ARKEMA INNOVATIVE MATERIALS FOR A SUSTAINABLE WORLD

We act and innovate for people and the planet

Our approach to sustainability

A CSR approach centered around 5 major priorities

Offering sustainable solutions

Moving toward higher positive impact

Circular economy

A sustainable resource management

Climate plan

Contain global warming

Safety and environment

Acting as a responsible manufacturer

Employees and relations with stakeholders

A commited value chain

Content

« In a world facing considerable environmental and social challenges, the urgency of which we measure every day, our mission as an industrial company is more than ever to act by putting our expertise and our innovation in materials science at the service of the transition to a more sustainable world. »

Thierry Le Hénaff,
Chairman and CEO of Arkema

Manifesto

The world is experiencing a wave of profound and rapid change, and people have high hopes for the future.
Around the globe, action is being taken to address social, environmental, climatic and economic challenges, to make our world a better place.

Deeply committed to the world of specialty materials, the women and men of Arkema are driven by their technological know-how and innovative spirit. Materials science is our shared passion. It enables us to create new materials, develop promising solutions, and help shape the future we want:

- By addressing current and future challenges with high-performing, innovative materials.
- By using our expertise, our diversity, and the talent of our employees to help our partners and customers in their search for sustainable performance.
- By acting as a responsible industry leader who places climate issues and natural resource management at the heart of its actions.
- By cultivating open dialogue with our stakeholders to better meet their expectations.

This is what unites us at Arkema. We reconcile social progress and environmental transition with economic development. And thanks to our innovative materials, we are riding this wave of change toward a more sustainable world.

Offer sustainable solutions

Our world faces multiple economic, environmental and social challenges. By 2050, the world population is expected to exceed 9.5 billion inhabitants, with the effects of increasing urbanization and changing lifestyles, strong consequences on the climate, an increased use of resources while accompanied by the emergence of new technologies. To help answer to these major global challenges, Arkema strives to offer its customers sustainable and innovative solutions, which contribute to the Sustainable Development Goals (SDGs) defined by the United Nations.

Innovating at the service of sustainable development

5 innovation platforms to meet major societal challenges

Natural resource management

- Rilsan® and Pebax® Rnew® specialty polyamides made from castor oil for the automotive, sports, medical or electronics industries.
- Kynar® for water ultrafiltration.
- Albone® hydrogen peroxide for water treatment.

New energies

- Kynar® (separator coatings and binders) , and waterborne binders for anodes.
- Kynar® for photovoltaics.
- Elium® recyclable resin for wind turbines.
- Specialty resins and high performance composites for hydrogen storage.

Electronics solutions

- Kynar® and specialty polyamides for tablets, smartphones.
- Bostik® adhesives and Sartomer® resins for display coatings.
- Piezotech® piezoelectric polymers for connected objects.

Lightweight materials and design

- Rilsan® and Rilsamid® specialty polyamides, Kepstan® PEKK and Elium® recyclable resin, for thermoplastic composites.
- N3xtDimension® UV curable resins, Kepstan® PEKK and specialty polyamides and for 3D printing.

Living comfort and home efficiency

- Adhesives and sealants for windows, doors or insulation panels.
- Acrylic emulsions with a low volatile organic compound content.
- Kynar Aquatec® resins for white cool-roof coatings.

Number of patents filed related to sustainable development

2021

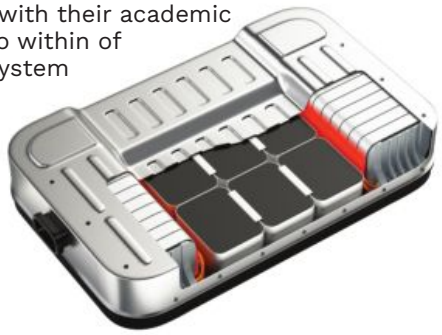
200 (90%)

Which is part of our Research department aims at bringing new products to the market by carrying out disruptive innovation projects. The incubator was behind the 2016 launch of Arkema's thermoplastic composites range.

