which ensures mechanical resistance, efficient palletization, and an excellent moisture barrier. Every Rilsan® Fine Powders bag carries appropriate labels with all essential data for traceability.

This global team will assist you at every stage in your use of Rilsan® Fine Powders, from design and industrial technical support and development.

Environmental impact

- Rilsan® Fine Powders offer many positive environmental features in keeping with sustainability. They are made from castor oil, a byproduct of the vegetable oil industry, which does not interfere with the food chain, is not a GMO, uses very few pesticides, grows in poor soil in semi-arid areas and requires very little water.

- Through ongoing purchases of castor oil on the world markets, including South America, India, South-East Asia and China, this biobased polyamide is sustainably produced.

- Rilsan® Fine Powders do not release any volatile pigments, bisphenol A, phthalates, halogens, flame retardants or plasticizers.

Environmental impact

- Rilsan® Fine Powders range includes products for any application:

  - Specific grades of powder designed for laser sintering to produce 3D parts specifically tailored to the needs of the customer.
  - Specific grades of powder designed for metal coating around the world looking for the ultimate solution to metal protection.
  - Specific grades of powder designed for use in metal coating processes.

A Worldwide Technical Support and Sales Network

Arkema’s sales, technical support and intermediaries (such as physicians) of pertinent risks and fulfill any postmarket surveillance obligations. Any decision regarding the appropriateness of a particular Arkema product for use as a medical device or in a medical device application is the sole responsibility of the manufacturer of the medical device. Arkema does not allow, endorse or permit the use of Arkema products in such medical devices. Arkema has implemented a Medical Policy regarding the use of Arkema products in medical device applications that are in contact with the body or circulating bodily fluids (http://www.arkema.com/en/social-responsibility/responsible-product-management/medical-device-policy/index.html) Arkema has designated Medical grades to be used for such Medical Device applications. Products that have not been designated as Medical grades are not authorized by Arkema for use in Medical Device applications. The statements, technical information and recommendations contained herein are beyond our control, ARKEMA expressly disclaims any and all liability as to any results obtained or arising from the use of information or technical data contained herein.

Rilsan® Fine Powders range of products is managed by Arkema Specialty Polymers business unit or its representatives in the following countries.

- USA
  - 900 First Avenue, New York, NY 10010
  - Tel.: (+1) 212 376 5000
  - Fax: (+1) 212 376 6877
- EUROPE
  - 420, rue d’Estienne d’Orves
  - 92480 Movie, France
  - Tel.: 33 (0)1 49 00 80 80
  - Fax: 33 (0)1 49 00 83 96
- ASIA
  - 781 Life Hub@Daning
  - Life Hub 13F, 13-1-6, Kandai-cho, Koto-ku, Tokyo 100-0011
  - Fax: (+81) 3 5251 9930
  - Tel.: (+81) 3 5251 9900
- JAPAN
  - Fukoku Seimei Bldg 15F
  - 8-1, Nakano, Arakawa-ku, Tokyo 110-0003
  - Fax: (+81) 3 5251 9930
  - Tel.: (+81) 3 5251 9900
- CHINA
  - Life Hub 13F, 13-1-6, Kandai-cho, Koto-ku, Tokyo 100-0011
  - Fax: (+86) 21 6147 6877
  - Tel.: (+86) 21 6147 6877

Other applications

- bendable
- combines the best of thermoplastic impact resistance and thermoset hardness
- very easy processing
- surface enhancement and texturing for industrial coatings
- easy to clean, high resistance to chemicals, inks, detergents and heat
- unique warm-to-the-touch, smooth surface finish with low friction
- lightweight, high rigidity, high strength
- specific properties for 3D printing applications
- high performance, high impact resistance
- for use in metal coating processes
- specific grades of powder designed for laser sintering to produce 3D parts specifically tailored to the needs of the customer.

