



Rilsan® Fine Powders for Automotive and Transportation

January 2022



1

Rilsan® Fine Powders Properties and Process

RILSAN® POLYAMIDE 11: A BIO-BASED SOLUTION



CASTOR PLANT

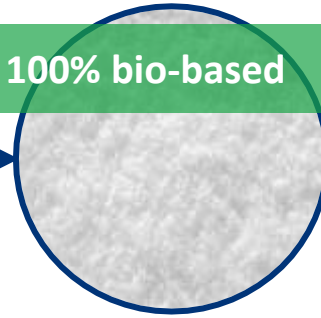


CASTOR SEEDS



CASTOR OIL

100% bio-based



AMINO 11



POLYMERIZATION



- No Food Competition
- From Semi-arid to sub-tropical
- Sustainable Farming
- From Annual to Short Cycle Crop Rotation
- Non GMO



Rilsan® PA11, Rilsan® Fine Powders **PA 11** 100%

% Renewable Content (ASTM D6866)

RILSAN®
FINE POWDERS

Rilsan® Fine Powders & Orgasol® markets



Additive manuf.
-Laser Sintering

Drivers:
Cost per part,
Reliability, Parts
Performance



**Additive for
cosmetics**



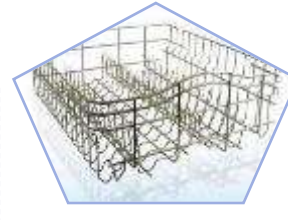
**Additive for
aerospace
composites**

Drivers:
Lightweight,
Productivity,
Maintenance
Cost



**Additive for
Industrial coating**

Drivers:
Cost
Regulation
Performance
Appearance



**Dish washer
basket**

Drivers:
Cost, Energy
efficiency
Chinese market



**Powder Coating
Water**

Drivers:
Specifications,
Regulation, Cost



**Powder Coating
Transportation**

Drivers:,
Emerging countries,
Cost
Energy efficiency
Comfort of driving
Electrical insulation



**Industrial Powder
Coating
diversification**

Drivers:
Economy, Cost,
Performance,
Environmental

Material

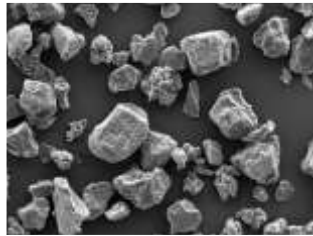
Additive

Coating

Rilsan® Fine Powders Properties

PA 11 based powder

Key properties



- ★ Adjustable particle size from 30 to 100µm
- ★ Sharp melting point 186°C
- ★ Excellent Chemical resistance
- ★ High mechanical properties & abrasion resistance
- ★ Outstanding flexibility
- ★ Excellent impact resistance
- ★ Protection against corrosion



A wide range of powders to protect your metal – Durable by nature



Responsible Care

Rilsan® Fine Powders – Thermosplastic

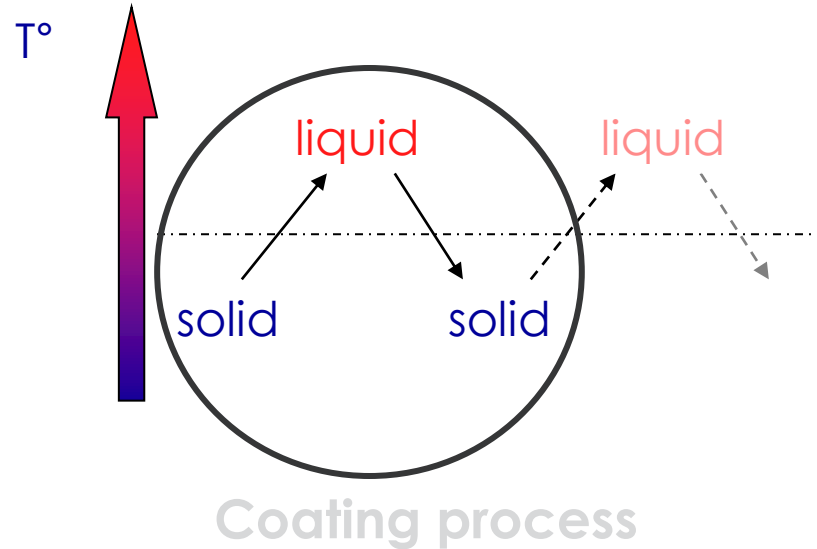
Thermoplastics



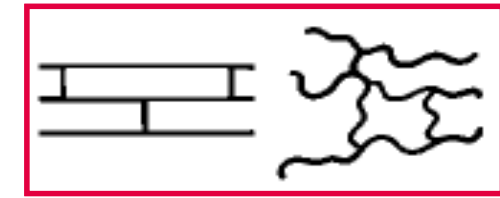
No chemical reaction during application.