Our researchers take part in research chairs, shared laboratories and partnerships with universities, or with the universities Monash in Kuala Lumpur in Malaysia, Yamagata in Japan, Hanyang in South Korea and the university of Delaware in the United States.
Arkema has launched the **Start-up connect program**, which invites start-ups developing transformational technologies in the field of advanced material, to approach our Group to study a dedicated research collaboration as well as a potential financial support. Start-up Connect is a strategic element of Arkema's development within a responsible innovation ecosystem.

A center of excellence dedicated to batteries

In order to support the acceleration of electric mobility and the needs in renewable energy storage, Arkema opened in November 2021 a center of excellence dedicated to the batteries, in Pierre-Bénite (France). Improved performance of batteries, increasing energy density, charging time, autonomy and lightweighting, are the main fields of research for Arkema teams, in collaboration with their academic partners but also within of the battery ecosystem (start-ups, manufacturers, gigafactories).



Acting for safe products

Arkema's product stewardship policy encompasses health, safety and environmental protection throughout the product life-cycle. Committed to continuous progress, Arkema mobilizes a large team of experts in toxicology, ecotoxicology and regulatory affairs aiming at:

- Advancing scientific knowledge related to products' hazards and risks.
- Promoting and developing safer products and uses, taking into account the entire value chain and the circularity challenges.
- Providing clear and accessible information for product users.

EnVia® resins range: for safer paints and coatings

EnVia® products contain no added alkyl phenol ethoxylate (APEO) surfactants, formaldehyde or formaldehyde donors and have a low volatile organic compound (VOC) content and low residual monomer levels. The EnVia® range enables Arkema's customers to formulate more health- and environmentally-friendly paints and varnishes, and facilitates access to ecolabels.

Steering our solutions portfolio towards more sustainability

ARCHIMEDES program: Arkema's portfolio screened in light of United Nations Sustainable Development Goals.

Since 2018, Arkema has been performing a systematic assessment of its solutions portfolio from a sustainability perspective. The products are assessed in the application fields and the geographic area in which they are sold. As much as knowledge allows, the approach takes into account the entire value chain from the raw materials until the product's end-of-life. This analysis guides very concretely the Business lines policy, which are encouraged to develop innovation and grow sales of solutions contributing to UN Sustainable Development Goals. The program is being rolled out in order to continue to increase the share of assessed sales and in order to improve our contribution to the United Nations Sustainable Development Goals in the long run.

Share of ImpACT+ sales [1]

2030 Target **65%**

2021

51%

[1] The share of sales with a significant contribution to the SDGs is established on the basis of an assessment of 85% of Group sales in 2021.

Bostik butyl sealing tapes: for safe and efficient buildings

Butyl sealing tapes provide a safe and easy-to-use solution to ensure the integrity of the building envelope throughout its life. They create a watertight, draught-proof seal around windows and doors, thus reducing the building's energy consumption. They replace metal or bitumen, thus eliminating the need for flame treatment, avoiding exposure of construction workers to heavy metals, and providing unique flexibility even at low temperatures.

Implement and facilitate circularity

To respond to the scarcity of natural resources and the increasing environmental impact of human activities, Arkema develops the circular economy. Through a Life Cycle approach and the development of partnerships, the Group strives to design products and services that minimize waste and pollution, optimize the use of resources and help keep products and materials in the use loop.

Arkema intensifies partnerships in order to build circular flows across the value chain. We explore all directions contributing to a responsible management of resources in terms of materials, water and energy. **Virtucycle®** services enable specialty polyamide-and PVDF specialty resin customers to partner with Arkema in open-loop and closed-loop recycling initiatives for post-industrial and/or post-consumer recycling.

Arkema strengthens its commitment With the acquisition of Agiplas

With the acquisition of Agiplast, a company specialized in the regeneration of high performance polymers, in particular specialty polyamides and fluoropolymers, Arkema offers its customers expertise in mechanical recycling technologies and gives them access to high quality recycled polymers. In October 2019, Arkema, in collaboration with Agiplast, launched the Virtucycle® program aimed at developing high-performance polymer collection and regeneration circuits while minimizing the associated CO_2 emissions. With this acquisition completed in 2021, Arkema becomes the first fully integrated high-performance polymer producer offering both high performance bio-sourced and recycled materials to meet the challenges of resource scarcity and product end-of-life.