Other applications

- Metal Coatings

- ferrites and ferrite substrates
- electrical components
- automotive components
- composites
- metal coating
- equipment, hospital beds, wheelchairs, and ambulance stretchers, etc.
- undergarment wires and adjustors, printing and textile rollers, pharmaceutical and food processing equipment, etc.
- building and electrical parts
- fluid transfer
- spline shafts, sliding door and seat rails, springs, brackets, etc.
Main benefits of Rilsan® fine powders include:

- Outstanding flexibility
- Excellent impact resistance
- Resistance to a wide variety of chemicals
- Wide service temperature range
- Low density
- Low moisture pick up (high dimensional stability)
- Unrivalled wear resistance
- Proprietary micronisation process producing a wide diversity of particle size distribution and formulations.

**DURABLE BY NATURE**

Rilsan® polyamide resin is produced from castor oil obtained from the widely cultivated Ricinus communis. Castor oil is 100% vegetable, biodegradable, natural, non-toxic and renewable. Rilsan® Fine Powders are a thermoplastic and not directly impacted by variations in crude oil prices. Moreover, Rilsan® Fine Powders are environmentally sound. Rilsan® polyamide resins are a responsible choice for the environmentally aware.

**RANGE OF POWDERS**

- RILSAN® FINE POWDERS T and FB: Grades have an average particle size around 100 microns. They are designed for the fluidized bed dip coating process. A desirable coating thickness between 250 and 500 µm can be achieved.
- RILSAN® FINE POWDERS ES and ESY: Grades have an average particle size around 30 microns and are designed for the electrostatic spraying process. A desirable coating thickness between 80 and 150 µm can be achieved.
- MC grades have an average particle size around 50 microns. They are specially designed for coating small items using the minicoat/maxicoat process.
- RILSAN® FINE POWDERS D: These polyamide powders are used as additives in paint formulations. Rilsan® D powders provide excellent scratch and abrasion resistance and a desired structural effect in a wide range of liquid paints, both water-borne and solvent-borne.
- RILSAN® INVENT: These powders are specially designed for laser sintering processes, offering unique mechanical properties for high performance applications. The product range includes mass colored black powder for excellent color finish.

**RECOMMENDED PRIMERS**

High performance primers are marketed under the Primgreen® (water-borne, low VOC) and Rilprim® (solvent-based) brands. These primers have been specially developed for compatibility with Rilsan® Fine Powders. Across a range of processing temperatures, these primers provide Rilsan® PA11 coatings optimum anticorrosion protection on a variety of metal substrates.
Main benefits of Rilsan® fine powders include:

- Outstanding flexibility
- Excellent impact resistance
- Resistance to a wide variety of chemicals
- Wide service temperature range
- Low density
- Low moisture pick up (high dimensional stability)
- Unrivalled wear resistance
- Proprietary micronisation process producing a wide diversity of particle size distribution and formulations.

DURABLE BY NATURE

Rilsan® polyamide resin is produced from castor oil obtained from the widely cultivated Ricinus communis. Castor oil is 100% vegetable, biodegradable, natural, non-toxic and renewable.

Rilsan® Fine Powder is thus a thermoplastic not directly impacted by variations in crude oil. Moreover, Rilsan® Fine Powder is environmentally sound. Rilsan® Fine Powder is the right product for customers in search of eco-design. Rilsan® polyamide resins require less non-renewable energy than most performance polymers and offer a responsible choice for the environmentally aware.

Rilsan® Fine Powders are constantly evolving and developing to meet your needs. Our proprietary micronisation process can produce a wide range of uniform particle sizes, offering a powder matched to your processing and performance requirements.

DURABLE BY NATURE

Rilsan® Fine Powders are constantly evolving and developing to meet your needs. Our proprietary micronisation process can produce a wide range of uniform particle sizes, offering a powder matched to your processing and performance requirements.

RANGE OF POWDERS

RILSAN® FINE POWDERS T and FB

T and FB grades have an average particle size around 100 microns. They are designed for the fluidized bed dip coating process. A desirable coating thickness between 250 and 500 µm can be achieved.

RILSAN® FINE POWDERS ES and ESY

ES and ESY grades have an average particle size around 30 microns. They are designed for the electrostatic spraying process. A desirable coating thickness between 80 and 150 µm can be achieved.

MC grades have an average particle size around 50 microns. They are specially designed for coating small items using the minicoat/maxicoat process, originally developed by Arkema to allow very high productivity.

