# Dow SYL-OFF™ Fluorosilicone Release Coating solutions for silicone PSAs

## Open the way to innovative new opportunities

## General descriptions

### SYL-OFF™ fluorosilicone release coating solutions for silicone PSAs

Silicone PSAs have unique advantages that make them ideal for challenging, high-value applications. Now, with a wider range of fluorosilicone release coating solutions and complementary PSAs from Dow, you have new choices that could help you:

- Extend the adhesive performance of silicone PSAs to new applications and develop more innovative products;
- Meet changing customer needs and enter new markets;
- Achieve the best balance of economy and performance for your application.

A variety of fluorosilicone release coatings are available with silicone PSA options that expand opportunities. SYL-OFF™ Brand fluorosilicone release coatings are designed to provide consistent, stable release from silicone PSAs from Dow.

### Features

Dow's Fluorosilicone Release Coatings for silicone PSAs do not require special solvents such as fluorinated solvents. In addition, by adjusting the formulation of the coating bath according to the type of silicone adhesive to be combined, it is possible to obtain the desired release force and high release stability over time. With our wide selection of silicone adhesive release agents, Dow can provide the best silicone adhesive release agent and solution for your needs.

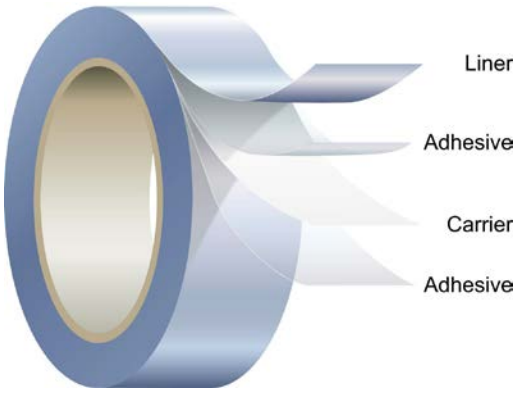
### Application

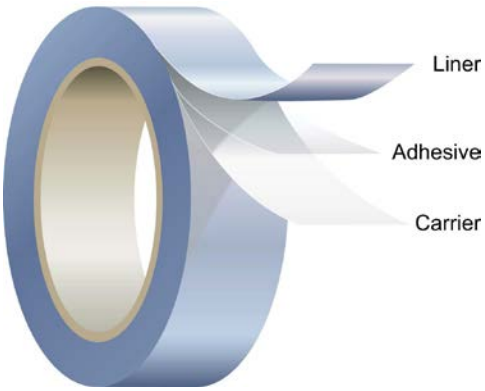
Major uses of industrial-grade silicone PSA release coatings applied with silicone PSA tape forms include:

- Transfer films
- Industrial tapes greater than 2 inches wide
- Die cut constructions
- Double-sided tapes
- Silicone foam or rubber tapes
- Transfer to heat sensitive or non-solvent-castable backings

Fluorosilicone release coatings contribute to greatly improving usability and productivity without impairing the physical properties of silicone PSAs.

### Typical tape constructions utilizing SYL-OFF™ fluorosilicone liners



# Dow SYL-OFF™ Fluorosilicone Release Coating basic properties

Dow offers a product series providing a range of features to meet your various needs. Table 1 below shows the basic properties, features and typical applications of Dow SYL-OFF™ Fluorosilicone Release Coatings.