Arkema supports the wind power industry in recycling

Bringing together seven partners from academia and industry, the Zero wastE Blade ReseArch (ZEBRA) project was launched in September 2020 to create the first 100% recyclable wind turbine. With its Elium® thermoplastic liquid resin and its structural adhesives, Arkema proposes a breakthrough innovation in the composites market, opening up new perspectives in many sectors and especially in the production of wind turbine blades. The Elium® resin-based composite parts are 100% recyclable, through a mechanical or chemical recycling process of scraps and end-of-life composite parts. Arkema's position in this consortium demonstrates the Group's commitment and drive to integrate a circular economy model into its product design and to participate in developing new renewable energy technologies. In March 2022 a 62 meter long recyclable prototype blade was successfully manufactured from Elium® liquid thermoplastic resin.

SENSIO™: a range of bio-based, biodegradable surfactants for more sustainable detergency

SENSIO™ surfactants, which are up to 100% plant-based, GMO-free and non-competitive with the food chain, are derived from the sustainable castor oil industry, in which Arkema is a major player. Thanks to the Mass Balance approach, SENSIO™ surfactants are ecocertified and can be used in ecolabeled products, enabling Arkema's customers to create new-generation detergent formulas that are increasingly concentrated and effective, more sustainable, more responsible and more efficient.

Our approach to circularity

Implementation, use, end-of-life

Maintain products & materials in the use-loop.
- Ecodesign.
- Reduce presence of hazardous substances.
- Development of recycling streams.

Materials

Maximize use of.
- Renewable materials & packaging.
- Recycled materials & packaging.

Measure

Circularity indicators

Life Cyle Assessment (LCA)

Transformation processes

Manage resources on our sites.
- Materials & wastes.
- Water.
- Energy.

Performance measurement is an integral part of the transformation plan towards a circular economy. Arkema has thus set up indicators, both for products and for industrial processes.

	Target year	Target	2021
Percentage of sales from products made from renewable or recycled raw materials [1]			10%
Water withdrawal by industrial sites (cu.m/€k of sales)	2023	8.0	6.9
Percentage of sales covered by a life-cycle assessment	2024	50%	27%

[1] Sales based on a renewable or recycled raw material content of at least 25%.

Implementing the circular economy on our sites

Concrete actions:
- By-products from the conversion of castor oil into undecanoic amino acid at the Marseille (France) plant are examples of reuse through the Oleris® range, whose bio-based origin is sought after.

- At the Hengshui site in China, the residual sulfuric acid generated by the manufacturing process is transformed into crystallized sodium sulfate, thereby recovering a waste stream into more than 50,000 metric tons per year of commercial product.
- On the Lacq site (France), desulfogypsum from the sulfur residue treatment facility is a nonhazardous waste that is re-used as a material for the manufacture of plasterboard in cement works. In 2019, 13,500 metric tons of desulfogypsum were recycled in this way, thereby avoiding their being sent to landfll.
- Ribécourt plant in France has set up a purification channel for its process solvents, and was thus able to recycle 215 tonnes of solvents in 2021. Several other Group sites are committed to a similar approach.

Reinforce our commitment to the climate

In line with the expectations of the Paris Agreement to contain global warming to 1.5°C above pre-industrial levels by the end of the century, Arkema has set itself an ambitious target, based on an SBT (Science Based Target) approach, to reduce its scope 1 and 2 greenhouse gas (GHG) emissions and its scope 3 emissions by 46% by 2030 relative to 2019. Thus, the Group is raising its level of commitment from well below 2°C to 1.5°C, and now also includes all scope 3 emissions. This commitment will be supported by an increase in investments contributing to decarbonization, which could reach €400 million by 2030.

