

UROTUF F100-W-36

Product Code 91795-00

Waterborne Oil Modified Urethane

DESCRIPTION

UROTUF F100-W-36 is an anionic stabilized dispersion of an oil modified urethane polymer provided at 37% solids in water. This resin is similar to UROTUF F97 but contains no cosolvent.

APPLICATION

- Contractor and do-it-yourself finishes
- Wood floor finishes
- Exterior spar varnishes
- Pigmented topcoats and primers
- Interior and exterior stains
- Concrete coating

FEATURES

- Cosolvent free
- One-package, self crosslinking system
- Quick drying
- Long term package stability

BENEFITS

- Choice of low toxicity cosolvents
- Excellent mar and abrasion resistance
- Excellent stain and chemical resistance
- Multiple coats in same day

TYPICAL WET PROPERTIES

| | | | |
|--------------------------------|------|----------------|-------|
| Neutralizer , % ⁽¹⁾ | 1.6 | Density, #/gal | 8.529 |
| Cosolvent, % ⁽²⁾ | None | VOC, #/gal | 0.08 |
| Solids, % | 37.4 | VOC, g/l | 9 |
| Acid # | 10.1 | | |
| pH | 8.61 | | |
| Viscosity, cps ⁽³⁾ | 730 | | |
| Viscosity, stokes | 7.0 | | |

(1) Triethylamine

(2) N-Methyl pyrrolidone

(3) Brookfield DVI-C/P, Cone #40

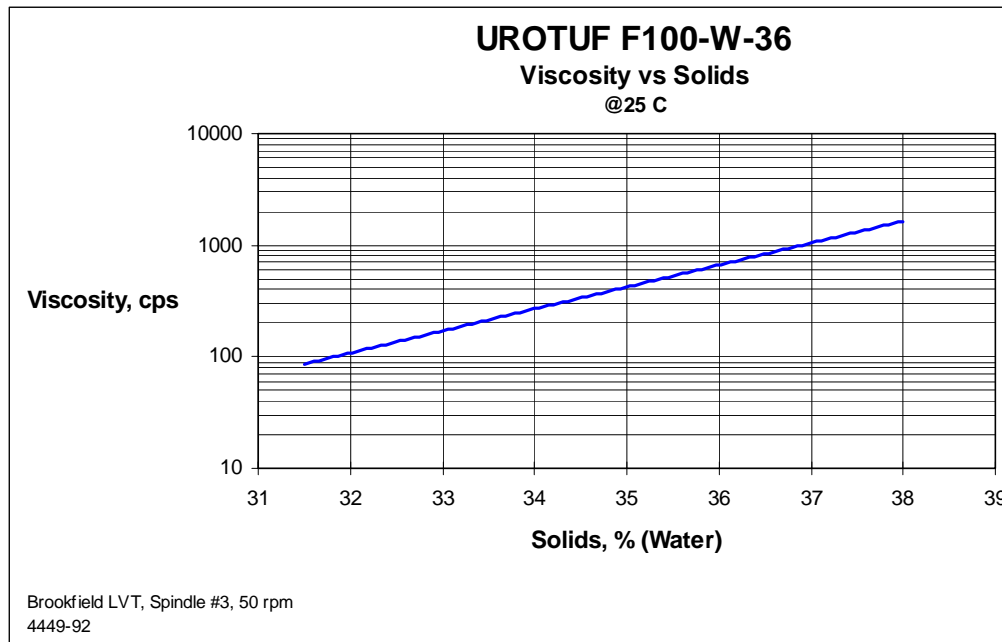
The information herein is general information designed to assist customers in determining whether our products are suitable for their applications. Our products are intended for sale to industrial and commercial customers. We require customers to inspect and test our products before use and to satisfy themselves as to contents and suitability for their specific applications. We warrant that our products will meet our written specifications. **Nothing herein shall constitute any other warranty express or implied, including any warranty of merchantability or fitness for a particular purpose**, nor is any protection from any law or patent to be inferred. All patent rights are reserved. The exclusive remedy for all proven claims is limited to replacement of our materials and in no event shall we be liable for special, incidental or consequential damages.

STORAGE

Store **UROTUF F100-W-36** at less than 100 °F and avoid freezing to ensure maximum shelf life. If frozen, warm to room temperature for 24 hours and mix well. Recovery after freezing may take several days. Minimize exposure to air or oxygen to avoid premature oxidation.

Read the UROTUF F100-W-36 Material Safety Data Sheet before handling or using this product.

DILUTION CURVE



FORMULATIONS

Cosolvent Options

| | BP, C | ER * | Viscosity cps | Mar Resistance |
|---------------------------------------|--------------|-------------|----------------------|-----------------------|
| Dipropylene glycol mono methyl ether | 180 | 0.020 | 58 | 2 |
| Tripropylene glycol mono methyl ether | 243 | 0.003 | 56 | 1 |
| Propylene glycol mono propyl ether | 149 | 0.210 | 129 | 4 |
| Propylene glycol mono butyl ether | 171 | 0.090 | 324 | 2 |
| Isobutanol | 108 | 0.600 | 284 | 2 |