RECOMMENDED PRIMERS

High performance primers are marketed under the Primgreen® (water-borne, low VOC) and Rilprim® (solvent-based) brands. These primers have been specially developed for compatibility with Rilsan® Fine Powders. Across a range of processing temperatures, these primers provide Rilsan® PA11 coatings optimum anticorrosion protection on a variety of metal substrates.

RILSAN® INVENT

These powders are specially designed for laser sintering processes, offering unique mechanical properties for high performance applications. They provide for excellent color, flowability and performance.

OTHERS

These powders are specially designed for laser curing processes, offering unique mechanical properties for high performance applications.
**PACKAGING**

ARKEMA’S GLOBAL COMMERCIAL AND TECHNICAL SERVICE.

---

**SUCCESSFUL RESULTS IN A WIDE VARIETY OF APPLICATIONS**

**METAL COATING**

Combining beauty and function, Rilsan® coating is a solution for the most demanding applications. The product's performance and reliability will greatly increase the value of your product, helping you stand out from the competition.

---

**APPLICATIONS**

**EQUIPMENT, HOSPITAL BEDS, WHEELCHAIRS, AND AMBULANCE STRETCHERS, ETC.**

**UNDERGARMENT WIRES AND ADJUSTORS, PRINTING AND TEXTILE ROLLERS, PHARMACEUTICAL AND FOOD PROCESSING EQUIPMENT**

**COMPOSITES**

• Suitable for dyeing • Machinable • Limits bacterial growth

**INJECTION AND PRODUCTION TUBING**

• Graffiti resistance and fire resistance • Electrical insulation

**FLUID TRANSFER**

• Long term resistance to extreme maritime environments

**OTHER APPLICATIONS**

**ADDITIVE MANUFACTURING**

• Specific grades of powder designed for laser sintering to produce 3D parts with exceptional mechanical properties

**METAL COATING**

• Low surface energy • Smooth surface finish with low friction • Unique warm-to-the-touch, smooth surface finish with low friction • Specific grades of powder designed for laser sintering to produce 3D parts with exceptional mechanical properties

---

**SERVICE**

This global team will assist you at every stage in your use of Rilsan® Fine Powders, from design and industrial technical support and development.

---

**ENVIRONMENTAL IMPACT**

• Rilsan® Fine Powders are managed by Arkema Specialty Chemicals, a leading worldwide technical support and sales network.

---

**OTHER**

---

**DURABLE BY NATURE**

---

**Biobased polyamide fine powders**
**PACKAGING**

Rilsan® Fine Powders are supplied in 20 or 25 kg sealed bags or octabins. The bags consist of a multilayer Kraft paper/PE, which allows for high-humidity resistance and ensures the quality of the powders. The powder bag carries appropriate labels with all essential data for traceability.

**METAL COATING**

Combining beauty and function, Rilsan® coating offers you the best coating available for metal protection. It allows you to meet the world's highest standards, ensure the success of your project.

**SERVICE**

Rilsan® Fine Powders are backed by a global and integrated organization for supply chain, marketing, technical support and development. Our global team will assist you at every stage in your use of Rilsan® Fine Powders, from design and industrial scale-up to on-site assistance or technical support and development.

**APPLICATIONS**

- **Metal Coating**: Suitable for a wide range of applications, including automotive, metal coating, and electrical equipment. Features excellent resistance to alkaline and chlorinated hot water, very easy processing, and a unique warm-to-the-touch, smooth surface finish with low friction.
- **Composite**: Suitable for outdoor furniture, lamp posts, electrical cabinets and clips, bolts and screws, etc. Features graffiti resistance and fire resistance, electrical insulation, and noise and vibration dampening.
- **Metal Articles**: Suitable for dishwasher baskets, shopping cart, shelving, various cleaning trolleys, wire articles, etc. Features compliance with the most demanding specifications for drinking water contact.
- **Coatings Additives**: Suitable for building and electrical, composites, and textiles / printing / food / healthcare. Features excellent resistance to chemicals, inks, detergents, and heat, easy to clean, high resistance to chemicals, inks, detergents, and heat, and a unique warm-to-the-touch, smooth surface finish with low friction.
- **Equipment, Hospital Beds, Wheelchairs, and Ambulance Stretchers, etc.** Features stone chipping resistance at low temperatures, noise and vibration dampening.
- **Wire Art**: Suitable for automotive and transportation. Features compliance with the most demanding specifications for drinking water contact, stone chipping resistance at low temperatures, noise and vibration dampening.