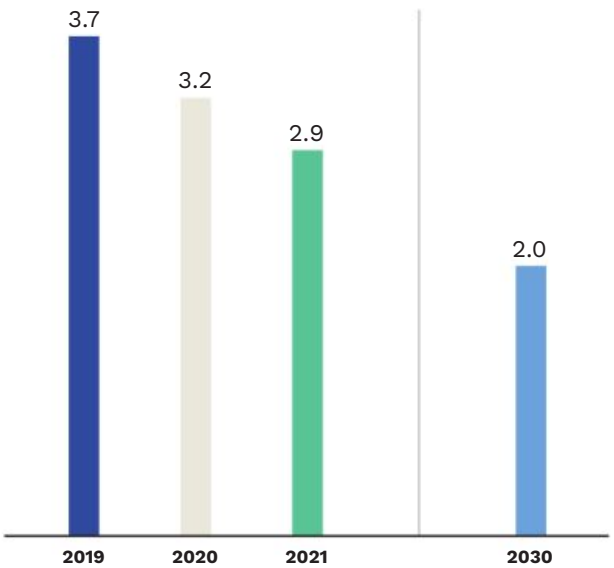
Scope 1 & 2

Arkema sets itself the target to limit its scope 1 and 2 emissions to 2 million tons of CO_2 equivalent in 2030, a 46% reduction compared to the 3.7 million tons emitted in 2019.

The main levers to achieve this goal are:

- The reduction of energy consumption.
- Accelerating the decarbonization of our energy sources.
- The evolution towards manufacturing processes and product ranges with less emissions.
- Strengthening the capture and processing of emissions.
- The setting of the internal price per ton of carbon at 100 euros.

Scope 1+2 emissions
(Mt CO_2e)



[1] Group perimeter as of July 7th 2022.

ARKEMA ENERGY

aiming to improve energy efficiency, Arkema Energy is an essential global program allowing the Group to achieve its climate objectives.

Energy: net energy purchase

Energy

2030 Target (≠2012)
-25% [1]

2021
-15%

[1] Intensive indicator (EFPI).

"As a responsible manufacturer, Arkema is strongly mobilized to address the major societal challenge of decarbonization. With this new ambitious climate plan, the Group is taking a new step forward in its action for the fight against global warming.
In particular, our cutting-edge expertise and innovation benefit our partners and customers in their own quest for sustainable performance, and we act on a daily basis to limit our carbon footprint."

Luc Benoit-Cattin,
Executive Vice President industry and CSR

Arkema sites powered by renewable energy

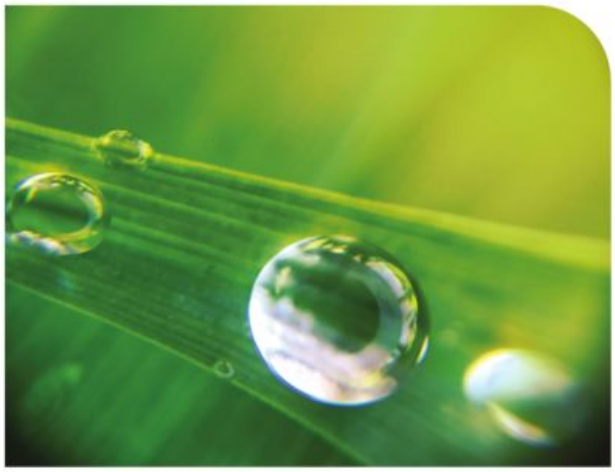
Following the example of the Saint-Auban site (France), where a solar power plant producing 19 GWh per year went into operation in 2019, most of which is for self-consumption, in 2022 the Clear Lake site (United States) will receive about one-third of its electricity needs from a 260 MW solar power plant located in the Texas desert.

Optimized steam trap management worldwide

The program launched in 2020 in Europe was rolled out to Asia and the Americas in 2021, with the aim of covering the most energy-intensive sites, which account for 85% of the Group's total energy consumption. By the end of 2021, 90% of these sites had joined the program. Since its launch in 2020, nearly €2 million has been invested and allowed a 33% decrease in the average trap failure rate, leading to a consumption reduction by 48 GWh in 2021.

