

ARKEMA

Arkema today

2023 Arkema China presentation

We have got big ambitions for 2024

“Be the Specialty Material leader,
offering the most innovative and sustainable solutions to address our customers’ current and future challenges”.

By 2024, Arkema will be a pure Specialty Materials player.

We ride together



**The products, the people, the partners
and the passion** – this is what unites us
at Arkema.

Together, we put our materials and
expertise to work to make a more
sustainable world for everyone.

The materials in our lives will be a force for progress

Our materials have a **Critical Role** to play, they will be:

Lighter,
more **Efficient,**
more **Versatile,**
and more **Sustainable.**



They will help us work smarter, play better, live more responsibly



Clean mobility

Our solutions:

- Lightweighting :
Rilsan® HT
- Durability:
Kynar® PVDF
- Batteries & hydrogen:
Elium® thermoplastic resin



Urbanization

Our solutions:

- Thermal & acoustic insulation :
Certincoat®
- Energy efficiency :
Bostik thermal insulating
- Living comfort
Bostik invisible fastening sealant



Environment

Our solutions:

- Wind & solar:
Organic peroxide
- Water treatment :
Albone® Hydrogen peroxide
- Renewable resources
Virtucycle® Project



Industry 4.0

Our solutions:

- 3D printing :
Nextdimension®
- Miniaturization
- Smart devices :
Sartomer®



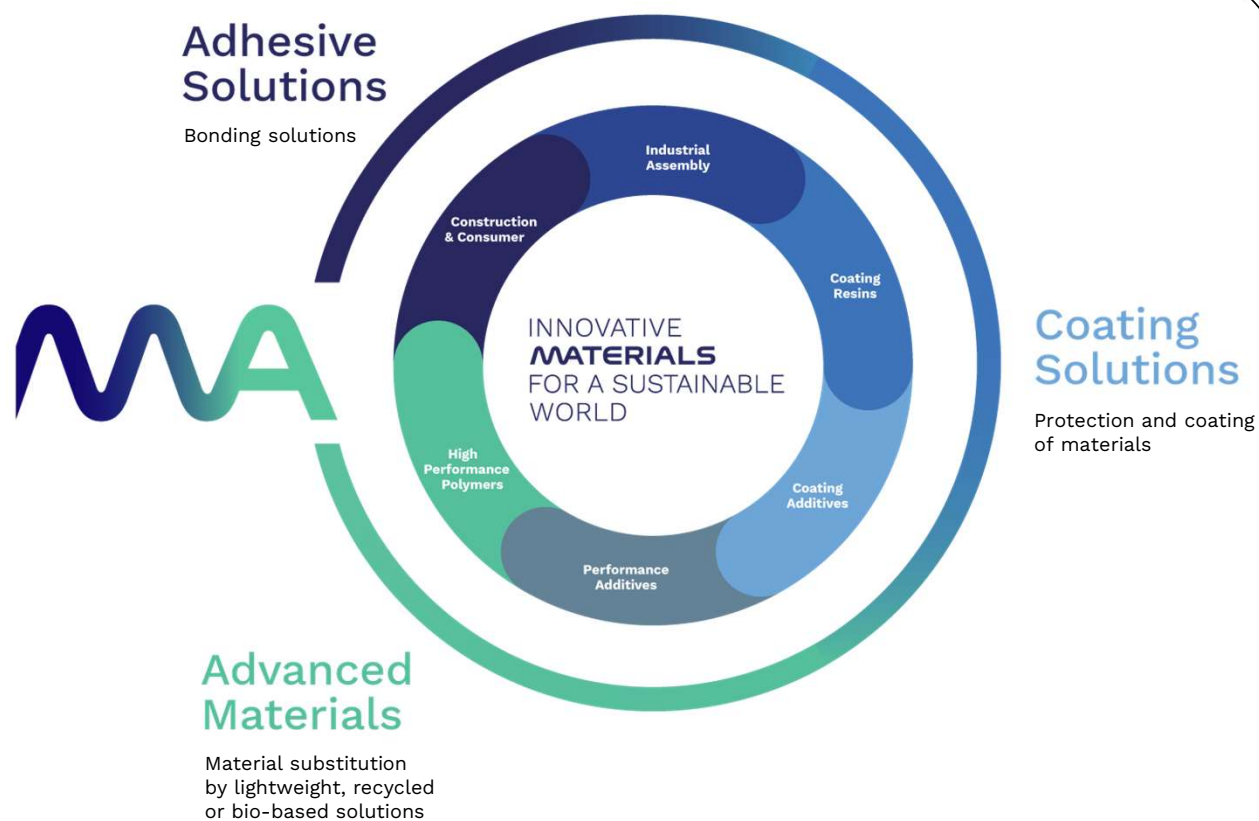
Lifestyle

Our solutions:

