

## PRODUCT DESCRIPTION

**NANOMYTE® TC-4001** is a single component formulation designed to protect metals from degrading, preserving their structural integrity and appearance. The hard, dense, and smooth coating is a nanostructured composite consisting of organic and inorganic phases. It resists scratching and chipping, and adheres strongly to bare, pretreated, or painted metal surfaces, thus providing a durable barrier to liquids and gases. The coating is easily applied by immersion, spraying or brushing, in thicknesses ranging from microns to mils.

## SURFACES

Iron, steel, stainless steel, aluminum, copper and bronze, powder coated metals, and painted and primed metals

## TYPICAL PROPERTIES

<b>Color:</b>	Clear liquid (colorless to yellow)
<b>Curing Temperature:</b>	20 °C – 150 °C
<b>VOCs:</b>	Less than 100 g/L
<b>Carrier type:</b>	Solvent borne
<b>Coverage:</b>	800 – 1200 ft <sup>2</sup> / gallon
<b>Solids Content:</b>	18 – 20 %
<b>Recommended thickness per coat:</b>	Wet mils: 1.5 – 2.0   Dry mils: 0.5 – 1.2 (coating can be made thinner by diluting with recommended solvents)

## APPLICATION METHODS & INSTRUCTIONS

### Surface Preparation

Ensure bare metal surfaces to be coated are clean and dry. Remove all oil, grease, dust, dirt and other foreign material before using appropriate metal cleaner and/or applying TC-4001. To ensure that the surface is free of oil and grease, use a lint-free white cloth with a solvent, such as alcohol or acetone, and clean until the cloth remains white after wiping. TC-4001 can then be applied per application instructions below. Remove scale and light to medium rust using appropriate rust stabilizer and/or scale remover. Heavy rust must be sandblasted or ground off. If desired, metal may be primed or painted before using TC-4001 as final topcoat.

### Application

Apply by spraying, immersion (dipping), rolling or brushing.

#### Spraying

When surface preparation is complete and surface is dry and free of dust, begin application using a high volume, low pressure (HVLP) spray gun with a 1.0 size tip and the pressure set at approximately 25 to 30 psi. On a separate piece of cardboard first spray a test pattern to achieve a 6" to 8" elongated pattern approximately 1" wide in the middle and fluid enough to cover but not puddle. Once the spray pattern is achieved on the test cardboard, spray one coat in a cross-pattern; left to right, then up and down. To spray small pieces or tight locations you can use a "Preval" sprayer - a small disposable sprayer that can spray any liquid and holds approximately 6oz, ideal for touch ups as well.

#### Rolling

Using an ultra-smooth, high-density foam roller, pour TC-4001 into a roller pan and completely saturate the roller. Apply in a cross-pattern; left to right, then up and down as quickly as possible as the coating dries fast. Avoid down pressure on the roller to achieve a better looking finish.

#### Brushing

Select the appropriate size brush width based on the surface area being coated. Apply TC-4001 in a cross-pattern, up and down, then left and right. To obtain the best results, do not overwork the coating as it dries fairly quickly. Do not bear down with the brush.

## CURING

### Room Temperature Curing (25 °C)

Under ambient conditions, a single coat will be dry to the touch in 1-2 hours and cured in 24 hours.

### Accelerated Curing (105 °C – 150 °C):

Alternatively, the coating can be applied to the surface, dried in ambient air for 10 minutes, and then heated to at least 105 °C for 1 hour. An oven, blow dryer or heat gun may be used (maximum temperature is 150 °C). After heating, coated parts should be allowed to cool before handling.

NANOMYTE® TC-4001 will completely wet bare metal surfaces if properly prepared or if primed / painted. Only one coat is required to cover substrates, but multiple coats are allowable. Under ambient conditions, a single coat is 5 – 15 µm (0.2 – 0.6

mil) thick and will be dry to the touch in 1-2 hours and cured in 24 hours. Multiple coats can be applied in 10 minute intervals while the previous coat is still tacky. Two to three coats should result in a final coating that is 25 – 40 µm (1 – 1.5 mil) thick.

## APPLICATION NOTES

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### Test Area

Given the wide variety of metals and the various methods and environments of application, it is advisable to first use TC-4001 on a test piece or in an inconspicuous area to evaluate the resulting adhesion and appearance. There will often be some enhancement in luster (gloss) from the original surface. TC-4001 is a clear coating, however on some white paints or powder coats, the color may be altered to appear off-white or slightly yellow, particularly if a thick coat is applied.

### Clean Up

Clean tools and flush equipment thoroughly with acetone immediately after application is completed and before product dries. Once the coating is dry, solvent cleaning is no longer effective.

### Care & Maintenance

For normal cleaning, wash the coated surface with a hose or wipe down with a damp cloth to remove dirt and spills on the surface. Although TC-4001 is scratch resistant, it is not scratch proof. Do not use abrasive cleaners or scouring pads. If an area becomes damaged or is mechanically abraded, lightly sand the area with 220 grit sandpaper and reapply the coating. If the substrate itself is damaged, make the necessary repairs first, then re-apply TC-4001.

## STORAGE & HANDLING

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### Precautions for Safe Handling

Appropriate personal protective equipment should be used at all times. Provide good ventilation or extraction. Avoid prolonged or repeated breathing of vapor. Avoid contact with eyes, skin and clothing. Wash hands thoroughly after handling. Keep away from heat, sparks, flames and other sources of ignition. Take measures to prevent the buildup of electrostatic charge.

### Conditions for Safe Storage

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Residual vapors might explode on ignition. Do not apply heat, cut, drill, grind or weld on or near this container.

## ADDITIONAL INFORMATION

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**WARNING:** This product should not be used, stored, or transported until all handling precautions and recommendations stated in the Technical Data Sheet (TDS) and Safety Data Sheet (SDS) for this coating are understood. Exposure should be minimized and direct contact should be avoided through the observance of proper precautions, use of appropriate engineering controls, and proper personal protective clothing and equipment.

NEI Corporation believes that the information in this technical data sheet is an accurate description of the typical use of the product. However, NEI disclaims any liability for incidental or consequential damages, which may result from the use of their products that are beyond its control. Employers should use this information only as a supplement to other information gathered by them and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees. Therefore, it is the user's responsibility to thoroughly test the product in their particular application to determine its performance, efficacy, and safety. Nothing contained herein is to be considered as permission or a recommendation to infringe any patent or any other intellectual right.

**Refer to SDS for complete information on the safe handling of this product.**