→ coating application is merely through physical change of state

Examples: **RILSAN®**, **KYNAR®**, **PEBAX®**, **KEPSTAN®**, PVC .



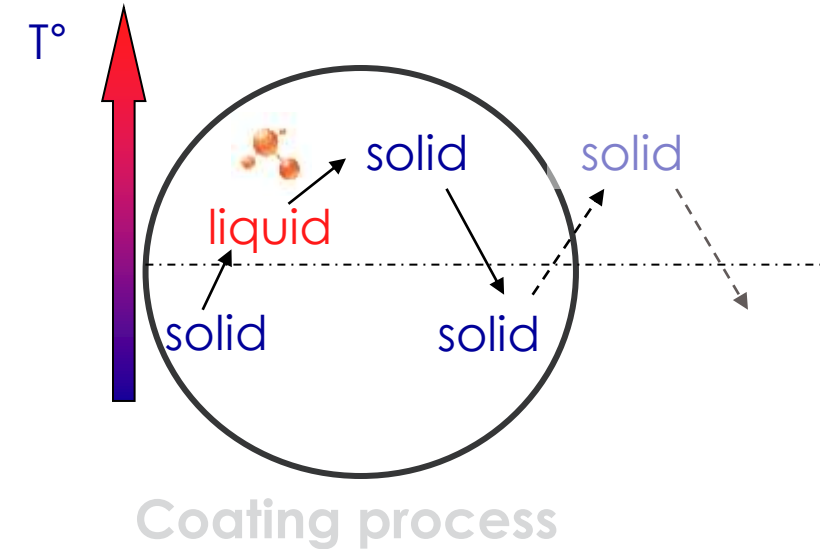
Thermosettings



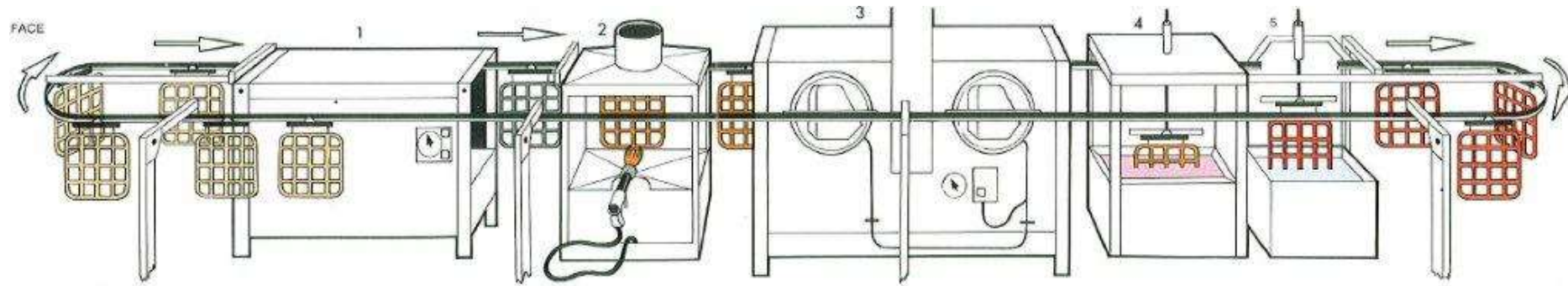
Coating application involves **chemical reaction**

→ optimized control of application conditions required to obtain optimized coating performance