- Personalized designs:
Pebax®
- Performance :
Fix&flash by Bostik
- Sustainability :
Sensio™

Arkema's positioning is unique

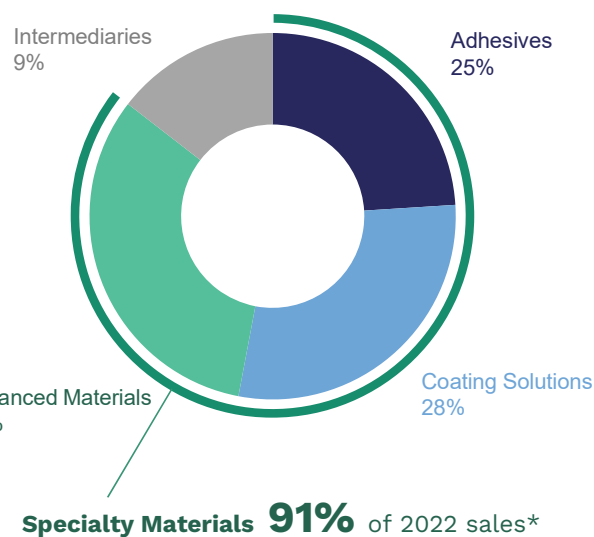
We offer a distinctive range of solutions thanks to the wide scope of technologies and the diversity of our product lines. Our 3 segments are intimately connected to each other.



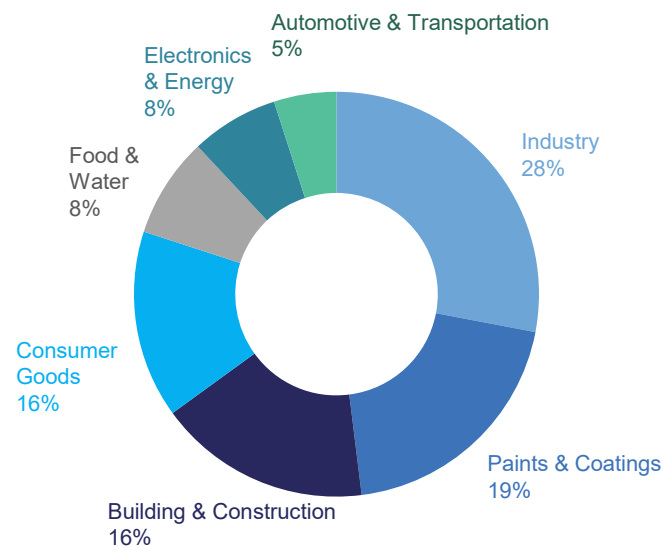
Aside these platforms, Arkema will gradually reduce the share of its Intermediates businesses (Fluorogases & Asia Acrylics).

