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Technical Data Sheet
VIRIDYN 101-M

Version	Revision Date:	Date of last issue:	14-Aug-2025
5.0	01-Sep-2025	Date of first issue:	02-Apr-2021

OVERVIEW

Type	High-grade oleophobic (up to grade 8) and hydrophobic nano-coating for membranes.
Functionality & Features	101-M dries to a thin, transparent film with excellent hydrophobic and oleophobic properties. Variants of 101-M offer can oleophobicity between grades 6 and 8 on PTFE membranes. 101-M coatings repel oils, water, silicones, paints, photoresists and organic solvents. Membranes, filters, and mesh coated with 101-M retain air and sound permeability
Application	101-M is provided as either a 15% concentrate or 2% pre- diluted solution in either fluoro-solvent or MEK. 101-M is usually used at concentrations of 0.2% to 3% in solvent. 101-M is easy to apply by dipping membranes and mesh, spraying, or roll-to-roll.

SOLUTION PROPERTIES

Product Codes	101-M8, 101-M7, 101-M6
Color	Colourless or Yellow Liquid
Clarity	Lightly Turbid to Clear
Concentration	2-3% recommended for membranes
Odour	Light ether-like or acetone
Viscosity	>0.41 cP depending on polymer concentration
Solvents	**101-M8, 101-M7**: AE3000 **101-M6**: MEK
Shelf Life	**101-M8, 101-M7**: 2 years stored at room temperature **101-M6**: 1 year stored at 1°F
One Part System	Yes
Application Options	Dipping, spraying

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COATING PROPERTIES

Appearance	Clear, odourless and colourless film
Chemistry	C6
Contact Angle to Water	>110°
Contact Angle to Oil	>55°
Surface Tension	8-14 dynes/cm
Oleophobicity grade	**101-M8**: 7 to 8 **101-M7**: 6 to 7 **101-M6**: 5 to 6
Hardness	>2B pencil
Flammability	Non-burning
Tracer	UV tracer for quality control (at request)
Heat stability continuous	175°C
Toxicity	HMIS Rating Health = 1
Ease of Application	Excellent
Solvent/Chemical Resistance	Excellent after drying
Transparent	Yes
Electric conductivity	Yes (at <0.5 µm film thickness)
Ease of Dry	Dries at room temperature in <10 minutes

VIRIDYN 101-M CHEMICAL RESISTANCE PERFORMANCE

Microscopy evaluation of 101-M6 films after chemical exposures

	Untreated	Acetone	Ethanol	IPA	Gasoline	Motor-Oil
Glass – 180°C cure	Robust	No Change	No Change	No Change	No Change	No Change
Metal – 180°C cure	Robust	No Change	No Change	No Change	No Change	No Change
Plastic – 110°C cure	Robust	No Change	Circular Ghost	No Change	No Change	No Change

Water contact angles for 101-M6 films after exposures

	Untreated	Acetone	Ethanol	IPA	Gasoline	Motor-Oil
Glass – 180°C cure	>110°	>110°	>110°	>110°	>110°	>110°
Metal – 180°C cure	>110°	>110°	>110°	>110°	>110°	>110°
Plastic – 110°C cure	>110°	>110°	>95°	>110°	>110°	>110°

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Mineral oil contact angles for 101-M6 films after exposures

	Untreated	Acetone	Ethanol	IPA	Gasoline	Motor-Oil
Glass – 180°C cure	>50°	>50°	>50°	>50°	>50°	>50°
Metal – 180°C cure	>50°	>50°	>50°	>50°	>50°	>50°
Plastic – 110°C cure	>100°	>100°	>95°	>100°	>100°	>100°

Dodecane oleophobicity of PTFE membranes after exposures

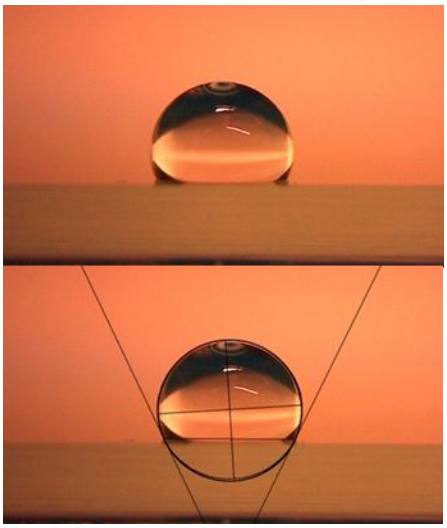
	Untreated	Acetone	Ethanol	IPA	Gasoline	Motor-Oil
Membranes – 110°C cure	Pass	Pass	Pass	Pass	Pass	Pass

