



GUARDIT SOLUTIONS

EcoBarrier™

CREATED USING NANOTECHNOLOGY

Permanent Anti Graffiti Coating



- In 2010 NTS Coatings acquired the exclusive rights for EcoBarrier in Australia.
- EcoBarrier was developed by leading nanotechnology group Nanokote Pty Ltd.
- Nanokote is a division of Australian company Micronisers Pty Ltd founded in 1987. Micronisers specializes in manufacturing nanotechnology-based products that are supplied to its customers as an ingredient in a final formulation. Extensive research with the CSIRO (Australia's preeminent scientific research organization) has resulted in numerous patents and state of the art commercial products. Micronisers is one of very few true nanotechnology companies that are successfully manufacturing and commercializing nanotechnology products.
- Micronisers have manufacturing and sales offices in Australia, Thailand, Malaysia, Indonesia, China and the UAE.
- NTS Coatings has 10 years experience in coating technology and application experience. The company supplies product and application for architectural and infrastructure projects Australia-wide.

What is Nanotechnology?

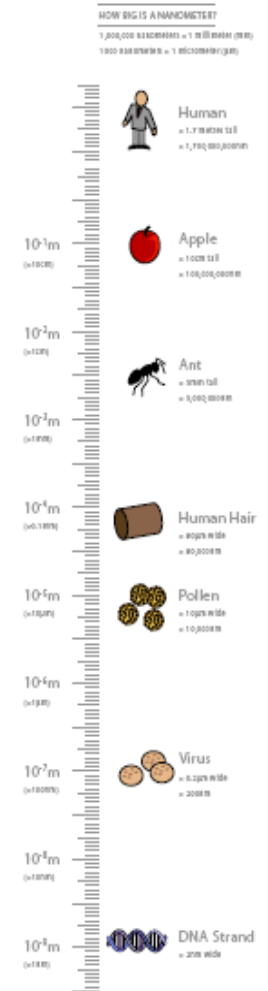
Nanotechnology deals with the study of molecular and atomic particles, a world that is measured in nanometers (billionths of a meter or 10^{-9}) and is 1000 times smaller than the human eye can see.

Working at this nano scale specifically designed molecular architectures and intelligent structures can be created.

These supra (nano) molecules provide superior, performance-enhancing attributes such as stronger, smoother, longer lasting, more flexible, smarter and less expensive surface coatings

At this scale substances can be created that form a very strong, permanent bond with the surfaces to which they're applied. In fact, in many ways they're really an extension of the surface itself, and the only way to remove them is to physically etch the surface.

By binding mineral and metal nanoparticles into our coating technology we are able to provide coatings that can perform a specific function be it anti-bacterial, anti-fungal, anti-stick etc...



Anti-Graffiti Barriers

- Not usually possible to prevent graffiti, removal methods must be both efficient and fast.
- The best method of easing graffiti removal is generally agreed to be the insertion of a barrier between the surface and the defacing material, such as paint spray, crayon or marker pen.
- Anti-graffiti barriers and coatings fall into three distinct categories.

Sacrificial Anti-Graffiti Coatings

- Sacrificial coatings are mostly based on easily removable waxes. After soiling with graffiti, both the wax and graffiti are removed together, sometimes with solvents or more commonly by melting the wax with steam or hot water.
- The biggest problem with this approach is that the coatings must be replaced after each removal operation, which is time consuming and expensive.

Semi-Permanent Anti-Graffiti Coatings

- Semi-permanent coatings are commonly based on acrylics or cross-linking systems, such as epoxy, urethane or polyester. They can be multi-coat systems that possess a moderate degree of resistance to aggressive cleaning chemicals.
- These coatings will normally withstand a few graffiti-removal operations with strong chemicals, but eventually attack by the removal chemicals makes replacement necessary.
- Aggressive removers are necessary as the marking media usually has some affinity for the coating and a degree of adhesion or diffusion of the marking media takes place, which tends to increase with time.

Permanent Anti-Graffiti Coatings

- Permanent coatings are relatively new and offer an extremely long-life surface from which graffiti, fly-posters and other soiling can be removed repeatedly, using safe and mild agents, without the loss of properties, performance or appearance of the coating itself. Coatings of this type normally have release properties similar to those of non-stick domestic kitchenware. Any soiling can easily be removed using aqueous cleaners.

Major difference – Organometallic bonding – NK-M1AG.

