

Uraflex EU222

Aliphatic polyurethane elastomer with reactive hydroxyl groups

Delivery form
Uraflex EU222 M1

51% in n-butyl acetate/
N-methyl-2-pyrrolidone = 95/5

Applications

Plastic coatings

- Clear and pigmented coatings
Automotive
- Primers and metallic base coats for plastic substrates

Principal properties

- Adhesion
- Flexibility

Uraflex EU222 M1 is an aliphatic polyurethane elastomer with reactive hydroxyl groups, which in combination with polyisocyanate resins, e.g. Tolonate HDB⁸⁾ or Desmodur N⁶⁾, provides flexible coating systems with good adhesion to many plastic substrates.

Dilutability (resin solution/solvent = 1/1)

| | | |
|------------------------|----|----------|
| Xylene | | complete |
| Solvesso 100 | 7) | complete |
| Methoxy propyl acetate | | complete |
| Ethyl acetate | | complete |
| n-Butyl acetate | | complete |
| Methyl ethyl ketone | | complete |
| Methyl isobutyl ketone | | complete |
| N-methyl-2-pyrrolidone | | complete |

Compatibility

| | | |
|------------------------------|-----|----------------|
| Vynilite VAGH, VAGD | 9) | limited |
| Vynilite VYES, VROH, VMCM | 9) | not compatible |
| CAB 531-1, 551-0.01, 551-0.2 | 10) | not compatible |
| Nitro cellulose H9 | 11) | limited |
| Nitro cellulose H28, E330 | 11) | complete |
| Desmodur N 75 | 6) | complete |
| Tolonate HDB 75 | 8) | complete |
| Uraflex EU221 M1 | | complete |
| Laropal A81 | 12) | complete |

Recommendations on formulation and use

Clear films of Uraflex EU222 M1 are after crosslinking with 18% Desmodur N⁶⁾ (solid/solid) very flexible and hard (100 sec. König hardness at 30 micron film thickness). Uraflex EU222 M1 can be combined with Uraflex EU221 M1 to improve the flexibility. The mechanical properties of the 60/40 to 80/20 (Uraflex EU222 M1/EU221 M1) combinations resemble those of Uraflex EU220 M1. Pigmentation is preferably done straight into the Uraflex with the usual equipment and paint additives. Drying at elevated temperatures, e.g. 15 min. 80 °C is recommended. The addition of 0.25%-0.50% acetic acid (solid/solid) improves the potlife of the Uraflex EU222 M1/isocyanate system.

Product specifications

| Specification | Range | Unit | TM |
|------------------|-------|----------|-------|
| Viscosity, 23°C | 4-6 | Pa.s | 2013 |
| Colour, Lico 200 | 0-1 | G | 2017 |
| Solids content | 50-52 | % | 2026B |
| Appearance | clear | - | 2265 |
| Amine number | 0-1 | mg KOH/g | 3001 |

Other product data

| Property | Value | Unit | TM |
|---------------|-------|-------------------|------|
| Density, 23°C | 987 | kg/m ³ | 2160 |
| Flash point | 28 | °C | 2800 |

Storage conditions

Uraflex EU222 should be stored indoors in the original, unopened and undamaged containers in a dry place at storage temperatures between 5 °C and 30 °C. Exposure to sunshine should be avoided.

Shelf life

Under the above mentioned storage conditions the shelf life of Uraflex EU222 will be 6 months ex works. The viscosity of this type of resin could change during storage. It is for this reason recommended to check the viscosity before use.

Remark

Uraflex resins are high molecular weight polymers with a limited solubility. This limited solubility could result in partial separation of the resin during storage especially at low temperatures. This separation is a reversible process and the resin can be homogenised easily by mixing at slightly elevated temperatures.

Starting formulations**a. Grey primer for plastics (PU 222-1) weight**

| | | |
|------------------|----|-----|
| Uraflex EU222 M1 | | 71 |
| n-Butyl acetate | | 158 |
| Blancfixe micro | 1) | 146 |
| Kronos 2065 | 2) | 146 |
| Micro-Talc AT1 | 3) | 54 |
| Flammruss 101 | 4) | 1.0 |
| Anti Terra U | 5) | 4.0 |

Disperse in a ball mill and let down with

| | | |
|------------------|--|-----------|
| Uraflex EU222 M1 | | 342 |
| n-Butyl acetate | | <u>78</u> |
| | | 1000 |

| | | |
|---|----|-------|
| Acetic acid 10% in n-butyl acetate | | 10.3 |
| Viscosity, DIN cup 4, sec. | | 120 |
| Solids content, % | | 56 |
| Crosslink with Desmodur N75 | 6) | 53.70 |
| Spray viscosity, DIN cup 4, sec. | | 18 |
| Spraying thinner: | | |
| n-Butyl acetate/Diacetone alcohol = 7/3 | | |
| Solids content at spray viscosity, % | | 43 |

b. Base coat for ABS (PU 222/4) weight

| | | |
|------------------------|--|------------|
| Uraflex EU222 M1 | | 500 |
| Aluminium paste* | | 350 |
| Methoxy propyl acetate | | <u>150</u> |
| | | 1000 |

| | | |
|---------------------------------|----|----|
| Crosslink with Desmodur N (75%) | 6) | 65 |
|---------------------------------|----|----|

*** Aluminium paste**

| | | |
|------------------------|-----|------------|
| Sparkle Silver 3122 AR | 13) | 500 |
| Xylene | | 375 |
| Cerafac 100 | 14) | <u>125</u> |
| | | 1000 |

| | | |
|--|-----------------|-------|
| Viscosity, DIN cup 4, sec. | | 80 |
| Solid content, % | | 39 |
| Spraying viscosity, DIN cup 4, sec. | | 15 |
| Spraying thinner | n-butyl acetate | |
| Solid content at spraying viscosity, % | | 26-28 |

- 1) Sachtleben Chemie GmbH
- 2) Kronos Titan GmbH
- 3) A/S Norwegian Talc
- 4) Degussa
- 5) Byk-Chemie GmbH
- 6) Bayer AG
- 7) Exxon Chemical
- 8) Rhune Poulenc
- 9) Union Carbide
- 10) Eastman Chemical Company
- 11) Wolff Walsrode AG
- 12) BASF AG
- 13) Silberline Ltd.
- 14) Cera Chemie