**ENVIRONMENTAL IMPACT**

- **Biobased Polyamide**: Rilsan® Fine Powders are managed by Arkema Specialty Chemicals and are part of the Arkema Group's global initiatives on sustainable development.
- **Castor Oil Plant Cultivation**: Supported by the Arkema Group for over 60 years, providing renewable organic compounds and free of heavy metals, bisphenol A, phthalates, halogens, isocyanates and curing agents.
- **BPA-Free**: Rilsan® Fine Powders do not release any volatile organic compounds and are free of heavy metal pigments, bisphenol A, phthalates, halogens, isocyanates and curing agents.
- **Compliance with Regulations**: The Rilsan® Fine Powders range includes grades that are compliant with regulations for food and drinking water contact.

**OTHER APPLICATIONS**

- **Injection and Production Tubing**: Suitable for pipes and fittings, valves, flanges, couplings, flow meters, etc. Features compliance with the most demanding specifications for drinking water contact, stone chipping resistance at low temperatures, noise and vibration dampening.
- **Water**: Suitable for pipes and fittings, valves, flanges, couplings, flow meters, etc. Features compliance with the most demanding specifications for drinking water contact, stone chipping resistance at low temperatures, noise and vibration dampening.
- **Laser Sintering**: Suitable for metal articles, wire articles, equipment, hospital beds, wheelchairs, and ambulance stretchers, etc. Features graffiti resistance and fire resistance, electrical insulation, and noise and vibration dampening.

**Biobased Polyamide Fine Powders**

- **Properties**: Biobased polyamide fine powders are biocompatible and biodegradable. They are suitable for a wide range of applications, including metal coating, composite, and coatings. They are free of heavy metal pigments, bisphenol A, phthalates, halogens, isocyanates, and curing agents.
- **Applications**: They can be used in automotive, metal coating, composite, and textiles / printing / food / healthcare industries. They provide excellent resistance to chemicals, inks, detergents, and heat, and a unique warm-to-the-touch, smooth surface finish with low friction.

**Contact Information**

- **USA**: Tel.: (+1) 800 932 0420, Fax: (+33) 1 49 00 83 96
- **EUROPE**: Tel.: (+33) 1 49 00 80 80, Fax: (+33) 1 49 00 83 96
- **China**: Tel.: (+86) 21 6147 6877, Fax: (+81) 3 5251 9930
- **Japan**: Tel.: (+81) 3 5251 9900, Fax: (+81) 3 5251 9930
- **France**: Tel.: (+33) 1 49 00 80 80, Fax: 33 (0)1 49 00 83 96
- **arkema.com**
PACKAGING

Rilsan® Fine Powders are supplied in bags of 25, 50 or 300 kg in polyethylene or polypropylene. The bags are supplied in suitable containers. Every Rilsan® Fine Powders bag is equipped with appropriate labels with all essential data for traceability.

The packaging is designed with high mechanical resistance, efficient palletization, and an excellent barrier to moisture. It ensures the safety and quality of the product during transportation and storage.

The packaging is manufactured from high-quality materials to meet the stringent requirements of the automotive industry and other sectors where quality and reliability are critical.

The packaging is also designed to facilitate handling and transportation, making it easy to load and unload the product at the customer’s site.

SUCCESSFUL RESULTS IN A WIDE VARIETY OF APPLICATIONS

 METAL COATING

Combining beauty and function, Rilsan® coating offers a solution for the wide range of applications. The coating is designed to meet the strictest standards and requirements, ensuring durability and resistance to corrosion.

The coating is easy to apply, and it has a high level of chemical resistance. It can be applied in a wide range of conditions and is suitable for various applications, including in the automotive industry.

Metallic powders can be impregnated with metallic inorganic compounds, and the resulting materials are free of heavy metal pigments, transition metals, and halogens.