PERIODIC TABLE OF THE ELEMENTS

<http://www.kf-split.hr/periodni/en/>

PERIOD	GROUP I 1 IA	GROUP IUPAC 2 IIA	GROUP IUPAC 3 IIIB	GROUP IUPAC 4 IVB	GROUP IUPAC 5 VB	GROUP IUPAC 6 VIB	GROUP IUPAC 7 VIIB	GROUP IUPAC 8 VIIIB	GROUP IUPAC 9 VIIIB	GROUP IUPAC 10 VIIIB	GROUP IUPAC 11 IB	GROUP IUPAC 12 IIB	GROUP IUPAC 13 IIIA	GROUP IUPAC 14 IVA	GROUP IUPAC 15 VA	GROUP IUPAC 16 VIA	GROUP IUPAC 17 VIIA	GROUP IUPAC 18 VIIIA
1	1 1.0079 H HYDROGEN																	2 4.0026 He HELIUM
2	3 6.941 Li LITHIUM	4 9.0122 Be BERYLLIUM																10 20.180 Ne NEON
3	11 22.990 Na SODIUM	12 24.305 Mg MAGNESIUM											13 26.982 Al ALUMINIUM	14 28.086 Si SILICON	15 30.974 P PHOSPHORUS	16 32.065 S SULPHUR	17 35.453 Cl CHLORINE	18 39.948 Ar ARGON
4	19 39.098 K POTASSIUM	20 40.078 Ca CALCIUM	21 44.956 Sc SCANDIUM	22 47.867 Ti TITANIUM	23 50.942 V VANADIUM	24 51.996 Cr CHROMIUM	25 54.938 Mn MANGANESE	26 55.845 Fe IRON	27 58.933 Co COBALT	28 58.693 Ni NICKEL	29 63.546 Cu COPPER	30 65.39 Zn ZINC	31 69.723 Ga GALLIUM	32 72.64 Ge GERMANIUM	33 74.922 As ARSENIC	34 78.96 Se SELENIUM	35 79.904 Br BROMINE	36 83.80 Kr KRYPTON
5	37 85.468 Rb RUBIDIUM	38 87.62 Sr STRONTIUM	39 88.906 Y YTRIUM	40 91.224 Zr ZIRCONIUM	41 92.906 Nb NIObIUM	42 95.94 Mo MOLYBDENUM	43 (98) Tc TECHNETIUM	44 101.07 Ru RUTHENIUM	45 102.91 Rh RHODIUM	46 106.42 Pd PALLADIUM	47 107.87 Ag SILVER	48 112.41 Cd CADMIUM	49 114.82 In INDIUM	50 118.71 Sn TIN	51 121.76 Sb ANTIMONY	52 127.60 Te TELLURIUM	53 126.90 I IODINE	54 131.29 Xe XENON
6	55 132.91 Cs CAESIUM	56 137.33 Ba BARIUM	57-71 La-Lu Lanthanide	72 178.49 Hf HAFNIUM	73 180.95 Ta TANTALUM	74 183.84 W TUNGSTEN	75 186.21 Re RHENIUM	76 190.23 Os OSMIUM	77 192.22 Ir IRIDIUM	78 195.08 Pt PLATINUM	79 196.97 Au GOLD	80 200.59 Hg MERCURY	81 204.38 Tl THALLIUM	82 207.2 Pb LEAD	83 208.98 Bi BISMUTH	84 (209) Po POLONIUM	85 (210) At ASTATINE	86 (222) Rn RADON
7	87 (223) Fr FRANCIUM	88 (226) Ra RADIUM	89-103 Ac-Lr Actinide	104 (261) Rf RUTHERFORDIUM	105 (262) Db DUBNIUM	106 (266) Sg SEABORGIUM	107 (264) Bh BOHRIUM	108 (277) Hs HASSIUM	109 (268) Mt MEITNERIUM	110 (281) Uun UNUNILIUM	111 (272) Uuu UNUNUNIUM	112 (285) Uub UNUNBIUM	114 (289) Uuq UNUNQUADIUM					

RELATIVE ATOMIC MASS (A)

ATOMIC NUMBER (Z)

SYMBOL

ELEMENT NAME

STANDARD STATE (25 °C; 101 kPa)

Ne - gas Fe - solid

Ga - liquid Tc - synthetic

LEGEND:

