Delivering innovative products and services to coatings formulators worldwide
Helping you achieve **performance, value and sustainability** in your coatings formulations

Arkema has a comprehensive and unique portfolio of coatings materials and technologies for architectural and industrial coatings; building and decorative paints; transportation, marine and maintenance coatings; traffic paints; adhesives and sealants; inks and graphic arts; textiles, non-wovens, leather and photocure systems.

Arkema is one of the leading suppliers of raw materials for coatings. Our objective is simple – help all of our coatings customers grow by meeting their needs, on every continent, for:

- **Enhanced performance** through innovative product technology that includes waterborne, solventborne, photocure, high solids, and powder coating resins; additives and rheology modifiers; acrylic monomers; and a wide range of specialty materials.
- **Enhanced value** by offering choices that help you find the best balance of performance and cost.
- **Enhanced sustainability** by providing products and technology that help you meet specific environmental regulations as well as your own sustainability goals.

Arkema’s product portfolio for coatings applications includes:

- Waterborne, solventborne and powder coating resins from Arkema Coating Resins.
- Specialty additives for coatings and adhesives from Arkema Coating Resins.
- Rheology additives for waterborne coatings from Coatex.
- High added value photocure resins for fiber optics, graphic arts, electronics, and other specialty applications from Sartomer.
- Extreme weatherability for water, solvent or powder coatings based on Kynar® polyvinylidene fluoride resins.
- High performance surface modification additives, including Orgasol® and Rilsan® fine powders.
- Amines for solvent-based and water-based paints.
- DMSO polar aprotic solvent for special formulations and oxygenated solvents.
- Nanostructured materials.
- Specialty surfactants and polyols, functional fillers diatomite and perlite, and molecular sieves from Ceca.
- Acrylic monomers.
- Methane sulfonic acid (MSA) esterification catalyst.

Arkema’s technology and product range covers 99% of Coatings market.

- Conventional solventbornes (resins and additives)
- Waterborne emulsions for architectural (resins and additives)
- Waterborne industrial (resins and additives)
- High solids
- Powder (resins and additives)
- Radiation curables (2 %) and other

Source “Paint & coating industry overview” – 2012 by Chemical Economics Handbook - SRI Consulting

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Global coating market ~$95bn by technology

54% 40% 10% 9% 5% 3% 9% 5% 3%
Access to a large portfolio of technologies for major coatings applications

**Decorative Paints**

**Solventborne resins:**
- Synolac®
- Gelkyd®
- Super Gelkyd®
- Unitane®
- Siliporite®

**Rheological and texturing additives:**
- Crayvallac®
- Orgasol®
- Alpamine®
- Rilsan® Fine Powders

**Oxygenated solvents and plasticizers:**
- Hexasol®
- Methyl isobutylketone
- Ensoline®

**Waterborne resins:**
- ENCOR®
- SNAP®
- Synaqua®
- Kynar Aquatec®

**Opacifiers:**
- Celocor®

**Wood and Plastic Coatings**

**Solventborne resins:**
- Synolac®
- Synocure®

**Surface modifiers:**
- Orgasol®

**Photocure resins:**
- Sartomer®
- Sarbio®
- Sarbox®

**Waterborne resins:**
- ENCOR®
- Kynar Aquatec®

**Oxygenated solvents:**
- Diacetone alcohol

**Vegetable oil based monomers, additives and plasticizers:**
- Oleris®

**Photocure resins:**
- Sartomer®
- Sarbio®
- Sarbox®
- Sarcryl®
- Sarmet®

**Rheological and leveling additives:**
- Crayvallac®

**Metal Coatings**

**Solventborne resins:**
- Synolac®
- Gelkyd®
- Super Gelkyd®
- Unitane®
- Siliporite®

**Rheological and texturing additives:**
- Crayvallac®
- Orgasol®
- Alpamine®
- Rilsan® Fine Powders

**Oxygenated solvents and plasticizers:**
- Hexasol®
- Methyl isobutylketone
- Ensoline®

**Waterborne resins:**
- ENCOR®
- SNAP®
- Synaqua®
- Kynar Aquatec®

**Vegetable oil based monomers, additives and plasticizers:**
- Oleris®

**Building blocks:**
- Dianol®
- Adiansol®
- Ensoline®
- Inipol®
- Noramium®

**Catalyst:**
- Methane sulfonic acid (MSA)

**Inks**

**Solventborne resins:**
- Synolac®
- Synocure®

**Surface modifiers:**
- Orgasol®

**Photocure resins:**
- Sartomer®
- Sarbio®
- Sarbox®
- Sarcryl®
- Sarmet®

**Rheological and texturing additives:**
- Crayvallac®

**Optical**

**Photocure resins:**
- Sartomer®
- Sarbio®
- Sarbox®
Arkema Coating Resins is a leading supplier of waterborne, solventborne and powder resins along with additives and opacifiers for architectural coatings, industrial finishes, construction products, traffic paints, sealants, adhesives, inks, non-wovens, floor care and graphic arts products.