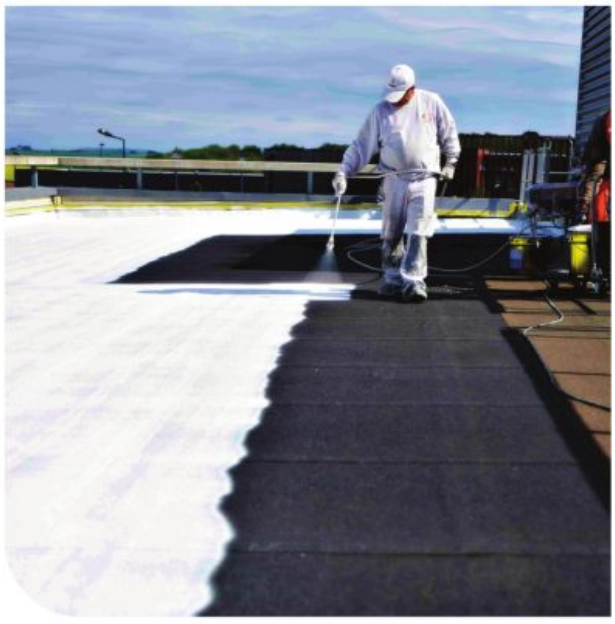
Scope 3

Arkema also intends to reduce its scope 3 emissions by 46% and achieve 85 million tons of CO_2 equivalent in 2030 compared to the 158 million tons emitted in 2019. These emissions take into account all scope 3 categories.



In order to achieve this target, Arkema is taking action in the most emissive categories both upstream and downstream.

- Upstream: pursue the dialogue with our suppliers and encourage them to set SBT objectives on their own scopes 1 and 2.
- Downstream: reduce activities in the most emissive applications of fluorinated gases covered by the Kyoto Protocol, and develop new generations (HFOs) for activities with high added value. And through innovation on our three segments, drive the product and service offering towards solutions that contribute to the reduction of greenhouse gas emissions.



Aim for excellence in safety and environment

As part of its commitment to societal issues, Arkema operates as a responsible manufacturer and resolutely observes a policy of continuous improvement and operational excellence. The Group's ambition is to rank among the leading chemical producers in terms of safety performance and it is fully determined to reduce the environmental footprint of its activities.

Safety / Process safety

Integrating safety as a must

Safety is part of Arkema's DNA, and we strive to maintain a leading status within the chemical industry.

Total recordable injury rate (TRIR) [1]

2030 Target
< 0.8

2021
1.2

Process safety event rate (PSER) [2]

2030 Target
< 2

2021
3.1

[1] The TRIR includes injuries to both Group and subcont ractor employees.

[2] The PSER is calculated in accordance with the criteria set out by the Internat ional Council of Chemical Associat ions (ICCA) and the European Chemical Indust ry Council (CEFIC).

Safety always in mind ARKEMA

Global rollout of the new Essentials

Ten years after their launch, Arkema decided to review its Essentials to account for progress made in safety, changes in accident typology, and developments in the industrial profile of its operations, which now focus more on downstream products. In 2021, all Arkema employees worldwide received training on complying with the rules associated with these 14 new Essentials, more than half of which remain unchanged.
Each Group facility has launched a multi-year training program prioritizing Essentials according to the accident risks specific to the site ("one Essential per quarter").

VOC reduction at the Mont site (France)

With connection of a vent to the site's thermal oxidizer, and more efficient operating stability, the Mont plant was able to reduce its VOC emissions in 2021 by 20% with respect to 2019.

Air in volatile organic compound (voc) emissions intensity

2030 Target (≠2012)
-65% [1]

2020
-42%

[1] Intensive indicator (EFPI).