* Evaporation Rate, Butyl acetate = 1.00

VARNISH FORMULATION

| | UROTUF F100-36 ⁽¹⁾ | | UROTUF F97-33 | |
|---|-------------------------------|---------------|----------------|---------------|
| | Weight | Volume | Weight | Volume |
| 1. UROTUF Resin | 723.960 | 85.07 | 756.595 | 88.59 |
| 2. Water, DI | 31.314 | 3.76 | 31.512 | 3.78 |
| 3. Mn (9%) Hydrocure III ⁽²⁾ | 1.253 | 0.15 | 1.260 | 0.15 |
| 4. Water, DI | 38.084 | 4.57 | 0.000 | 0.00 |
| 5. Dowanol DPM ⁽³⁾ | 38.084 | 4.82 | 0.000 | 0.00 |
| 6. BYK 345 ⁽⁴⁾ | 1.253 | 0.14 | 1.260 | 0.15 |
| 7. Water, DI | 12.365 | 1.48 | 61.048 | 7.33 |
| Total | 846.311 | 100.00 | 851.677 | 100.00 |

Varnish Properties

| | | |
|-------------------------------|------|------|
| Solids, % | 30.3 | 30.2 |
| pH | 8.33 | 8.13 |
| Viscosity, cps ⁽⁵⁾ | 29 | 28 |
| Viscosity, stokes | 0.40 | 0.62 |
| VOC, #/gal | 1.46 | 1.48 |
| VOC, g/l | 175 | 177 |

(1) NV = 35.1

(2) OM Group; premix 1:25 with water using mild agitation then add to resin under agitation; 450 ppm on resin solids.

(3) Cosolvent required to coalesce film properly; premix 1:1 with water prior to addition under agitation

(4) Byk Chemie

(5) Brookfield RVT-C/P, Cone #40

Formulating directions:

1. Premix Items 2 and 3 in sequence with mild agitation then without delay gradually add to Item 1 under agitation
2. Premix Items 4 and 5 in sequence with moderate agitation then gradually add to the Step 1 blend under agitation.
3. Add Items 6 and 7 in sequence to the Step 2 blend and continue to mix until homogeneous
4. Filter (10 micron) and package. Allow to stand at least 7 days before use.

FILM PERFORMANCE ⁽¹⁾

| | UROTUF F100-36 | UROTUF F97-33 |
|---|-----------------------|----------------------|
| Dry Time, hr:min | | |
| Set | 0:10 | 0:10 |
| Thru | 0:25 | 0:25 |
| Hard | 0:35 | 0:40 |
| Tack Free (200 g), hrs:min | 0:40 | 0:50 |
| Tack Free (500 g), hrs:min | 0:45 | 0:55 |
| Sward Hardness | 36 | 42 |
| Konig Hardness | 78 | 100 |
| Pencil Hardness | H | H |
| Mar Resistance, g ⁽²⁾ | 200 | 100 |
| Mar Resistance, days ⁽³⁾ | 1 | 1 |
| Impact Resistance, in-lbs | | |
| Direct / Reverse | 160 / 160 | 160 / 160 |
| Mandrel Bend, 1/8" | Pass | Pass |
| Abrasion Resistance, mg loss ⁽⁴⁾ | 55 | 54 |
| Film Color: ⁽⁵⁾ | | |
| "L" Value | 91.13 | 91.06 |
| "a" Value | -0.94 | -0.94 |
| "b" Value | 4.71 | 4.89 |
| Yellowing Index | 8.44 | 8.79 |
| Gloss | | |
| 60 degrees | 90 | 91 |
| 20 degrees | 68 | 74 |

- (1) Drier sweat-in for 7 days prior to film application, film aged 7 days @RT before testing
- (2) Hoffman Tester, loop stylus, weight required to mar film
- (3) Time to develop mar resistance, finger nail scratch test
- (4) Taber, CS-17 wheels, 1000 cycles, 1 Kg load
- (5) 3 MWF applied to Leneta chart

UROTUF F100-36

UROTUF F97-33

| | | |
|---|-------|-------|
| Chemical Resistance, average ⁽⁶⁾ | 3.88 | 3.96 |
| Acetic acid, 10% | 5 | 5 |
| Ammonia, Parson's | 5 | 5 |
| Ball point ink | 2 | 2 |
| Black marker | 1 | 1 |
| Cleaner 409 | 5 | 5 |
| Coffee | 5 | 5 |
| Dye | 2 | 2 |
| Ethanol, 50% | 3 | 5 |
| Iodine | 1 | 1 |
| Ketchup | 5 | 5 |
| Lipstick | 5 | 5 |
| Merthiolate | 5 | 4 |
| Mustard | 3 | 3 |
| Nitric acid, 2% | 5 | 5 |
| Olive oil | 5 | 5 |
| Polish remover | 5 | 5 |
| Shoe polish | 2 | 3 |
| Sodium hydroxide, 10% | 0 | 0 |
| Spic & Span, 1% | 5 | 5 |
| Sulfuric acid, 10% | 5 | 5 |
| Sunblock, SPF-30 | 3 | 3 |
| Tea | 5 | 5 |
| Vinegar | 5 | 5 |
| Water | 5 | 5 |
| Windex | 5 | 5 |
| Chemical Resistance, totals | 97 | 99 |
| Solvent Rubs, dbl | | |
| Ethanol | > 200 | > 200 |
| Xylene | > 200 | > 200 |
| Isopropanol | > 200 | > 200 |
| Methyl ethyl ketone | > 200 | > 200 |

(6) ASTM D1308, 4 hour exposure, covered, rating 0-5 no effect