Arkema Coating Resins offers you access to a truly comprehensive range of coating resins options, plus innovation, sustainable technologies and local service and support wherever you operate around the world. In short, our business will deliver more ways to meet your expectations for performance, value, answers and options for your business.

- Comprehensive resources for architectural and industrial coatings, including powder coatings; traffic paints; transportation, marine and maintenance coatings; pressure sensitive adhesives; building and construction products, as well as inks and graphic arts; coatings for textiles, nonwoven and leather.
- More product chemistry options, including a wide range of waterborne emulsions, opacifiers, waterborne and solventborne alkyds, powder coatings, polyester resins and additives for solventborne systems.
- More global resources, including product and service support for your business in Europe, North America, Asia, South America, Middle East and Africa.
- More answers from a coordinated technical and sales support network with sales offices, R and D and application development laboratories around the world.

Worldwide presence
- 19 production facilities in the Americas (USA, Brazil), Europe (France, Italy, Spain, The Netherlands, UK, Germany) and Asia Pacific (China, India, Malaysia)
- 3 coatings R&D centers and 7 technical laboratories in Europe, USA and Asia

Brand names
ENCOR® - Evocar® - Neocar®
SNAP® - EnVia® - Synaqua®
Celocor® - Reafree® - Crayamid®
Gelkyd® - Super Gelkyd®
Synocryl® - Synocure® - Synolac®
Unithane® - Chempol® - Crayvallac® - SECHA®

Acrylic monomers
A global market leader

Arkema is one of the world leading producers of acrylic monomers, marketed under the Norsocryl® brand, and offers a range of products – glacial acrylic acid, methyl acrylate, ethyl acrylate, n-butyl acrylate and 2-ethyl hexyl acrylate – to enhance polymer performance.

Thanks to their unique properties, acrylic monomers improve every day life by making products last longer, creating more value for the paints and coatings industry and providing a cleaner environment.
Coatex

Rheology additives for waterborne paints.
Add drops of vitamins to your paints and coatings!

A subsidiary of Arkema and its specialty acrylic polymers business, Coatex is one of the main global producers of rheology additives for aqueous formulations and water based processes. Coatex develops solutions for countless applications including the suspension of minerals in water, paper, coating and paint manufacturing, personal care and numerous other applications for industrial specialties.

The commitment of Coatex to the paints and coatings industry dates back to the birth of the company and has been constantly strengthened since.

Coatex teams are entirely dedicated to one field of expertise: rheology additives for waterborne systems. This focus together with a dedication of innovation makes Coatex know-how unique and its portfolio one of the broadest of the market, within each of the key rheology additives technologies:

- Waterborne thickeners:
  - Associative acrylic thickeners (HASE)
  - Associative polyurethane thickeners (HEUR)
- Water soluble dispersing agents:
  - Anionic dispersants
  - Steric dispersants: Bumper Technology™

Thanks to in-house technologies and sustainability driven R and D efforts, Coatex brands meet the most stringent environmental regulations, VOC free, APEO free, heavy metal free. Coatex is proud to offer the first additive range to be EnVia® certified.

Paint producers need to reach the performance they target while constantly reducing emissions and costs. This need is driving Coatex innovation strategy in rheology additives.

In addition to its R and D center in Europe, Coatex has three Coatings laboratories providing formulation support close to its customers in Asia, North America and Latin America.

Coatex teams work in synergy within Arkema to quickly develop innovative solutions.

Worldwide presence

- 6 production facilities in France, The Netherlands, USA, Brazil and China
- 1 R&D center in France
- Application laboratories and technical service centers in USA, Brazil and China

Brand names

Ecodis™ - Coadis™
Bumper Technology™ - Viscoatex™
Thixol™ - Rheotech™ - Coapur™
A world player in specialty chemicals.

Ceca, a subsidiary of Arkema group, produces specialty surfactants and polyols based on alkoxylates and fatty amines. These specialty polyetherpolyols are used as intermediates for the manufacturing of resins such as epoxies, polyurethane and polyester. They impart flexibility, chemical resistance and heat stability to the resins.