We make the materials that make a difference

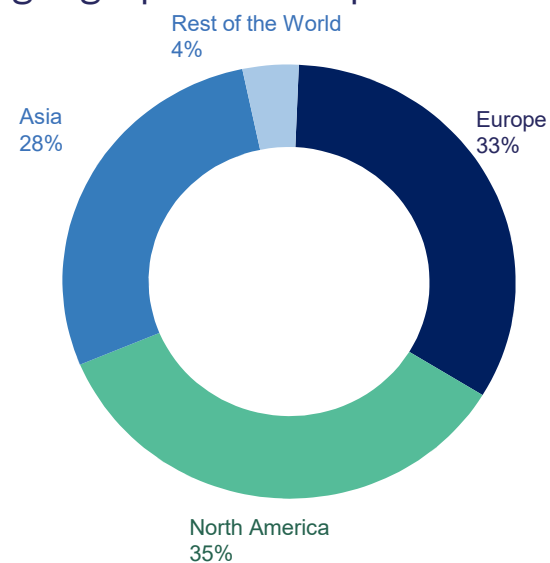
The right products



For the right markets



With balanced geographical footprint



2022 sales: €11.5bn

Levers that reinforce our success



Accelerating growth through bolt-on acquisitions

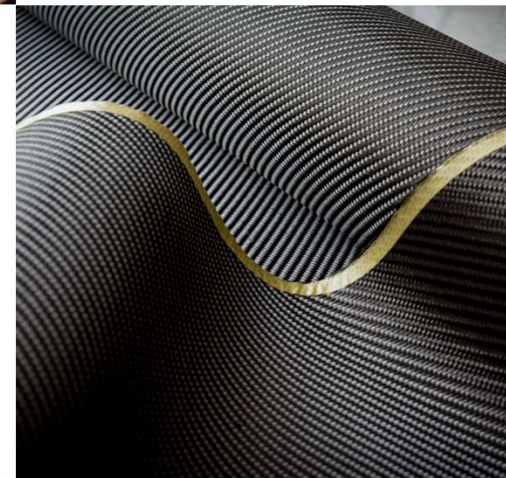


Achieving best-in-class CSR performance among chemical players

Focusing innovation on sustainability



Taking action in commercial and operational excellence initiatives



Our people make it happen



Diversity
and inclusion

21,100

passionate employees
across the globe



Rising talents

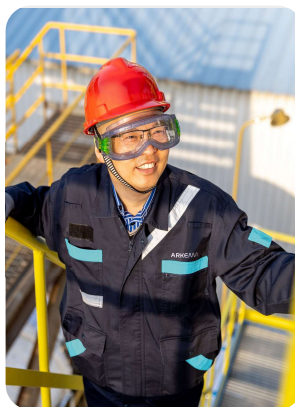
2,212

recruitments
in **2022**



Committed to our
10,000
customers

Collaborations with leading
brands



Worldwide
expertise

55 countries

148 plants

16 R&D centers

1,800 researchers

Sustainable innovation is in our DNA

1,800

researchers

60

R&D partnerships

16

R&D centers
in Europe, Asia and America



+200

Patents filed in 2022
including 90% linked to
sustainability

2.3 %

of company sales
allocated in R&D

1

incubator dedicated
to disruptive
innovations

~15 %

of sales from products
launched within last 5
years



Our 2030 objective*:

to generate

€1.5 bn

Additional sales

vs €1.0bn previously announced, from our
5 innovation platforms:

- Lightweight materials and design
- Electronic solutions
- New energies
- Living comfort & home efficiency
- Natural resources management

aligned with the megatrends

* Compared with 2019

Values that guide our ambitions



Simplicity

Performance

Solidarity

Empowerment

Inclusion

We are committed to a sustainable future

Arkema aims to generate sustainable and responsible growth for its businesses and to meet societal challenges by providing its customers with sustainable and innovative solutions that contribute to the Sustainable Development Goals defined by the United Nations.

Our CSR Policy

Offer sustainable solutions driven by innovation

Responsible product stewardship

Solutions that address societal, climate and circular economy challenges

Innovation at the heart of the activities

Act as a responsible manufacturer

Employee health and safety

Process safety

Environmental footprint reduction

Resources management

Climate

Biodiversity

Cultivate a position as an employer of choice and seek an open dialogue with stakeholders

Ethics

Human rights

Diversity and inclusion

Employee development

Quality of life at work

Responsible value chain

Corporate citizenship



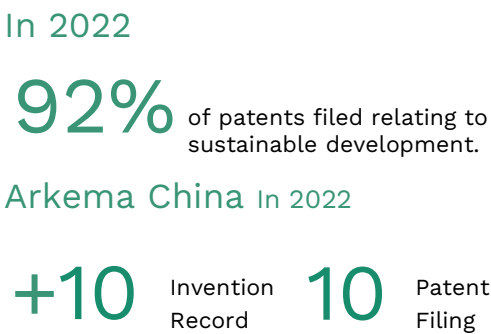
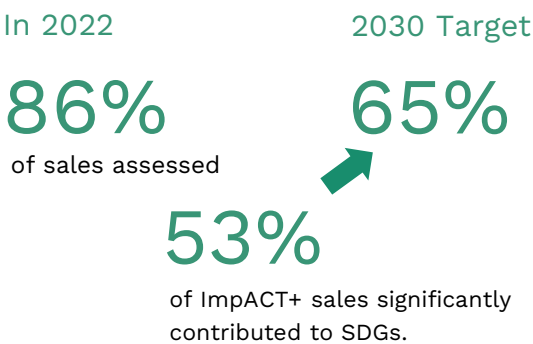
Sustainable Product Innovations



