



TRANSPORTATION MARKET PRESENTATION



Product Offer

RILSAMID[®]

Industry Standard Material



Burst pressure at high temperatures



Zinc chloride resistance



Lightweight

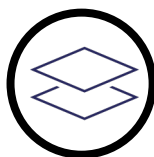
Polyamide 12

KYNAR[®]
PVDF

ORGALLOY[®]
Polyamide Alloys

RILSAN[®]

Industry Reference Material for Extreme Conditions



+ the advantages of Rilsamid[®] PA12



Cold temperature impact



Superior long-term aging



Improved environmental impact

Polyamide 11

PEBAX[®]
Elastomers

RILPERM[®]

Cost Saving & Superior Performance Possibilities



+ the advantages of Rilsamid[®] PA12 & Rilsan[®] PA11



Optimized cost



Improved performance balance

Multi-layer

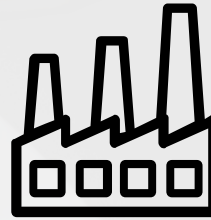
PLATAMID[®]
copolyamide hotmelt adhesives

WHAT ARKEMA HIGH PERFORMANCE POLYMERS HAVE TO OFFER



INNOVATIVE HIGH PERFORMANCE & DURABLE MATERIALS

With over 70 years experience we offer materials that meet market challenges and last over time



STRONG & RELIABLE SUPPLY CHAIN

With an integrated and global supply chain we are able to ensure customer supply



EXCEPTIONAL LCA PROFILE & SUSTAINABLE VALUE CHAIN

We are the sole producers of PA11, a bio-based polyamide and are integrated in the supply chain to ensure sustainability

Transportation – Truck & Automotive



Truck Segment

POWERTRAIN

- Fuel & Fluid Management
- Emission Control Systems
- Alternative Fuel Systems
- Connectors, Fittings, Components
- Chassis parts (Metal Coatings)

AIR BRAKING

- Air brake lines
- Truck connectors

NEW ENERGY VEHICLES

- Li ion Batteries
- H2 lines & tanks
- New energy vehicles



Powertrain Applications

FUEL, FLUID MANAGEMENT

- Fuel lines
- Connectors
- Metal coatings
- AC circuit
- Water cooling circuit
- Air intake hoses
- Transmission Oil Cooling circuit

EMISSION CONTROL SYSTEMS

- Vacuum & blow-by lines
- SCR lines

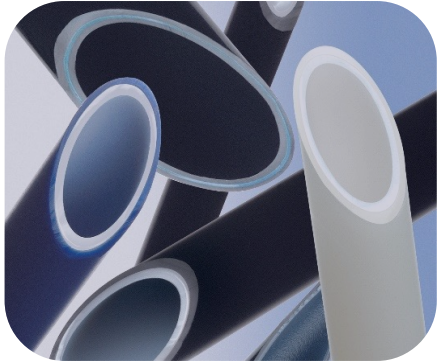
ALTERNATIVE FUEL SYSTEMS

- CNG - LPG - LNG transmission
- CNG - LPG - LNG containment

CHASSIS PARTS (METAL COATINGS)

- Steering column coatings
- Spline shaft coatings
- Miscellaneous coatings

Fuel & Fluid Management



**Fuel lines
(incl. in-tank)**

Excellent barrier to cleaner
fuel for low emissions
Higher temperature
resistance
Zinc chloride resistance

**RILSAN®
RILSAMID®**



Quick Connectors

High chemical resistance
Low moisture uptake and
tight dimension tolerance
for safety
Lightweight
Conductive or weldable
solutions

**RILSAN®
RILSAMID®**



Metal Coatings

Excellent durability
Noise reduction

**RILSAN®
RILSAN®
FINE POWDERS**



AC Circuit

High durability
Low density
Flexibility for space
saving
Low permeation to lower
GWP refrigerant

ORGALLOY®

Fuel & Fluid Management



**Water Cooling
Circuit**

Lightweight
Space saving vs. rubber
High temperature
resistance
Chemical resistance

RILSAN[®]
RILSAMID[®]



**Air Intake
Hoses**

High temperatures
resistance
Lightweight
Excellent flex-fatigue
Space saving vs. rubber

RILSAN[®]
ORGALLOY[®]



**Brake booster
Lines**

Wide temp. range
Flexibility

RILSAN[®]
RILSAMID[®]



