DESCRIPTION:

NUKOTE PU-pw is a pure aromatic polyurethane modified specifically to meet requirements for use in coating substrates utilised for storage and transmission of potable and drinking water. It is an ANSI/NSF 61 compliant and approved pure polyurethane barrier material Nukote PU-pw is tested and approved by many countries for applications on substrates in contact with potable water and food products. It is a plural component, 2:1 fast curing, 100% solids product suitable for steel, concrete and other substrates as a chemical, corrosion and abrasion resistant liner. This aromatic rigid polyurethane coating displays good chemical resistance and thermal stability. It is applied by a dedicated airless spray in single or multiple layers to form a tough but flexible uniform membrane

FEATURES:

- ANSI/NSF 61 approved for potable water
- Meets global migration standard US – FDA: 21 CFR 175 – 300
- 100% solids with zero VOC
- Fast reactivity and cure time resulting in fast return-to-service time
- Applicable in temperatures from -10 ºC and upwards
- Performs in constant temperatures from -10 ºC to +80 ºC dry
- Retains physical properties at -10 ºC to +80 ºC
- Good elongation properties
- Seamless, resilient, flexible and tough
- Impact, tear and abrasion resistance
- Resistant to many solvents, acids and alkalis (consult NCSI)

TYPICAL USES:

- Potable water treatment plants and potable water pipelines
- Concrete / steel water storage tanks
- Desalination and water treatment plants
- Catering facilities, food processing plants, food preparation areas
- Dairies and livestock farming facilities
- Cold storage facilities and refrigerated vehicles
- Pharmaceutical, sterile and clean - room areas
- Aquariums, ponds, aqueducts and reservoirs

COLORS:

Off-white. Custom colors, blended to match any RAL number, are available upon request subject to minimum quantity.

PACKAGING:

150-gallon (570-liter) drum sets, shipped in 3 metal drums of 50 gallons (190 liters) of side A and 100 gallons (380 liters) side B.
15-gallon (57-liter) kits, shipped in 3 plastic pails of 5 gallons (19 liters) of side A and 10 gallons (38 liters) side B.

Also available in totes.

COVERAGE:

Nukote PU-pw may be applied at any rate to achieve the desired thickness.

Calculation for theoretical coverage: 80 Ft^2 /gal @ 20 mils (2 m^2/liter @ 500 micron).

TECHNICAL DATA (All values @ 77 ºF / 25 ºC)	**US**	**Metric**
Solids by volume (ASTM D2697)	100%	100%
Volatile organic compounds (ASTM D2369)	0 lb./gal	0 gm/ lit
Theoretical coverage	40 ft^2/gal @ 40 mils	1m^2/ lit @ 1mm
Specific Gravity of materials (ASTM D792)	A: 9.99, B: 8.7 lbs./gal	A-1.20, B-1.05 kg/ liter
Viscosity at 158 ºF/70 ºC in cps ±10% (ASTM D4878)	A-125, B-500	A-125, B-500
Shelf life @ 77 ºF /25 ºC	12 to 15 Months	12 to 15 Months
Tensile strength (ASTM D412-C)	2600 to 3000 psi	18 to 22 MPa
Elongation (ASTM D412-C)	20-30 %	20-30 %
Hardness (ASTM D2240)	60 – 70 Shore D	60 - 70 Shore D
Flexibility (2mm mandrel ASTM D522)	Pass	Pass
Water absorption -24 hours (ASTM D570)	~ 1 %	~ 1 %
Tear strength (ASTM D642)	350 - 400 pli	60 – 70 Kn/m
Impact Resistance (ASTM G14), No Holidays	> 150 in-lbf	> 17 J (N-m)
Flash point Pensky Martin	>200 ºF	>93 ºC
Service temperature (Dry)	-14 ºF to 176 ºF	-10 ºC to 80 ºC
Service temperature (immersion)	122 ºF	50 ºC
Abrasion Resistance (ASTM D4060) weight loss	< 20 mg loss Taber CS 17 wheel 1Kg/1000 rev	
PROCESSING PROPERTIES (Under standard lab conditions)		
Mix Ratio V/V	1:2	
Gel time	80-100 seconds	
Tack free time (DFT & Temperature dependent)	5 minutes	
Touch Dry	20 minutes	
Hard dry	60 minutes	
Post cure	24 hours	
Properties and values are highly dependent on equipment, spray gun, mix chamber temperature, pressure and related parameters. Variations are possible and expected.		

STORAGE:

Twelve to fifteen months in factory delivered, unopened drums. Store on pallets and keep away from extreme heat, freezing, and moisture. Store Side A (isocyanate) between 70 ºF and 95 º F (22 º and 35 ºC). The use of drum heaters is encouraged to reduce material viscosity at low temperatures

MIXING:

Nukote PU-pw might not be diluted under any circumstance. Thoroughly mix Nukote PU-pw Part B resin material with air driven power equipment until a homogeneous mixture and color is obtained. Always use dedicated spray equipment.