Assess
sustainability of
Product Mix

Innovate
Product Mix
R&D & technical centers
Five innovation and
research platforms

Collaborate
to promote a circular economy



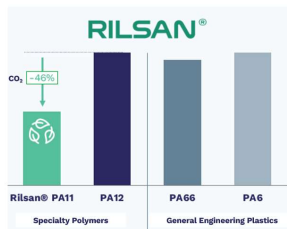
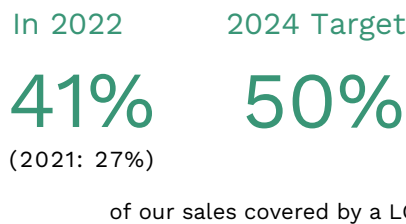
Intensification of partnerships
to build circular flows

Long standing expertise
in bio-sourced products



Rollout of product LCA
(Life Cycle Assessment)

10% of sales from
bio-based products.



Zebra
Partnership

ELIUM®

Zero-waste blade research: creation of the first 100% recyclable wind-turbine blade (based on Elixir® resin).



Recycling service for post industrial and post consumer materials associated with Arkema and client activities (Rilsan® PA11 and Kynar® PVDF)

RILSAN® KYNAR®



We take action for the climate and the environment

SAFETY — To be among the best in the industry

**Target
for 2030**



People *
≤ 0.8

Reduce injury
Frequency rate

Process*
< 2.0

Reduce process- event
frequency rate

* Number of accidents or process events per million work hours.

Performance in 2022

People

Global: **0.9**

China: **0.1**

Reduce injury
Frequency rate

Process

Global: **2.8**

China: **0.5**

Reduce process- event
frequency rate



CLIMATE — Keeping global warming in line with the Paris Agreement

**Target
for 2030**

Emissions

Climate change action(Carbon reduction)
Circular economy (Waste Reduction)

Performance in 2022

- **48.5%** reduction in GHG emissions from scopes 1 & 2
- **54 %** reduction in GHG emissions from scope 3
- vs **2019**

- **34 %** reduction in GHG emissions from scopes 1 & 2
- **49 %** reduction in GHG emissions from scope 3
- vs **2019**

ENVIRONMENT — Further reduce the environmental footprint of the Group's activities

**Target
for 2030**

- **65 % Air** In intensity of emissions from Volatile Organic Compounds (VOC)

- **60 % Water** In intensity from Chemical Oxygen Demand (COD).

- **25 % Energy** In intensity from net energy purchase.

- vs **2012**

Performance in 2022

- **47 %**

- **58 %**

- **13 %**



We engage with our employees

Diversity and development of employees

→ 2030 Target

* Employees in senior management and executive positions.

Share of women*

30%

(2022: 26%)

Share of non-French*

50%

(2022: 40%)

Engagement

2023 Top Employer in 4 countries

82%

of employees actively engaged and confident in the development of the Group.

Philanthropy and patronage

- Financing of educational and job insertion projects through sport or culture (Sport dans la Ville, Science Teacher program in the US, ChemArt Green Innovation Class in China, etc.).
- Arkema Fund for Education.

Community relations and local outreach

Every year



Global **80%**

China **100%**

of our industrial sites carried out local actions. (**1,000+**)

TfS Initiative



Engaged in the initiative since 2015

→ **2025 Target: 80%**
(2022: 75%)

of total suppliers complete TfS' online audit

* TfS (Together for Sustainability) aims to develop societal responsibility throughout the chemical industry service chain

“绿色生活
成就可持续未来”
Green Life for a Sustainable Future”

Arkema China CSR initiatives

- ChemArt Green Innovation Class
- Clean Water Project
- Butterfly Football Cup
- "Open-to-Public" Day Activities



Arkema China Volunteer Association

Established in March 2017

Women@Arkema China Committee

Established in March 2023



Responsible Care Changshu AMIP Committee

Established in February 2017 (Initiated by Arkema)