Specialty surfactants are used as wetting, dispersing, coalescing and plasticizing agent in waterborne coating formulations.

Flux-calcined diatomite Clarcel® and perlite Randafil™ are processed minerals used in decorative, industrial or traffic paints and in industrial wood coatings. They impart roughness to the film in order to provide flatting and improved inter-coat adhesion.

Due to their hard mineral structure, Clarcel® and Randafil™ confer to the film scrub resistance, and their low density allows the increase in the performance of the paints while reducing the costs of the formulations. The porosity of diatomite helps in the control of vapour permeability for reduced blistering and peeling and acts as TiO₂ extender. In addition to their matting effect, these chemically inert minerals extend the life of outdoor paint.

Molecular sieves Siliporite® powder range is used as moisture scavenger in PU-systems to avoid gassing and viscosity rising during storage due to premature reaction with water.

As part of Arkema, Sartomer offers customers global access to technology, manufacturing and service. This means more unique solutions, dependable supply and consistently high quality products and services.

Sartomer products are marketed to formulators through a direct sales force and distributors throughout the world.

*Sustainable Organic Compounds
Arkema’s high performance and high added value Kynar® PVDF resin exhibits outstanding properties such as resistance to weathering, including proven 25-to-30 year resistance to UV, chemical attack, and pollution. Its reputation as a binder for paint is based on over 45 years of development and experience. Various grades lend themselves to dispersion, dissolution, liquid and powder coating methods.

Kynar 500® FSF® PVDF resin is the basis for a premier finish for colorful metal buildings, advocated by paint manufacturers and architects for its unrivaled durability in metal finishes for different kinds of buildings.

Arkema has also developed a breakthrough technology called Kynar Aquatec®, the first aqueous PVDF/acrylic emulsion that can be applied to a broad range of substrates. This water-based technology expands the use of Kynar® PVDF coatings to factory application on non-metallic substrates such as vinyl siding, trim and decking and fiberglass pultrusions. When applied in the field to exterior walls and reflective roofs it allows for energy savings, optimized performance, and increased durability and sustainability.

Kynar® fluoropolymer based coatings
An exceptional resin for a variety of coatings with unrivaled durability

Worldwide presence
- 3 production facilities in France, USA and China
- 3 R&D centers in Europe, USA and Asia

Brand names
Kynar 500® FSF® - Kynar Aquatec®

Polyamide fine powders
A unique range of multifunctional and high performance surface modifiers

Orgasol® ultra fine powders and Rilsan® fine powders are high performance additives for coatings. The main applications include coil coatings, can coatings, industrial coatings, wood finishes flooring and graphic arts to which they impart abrasion resistance, scratch resistance, texture and matting effects.

Orgasol® powders provide soft feel texturing, coating flexibility, and dry lubricant effects, thanks to their unique particle size distribution and morphology. They are easy to disperse in waterbased, UV and solvent based formulations.

Rilsan® Fine Powders are made from a renewable raw material, 100% biosourced, and exhibit a full dispersability in liquid paints and a regular particle size distribution, which provides even texturing, excellent coverage and uniform color effects. In addition to its utility as an additive in paint, Rilsan® is also used as a thermoplastic powder coating in automotive, appliance, and water treatment markets.

Rilsan® coating is a proven solution for metal protection, with excellent corrosion and abrasion resistance, and outstanding impact resistance.

Worldwide presence
- 3 production facilities in France and USA
- 1 R&D center in France

Brand names
Orgasol® - Rilsan® Fine Powders
Nanostructured polymers Nanostrength® made with BlocBuilder® offer proven benefits for many industries and applications including thermoplastics and thermosets, adhesives, acrylic and epoxy coatings, dispersing agents and polymeric stabilizers.

The BlocBuilder® regulators platform is especially well-suited for paints, coatings, inks, adhesives, dispersants, and surface treatment applications. The controlled radical polymerization process opens new design possibilities within dispersants and polymeric surfactants. BlocBuilder® regulators can also be used to improve the film formation and block properties of paints and coatings.

Nanostrength®, a family of self-assembling acrylic block copolymers, can be used for epoxy coatings, and high-end structural adhesives, imparting enhanced mechanical properties, and in hot-melt pressure-sensitive adhesives.

Oleris® sebacic acid is widely used in formulated coating resins. Oleris® dibutyl sebacate is used as a plasticizer with very good solubility in paint and inks solvents. It provides light stabilization and presents very good film forming properties. Oleris® dimethyl sebacate is used as an intermediate to produce light stabilizer additives.