SURFACE PREPARATION:

Concrete:
The surface of a concrete subfloor should be dry, smooth, structurally sound and free of depression, scale, or foreign deposits of any kind. Remove all curing compounds. Abrasive blast, sweep blast or water blast to remove all latent material and expose voids. Use a good quality epoxy filler or mortar for void and spall filling, skim coat or repairs. Prime, fill imperfections in the substrate surface to limit out-gassing. All concrete substrates, on or below grade level should be tested for moisture content. On-grade or below-grade concrete floors or slabs should have a moisture barrier installed to protect from ground moisture. The surface preparation of concrete should meet and conform to Joint NACE 6/SSPC-SP 13 standards and achieve a concrete surface profile of CSP 3 to CSP 6 as per ICRI Guideline No.03732 for optimum performance.

Metal:
All surfaces should be clean and free from contamination. The surface should be assessed and treated in accordance with ISO 8504, Abrasive blast the surface to minimum NACE-2/SSPC SP-10/Sa 2.5, as per ISO 8501-1, for a visual assessment of surface cleanliness with an anchor profile of 3 to 4 mils (75 -100 microns). Soluble salts must be removed to an acceptable levels. ***Refer to NCSI surface preparation manual for detailed procedures for different types of substrates.***

APPLICATION:

This material must be applied utilizing high-pressure, heated plural component spray proportioning equipment, able to proportion and maintain a 1:2 ratio such as those manufactured by Graco®. The proportioning equipment utilized must be capable of supplying correct pressure and heat for the appropriate hose length on a consistent basis. Suitable equipment is Graco extreme ‘Hydro-Cat’ 45:1 Airless Spray unit at 2500 psi and with solvent flush capability. For optimum performance, the substrate should be hydro or abrasive blasted. The material temperature for spraying for side A (isocyanate) is 105º F (40 ºC) and side B (resin) is 122 ºF (50 ºC) .Concrete substrates should be allowed to cure a minimum of 30 days. On concrete, Nukote PU PW should always be applied over a suitable recommended primer for getting maximum adhesion. Steel should be cleaned to SA2.5 and minimum 75µm profile. Please review your specific project with regional Nukote entities for liner thickness. For all submersed and buried applications, a primer is recommended.

EQUIPMENT CLEAN UP:

Cured product may be disposed of without restriction. Uncured Isocyanate and resin portions should be mixed together and disposed of in accordance with local regulations. Containers should be disposed of according to local environmental laws and ordinances.

LIMITATIONS:

Do not open until ready to use, and store in a sealed container after opening. Adding a nitrogen blanket is strongly recommended for the 'A' component when storing after opening. Moisture sensitive

WARNING:

This product contains Isocyanate and curatives

CHEMICAL RESISTANCE:

Each Nukote product formulation has varying levels of resistance to specific chemicals. Please review the chemical immersion test data included in the Nukote Test Book for general resistance to specific chemicals at specific concentration levels. Chemical concentrations are complex and when combined with temperatures above ambient levels this complexity increases exponentially. Contact Nukote Technical Personnel for specific recommendations for chemical resistance prior to specifying these products in this application type. Consult with NCSI for more details on product and chemical resistance. The following chart is the results of Polyurethane immersed in chemicals and tested as per modified ASTM D 3912.

Chemicals	Resistance	Chemicals	Resistance
Hydrochloric acid upto 15%	R	Ammonium Hydroxide 20%	R
Sulphuric Acid 30 %	R	Ammonium Hydroxide 50%	RC
Phosporic Acid 60%	R	Sodium hydroxide 50%	R
Acetic Acid 5%	R	Pottasium hydroxide 20%	RC
Sea water	R	Ferric and Ferrous Chloride	R
Water @ 50 ºC	R	Sodium hypochlorite 17%	R
Diesel,	R	Octane, Heptane,Pentane	R
Fuel Oil 2,4,6	R	Motor Oil and Hydraluic oils	R
JP 5	R	Gasoline	RC

R = Resistant RC = Slight surface change or discolouration with no loss of hardness

WARRANTIES AND DISCLAIMERS:

Nukote Coating Systems International, a Nevada, USA Corporation warrants that the two components of this product shall conform to the technical specifications published in the product literature. The quality and fitness of the product is dependent upon the proper mixture and application of the components by the applicator. Nukote Coating Systems has no role in the application of the finished polymer other than to manufacture and supply its two components. It is vital that the person applying this product understands the product and is fully trained and certified in the use of plural component equipment and application of plural component materials. There are no warranties that extend beyond the description on the face of this instrument, except when provided in writing, directly by Nukote Coating Systems International and executed under seal by a company officer.