***Table 1:*** **Dow SYL-OFF™ Fluorosilicone Release Coatings**

| Product | Solvent | Active ingredient (%) | Viscosity (cPs) | Features/benefits | Typical applications |
|---|---|---|---|---|---|
| SYL-OFF™ Q2-7785 Release Coating | Heptane | 80 | 3060 | Consistent, stable release. | Release of industrial grade silicone PSAs. |
| SYL-OFF™ 7786 Release Coating | Solvent-less | >95 | 330 | Higher fluorosilicone content for differential release value. | Release of industrial grade silicone PSAs. |
| SYL-OFF™ 7792 Fluorosilicone Release Coating | Heptane | 80 | 3120 | Low and stable release force. Suitable to laminate various silicone PSA films on the release liner. | Production of release substrates coated from solvent. Release of industrial grade silicone PSAs. Main uses with silicone PSA tape include adhesive transfer tapes, industrial single coated or double coated tapes, labels, silicone foam or rubber tapes, and in-process liner for converting. |
| SYL-OFF™ 7795 Fluorosilicone Release Coating | Heptane | 80 | 3010 | Low and stable release force. Suitable to laminate various silicone PSA films on the release liner. Suitable for wet coating silicone PSA on the release liner. | Production of release substrates coated from solvent. Release of industrial grade silicone PSAs. Main uses with silicone PSA tape forms include adhesive transfer tapes, industrial single coated or double coated tapes, labels, silicone foam or rubber tapes and in process liner for converting. |
| SYL-OFF™ 7798 Fluorosilicone Release Coating | Diisopropyl ether | 85 | 4000 | Low and stable release force. High SAS. Suitable for dry laminate and wet casting using a wide range of silicone PSAs. | Release of industrial grade silicone pressure sensitive adhesives. Main uses with silicone PSA tape forms include adhesive transfer tapes, industrial single coated or double coated tapes, labels, silicone foams or rubber tapes, in process liner for converting, and silicone PSA assembly tapes. |
| SYL-OFF™ 7555 Coating | Solvent-less | 100 | 429 | Solventless. Stable release. | Release coating for silicone PSAs laminate/ labelstock. |
| SYL-OFF™ Q2-7560 Crosslinker | / | 100 | 35 | Crosslinker for SYL-OFF™ Q2-7785 Release Coating, SYL-OFF™ 7786 Release Coating, SYL-OFF™ 7792 Fluorosilicone Release Coating, SYL-OFF™ 7795 Fluorosilicone Release Coating and SYL-OFF™ 7798 Fluorosilicone Release Coating | |
| SYL-OFF™ SL 7561 Crosslinker | / | 100 | 210 | Crosslinker for SYL-OFF™ 7555 Coating | |

# Typical Dow SYL-OFF™ Fluorosilicone Release Coatings release performance

**Release performance evaluation method -** Release film preparation conditions

- Substrate: 50um thickness PET film
- Release agent bath formulation: See Table 2.
- Coating amount: 0.4 µm
- Curing: Hot air circulation oven, 150°C x 1 min.
- Liner aging: 70°C x 1 day