In resins, amines are used as synthesis intermediates, specialty monomers, catalysts for resins. In formulation, Alpamine® amines are used as neutralizing agents in waterborne paints or anti-skin agents in alkyd paints.

A large selection of Amines
To improve the properties of solvent-based and water-based paints

Worldwide presence
- 1 production facility in France
- 1 R&D center in France

Brand name
Alpamine®
Dimethylsulfoxide
The safest polar aprotic solvent

Safe for humans and for the environment, the polar aprotic solvent DMSO provides good dispersion properties and good solubility for polymers and prepolymer, and in special formulations and waterborne finishes used for surface coating (acrylic dispersions, paints, lacquers, waterborne formulations and inks).

Arkema has developed an improved, pleasant-odor version of dimethyl sulfoxide called DMSO Evol®, designed specifically for surface coating, cleaning, stripping, and other applications where N-methyl pyrrolidone (NMP) currently finds many uses.

Methane sulfonic acid
The right catalyst for the purest esters

Arkema’s methane sulfonic acid (MSA) is a strong acid, extensively used for the preparation of esters. MSA allows to improve kinetic and yields of reaction and can be used up to 200°C. It gives esters with lower colors versus inorganic or long chain organic acids. In addition, the esters made from MSA are less smelling. MSA is non oxidizing agent and can be easily recycled. If you are not interested in MSA recycling, you may send MSA effluents in waste water treatment station as this product is readily biodegradable.

Arkema has developed a new MSA grade, MSA Low Corrosion (LC). This new MSA LC grade is completely safe to prevent any corrosion of standard stainless steel materials. MSA LC is the best alternative to PTSA and sulfonic acid.

Oxygenated solvents
For various paint formulations

Oxygenated solvents are used as solvents in formulation and for resins in architectural paints, wood coating and coil coating. They can also be used in the synthesis of pigment dyes and resins.

Hexasol® is used in waterbased paints to improve key properties such as the extension of the duration of the film formation or the reduction of the minimum film forming temperature.
To deliver a solution globally from local production sites around the world

Europe

- Headquarters
  - Arkema - Colombes, France
  - Coatex - Genay, France
  - Sartomer - Colombes, France
  - Ceca - La Garenne Colombes, France

- Technical and R&D centers
  - Boretto, Italy - Coating Resins
  - Carling, France - Acrylic Monomers
  - Genay, France - Coatex
  - Lacq, GRL, France - Nanostrength - BlocBuilder - Ceca - MSA
  - Parentis, France - Ceca
  - Pierre-Bénite, CRRA, France - Kynar - Ceca
  - Serquigny, Cerdato, France - Kynar - Rilsan - Orgasol - Oleris
  - Sant Celoni, Spain - Coating Resins
  - Verneuil, France - Coating Resins - Sartomer

- Production facilities
  - Antwerp, Belgium - Ceca
  - Boretto, Italy - Coating Resins
  - Brummen, The Netherlands - Coating Resins
  - Carling, France - Acrylic monomers
  - Chateauroux, France - Ceca
  - Drocourt, France - Coating Resins
  - Feuchy, France - Ceca
  - Foggia, Italy - Ceca
  - Gissi, Italy - Coating Resins
  - Genay, France - Coatex
  - Inowroclaw, Poland - Ceca
  - La Chambre, France - Amines - Oxygenated solvents
  - Lacq, France - DMSO - BlocBuilder - MSA
  - Moerdijk, The Netherlands - Coatex
  - Malley, Spain - Coating Resins
  - Mont, France - Orgasol - Nanostrength
  - Pierre-Bénite, France - Kynar
  - Riom es Montagne, France - Ceca
  - Saint Bauzile, France - Ceca
  - Sant Celoni, Spain - Coating Resins
  - Serquigny, France - Rilsan
  - Stallingborough, United Kingdom - Coating Resins
  - Strood, UK - Ceca
  - Villers StPaul, France - Coating Resins - Sartomer
  - Zwickau, Germany - Coating Resins

Americas

- Headquarters
  - Arkema Coating Resins - Cary, NC
  - Arkema Inc. - King of Prussia, PA
  - Sartomer - Exton, PA

- Technical and R&D centers
  - Araçariguama, Brazil - Coatex - Coating Resins
  - Cary, NC - Coating Resins
  - Chester, SC - Coatex
  - Exton, PA - Sartomer
  - King of Prussia, PA
  - North Kansas City, MO - Coating Resins

