



Teflon®

Nonstick & Industrial Coatings

851-214, 851-221, 851-224, and 851-255 Teflon® PTFE Topcoats

Description

These *Teflon*® PTFE topcoats are used in industrial topcoat finishes for dry lubrication, nonstick, and high-temperature resistance.

FDA Status

The 851-line of *Teflon*® PTFE topcoats does not comply with FDA regulations governing components of coatings for direct food contact.

Application

Bring coating to room temperature, roll or agitate gently, but thoroughly. Do not mix with a propeller-type mixer because the material is shear sensitive.

Strain through muslin or 100-mesh stainless steel screen.

Use conventional industrial spray equipment.

See “Applying *Teflon*® Coatings” fact sheet.

Surface Preparation

Apply primer over clean and roughened surface. See primer fact sheets for application parameters.

Film Thickness

851-214: 13–38 µm (0.5–1.5 mil) DFT per coat to a maximum of 76 µm (3 mil)

High-build topcoats:

851-221, 851-224, 851-255: 2.0–76 µm (0.8–3.0 mil) DFT per coat to a maximum of 205 µm (8 mil)

Bake

All temperatures refer to metal temperature.

Single Topcoat

30 min. at 385°C (725°F)

5 min. at 427°C (800°F)

Multiple Coats

Use high-build products 851-221, 851-224, 851-255 to apply films thicker than 51–76 µm (2–3 mil) .

Preheating the piece at 49–60°C (120–140°F) will help dry the film before baking to prevent popping or cracking.

Bake each intermediate coat at 316°C (600°F) for 5–10 min. Cool. Repeat until desired film build is reached.

Bake the last coat at 399°C (750°F) for 15 min.

Repair

Wear a respirator at all times.

Roughen surface with #400–#600 sandpaper.

Clean surface thoroughly with xylene or alcohol; allow to dry completely.

Preheat piece to 49–60°C (120–140°F)

Apply 5–8 µm (0.2–0.3 mil) using dry spray technique (high atomizing pressure, greater than normal gun distance from the piece).

Air dry, then bake at 400°C (750°F) 3–5 min.

Table 1
Typical Properties

Product Code	High Build			
	851-214	851-221	851-224	851-255
Color	Green	Gray	Green	Black
% Weight Solids	42.4	47.8	44.7	43.7
% Volume Solids	23.2	27.8	26.1	27.1
Coverage, ft ² /gal* (m ² /L)*	372 9.1	445 10.9	419 10.3	435 10.6
Viscosity, cP	300–500	300–500	300–500	300–500
Maximum Continuous Use Temperature, °C (°F)	260 (500)	260 (500)	260 (500)	260 (500)

*Theoretical coverage at 25 µm (1 mil) assuming 100% spray efficiency. These figures are averages and may vary.

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Storage and Stability

Shelf life is approximately 18 months at room temperature (18°–24°C [65°–75°F]).

Do not allow product to freeze.

Material may be exposed briefly to temperatures outside the suggested temperature range without harm. In such cases, check product properties before extensive use.

Safety

Follow normal industrial safety practices for handling and applying *Teflon*® products. Industrial experience has clearly shown *Teflon*® materials can be processed

and used at elevated temperatures without hazard providing adequate ventilation is used. Ventilation should be available at baking temperatures of 275°C (525°F) and above. Before using *Teflon*®, read the Material Safety Data Sheet (MSDS) and the detailed information in the "Guide to the Safe Handling of Fluoropolymer Resins," latest edition, published by the Fluoropolymers Division of The Society of the Plastics Industry.

When grit-blasting *Teflon*® finishes off aluminum or magnesium surfaces, the possibility of explosion exists if the fines are allowed to heat up. Good house-keeping practices, keeping the residue wet, and keeping the ventilation and dust collection systems in good working order reduces this risk.

For more information on *Teflon*® coatings:

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CAUTION: Do not use in medical applications involving permanent implantation in the human body. For other medical applications, see "DuPont Medical Caution Statement," H-50102.



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