**TECHNICAL DATA SHEET**

Pulron 101ES Thermoplastic Coatings

**General Description:**

Pulron 101ES is a thermoplastic coating powder which has been specifically designed to provide a long-lasting protection for general exterior applications. It is based on acid-modified polyolefins and is applied by electrostatic spray. 101ES is resistant to adverse weather conditions, detergents, salt spray and typical airborne pollutants.

**Recommended Coating Conditions:**

It is recommended that chemical cleaning or sand blasting in SA 2,5 quality. Phosphatation or chromatizing is also recommended to obtain excellent adhesion and special corrosion resistance. When the powder is applied using corona discharge gun, the voltage 50-80 kV is ideal for coating. Post heat temperature and heating time must be optimized depending on metal thickness and process conditions.

**Typical Properties of the Powder:**

| | |
|---|---|
| Coverage (% 100) | 5,3 $m^2$/kg (at 200 microns) |
| Particle size | <250 microns |
| Bulk density | 0,40 gr/$cm^3$ |
| Packaging | Polyethylene bag and 15 kg cardboard boxes |

**Typical Properties of the Material**

| | | | |
|---|---|---|---|
| Density | gr/$cm^3$ | 0,95 | ASTM D 792 |
| Tensile Strength | MPa | 10 | ISO 527 |
| Elongation | % | 470 | ISO 527 |
| Hardness | Shore D | 44 | ASTM D 2240 |
| Vicat Softening Point | °C | 73 | ASTM D 1525 |
| Melting Point | °C | 93 | ISO 11357 |
| Tear Strength | N/mm | 60 | ASTM D 1938 |
| Environmental Stress Cracking | Hour | >1000 | ASTM D1693 |
| Toxicity Index | | 1,8 | NES 7 |
| Dielectric Strength* | KV/mm | 18,8 | IEC243 VDE0303 |
| Volume Resistivity* | Ohm.cm | $>10^{13}$ | ASTM D 257 |
| Surface Resistivity* | Ohm | $>10^{13}$ | ASTM D 257 |

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**Typical Properties of the Coating**

| | | | |
|---|---|---|---|
| Coating Thickness (Recommended) | Micron | 200-350 | |
| Gloss | | 85 | ASTM D 523 |
| Impact Strength | N.m | 10 | ISO 6272 |
| Taber Abrasion | mg | 11 | ASTM D 4060/87 |
| Salt Spray | Hour | 1000 | ISO 9227 |

Chemical Resistance

| | |
|---|---|
| - Dilute Acids 60 $^{o}$C | Good |
| - Dilute Alkali 60 $^{o}$C | Good |
| - Salt (except peroxides) 60 $^{o}$C | Good |
| - Solvents 23 $^{o}$C | Poor |

| | | | |
|---|---|---|---|
| Corrosion Resistance | | C5-M High | ISO 12944 |
| | | Im3 High | |
| Adhesion | | Gt 0 | ISO 2409 |
| Gloss Retention after QUV (1000 h) | % | ≥ 50 | ASTM D-4587 |
| Flammability | | $V_0$ | UL94 |
| Working Temperature | | 60 $^{o}$C max. | (Continuous in air) |

*: The raw material was tested

Pulron Thermoplastic Coatings by

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# TECHNICAL DATA SHEET

## Pulron 201FB Thermoplastic Coatings

**General Description:**

Pulron 201FB is a thermoplastic coating powder which has been specifically designed to provide hard coating. It is based on grafted polyolefins and is applied by fluidized bed systems. Thanks to being hard material, 201 FB has excellent scratch and abrasion resistance.

**Recommended Coating Conditions:**

It is recommended that chemical cleaning or sand blasting in SA 2,5 quality. Phosphatation or chromatizing is also recommended to obtain excellent adhesion and special corrosion resistance.

**General Applying Conditions:**

| | |
|---|---|
| Metal pre-heating: | 300°C, 10 min |
| Dipping time: | 3-5 sec |
| Metal post-heating: | 180°C, 5 min (Cooling is optional) |

Post heat temperature and heating time must be optimized depending on metal thickness and process conditions in your systems.

**Properties of the Powder:**

| | |
|---|---|
| Coverage (%100) | 2.85 $m^2$/kg (at 350 microns) |
| Particle size | <350 microns |
| Bulk density | 0,50 $gr/cm^3$ |
| Packaging | Polyethylene bag and 15 kg cardboard boxes |
| Storage | Stored in a clean dry area (< 27°C) and out of sunlight |

**Performance Properties of Material**

| | | | |
|---|---|---|---|
| Density | $gr/cm^3$ | 0,90 | ASTM D 792 |
| Tensile Strength | MPa | 14 | ISO 527 |
| Elongation | % | 1500 | ISO 527 |
| Hardness | Shore D | 60 | ASTM D 2240 |
| Vicat Softening Point | °C | 105 | ASTM D 1525 |
| Melting Point | °C | 135 | ISO 11357 |
| Flammability | | $V_0$ | UL 94 |
| Surface Resistivity | Ohm | $>10^{13}$ | ASTM D 257 |
| Gloss | | 20 | ASTM D 523 |
| Taber Abrasion (CS-17, 500 g load, 1000 cycler) | mg | 7mg | ASTM D 4060/87 |
| Salt Spray | Hour | 1000 | ISO 9227 |
| Impact Strength | N.m | 10 | ISO 6272 |