*Note: the tests results are based on this liner aging (post cure) condition*

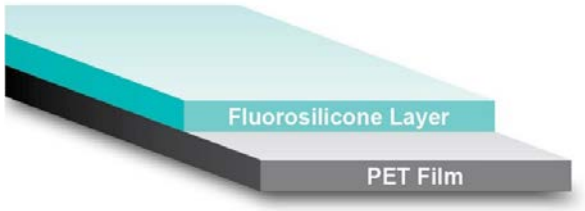



***Table 2:*** **Silicone PSA Release Coating Evaluation Bath Formulations (wt%)**

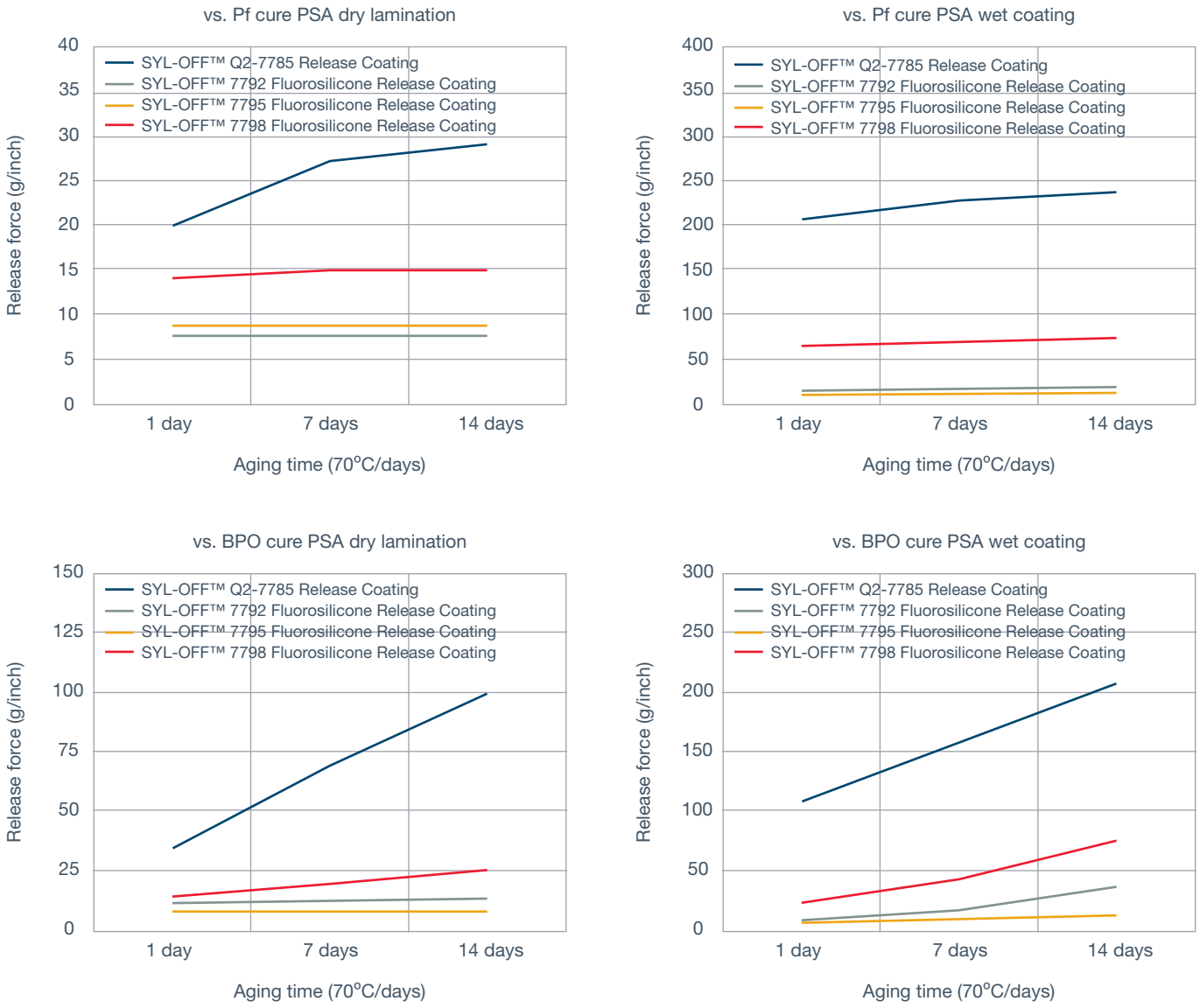
| | SYL-OFF™ Q2-7785 Release Coating | | SYL-OFF™ 7792 Fluorosilicone Release Coating | | SYL-OFF™ 7795 Fluorosilicone Release Coating | | SYL-OFF™ 7798 Fluorosilicone Release Coating | |
|---|---|---|---|---|---|---|---|---|
| Types PSA | Pt cured PSA | BPO cured PSA | Pt cured PSA | BPO cured PSA | Pt cured PSA | BPO cured PSA | Pt cured PSA | BPO cured PSA |
| SYL-OFF™ Q2-7785 Release Coating | 100 | 100 | | | | | | |
| SYL-OFF™ 7792 Fluorosilicone Release Coating | | | 100 | 100 | | | | |
| SYL-OFF™ 7795 Fluorosilicone Release Coating | | | | | 100 | 100 | | |
| SYL-OFF™ 7798 Fluorosilicone Release Coating | | | | | | | 100 | 100 |
| SYL-OFF™ Q2-7560 Crosslinker | 3.20 | 0.70 | 3.20 | 0.70 | 3.20 | 0.70 | 3.29 | 1.64 |
| SYL-OFF™ 4000 Catalyst | | | | | | | 4.12 | 4.11 |
| Recommended diluting solvents: Isooctane/IPE (Isopropyl ether) | Optional quantity Isooctane | Optional quantity Isooctane | Optional quantity Isooctane | Optional quantity Isooctane | Optional quantity Isooctane | Optional quantity Isooctane | Optional quantity IPE | Optional quantity IPE |