Examples: FBE, Polyesters, Polyurethanes



Rilsan® Fine Powders – Fluid Bed Dipping Process



DIPPING PROCESS



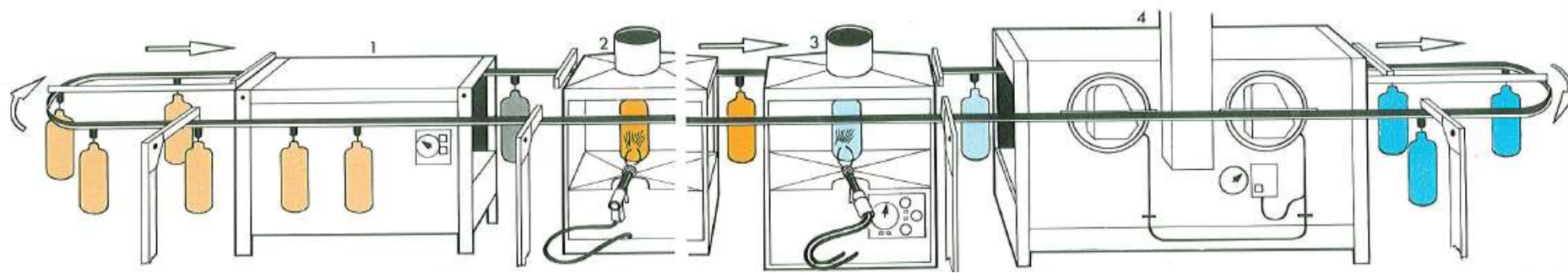
Rilsan® Fine Powders – Electro Spray Process

Surface Preparation (surface cleaning + roughening + priming)

Spraying

Heating

Cooling



ELECTROSPRAY PROCESS



2

Automotive and Transportation - Applications and examples

Main applications

→ Shafts and gearbox fox

Friction Reduction
Durability

- Abrasion resistance
- Wear resistance
- Chemical resistance
- Impact Resistance



→ Door Rails

Friction Reduction
Noise Reduction
Stone chipping Resistance
Durability

- Abrasion resistance
- Wear resistance
- Impact Resistance



→ Dog guards / Nudge bars

Stone chipping Resistance
Durability

- Abrasion resistance
- Wear resistance
- Impact Resistance



→ Small parts (hooks, clips, springs)

Noise Reduction
Durability

- Abrasion resistance
- Wear resistance
- Impact Resistance



Wheel weights

→ Strap bands

Bendability
Corrosion resistance
Stone chipping Resistance
Durability

- Chemical resistance (brake fluid, fuel, grease, oil)
- Impact resistance
- UV resistance



→ And many more...

Hood support
Seat Components
Sunroof cables
Handrails
Anti-theft devices
Fuel line



Electrical Applications and Battery components

ENERGY & ELECTRICAL SIGNAL

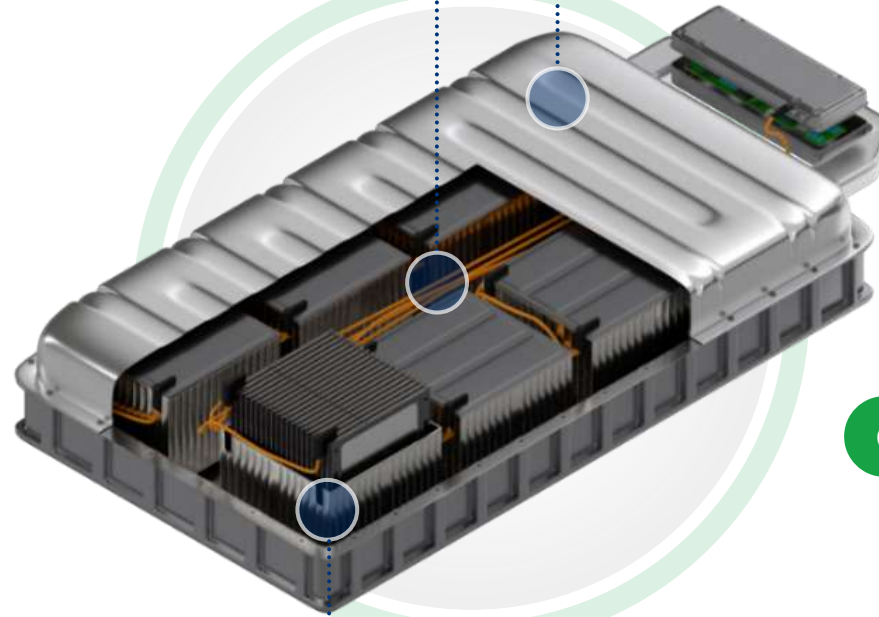
Busbars & Connectors



THERMAL MANAGEMENT

Intercell cooling elements coating

Source DANA



BATTERY PACK ASSEMBLY

Battery rack coating



Customer Benefits



Process flexibility to optimize the design and production

Proven insulation properties

Flexibility

Impact resistance

Temperature resistance

Corrosion resistance

Pebax® Thermoplastic Elastomers : Extra Grip and Noise reduction



Roof racks & grips of all kinds

Thanks for your attention

Questions are welcome

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