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**TECHNICAL DATA SHEET**

Pulron 401FB Thermoplastic Coatings

## General Description:

Pulron 401FB is a thermoplastic coating powder which has been specifically designed to provide a long lasting protection for metal fences, other wire items and battery boxes. It is based on modified polyolefins and is applied by fluidized bed. 401FB is resistant to adverse weather conditions, detergents, humidity and typical airborne pollutants.

## Recommended Coating Conditions:

It is recommended to apply chemical cleaning or sand blasting in SA 2,5 quality. Phosphatation is – unnecessarily - also recommended to obtain excellent adhesion and special corrosion resistance. Recommended pre-heating temperature is 300-350°C for 10 minutes. Heating temperature and duration must be optimized depending on metal thickness and process conditions. Recommended dipping time should be between 3-5 seconds depending on the desired thickness. Post- heating is optional and it is advisable to heat at 200°C for 2 minutes.

## Properties of Powder:

| | |
|---|---|
| Coverage (% 100) | 3,1 $m^2$/kg (at 350 microns) |
| Particle size | <350 microns |
| Bulk density | 0,30 gr/$cm^3$ |
| Packaging | Polyethylene bag and 15 kg cardboard boxes |
| Storage | Stored in a clean dry area (< 27°C) and out of sunlight |

## Performance Properties of Material

| | | | |
|---|---|---|---|
| Density | gr/$cm^3$ | 0,94 | ASTM D 792 |
| Tensile Strength | MPa | 10,4 | ISO 527 |
| Elongation | % | 280 | ISO 527 |
| Hardness | Shore D | 50 | ASTM D 2240 |
| Melting Point | °C | 121 | ISO 11357 |
| Flammability | | $V_0$ | UL 94 |
| Volume Resistivity* | Ohm.cm | >$10^{13}$ | ASTM D 257 |
| Surface Resistivity* | Ohm | >$10^{13}$ | ASTM D 257 |
| Gloss | | 60 | ASTM D 523 |
| Taber Abrasion | mg | 30 | ASTM D 4060/87 |
| Salt Spray | Hour | 500 | ISO 9227 |
| Impact Strength | N.m | 10 | ISO 6272 |
| Gloss Retention after QUV (1000 h) | % | ≥ 50 | ASTM D-4587 |

**:* *The tests were performed by raw material.*

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# TECHNICAL DATA SHEET

## Pulron 601RL/601FS Thermoplastic Coatings

**General Description:**

Pulron 601 series is designed for coating inside of fire extinguishers or metal tubes/pipes via rotolining and/or flock spray method. It is a blend of polyolefins and result of its nature, 601 series has an excellent resistance to aqueous environments, including the foaming agent AFFF and is also resistant to antifreeze.

**Recommended Coating Conditions:**

Degreasing and sandblasting (Swedish Standard SA 2½) are recommended as pretreatment. Iron phosphatation is also recommended to obtain excellent adhesion and special corrosion resistance.
Metal pre-heating: 220°C- 280°C
Application and postheat times must be optimized depending on metal thickness and type.

**Properties of the Powder:**

| | |
|---|---|
| Coverage (%100) | 1.5 $m^2$/kg (at 800 microns) |
| Particle size | <350 microns |
| Bulk density | 0,35 gr/$cm^3$ |
| Packaging | Polyethylene bag and 15 kg cardboard boxes |
| Storage | Stored in a clean dry area (< 27°C) and out of sunlight |

**Performance Properties of Material**

| | | | |
|---|---|---|---|
| Density | gr/$cm^3$ | 0,95 | ASTM D 792 |
| Tensile Strength | MPa | 6 | ISO 527 |
| Elongation | % | 140 | ISO 527 |
| Hardness | Shore D | 40 | ASTM D 2240 |
| Vicat Softening Point | °C | 80 | ASTM D 1525 |
| Melting Point | °C | 103 | ISO 11357 |
| Flammability | | $V_0$ | UL 94 |
| Dielectric Strength* | KV/mm | 18.8 | IEC243 VDE0303 |
| Volume Resistivity* | Ohm.cm | $>10^{13}$ | ASTM D 257 |
| Surface Resistivity* | Ohm | $>10^{13}$ | ASTM D 257 |
| Taber Abrasion** | mg | 41 | ASTM D 4060/87 |
| Salt Spray*** | Hour | 1000 | ISO 9227 |
| Impact Strength | N.m | 10 | ISO 6272 |
| QUV | Hour | 1000 | ASTM 0-4587 |

*: The tests were performed by raw material.
**: CS-17 wheel, 500g load, 1000 cycles.
***: Loss of adhesion less than 10 mm from scribe.

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