**Release force measurement conditions:**

- Silicone PSA coating thickness: 50 µm (Dry)
- Substrate: 50um PET
- Silicone PSA aging: 25°C x 1 day
- Lamination methods: 1) Wet coating
  2) Dry lamination
- Peeling speed:0.3m/min (peel liner side)

*Note: the silicone PSA cure conditions are: 1) Pt cure silicone PSA: 100°Cx3min, 2) BPO cure silicone PSA: 70°Cx3min + 180°Cx3min*

***Figure 1-4:*** **Two Types of Silicone PSAs Release Performance in the Conditions of Dry Lamination and Wet Coating**




In general, the wet coating tends to release more heavily than the dry lamination, but the new SYL-OFF™ 7792 Fluorosilicone Release Coating, SYL-OFF™ 7795 Fluorosilicone Release Coating, and SYL-OFF™ 7798 Fluorosilicone Release Coating are lower than the conventional SYL-OFF™ Q2-7785 Release Coating in all combinations and have excellent release stability over time. In addition, SYL-OFF™ 7792 Fluorosilicone Release Coating and SYL-OFF™ 7795 Fluorosilicone Release Coating show almost no difference in release between the dry lamination and the wet coating when combined with any PSA, while SYL-OFF™ 7798 Fluorosilicone Release Coating shows a very well-balanced peel difference between the dry lamination and the wet coating in combination with any of the PSAs and is expected to be used in a wider range of applications.

# DOWSIL™ silicone PSAs for wet coating/dry lamination applications

Table below can be used to explore combinations of Dow silicone PSAs and SYL-OFF™ fluorosilicone release coatings for specific release-liner coating applications.

### Table 3: DOWSIL™ Silicone PSAs for wet coating/dry lamination applications

| Pressure sensitive adhesives | Wet coating onto fluorosilicone liner | | | | | | Dry lamination onto fluorosilicone liner | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SYL-OFF™ 7555 Coating | SYL-OFF™ Q2-7785 Release Coating | SYL-OFF™ 7786 Release Coating | SYL-OFF™ 7792 Flurosilicone Release Coating | SYL-OFF™ 7795 Flurosilicone Release Coating | SYL-OFF™ 7798 Flurosilicone Release Coating | SYL-OFF™ 7555 Coating | SYL-OFF™ Q2-7785 Release Coating | SYL-OFF™ 7786 Release Coating | SYL-OFF™ 7792 Flurosilicone Release Coating | SYL-OFF™ 7795 Flurosilicone Release Coating | SYL-OFF™ 7798 Flurosilicone Release Coating |
| DOWSIL™ 2014 Adhesive | • | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ |
| DOWSIL™ 7657 Adhesive | | • | • | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ |
| DOWSIL™ Q2-7735 Adhesive | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ |
| DOWSIL™ Q2-7406 Adhesive | • | ◊ | ◊ | ◊ | ◊ | ◊ | • | ◊ | ◊ | ◊ | ◊ | ◊ |
| DOWSIL™ Q2-7566 Adhesive | • | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ |
| DOWSIL™ 7355 Adhesive | • | ◊ | ◊ | ◊ | ◊ | ◊ | • | ◊ | ◊ | ◊ | ◊ | ◊ |
| DOWSIL™ 7358 Adhesive | | ◊ | ◊ | ◊ | ◊ | ◊ | • | ◊ | ◊ | ◊ | ◊ | ◊ |
| DOWSIL™ 280A Adhesive | | • | • | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ |
| DOWSIL™ 282 Adhesive | • | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ |

◊ Recommended • Recommendedunder specific conditions

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