Launched in 2016, the Optim'O program encompasses all

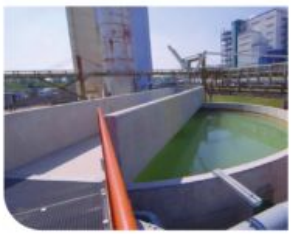
Water in chemical oxygen demand intensity (COD)

Optim'O ARKEMA

2030 Target (≠2012)
-60% [1]

2021
-55%

[1] Intensive indicator (EFPI).



water-management activities across the group, and in particular those geared towards consumption reduction, recycling, COD reduction and water-stress scenarios.

Leveraging digital in manufacturing

Incorporating digital into our processes enables us to save time, optimize our resources, enhance safety, among other benefits. Arkema is working on a wide variety of digital projects, with its resolutely innovative and collaborative approach.

Arkema steps up its action to protect biodiversity and joins Act4nature international

pour l'Environnement (EpE), Act4nature is an alliance of businesses, public institutions, scientific bodies and environmental NGOs committed to protecting, enhancing and restoring biodiversity. In 2021, Arkema signed Act4nature international's ten common commitments and defined eight individual commitments on the basis of its most significant impacts on biodiversity throughout its value chain. These commitments are detailed in eight objectives covering its industrial sites, upstream and downstream of its activity, but also its stakeholders.

Managing our activities with robust processes

To ensure a highly efficient inspection and control process, all of the Group-led safety, hygiene, environment and quality audits have been consolidated into a single audit, known as the Arkema Integrated Management System (AIMS). It is based on all of the Group's standards, both proprietary and endorsed, such as ISO 9001, ISO 14001, ISO 45001 replacing OHSAS 18001 and ISO 50001. This "all-in-one" approach has the dual benefit of being aligned with the Group's corporate culture and ensuring consistency across all its safety, environment, energy and quality management initiatives.

% of AIMS audited sites[1]

2025 Target **100%**

2021

86%

[1] AIMS : audit system developed by Arkema which combines audits related to safety, hygiene, environment and quality.

Cultivate the relationship with our stakeholders

Open dialogue with its internal and external stakeholders is a cornerstone of Arkema's social policy. The Group adheres to Human Rights and fundamental freedoms and places them at the heart of its business activities. It favors the individual and collective development of its employees. Arkema's global human resource policy places a key focus on the development of skills and the promotion of diversity and inclusion.
We strive for open dialogue with our customers, suppliers and other partners with the aim to build a responsible value chain that creates shared value. The Common Ground® initiative, addressing the neighboring communities of our sites, serves to develop lasting relationships based on trust and openness.

Fostering our employees' engagement

Given the highly technical nature of our businesses, developing expertise and maintaining a high level of engagement is key to meet today's and tomorrow 's business, technological, social and environmental expectations.

Developing our employees individually and collectively, giving equal opportunities and developing diversity in all its dimensions are daily management preoccupations.

Employees' engagement and confidence in the Group's development is visible in the 80% of active engagement and in the 6% shares they own, making them one of the company's leading shareholders.

Percentage of women *

2030 Target **30%**

2021

24%

Percentage of international collaborators *

2030 Target **50%**

2021

40%

Actively engaged employees

2021

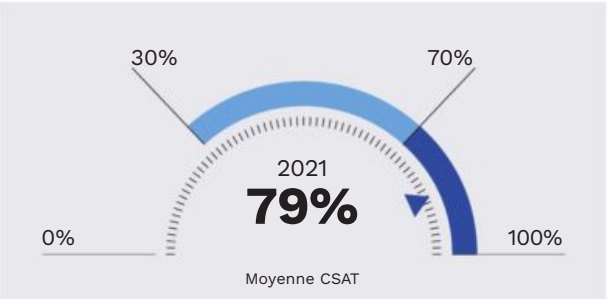
82%

OUR VALUES:
SOLIDARITY
PERFORMANCE
SIMPLICITY
ACCOUNTABILITY
INCLUSION

* In senior management and executive positions.

Meet the needs of our customers

To feel the pulse of its customers, Arkema completed a digital global customer satisfaction survey in February 2021, addressing 100% of its B-to-B customers in all three regions. Overall, the respondents awarded Arkema a CSAT (customer satisfaction score) of 79/ 100.



