

# DuPont™ Teflon®

## Nonstick & Industrial Coatings

### 856-200, 856-204, and 856-211 DuPont™ Teflon® 856-Line FEP Topcoats

#### Description

Teflon® FEP topcoats provide nonstick, chemical and corrosion resistance. Because FEP can melt-flow to form nonporous film, it is a natural choice for release applications with low abrasion such as molds and bakeware.

The 856-line of Teflon® topcoats must be used with a Teflon® industrial coatings primer. Examples:

| FDA Conforming Primers | Not FDA Conforming Primers |
|------------------------|----------------------------|
| 858-100                | 851-204                    |
| 959-200 series         | 850-300 series             |
| 959-405                | 958-200 series             |

#### FDA Status

The 856-200 Teflon® topcoat complies with FDA regulations in 21CFR governing components of coatings for direct food contact when applied according to fact sheet instructions. Primers must also comply for the system to be FDA conforming. **Note:** 856-204 and 856-211 Teflon® topcoats do not comply with FDA regulations in 21CFR.

**Table 1**  
**Typical Properties**

|   | 856-200     | 856-204    | 856-211     |
|---|-------------|------------|-------------|
| Color   | Clear       | Green      | Gray        |
| % Weight Solids   | 44.9        | 44.1       | 46.3        |
| % Volume Solids   | 26.4        | 24.4       | 24.3        |
| Coverage, ft <sup>2</sup> /gal*<br>(m <sup>2</sup> /l)* | 423<br>10.4 | 391<br>9.7 | 453<br>11.1 |
| Viscosity, cP   | 20–400      | 50–300     | 20–300      |
| Maximum use temperature, °C (°F)                        |             | 204 (400)  |             |

\* Theoretical coverage at 25 µm (1 mil) assuming 100% spray efficiency.

These figures are averages and may vary.

#### Application

Bring coating to room temperature. Roll or agitate gently but thoroughly until contents are homogeneous. Do not use a lightening mixer or similar type of mixer. Strain through 100-mesh stainless steel screen. See “Applying Teflon® Coatings” fact sheet.

#### Surface Preparation

Apply primer over clean and roughened surface and apply as directed on primer fact sheet. Bake or force dry per directions in appropriate primer fact sheet.

#### Film Thickness

Apply 856-2XX coatings at a total DFT of 15-25 µm (0.6-1.0 mil) with a primer thickness of approximately 7 µm (0.3 mil). Flash dry to prevent popping or cracking during the bake.

#### Bake

All temperatures refer to metal temperature. For end uses where low porosity is essential, multiple topcoats are required using the higher temperature bakes.

#### Primer

See specific fact sheets for primers.

#### Single top coat

The first topcoat must be sufficiently baked to cure the primer. For example:

| Bake  | If Using Primer                   |
|---|-----------------------------------|
| 5 min. at 400°C (750°F) or<br>10 min. at 370°C (700°F)  | 850-3XX line;<br>851-204; 858-100 |
| 60 min. at 300°C (575°F) or<br>5 min. at 370°C (700°F)* | 958-2XX line; 959-line            |

#### Multiple top coats

Apply another 10–15 µm (0.4–0.6 mil) of 856-line FEP topcoat. Bake 30 min. at 330–343°C (625–650°F). Repeat for all subsequent coats until desired film build up to 125 µm (5 mil) is reached.

## Repair

Re-baking above 300°C (575°F) may cause sufficient flow to eliminate the damaged area, otherwise: Roughen surface thoroughly with 400–600 grit sandpaper. Clean surface thoroughly with xylene or alcohol. Allow to dry.

Apply 7–15 µm (0.3–0.6 mil) of 856-line topcoat. Air dry, then bake 15–30 min. at 300°C (575°F).

## Storage and Stability

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 and properties before extensive use.

856-line: At normal room temperature, 18–24°C (65–75°F), these products have a shelf life of 18 months.

## 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.

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## 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.