**Transmission Oil
Cooling circuit**

High temperature
resistance
High pressure resistance
Lightweight

RILSAN[®]

Emission Control Systems



Vacuum & blow-by lines

Excellent chemical resistance
to harsher fluids
Higher temperatures
resistance
Flexibility

RILSAN[®]



SCR lines

Chemical resistance
Flexibility
High temperature resistance

RILSAN[®]
RILSAMID[®]



Fuel venting lines

Lower emissions with barrier
layers
Chemical resistance to cleaner or
aggressive fuels
Higher temperatures resistance

RILSAN[®]
RILPERM[®]

Alternative Fuel Systems & Chassis Parts



**CNG-LPG-LNG
transmission**

**CNG-LPG-LNG
containment**

Low permeation
High burst pressure resistance
Low density for Lightweight composites
High chemical resistance

RILSAN®



**Steering column
coatings**

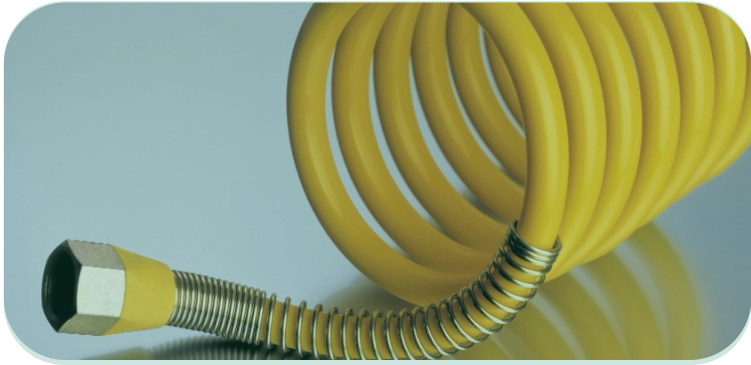
**Spline shaft
coatings**

**Miscellaneous
coatings**

Wear resistance
Chemical resistance
Dampening
High durability
Easier processing

RILSAN®
FINE POWDERS

Air Braking



Air brake lines

Excellent burst pressure at high temperature
Zinc chloride resistance
Cold Temperature impact
Optimized cost

RILSAN[®]
RILSAMID[®]
RILPERM[®]



Truck connectors

Lower density
Superior Mechanical &
Thermal resistance
High flowability
Weldable solutions

RILSAN[®]
RILSAMID[®]

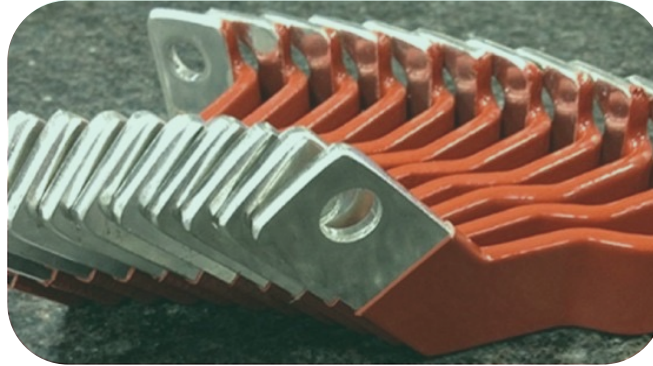
New Energy Vehicles



Lithium ion batteries

Chemical resistance
High temperature resistance

KYNAR®

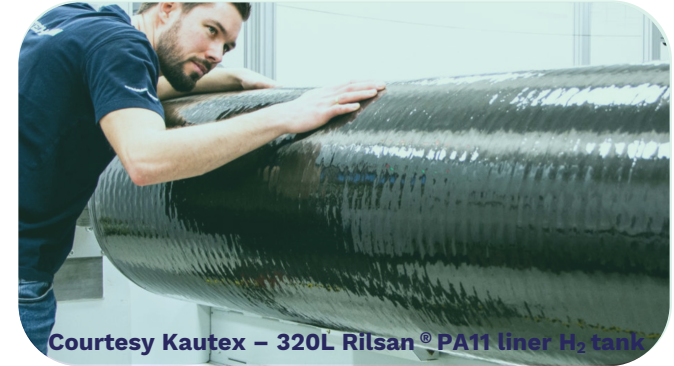


Bus Bars

Dielectric resistance
Fire resistance
Ease of processing
Bending ability

RILSAN®

RILSAN®
FINE POWDERS



Courtesy Kautex – 320L Rilsan® PA11 liner H₂ tank

H₂ lines & tanks

Low permeation to H₂
Processability
High impact resistance

RILSAN®

RILSAN®
FINE POWDERS

Automotive Segment

POWERTRAIN

- **Fuel & Fluid Management**
- **Emission Control Systems**
- **Alternative Fuel Systems**
- **Connectors, Fittings, Components**
- **Chassis parts (Metal Coatings)**