- China Petroleum and Chemical Industry "Corporate Citizens Model "
- "2021 Model Enterprise for Sustainable Development" at the 10th Finance Summit
- "Green Sustainable Development Contribution Award" at the 2022 International Green Zero-Carbon Festival
- "Leadership in CSR and Sustainable" of EUCCC

CSR awards in China

Recognized sustainability performance

Member of Dow Jones Sustainability Indices

Powered by the S&P Global CSA

→ Joined the DJSI World and DJSI Europe indices since 2020. “Chemicals” category

→ **3rd place** of DJSI World in 2022.

The Dow Jones Sustainability indices (DJSI) reward companies with the best performances in terms of sustainability.

CAC 40® ESG

Included in a new Euronext index since 2021.

MSCI

A grade since 2017.



In 2022, **B** for Climate change.

MOODY'S | ESG

Top percentile all sectors combined.
Score: **69**

ISS ESG

October 2022: **1st decile** (global).

ecovadis

Among top **3%** of the sector's best rated companies.



Arkema Greater China

Greater China

Headquarters: Shanghai

Employees: 3,000+

Production sites: 10

R&D centers: 2



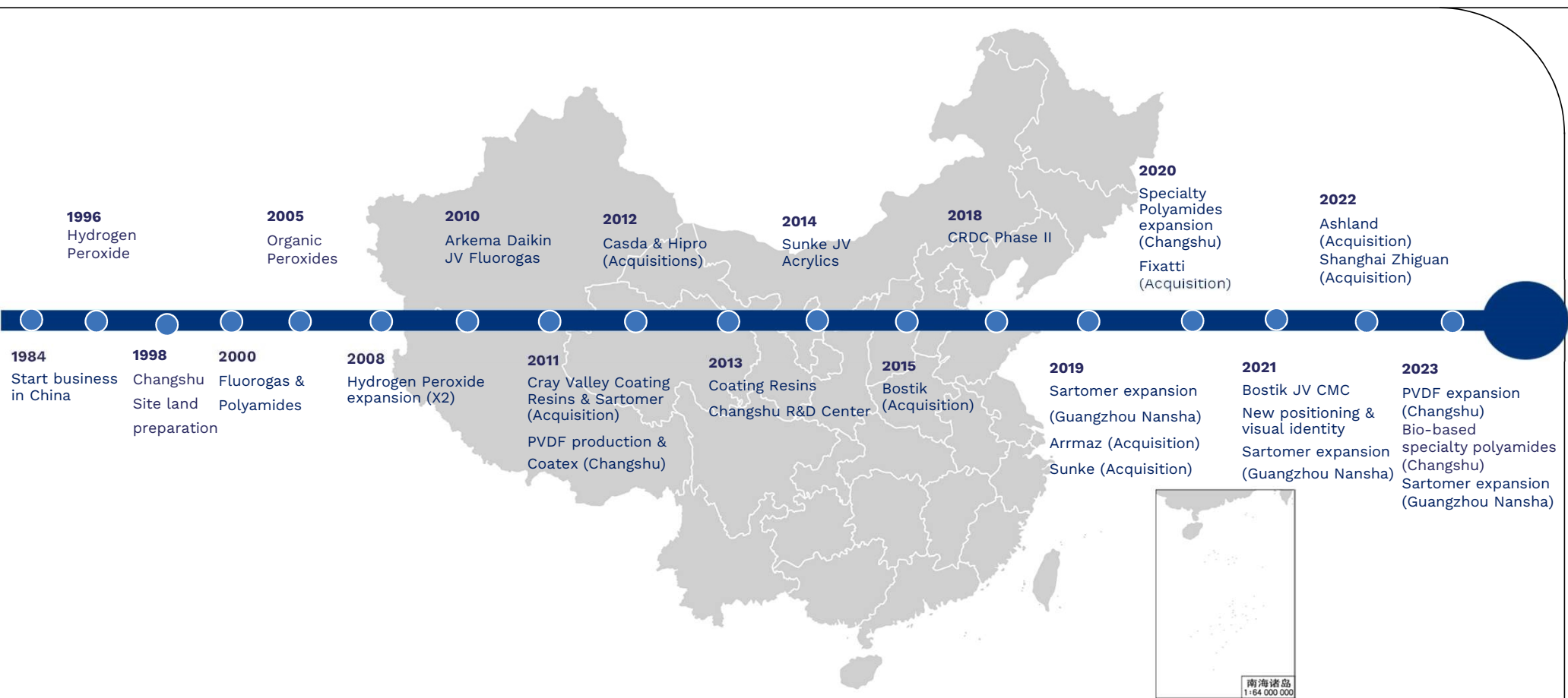
Arkema has been certified as
"World's Top Employers" in
2023.