Partnering for a sustainable supply chain

Arkema is committed to improving sustainability across its entire value chain together with its suppliers, partners, employees and customers. The Group strives to build long-term, balanced and sustainable relationships that are based on trust with its suppliers and subcontractors.

Through the Together for Sustainability (TFS) program, a chemical sector initiative, we encourage social responsibility in our supply chain and use it for decision-making.

1,700+ suppliers assessed regarding CSR.

Share of purchasing spend from relevant* suppliers covered by a TFS assessment

2025 Target **80%**

2021 **71%**

* Recurrent suppliers representing 80% of the Group's purchasing spend.

Pragati a more sustainable castor plant farming

This program to which Arkema is associated promotes higher crop yield, improved health and safety conditions for farmers, and judicious use of fertilizers and irrigation water thanks to the adoption of best agricultural practices in 69 villages in India.

5,800+ farmers trained and certified.

Linking with our communities

An initiative of openness and dialogue
Through **Common Ground®**, Arkema has committed to a resolutely innovative approach to building relationships between the Company, its industrial sites and their environment. Community relations through front-line communication enable the Group to open up its plants to the outside world and establish genuine relations of trust with all its stakeholders.

We promote individual creativity and initiative at work as well as in philanthropic actions. Through the Arkema fund for education, we support employees' pro-bono actions across the world.

Contributing to the United Nations Sustainable Development Goals

- Strategic contribution (through strategic objectives or programs)
- Direct contribution (resulting from voluntary initiatives)
- Indirect contribution (resulting from the Group's activities)

	Sustainable solutions	Responsible manufacturer	Open dialogue
1 No poverty			○
2 Zero hunger	●		
3 Good health and well-being	●	●	●
4 Quality education		●	●
5 Gender equality			●
6 Clean water and sanitation	●	●	
7 Affordable and clean energy	●	●	
8 Decent work and economic growth	●	●	●
9 Industry, innovation and infrastructure	●	●	
10 Reduce inequalities			○
11 Sustainable cities and communities	●		
12 Responsible consumption and production	●	●	●
13 Climate action	●	●	
14 Life below water	●	●	
15 Life on Land	●	●	
16 Peace, justice and strong institutions			●
17 Partnerships for the goals	●	●	●

Being recognized and committed to progress

Arkema joins the DJSI World index in sixth place in the “Chemicals” category among 114 companies assessed as well as S&P Global’s Sustainability Yearbook 2021, receiving the Bronze class distinction.

Arkema joins the CAC® 40 ESG of the Paris Stock Exchange, which classifies the 40 companies that have presented the best environmental, social and governance practices and performances among the CAC Large 60.

“A” rating since 2017.

In 2021, a « B » rating was obtained for Climate Change and a « B » rating for Water Security.

Inclusion in the Europe 120 and Eurozone 120 indices since 2015.

Arkema ranks among the top 3% of companies in the sector since 2014.

Renewed every year since its initial inclusion in 2015.

Engaging in worldwide initiatives

Responsible Care®
Arkema group showed its vision of a responsible corporation by the signature of the Responsible Care® Global Charter, from its creation in 2006, and renewed it in December 2014.
The initiative is supported by the chemical sector committed to improving safety, health and environment protect ion, notably through a product stewardship approach.

The Global Compact
Arkema has endorsed the ten principles of the United Nations Global Compact, which concern such issues as the respect of human rights, international labor standards, environmental protection and the fight against corruption.

U.N. Sustainable Development Goals
As a supporter of the United Nations Global Compact, Arkema has committed to the 2030 Agenda for Sustainable Development, an action plan for people, planet and prosperity.

Paris agreement:
In 2020, Arkema committed to the Paris Agreement, which aims to contain global warming by 2100 below 1,5°C compared to pre-industrial levels.

World Business Council for Sustainable Development (WBCSD)
In 2020 Arkema joined the WBCSD, a global, CEO-led organization of over 200 leading businesses working together to accelerate the transition to a more sustainable world.

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