nano-Guard 42AMD

BDT-42AMD Antimicrobial Disinfectant Nano-Ceramic Clear Coat

Technical Data Sheet

nano-Clear 42AMD is a clear when cured, easy to apply Antimicrobial Disinfectant formulation that helps to significantly lower the bio-burden and continuously protect treated surfaces from the colonization of bacteria, mold, mildew and fungus while the disinfectant additive in the formulation kills bacteria and viruses such as**; Corona Virus-Human, HIV, HCV & HBV** and more than 140 others from cleaned, product coated surfaces for as long as the coating remains intact.

nano-Clear 42AMD is a high performance, specially synthesized polysilazane polymer coating that ambient cures and develops a covalent bond with the substrate it is applied to, bonding the antimicrobial coating and the surface on a molecular level. A spray/wipe-on, rinse free solution that disinfects the surface while applied and continuously protects as long as the coating remains. The active ingredients are non-leaching and coating is inert and benign when cured.

nano-Clear 42AMD is an extremely hydrophobic coating with super slick properties that greatly reduce the ability of dirt and debris to bond to applied surfaces due to the radical reduction in the coefficient of friction. **nano-Grip** may also be added where traction is needed.

nano-Clear 42AMD is used as a single or multicoated application, depending on the volume of contact a treated surface will be subjected to and may be applied as often as desired. Our coatings contain an optical brightener that illuminates under special uv or black light and provides an effective means of physical inspection and verification of a present & functioning antimicrobial disinfectant coating. Applicators and consumers can easily verify that all intended surfaces were initially coated or, upon periodic inspection, have remained intact and still offering the intended antimicrobial protection.

nano-Guard 42AMD is an incredibly durable, scratch resistant, extremely water repellent, clear finish formulated for surfaces such as plastics, polished metal alloys, painted & unpainted surfaces, powder or Gel-coated® surfaces and it protects those treated surfaces from UV damage, fading and other environmental corrosion from standard protocol disinfectants.

nano-Guard 42AMD is also available with **"nano-Grip"** and though smooth, it will offer a more slip resistant grip in wet conditions. **nano-Guard 42AMD** has an excellent UV inhibitor, has high chemical resistance and is invulnerable to standard protocol cleaners.

BioDefense Technologies, Inc.
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Waverly Hall, GA 31831
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nano-Guard 42AMD – Properties:

- Color _____ Clear
- Viscosity _____ 16-18 sec. - #2 Zahn
- Percent of Solids _____ 23
- Odor (liquid) _____ Mint
- Odor (cured) _____ Slight Mint
- V.O.C. _____ Exempt per CFR 51.1 / reg. 8
- RoHS _____ Compliant
- Halogens _____ None
- Thermal Stability (cured) _____ 1200*F (648.8*C)
- Conical Bond (1⁄8 inch mandrel) _____ Passed (ASTM D522-93a
- Cross cut adhesion _____5B (ASTM D3359)
- Coefficient of Friction _____ 0.03u (ASTM D2047)
- Specific Gravity _____ 0.889 (ASTM D891-09)
- Pencil Hardness _____ 8h+ (ASTM D3363)
- Average applied dry film thickness _____ 3 to 10 microns
- Estimated Coverage Rate (@ 3 microns) _____ 3800sf per gallon
- Transfer to surrounding material _____ Zero transfer of contaminants
- Dry to Touch (time @ambient) _____ 15-30 min average
- Useable surface within_____12 hrs.
- Ambient cures (full cure to properties) _____5 days

- **EPA Reg. No. 83019-1**
- **FIFRA Reg. no. 61178-5, Refer to EPA list N**
- **EPA Est. No. 96461-GA-1**

Application

- May be applied by wiping directly on the intended surface with a tightly napped applicator sponge, a dense microfiber cloth or a pressurized pump or electrostatic hand sprayer may be used.
- Best practice = wipe over the sprayed area with a clean microfiber cloth to achieve a smooth and even coverage.
- Allow coating to dry 15-30 min, avg. dry to touch time. 12 hr usable surface time.

nano-Clear 42AMD's antimicrobial disinfectant formulation helps to continuously kill and protect coated surfaces from the colonization of the following list of microorganisms, significantly lowering the bio-burden upon that surface for an extended period of time.

MICROORGANISM EFFECTIVE KILL LIST

Human Viruses

Adenovirus type 2 – Cytomegalovirus – HBV (Hepatitis B Virus) – HCV (Hepatitis C Virus) – Herpes Simplex type 1 Virus – Herpes Simplex type 2 Virus – HIV-1 (AIDS Virus)
*Human Coronavirus
Influenza A/Brazil Virus – InfluenzaA/Victoria(H3N2) Virus

Influenza A2-Asian Virus – Influenza B Virus (Allen strain) – Influenza C Virus (Taylor strain) – Measles Virus

Non-Human Viruses

Avian Influenza/Turkey/ Wisconsin Virus
Canine Coronavirus – Canine Distemper Virus – Canine Herpesvirus
Equine Herpesvirus – Equine Influenza
Feline Calicivirus Norovirus – Feline Infectious Peritonitis –
Infectious Bovin Rhinotracheitis (IBR) – Newcastle Disease Virus

Isolates From AIDS Patients

Aspergillus niger – Candida albicans
Cryptococcus neoforman

Gram Positive Clinical Isolates

Staphylococcus aureus (Toxic shock) – Staphylococcus epidermidis – Staphylococcus saprophyticus

Gram Negative Clinical Isolates

Acinetobacter calcoaceticus var. anitratus – Acinetobacter calcoaceticus var. lwoffii Bordetella bronchiseptica – Brevundimonas diminuta

Burkholderia cepacia – Enterobacter agglomerans – Enterobacter cloacae – Enterobacter gergoviae – Enterobacter liquefaciens – Escherichia coli (Urinary) – Escherichia coli (Wound) – Flavobacterium meningosepticum – Hafnia alvei

Other Bacteria

Actinobacillus pleuropneumoniae – Actinomyces pyogenes – Bacillus cereus – Bacteroides fragilis – Corynebacterium ammoniagenes, (Brevibacteriumammoniagenes) - Bordetella bronchiseptica – Burkholderia pickettii

Parainfluenza type 1 – Poliovirus type 1 (Chat strain) – Respiratory Syncytial Virus - Rotavirus Vaccinia Virus

Porcine Parvovirus – Porcine Respiratory & Reproductive Syndrome Virus – Porcine Rotavirus – Pseudorabies Virus – Transmissible Gastroenteritis (TGE) T1 bacteriophage – T4 bacteriophage – Vesicular Stomatitis Virus (VSV) Bovine – Viral Diarrhea Virus (BYDV) – Avian Influenza Virus (H5N1)

Pseudomonas aeruginosa – Staphylococcus aureus – Streptococcus pneumoniae - Streptococcus haemoiyticus – Streptococcus pyogenes

Klebsiella oxytoca – Klebsiella pneumoniae – Morganella morganii – Proteus mirabilis -Proteus vulgaris – Pseudomonas aeruginosa – Pseudomonas fluorescens – Pseudomonas pseudomallei – Pseudomonas putida – Pseudomonas stutzeri – Serratia marcescens – Sphingomonas paucimobilis

Campylobacter jejuni – Chryseomonas luteol – Corynebacterium pseudotuberculosis – Enterobacter aerogenes – Enterococcus faecalis – Enterococcus faecium – Enterococcus hirae – Escherichia coli

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