The metallic powders can be used as an inducement to infringe any patent and the user is advised to take appropriate steps to be sure that any proposed use of the product will not result in patent infringement.

The statements, technical information and recommendations contained herein are based on the best knowledge and belief of the manufacturer as of the date of the information. The user is responsible for determining that his or her use complies with all applicable laws, regulations, and other requirements. The user is responsible for testing the product and of the information referred to herein are beyond our control. ARKEMA expressly disclaims any and all liability as to any results obtained or arising from the use of the product.

The statements, technical information and recommendations contained herein are believed to be accurate as of the date hereof. Since the conditions and methods of use of the product and the information referred to herein are beyond our control, ARKEMA expressly disclaims any and all liability as to any results obtained or arising from the use of the product.

ENVIRONMENTAL IMPACT

The Rilsan® Fine Powders are designed to be environmentally friendly, with a low environmental impact throughout the product lifecycle. The powder is manufactured using sustainable raw materials, and the packaging is designed to minimize waste and improve recyclability.

The Rilsan® Fine Powders are produced using a process that reduces energy consumption and greenhouse gas emissions. The product is designed to be easily recyclable, making it a sustainable choice for customers.

The Rilsan® Fine Powders are also designed to withstand harsh environmental conditions, ensuring that the product performs well in a range of applications.

OTHER APPLICATIONS

• Biobased polyamide fine powders

• Typical grades of powder designed for laser sintering pressureless powder with improved mechanical properties.

• Excellent adhesion and bonding for industrial coatings

• Toughening agent and thermoplastic resin for optimal composite fibre impregnation resulting in outstanding mechanical properties.

• High resistance to hydrocarbons and water treatment chemicals

• Specific grades of powder designed for laser sintering to produce 3D parts

• To be manufactured from biobased polyamide derived from castor oil plant cultivation

• Castor oil plant cultivation has been supported by the Arkema group for the past few years to ensure that the castor oil is produced in a sustainable manner.

• Castor oil is a renewable resource that is produced in semi-arid areas and requires very little water.

• It is the sole responsibility of the manufacturer and seller of the medical device to determine the suitability (including biocompatibility) of all raw materials, products and components, including without limitation, permanent or temporary implantable devices, and customers shall not represent to anyone else, that Arkema material in a particular medical device should be based on the judgment of the manufacturer, seller, the competent authority, and the treating physician.

• It is necessary to perform the necessary tests and inspections and to evaluate the medical device under actual end-use requirements and to adequately advise and warn purchasers, users, and/or learned medical practitioners of the potential consequences of non-Compliance with the instructions for use.

• Biocompatibility is determined by testing for cytotoxicity and biological compatibility with customers’ medical devices, including without limitation, permanent or temporary implantable devices.

• It is the responsibility of the manufacturer to ensure that the product is compatible with medical devices and is not used in applications that are in contact with the body or circulating bodily fluids.

• A technical assistance and innovation support provided by Arkema’s global initiatives on sustainable development.

• Arkema contributes to the economic development of several regions, including South America, India, South-East Asia and China.

• Castor oil plant cultivation has been supported by the Arkema group for the past few years to ensure that the castor oil is produced in a sustainable manner.

• Castor oil is a renewable resource that is produced in semi-arid areas and requires very little water.

• It is the sole responsibility of the manufacturer and seller of the medical device to determine the suitability (including biocompatibility) of all raw materials, products and components, including without limitation, permanent or temporary implantable devices, and customers shall not represent to anyone else, that Arkema material in a particular medical device should be based on the judgment of the manufacturer, seller, the competent authority, and the treating physician.

• It is necessary to perform the necessary tests and inspections and to evaluate the medical device under actual end-use requirements and to adequately advise and warn purchasers, users, and/or learned medical practitioners of the potential consequences of non-Compliance with the instructions for use.

• Biocompatibility is determined by testing for cytotoxicity and biological compatibility with customers’ medical devices, including without limitation, permanent or temporary implantable devices.

• It is the responsibility of the manufacturer to ensure that the product is compatible with medical devices and is not used in applications that are in contact with the body or circulating bodily fluids.