

NANOMYTE® SR-100 is a 2-component liquid coating that provides abrasion and scratch resistance to plastic substrates. It forms a ceramic-like hard surface that is needed in a variety of industrial and consumer applications, such as ophthalmic & sportswear lenses, automobile, airplane windows, and 3D printed parts. SR-100 is thermally cured and can be applied on surfaces using standard coating processes, such as dip-coating, spray coating, and spin-coating.

PHYSICAL CHARACTERISTICS

Product Form: Two-part liquid coating solution
Color: Part A – Translucent; Part B – colorless
Viscosity (20 °C): 10 – 25 cP (mixed)

TECHNICAL DATA

Abrasion Resistance: Δ Haze < 1% (ASTM D1044 Taber abrasion test, polycarbonate substrate, CS-10F wheels, 500g load, 500 cycles)
Chemical Resistance: Passes MIL-PRF-32432 standard – no visual damage after 24 hours of exposure to the following chemicals: bleach (6.0 wt% sodium hypochlorite), 30% concentration DEET, fire resistant hydraulic fluid (MIL-PRF-46170), hydraulic fluid, gasoline (87% Octane), motor oil, and JP8 fuel (MIL-DTL-83133E)
Mix Ratio (by weight): 9:1 (A:B)
Induction time: 30 min (for spray application)
Pot life: 72 hours
Curing Temperature: Varies by substrate (see page 2 for curing conditions)
Cured Film Thickness: 3 – 10 μ m (min-max recommended)
Coverage: 700 – 1,000 ft² per gallon

AVAILABLE QUANTITIES

NANOMYTE® SR-100 is a 2-part coating, sold in liter or gallon kit quantities.

SR-100	1 Liter Kit	1 Gallon Kit	5 Gallon Kit
(Part A)	900 grams	3420 grams	17.1 kg
(Part B)	100 grams	380 grams	1.9 kg

SURFACE PREPARATION / PRIMER APPLICATION

Ensure surfaces to be coated are clean and dry and apply a primer if necessary. NEI supplies two primers for polymer substrates: SRP-50 for PMMA and SRP-51 for PC. The primer may be applied by dipping, flowing, spinning, rolling or spraying. For spraying, an HVLP spray gun with a nozzle size of <1.0 mm is recommended, and the pressure should be set at approximately 25 to 30 psi. A single pass of spraying is recommended for the primer. The primed parts should be dried at 80°C for 10 min before application of NANOMYTE® SR-100.

COATING APPLICATION

It is recommended that coating application be performed in a clean environment to minimize surface defects. To make the coating solution, combine Part A and Part B at 9/1 weight ratio and mix well by stirring briefly. The coating may be applied by spraying, dipping, flowing, brushing or rolling. For spraying, an HVLP spray gun with a nozzle size of <1.0 mm is recommended; and the pressure should be set at approximately 25 to 30 psi. The induction time for spray application is 30 min, i.e., wait at least 30 minutes after mixing before coating application. For other application methods, it is recommended to age the mixed solution for at least 20 hours to obtain a highly transparent coating.

For Best Performance: Although the mixed coating solution is stable indefinitely, it is recommended to use the solution within 72 hours after mixing for best results.

CURING CONDITIONS

NANOMYTE® SR-100 is thermally cured at an elevated temperature. Recommended curing conditions:

- **PMMA:** 2 hours at 80°C
- **Polycarbonate, ABS, PC-ABS:** 1 hour at 100 – 120°C (depending on heat distortion temperature)
- **Other:** 30 minutes at 150°C for substrates that can withstand high temperatures

Shorter cure times / reduced temperatures may also be used depending on surface properties and performance requirements; test samples for desired performance when deviating from recommendations.

CLEAN UP

Clean tools and flush equipment thoroughly with water followed by isopropyl alcohol or acetone before product dries. Once coating is dry, the tools will not clean with acetone or any other solvent.

STORAGE & HANDLING

Precautions for Safe Handling

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

Conditions for Safe Storage

For best coating performance, keep container tightly sealed and store in a dry and cool area. Avoid storage above 40°C / 104°F and contamination with incompatible materials. Keep away from heat, sparks, flames and other sources of ignition. Residual vapors might explode on ignition.

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

ADDITIONAL INFORMATION

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.