Oriented around people
development, driven by
innovation, committed to a
more sustainable world.



Arkema In China – history 1984 - 2023



Geographical Presence In China

10 industrial sites

CHANGSHU

Changshu Platform

Bostik – Adhesives

TAIXING

Taixing- Acrylic acid products

ZHANGJIAGANG

ASP - Specialty polyamides

SHANGHAI

ASHP-Hydrogen peroxide

Fixatti-Hot melt adhesives

GUANGZHOU

Sartomer- Photocure resins

Bostik- Adhesives

KUNMING

ArrMaz- Specialty surfactants for Crop & Mining

HENGSHUI

Casda- Sebacic acid



2 R&D centers

Changshu R&D Center

Asia Technical Center

(Bostik)

LARGEST PLATFORM- CHANGSHU

- Specialty polyamides
- Fluoropolymer
- Organic peroxides
- Fluorogases
- Rheology & Specialty additives
- Coating resins

Arkema Changshu R&D Center



Large portion of team with **post-graduate** education and **international** background

Global innovation, serving **local** market

First R&D center in China built in 2013, the extension in 2018

>20 priority **patent** filling in last 5 years, including 90% linked to sustainability



Application laboratories

dedicated to our markets

A center of excellence for thermoplastics,

with injection, extrusion, compounding capacity for new product development and customer support

A center of excellence for process,

with various large-scale equipment to support plants

Open innovation, leading collaboration with industrial and academic partners in China

Shanghai Bostik Asia Technical Center

Expert at

- Developing high-performing, multi-purpose adhesives
- Improving production processes with time and cost-saving solutions
- Making operations more efficient, competitive and sustainable

SMP for rail



Headliner lamination



Anti-fog heat seal coatings



HMPSA reseal for meat and cheese



Flame retardant for Boeing



Butyl window flashing tape



Reseal for cookie packages



PE for dual ovenable



Oil filtration

Pioneer in Innovative Technology

A world-class leader in sealing and bonding technologies



Applications
for all markets

Changshu Site



Built in 1998
Arkema's Largest Industrial Platform

Production Units & Platform

- Fluorogases
- Fluoropolymer PVDF
- Specialty polyamides (PA11)
- Organic peroxides
- Rheology & Specialty additives
- Coating resins
- R&D center
- Wastewater Treatment Plant

Bostik

- In 2015, Arkema acquires Bostik
- In 2020, Arkema acquires Fixatti to strengthen the global supply of Bostik hot melt solutions
- In 2021, Bostik establishes a joint venture with Cartell Chemical to strengthen its instant engineering adhesives business
- In 2022, Arkema acquires Shanghai PMP to strengthen its engineering adhesives portfolio
- In 2022, Arkema acquires Ashland's Performance Adhesives business
- In 2023, Bostik Expands Asia Technology Center in Shanghai

3 production sites in China:

Changshu, Guangzhou, Shanghai

Asia Technical Center : Shanghai

Adhesive solutions for various markets

Durable goods

Aerospace, automotive, general transportation, assembly, engineering adhesives, construction materials and woodworking

Construction & Consumers

Stationery, craft, repair, home DIY and building construction adhesives

Advanced Packaging & Converting

Flexible packaging, consumer packaging & paper products, tapes & labels

Hygiene, Paper & Cardboard

Baby care products, feminine care products, adult incontinence products



Bostik Production Sites

Changshu – Bostik Plant

Main products

- Hot melt pressure sensitive adhesives
- Silyl modified polymers



Guangzhou – Bostik Plant

Main products

- Water-based adhesives
- Hot melt pressure sensitive adhesives
- Wood bonding

Shanghai – Fixatti

Main products

- Thermoplastics
- Thermosetting



Taixing - Sunke

- Modern and competitive production plant established in 2012
- Wholly-owned plant of Arkema since 2019
- Operating 3 acrylic acid production lines, 1 butyl acrylate production line, world-class scale glacial acrylic acid and butyl acrylate plant.