- Metal (Blue)
- Semimetal (Orange)
- Nonmetal (Green)
- Alkali metal (Light Blue)
- Alkaline earth metal (Light Orange)
- Transition metals (Light Green)
- Lanthanide (Light Purple)
- Actinide (Light Pink)
- Chalcogens element (Light Green)
- Halogens element (Light Orange)
- Noble gas (Light Green)

LANTHANIDE

57 138.91 La LANTHANUM	58 140.12 Ce CERIUM	59 140.91 Pr PRASEODYMIUM	60 144.24 Nd NEODYMIUM	61 (145) Pm PROMETHIUM	62 150.36 Sm SAMARIUM	63 151.96 Eu EUROPIUM	64 157.25 Gd GADOLINIUM	65 158.93 Tb TERBIUM	66 162.50 Dy DYSPROSIUM	67 164.93 Ho HOLMIUM	68 167.26 Er ERBIUM	69 168.93 Tm THULIUM	70 173.04 Yb YTTERIUM	71 174.97 Lu LUTETIUM
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ACTINIDE

89 (227) Ac ACTINIUM	90 232.04 Th THORIUM	91 231.04 Pa PROTACTINIUM	92 238.03 U URANIUM	93 (237) Np NEPTUNIUM	94 (244) Pu PLUTONIUM	95 (243) Am AMERICIUM	96 (247) Cm CURIUM	97 (247) Bk BERKELIUM	98 (251) Cf CALIFORNIUM	99 (252) Es EINSTEINIUM	100 (257) Fm FERMIUM	101 (258) Md MENDELEVIUM	102 (259) No NOBELIUM	103 (262) Lr LAWRENCIUM
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However three such elements (Th, Pa, and U) do have a characteristic terrestrial isotopic composition, and for these an atomic weight is tabulated.

Editor: Aditya Vardhan (adivar@netlinx.com)

For more information and downloads please visit ---> <http://www.periodni.com/en/download.html>

Coating application is achieved via spraying or rolling onto a clean, uncontaminated new surface. The coating is self levelling and transparent . Once applied curing to touch dry in 4 hours dry through time will occur within 24 hours and full hardening over 7 days.

Once applied, no further attention is required.

Once applied the coated surface will not fade or oxidise. The surface will be extremely easy to clean as the cured surface coating presents a non-stick finish that is permanent.

Our coating will reduce the need to use harsh detergents and water in order to clean the surface.

Paint, permanent marker, rust stains, bird droppings, bugs, salt etc, oil etc are easily wiped off.

Once fully cured the coating is extremely tough yet flexible and will not flake, peel or discolour.

Proprietary application methods are not required.

The coating is applied as a very thin permanent barrier. Typically the coating, when fully cured does not exceed a thickness of 10 microns. Depending on surface porosity, 1 litre of product will cover an average of 40 – 60 square meters.

The coating can be applied to just about any surface (porous and non-porous) including wood, brick, render, aluminum, stainless steel, composite materials, gel-coat, painted and non painted surfaces etc

FEATURES

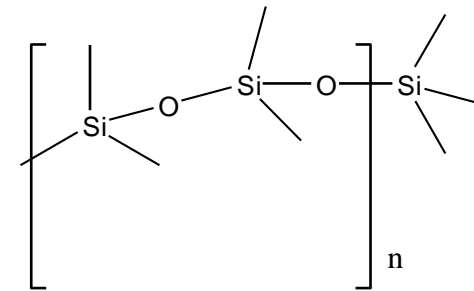
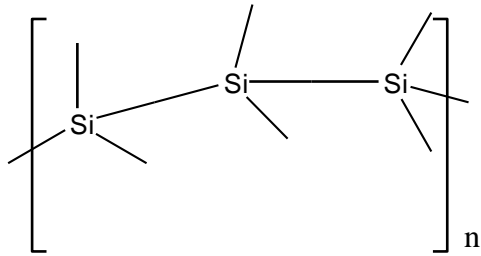
- Once applied the coating is permanent!
- Easy application, no proprietary application methods
- Spray, roll or brush application

The surface is permanently protected against graffiti and ghosting.