101-M CHEMICAL RESISTANCE TEST CONCLUSION

VIRIDYN 101-M films were not adversely affected by acetone, IPA, gasoline or motor-oil. The ethanol exposed region on plastic slides (cured at 110°C) showed a circular ghost after the drop of ethanol was removed. However, after the ethanol completely evaporated the film surface appeared intact. This suggests that the coating was inadequately cured or that ethanol partially dissolved the VIRIDYN 101-M coating. VIRIDYN 101-M appears to be a robust coating with good chemical resistance.

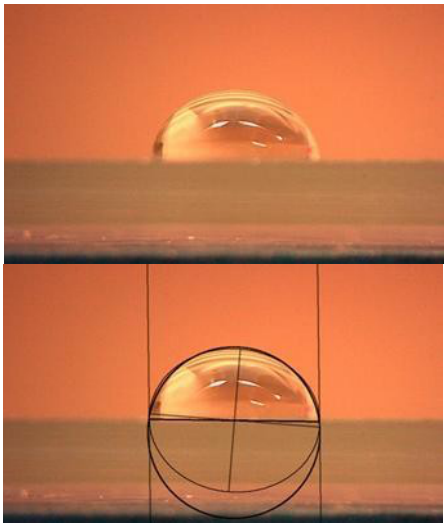
CONTACT ANGLE ANALYSES of 101-M7 ON GLASS

Water



2.0% polymer on glass
Contact angle: >110°

Oil



2.0% polymer on glass
Contact Angle: >80°

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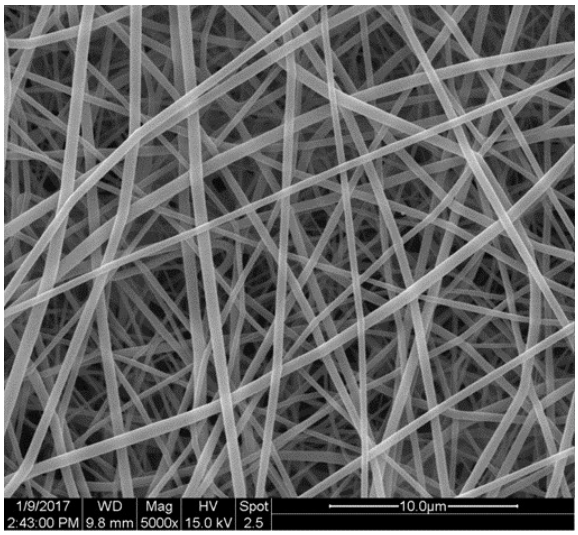
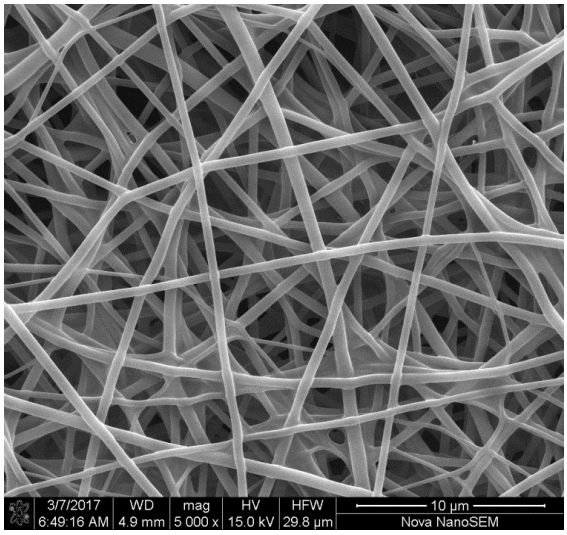
ELECTRON MICROSCOPY of COATED and UNCOATED MEMBRANES

[Showing pores are not occluded by 101-M8]