With Taixing, Arkema secures a global supply position, with production of acrylic monomers in each of the region, allowing it to serve its global and regional customers with best quality and service.

Zhangjiagang - Arkema Polyamides

World leading position in Advanced Bio-Circular PA11 and other flexible long-chain polyamides

- Joined Arkema Group in February 2012
- In 2021, a modified production line put into operation to meet the growing demand of long chain nylon resin
- In 2023, being one of the Group's 2 target lighthouse plants
- Our products are mainly used (new energy) automotive, 3D printing, electrical and electronic components, sporting, consumer goods, medical and aerospace, etc.

Main Products

- Rilsan®: Renewable/bio-based PA11 for excellent durability and toughness
- Pebax®: Thermoplastic elastomer (TPE) Excellent lightweight, highly resilient thermoplastic elastomer
- Rilsan® Fine Powders: Bio-based polyamide powder for powder coatings and 3D printing
- Rilsamid®: High performance engineering plastics for automotive systems, nylon monofilaments and other applications



Shanghai - Arkema Hydrogen Peroxide

- Established in February 1996, Established in March 1996 , a joint venture company with HYECC
- Supply of high quality hydrogen peroxide products for industrial and food packaging disinfection to China and other Asian countries

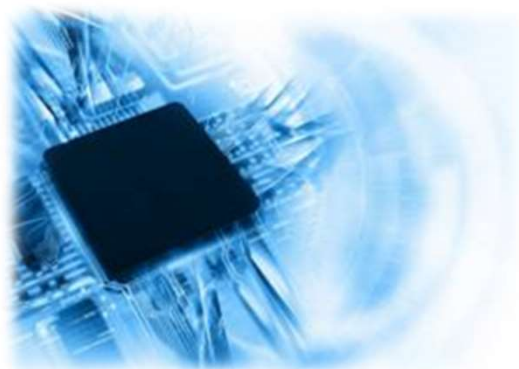
Milestones in recent years

- In 1996, Arkema Hydrogen Peroxide Co., Ltd. Shanghai was established.
- In 2000, it began operation.
- In 2008, Arkema Hydrogen Peroxide Co., Ltd. Shanghai announced to double its production capacity.
- In 2019, the production output has exceeded 1 million tons.



Guangzhou - Sartomer

- Sartomer originated as a dental business
- "Sartomer" is a combination of Greek and Latin, Sartomer = Sartos (Tailor-Made) + mer (Part)
- In 2011, Arkema acquired Sartomer



Invest in Nansha

- Official opening of Nansha factory in March 2008
- The photocure advanced liquid resin project

Serving Asian market

- Specialty (Meth)acrylate monomers
- Oligomers
- Engineered resins
- Photoinitiators and additives

Solutions for High-tech application fields



Kunming - ArrMaz



- In 2019, Arkema acquired ArrMaz

World leader in the production specialty chemicals for the mining, fertilizer, phosphate, industrial ammonium nitrate, asphalt, and oil and gas industries.

Main Products:

- Phosphorus Industry:
 - Anti-caking agents
 - Defoamers
 - Flocculants
- Mining:
 - Flotation reagent



Customized solutions for minerals and phosphorus Industry



Diammonium phosphate



Compound fertilizer



Phosphate ore, lithium ore



Water Treatment

Hengshui - CASDA Biomaterials



- Established in 2010
- Joined Arkema in 2012

Sustainable Resources

Produce a renewable bio-material from **castor oil**

Mainly used as a raw material for cold-resistant plasticizers, synthetic resins, synthetic fibers and nylon



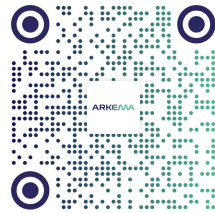
Main Products

- Sebacic acid
- Dimethyl sebacate
- Sec-Octanol
- Glycerol
- Fatty acid

Learn more about materials & innovative solutions

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Visit Arkema Alibaba 1688 Brand Pavilion



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阿科玛Arkema**



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And a strong, passionate brand ready to lead the wave of change!



Thank you!

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