



**In Union,
there is strength.**



UNITHANE IC-438 SF

Revision Date: 06/21

Reviewed: 06/21/21

RECOMMENDED FOR USE WITH:

Paint and Coating Resins

UNITHANE IC-438 SF is a NMP and APEO free, uniquely hard waterbased polyurethane designed specifically for use in a formulating topcoat for concrete, metal, wood and selected plastics. UNITHANE IC-438 SF produces an extremely clear, high gloss coating with exceptional abrasion and chemical resistance properties.

SPECIAL FEATURES

Solvent Free (SF), NMP-Free (NF), Low VOC (<50 g/L)

APPLICATION TYPES

Interior, Automotive, Synthetic Leather, Flooring, Wood, Concrete, Paint, Plastics - Rigid

TYPICAL SPECIFICATIONS

TOTAL SOLIDS: 36 - 38

pH: 7.5 - 9.0

VISCOSITY @ 25 DEGREES C: 10 - 250

VOC (GRAMS/LITER): 10.0-20.0

VOC (% OF TOTAL WEIGHT): 1.0-2.0

SPECIFIC GRAVITY: 1.01-1.04

APPEARANCE: Semi-translucent

GLOSS @60°: 70 - 100

FREEZE/THAW CYCLES D2243: 3

SHELF LIFE: Maximum 12 months

HARMONIZE TARIFF NUMBER: 3909.50.6000

*note: 5= no damage, films dried for 15 minutes at 80°C,
then equalized at room temp for 7 days*

WATER: 5

ACETIC ACID: 5

METHYL ETHYL KETONE: 3

2-PROPANOL: 3

TOLUENE: 5

GASOLINE: 5

TYPICAL FILM PROPERTIES

TENSILE (D-882): 4840

TENSILE AT 100% ELONGATION: 2600 psi

ELONGATION (D-882): 331%

COLD CRACK (ISO 17233): below 30°C

SOFTENING POINT: 155°C

PENCIL HARDNESS (D-3363): HB

SWARD HARDNESS (D-2134): 24.3

UV RESISTANCE (D-4587): No Damage (1000 hours at 340 nm)

IMPACT RESISTANCE (D-2794): No Damage at 160 psi Reverse,
Damage at 160 psi Direct

TABOR ABRASION (D-4060): 11 mg loss (CS-10, 1000g, 1000
cycles)

MANDREL BEND (D522): Pass 1/8, 1/4, 3/8, 1/2, 5/8, 3/4, 1

DRY TIME (D-5895): 89.3

HYDROLYSIS RESISTANCE (200 HOURS, 70°C, 95% RH): Retained
81% of Tensile Properties

COLD ROLL STEEL - UNPOLISHED: 5B

ALUMINUM - UNTREATED: 3B

BRASS - UNTREATED: 5B

ABS - UNTREATED: 0B

POLYCARBONATE - UNTREATED: 0B

NYLON - UNTREATED: 5B

HDPE - UNTREATED: 0B

Certified to ISO-9001: 2015

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