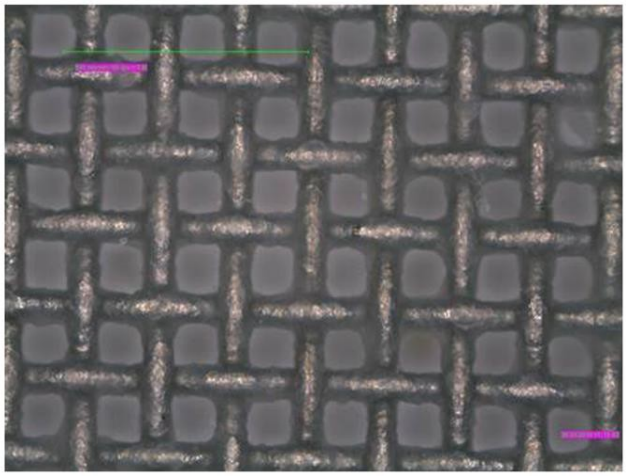
Untreated Control



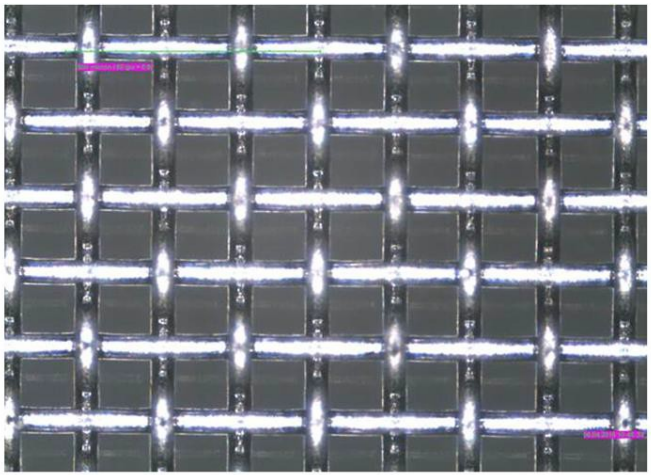
Coated with VIRIDYN 101-M8



Regular Coating



Coated with VIRIDYN 101-M8



VIRIDYN 101-M8 COATED MEMBRANE PROPERTIES

	UNCOATED			COATED with VIRIDYN 101-M8		
	Air permeability	**Hydrostatic head**	**Oleophobicity grade**	**Air permeability**	**Hydrostatic head**	**Oleophobicity grade**
	l/m2/s at 1000 Pa	**cmHH**	**AATCC 118**	**l/m2/s at 1000 Pa**	**cmHH**	**AATCC 118**
1	800-1200	13	<3	1061	74	7
2	800-1200	16	<3	1135	89	7

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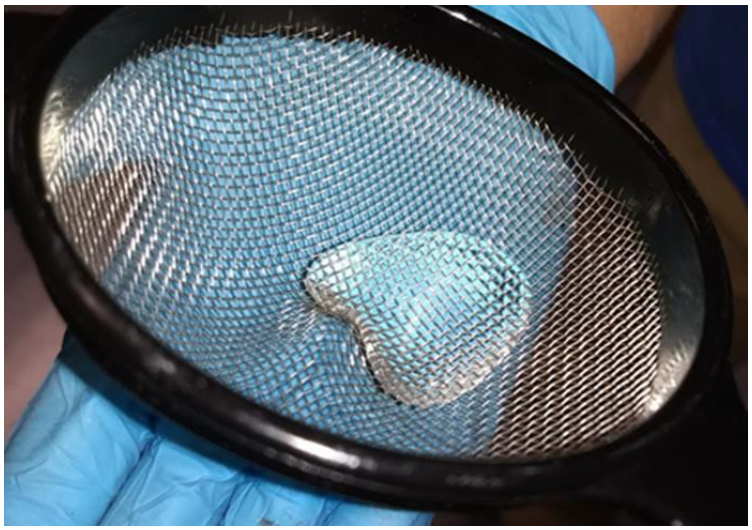

[Metal mesh coated with VIRIDYN 101-M8 showing water levitation]

IDENTIFICATION

Product name	VIRIDYN 101-M

MANUFACTURER or SUPPLIER'S DETAILS

Company name of supplier	ViriDyn LLC www.viridyn.com info@viridyn.com

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