INTERIOR & EXTERIOR

- **Textile**
- **Adhesives**
- **Antistatic**

NEW ENERGY VEHICLES

- **Electrical & Electronic components**
- **Li ion Batteries**
- **H₂ lines & tanks**



Powertrain Applications

FUEL, FLUID MANAGEMENT

- Fuel lines
- Connectors
- Metal coatings
- AC circuit
- Water cooling circuit
- Air intake hoses
- Transmission Oil Cooling circuit

EMISSION CONTROL SYSTEMS

- Vacuum & blow-by lines
- SCR lines

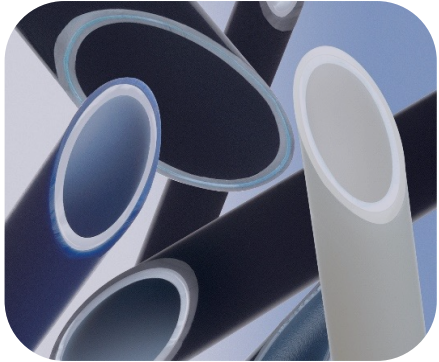
ALTERNATIVE FUEL SYSTEMS

- CNG - LPG - LNG transmission
- CNG - LPG - LNG containment

CHASSIS PARTS (METAL COATINGS)

- Steering column coatings
- Spline shaft coatings
- Miscellaneous coatings

Fuel & Fluid Management



**Fuel lines
(incl. in-tank)**

Excellent barrier to cleaner
fuel for low emissions
Higher temperature
resistance
Zinc chloride resistance

**RILSAN®
RILSAMID®**



Quick Connectors

High chemical resistance
Low moisture uptake and
tight dimension tolerance
for safety
Lightweight
Conductive or weldable
solutions

**RILSAN®
RILSAMID®**



Metal Coatings

Excellent durability
Noise reduction

**RILSAN®
RILSAN®
FINE POWDERS**



AC Circuit

High durability
Low density
Flexibility for space
saving
Low permeation to lower
GWP refrigerant

ORGALLOY®

Fuel & Fluid Management



**Water Cooling
Circuit**

Lightweight
Space saving vs. rubber
High temperature
resistance
Chemical resistance

RILSAN[®]
RILSAMID[®]



**Air Intake
Hoses**

High temperatures
resistance
Lightweight
Excellent flex-fatigue
Space saving vs. rubber

RILSAN[®]
ORGALLOY[®]



**Brake booster
Lines**

Wide temp. range
Flexibility

RILSAN[®]
RILSAMID[®]



**Transmission Oil
Cooling circuit**

High temperature
resistance
High pressure resistance
Lightweight

RILSAN[®]

Emission Control Systems



Vacuum & blow-by lines

Excellent chemical resistance
to harsher fluids
Higher temperatures
resistance
Flexibility

RILSAN[®]



SCR lines

Chemical resistance
Flexibility
High temperature resistance

RILSAN[®]
RILSAMID[®]



Fuel venting lines

Lower emissions with barrier
layers
Chemical resistance to cleaner or
aggressive fuels
Higher temperatures resistance

RILSAN[®]
RILPERM[®]

Alternative Fuel Systems & Chassis Parts



**CNG-LPG-LNG
transmission**

**CNG-LPG-LNG
containment**

Low permeation
High burst pressure resistance
Low density for Lightweight composites
High chemical resistance