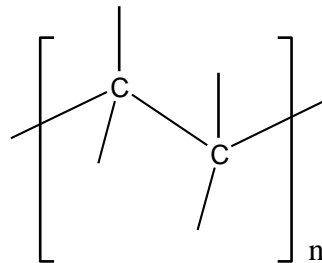
- Stops fading and oxidising of the treated surface
- Stops corrosion
- Low maintenance, easy to clean coating
- Reduced maintenance costs
- Extremely chemical resistant

- Protects the surface from UV fading and will not break down with UV radiation
 - Scratch resistant
 - Stain resistant
 - Reduced need for chemical cleaners
 - Asset protection
 - Environmentally friendly coating that reduces the need to use detergents pollution our waterways
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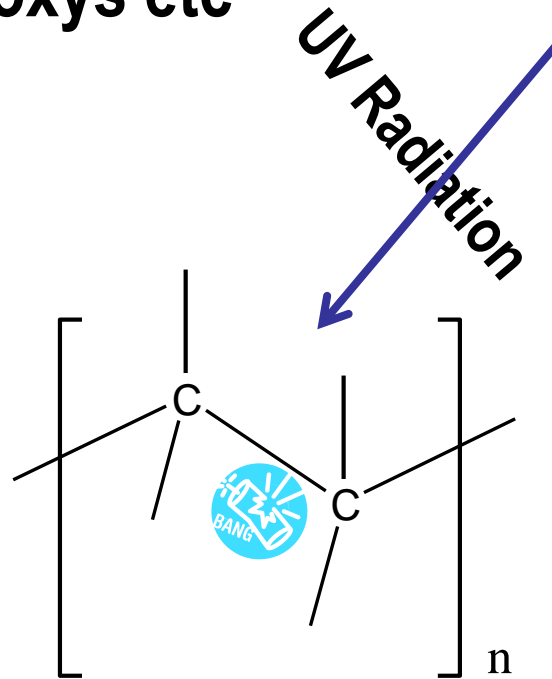
Polysilanes and polysiloxanes

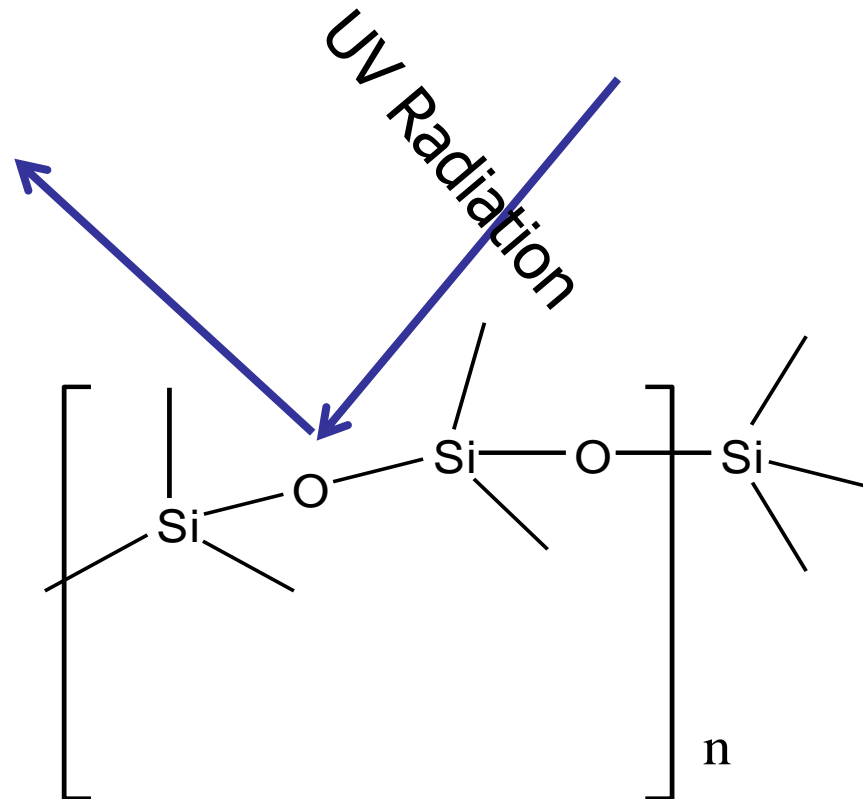


Organic coatings – polyurethanes, epoxys etc



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polyurethanes, epoxys etc





- Silane or Siloxane + PU
- Silane or Siloxane + Epoxy resin
- Silane or Siloxane + Acrylic

- Gloss or Matt finish
- With UV inhibitors or without

- Industrial application (1 part product)
 - Professional application (2 part product)
 - Drying times. Temperature dependant
 - Substrate preparation is important – porous concrete..
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Thank you for your time

Questions?