- Production facilities
  - Alsip, IL - Coating Resins
  - Araçariguama, Brazil - Coatex - Coating Resins
  - Bayport, TX - Acrylic monomers
  - Birdsboro, PA - Orgasol - Rilsan
  - Calvert City, KY - Kynar
  - Chatham, VA - Sartomer
  - Chester, SC - Coatex
  - Clear Lake, TX - Acrylic monomers
  - Grand Rapids, MI - Coating Resins
  - North Kansas City, MO - Coating Resins
  - Saint Charles, LA - Coating Resins
  - Saukville, WI - Coating Resins
  - Torrance, CA - Coating Resins
  - West Chester, PA - Sartomer
Asia

- **Headquarters**
  - Arkema Greater China - Shanghai, China
  - Arkema K.K. - Tokyo, Japan
  - Arkema - Mumbai, India - Kynar
  - Arkema - Seoul, Korea - Kynar
  - Arkema - Singapore - Kynar
  - Sartomer - Hong Kong, China

- **Technical and R&D centers**
  - Changshu, China
  - Guangzhou, China - Sartomer - Coating Resins
  - Kyoto Technical Center, Japan
  - Navi Mumbai, India - Coating Resins
  - Pasir Gudang, Malaysia - Coating Resins
  - Yokohama, Japan - Sartomer

- **Production Facilities**
  - Changshu, China - Coatex - Coating Resins - Kynar
  - Cuddalore, India - BlocBuilder
  - Hengshui, China - Oleris
  - Kunsan, Korea - Coatex
  - Nansha, China - Sartomer
  - Navi Mumbai, India - Coating Resins
  - Pasir Gudang, Malaysia - Coating Resins
  - Taixing*, China - Acrylic monomers

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A global chemical company and France’s leading chemicals producer, **Arkema** is building the future of the chemical industry every day.

Deploying a responsible, innovation-based approach, we produce state-of-the-art specialty chemicals that provide customers with practical solutions to such challenges as climate change, access to drinking water, the future of energy, fossil fuel preservation and the need for lighter materials.

With operations in more than 40 countries, some 14,000 employees and 10 research centers, Arkema generates annual revenue of €6.4 billion, and holds leadership positions in all its markets with a portfolio of internationally recognized brands.

* manufacturing JV Arkema/Jurong Chemical, with closing of the project expected during the summer of 2014
Investing globally to support
our coatings customers locally

January 2014
- Creation of Sunke, a manufacturing joint-venture between Arkema (55%) and Jurong Chemical (45%) for the production of glacial acrylic acid and butyl acrylate. With this production facility in China, Arkema will be in a position to support growth of its global and Asian customers. Closing is expected during the Summer of 2014.

2013
- Announcement of a project to divest Arkema’s coating business in South Africa (Arkema Resins Proprietary Ltd. and Harvey’s Composites Proprietary Ltd.)
- Start up of the new emulsion polymers facility (60,000 metric tons) on Arkema’s Changshu platform (China).
- Inauguration of the Arkema’s first R&D center in China (Changshu) to provide the development capacities and ideal local support for the Arkema Group’s customers in China, and South East Asia.
- Expansion of Arkema’s acrylic acid production capacity expansion at in Clear Lake, Texas (USA).

2012
- New 2EHA production facility in Bayport, Texas, USA.
- New emulsion production for Arkema Coating Resins in Changshu, China.
- New acrylic resin capabilities for Arkema Coating Resins in Pasir Gudang, Malaysia.
- 50% increase in polyvinylidene fluoride (PVDF) capacity at Changshu, China.
- Acquisition in Brazil, from Resicryl, of an additives and emulsions production site.
- Opening of a new technical service and development center for coatings in Guangzhou, China.
- Opening of a R&D center in Changshu, China, to provide local support in Asia for Arkema activities in coatings and other markets.
- Acquisition of Chinese companies, Hipro Polymers (specialty biosourced polyamides) and Casda (sebacic acid) to enlarge product range and better support customers locally.

2011
- Acquisition of the coating and photocure resins from Total group (portfolios of Cray Valley, Cook Composites & Polymers and Sartomer).
- New Coatex acrylic additives capacity and, new Kynar® PVDF plant in Changshu, China.

2010
- Emulsion and acrylic monomer assets acquired from Dow in the US.

2007
- Coatex rheological additives acquired from Omya.

Contacts
For further information, please contact us on:

Websites
arkema.com
arkemacoatingresins.com
crayvalleyac.com
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