RILSAN®



**Steering column
coatings**

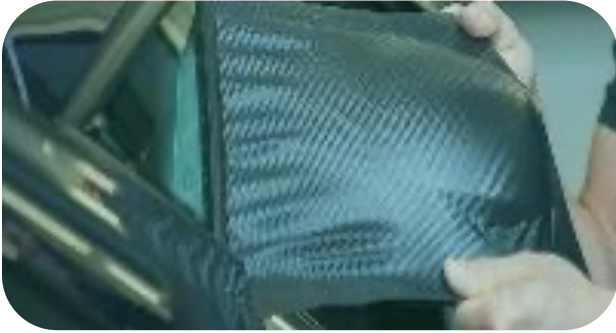
**Spline shaft
coatings**

**Miscellaneous
coatings**

Wear resistance
Chemical resistance
Dampening
High durability
Easier processing

RILSAN®
FINE POWDERS

Interior & Exterior Applications



Decorative films

Chemical resistance
Improved durability

KYNAR®



Door/roof panels

Low VOC
Improved adhesive
performance & durability

PLATAMID®



Upholstery

High chemical resistance
artificial leather coating
Easy cleaning and
maintenance

KYNAR®
RILSAN®

Interior & Exterior Applications



Door railings & small coated parts

Extreme wear resistance
Squeak & rattle reduction
Dampening effect

RILSAN®
FINE POWDERS



“Smart” surfaces

Anti-static, anti-dust
properties
High clarity & high quality
look

PEBAX®
RILSAN®
CLEAR



Key fobs

Aesthetic
Durability
Soft-touch
Exceptional flex-fatigue
performance

PEBAX®
RILSAN®

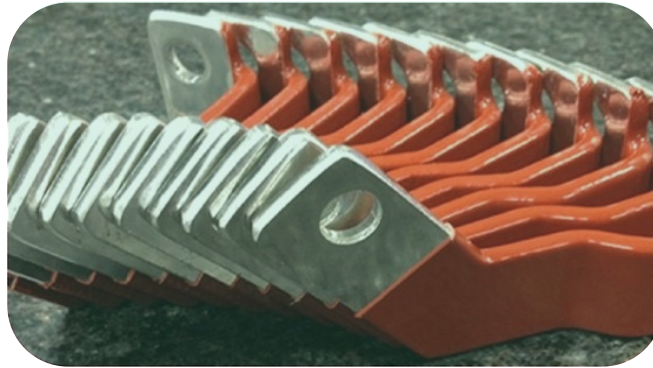
New Energy Vehicles



Lithium ion batteries

Chemical resistance
High temperature resistance

KYNAR®



Bus Bars

Dielectric resistance
Fire resistance
Ease of processing
Bending ability

RILSAN®

RILSAN®
FINE POWDERS



Courtesy Kautex – 320L Rilsan® PA11 liner H₂ tank

H₂ lines & tanks

Low permeation to H₂
Processability
High impact resistance

RILSAN®

RILSAN®
FINE POWDERS

© Copyright 2021 Arkema – All rights reserved. Do not copy without express permission from Arkema.

Rilsan®, Pebax®, Rnew®, Virtucycle®, Kynar®, Kynar 500®, Kynar Aquatec®, Kepstan®, Orgasol®, FSF® are registered trademarks of Arkema.

Arkema strictly prohibits the use of any polymers, including medical grades, in applications that are implanted in the body or in contact with bodily fluids or tissues for greater than 30 days. Unless Arkema otherwise expressly agrees by written contract, the Arkema trademarks and the Arkema name shall not be used in conjunction with customers' medical devices, including without limitation, permanent or temporary implantable devices, and customers shall not represent to anyone else, that Arkema allows, endorses or permits the use of Arkema products in such medical devices. Further, all implantable medical devices, whether permanent or temporary, carry a risk of adverse consequences. With regard to implantable medical devices, you should not rely upon the judgment of Arkema. Any decision regarding the appropriateness of a particular medical device in a particular medical application or for a specific clinical use should be based upon the judgment of your physician, medical device supplier and the United States Food & Drug Administration and/or the European process of Medical Device notification. Unless otherwise specifically stated by Arkema in writing, Arkema does not perform clinical medical studies on implantable medical devices. Arkema cannot weigh the benefits against the risks of a device and does not offer a medical judgment on the safety or efficacy of use of any Arkema product in a medical device. 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 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 any use of the product or reliance on such information; NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, IS MADE CONCERNING THE GOODS DESCRIBED OR THE INFORMATION PROVIDED HEREIN. The information provided herein relates only to the specific product designated and may not be applicable when such product is used in combination with other materials or in any process. The user should thoroughly test any application before commercialization. Nothing contained herein constitutes a license to practice under any patent and it should not be construed 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.