOURS WORKED:** This is the sum of hours worked by employees at each location of the group.

**MATERIALITY:** Information that can affect the company and could influence the perceptions and decisions of stakeholders seeking to make decisions and evaluate Mexichem's commitment to sustainability.

**MSDS:** Material Safety Data Sheet.

**NGO:** Non-governmental organization; a nonprofit organization financed mainly by private contributions, which operates outside institutionalized government or political structures. In general, an NGO's agenda includes social, political, and environmental issues.

**OSHA 18001:** System for evaluating occupational health and safety that governs management systems in those areas.

**OSHA:** Occupational Safety and Health Administration. Guidelines are issued by this agency to evaluate occupational health and safety.

**PARTICIPATION:** The process of contact, dialogue, and interaction that guarantees that all interested parties have adequate information and participate in decisions that affect their future.

**PVC:** Polyvinyl chloride.

**RESTORATION:** Reestablishment of the original properties of an ecosystem or habitat with regards to its community structure and fulfillment of its natural functions.

**SEVERITY RATE:** The number of disability granted days within the number of man-hours worked in the period, multiplied by 200,000.

**SLAG:** Waste from the metal smelting and refining processes, comprised mainly of iron, silica, and calcium.

**SOCIO-EFFICIENCY:** Describes the relationship between the added value of the company and its social impact.

**SUSTAINABILITY:** A focus of the economy that promotes the development of our society and that exists in equilibrium with the natural resources and ecosystems of the planet. Sustainability balances environmental quality and economic growth. It is a concept that recognizes that economic activities, environmental conditions, and equality in social development opportunities need to be integrated in benefit of humanity in the long-term.

**SUSTAINABLE DEVELOPMENT:** The kind of development that satisfies present needs without compromising the capability of future generations to fulfill theirs, just as defined by the World Commission on Environment and Development (Brundtland Commission) in 1987.

**TAILINGS:** Waste from the concentration process or smelting of low-content minerals.

**TAILINGS DAM:** Shallow depression where tailings are confined. Its main function is to provide time for the heavy metals to settle, or for the cyanide (used to dissolve gold and silver from the mineral) to be destroyed, before the water is discharged into a local source.

**UNITED NATIONS GLOBAL COMPACT:** An initiative for ethical commitment, encouraging entities in all countries to adopt as an integral part of their strategy and operations, its Ten Principles of Conduct and Action with regard to human rights, labor, the environment, and the fight against corruption.

**UNIVERSAL DECLARATION OF HUMAN RIGHTS:** Declaration adopted by the United Nations General Assembly that describes the guaranteed rights of all persons.

**VCM:** Vinyl chloride monomer.

**WASTEWATER:** Liquids with varied composition discharged after use by various sources: municipal, industrial, commercial, agricultural, livestock, or any other type, whether private or public, which has degraded its original quality.

**WASTEWATER TREATMENT:** Procedure by which water that is polluted with organic and mineral matter is purified. It is divided into three phases:

**• Primary treatment**

First step in the treatment of wastewater, in which all floating and sedimentable solids are eliminated by means of screens, mechanical extractors, and other devices.

**• Secondary treatment**

During this phase, the organic materials are eliminated through microbial processes.

**• Tertiary treatment**

In this stage of the process, nutrients (phosphorus and nitrogen) are removed along with a high percentage of suspended and dissolved solids.

**WBCSD:** World Business Council for Sustainable Development.

**WRI:** World Resources Institute.

| Definition of units and conversion factors |                          |
|--|--------------------------|
| t  | tons (1,000 kg)          |
| kt   | kilotons (1,000 t)       |
| mg   | milligram (0.001 g)      |
| µg   | microgram (0.000001 g)   |
| ppm  | parts per million        |
| L  | liter                    |
| m <sup>3</sup>                             | cubic meters             |
| GJ   | Gigajoules (109 joules)  |
| TJ   | Terajoules (1012 joules) |
| kWh  | kilowatts/hr (0.0036 GJ) |
| GWh  | Gigawatts/hr (106KWh)    |

| GHG conversion factors by fuel type |                        |                        |                       |                           |
|-------------------------------------|------------------------|------------------------|-----------------------|---------------------------|
|                                     | CO <sub>2</sub>        | CH <sub>4</sub>        | N <sub>2</sub> O      | GJ                        |
| Diesel                              | 2,730g/L               | 0.12 g/L               | 0,1 g/L               | 38.68 GJ/m <sup>3</sup>   |
| Gasoline                            | 2,360 g/L              | 0.19 g/L               | 0.39 g/L              | 34.66GJ/m <sup>3</sup>    |
| Natural gas                         | 1,880 g/m <sup>3</sup> | 0.048 g/m <sup>3</sup> | 0.02 g/m <sup>3</sup> | 0.03723 GJ/m <sup>3</sup> |
| Propane                             | 1,530 g/L              | 0.03 g/L               | 0                     | 25.53 GJ/m <sup>3</sup>   |
| Heavy fuel oil                      | 3.090 g/L              | 0.12 g/L               | 0.013 g/L             | 38.68 GJ/m <sup>3</sup>   |
| Coal                                | 2,110 g/kg             | 0.015 g/kg             | 0.05 g/kg             | 30.5 GJ/t                 |
| Coke                                | 2,480 g/kg             | 0.12 g/kg              | 0                     | 28.83 GJ/t                |

## Affiliations (4.13)

- Chlorine Institute
- NSF Product Certification Organization for Food, Water, and Consumer Goods.
- Mexican Center for Philanthropy
- Green Building Council Brasil
- WBCSD Brazilian Business Council for Sustainable Development
- Mexican Mining Chamber
- National Association of Chemical Industry (Mexico)
  - PROVINILO Commission for vinyl promotion
  - CIPRES Plastics Industry Commission on Responsibility and Sustainable Development
  - Responsible Care
  - SETIQ Transportation Emergencies System for the Chemical Industry
  - ECBE Emergency Squad Training School
- Mexican Stock Exchange  
Ticker symbol MEXCHEM
- IDIEM Institute for Research and Testing of Materials
- Acoplásticos (Colombia)
- Colombian Council of Sustainable Construction
- ICONTEC Colombian Institute of Technical Standards and Certification
- Instituto do PVC (Brazil)
- The Vinyl Institute (EUA)
- Responsible Care® Initiative of the Chemical Industry to improve Health, Safety and Environmental Development
- United Nations Global Compact
- Mexican Association of Investor Relations
- Mexican Stockbrokers Association
- Stock Market for Latin American Securities
- Petrochemical and Chemical Association of Latin America



## GRI Check



# Statement GRI Application Level Check

GRI hereby states that **Mexichem, S.A.B. de C.V.** has presented its report "We say - We do" (2014) to GRI's Report Services which have concluded that the report fulfills the requirement of Application Level A+.

GRI Application Levels communicate the extent to which the content of the G3 Guidelines has been used in the submitted sustainability reporting. The Check confirms that the required set and number of disclosures for that Application Level have been addressed in the reporting and that the GRI Content Index demonstrates a valid representation of the required disclosures, as described in the GRI G3 Guidelines. For methodology, see [www.globalreporting.org/SiteCollectionDocuments/ALC-Methodology.pdf](http://www.globalreporting.org/SiteCollectionDocuments/ALC-Methodology.pdf)

Application Levels do not provide an opinion on the sustainability performance of the reporter nor the quality of the information in the report.

Amsterdam, 2 April 2014

A handwritten signature in black ink, appearing to read "Ásthildur Hjaltadóttir".



Ásthildur Hjaltadóttir  
Director Services  
Global Reporting Initiative

The "+" has been added to this Application Level because Mexichem, S.A.B. de C.V. has submitted (part of) this report for external assurance. GRI accepts the reporter's own criteria for choosing the relevant assurance

*The Global Reporting Initiative (GRI) is a network-based organization that has pioneered the development of the world's most widely used sustainability reporting framework and is committed to its continuous improvement and application worldwide. The GRI Guidelines set out the principles and indicators that organizations can use to measure and report their economic, environmental, and social performance. [www.globalreporting.org](http://www.globalreporting.org)*

**Disclaimer:** Where the relevant sustainability reporting includes external links, including to audio visual material, this statement only concerns material submitted to GRI at the time of the Check on 26 March 2014. GRI explicitly excludes the statement being applied to any later changes to such material.



## Contact

If you would like to obtain additional information about this report or about Mexichem, please contact Juan Francisco Sánchez Kramer, Investor Relations Director. (3.4)

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