

New choices. More opportunities.

DOW CORNING® FZ-SERIES SURFACTANTS

Traditional polydimethylsiloxane does not always provide the performance required to meet your specific formulation needs. However, by incorporating organic groups, it is possible to create a wide range of siloxane structures with new performance-enhancing capabilities.

Dow Corning® FZ-Series Surfactants expand our current line of silicone polyethers, giving you even more structure and performance options from a single, trusted source.

Dow Corning FZ-Series Surfactants are concentrated and non-ionic. They can be formulated into both aqueous and non-aqueous systems. Plus, they are effective at low use levels.

BENEFICIAL FEATURES

- Low surface tension
- High wetting
- Gloss enhancement
- Moderate pro-foaming
- Broad range of solubility
- Aqueous cloud points
- Low volatility
- Low toxicity, environmentally safe
- Concentrated

WIDE RANGE OF END-USE APPLICATIONS

- Adhesives and sealants
- Agrochemicals²
- Auto appearance¹
- Chemical processing
- Fibers and textiles
- Institutional specialties¹
- Paints, inks, and coatings
- Plastics and rubber

¹Contact Dow Corning for regulatory compliance on your specific application.

PRODUCT DETAILS

Dow Corning FZ-Series Surfactants offer a choice of benefits, structures, and physical properties to meet your specific formulation needs.

Table 1. Selection Guide

<i>Dow Corning</i> ® Surfactant	Antifoam	Profoaming	Dispersing, Emulsifying	Finish, Gloss, Sheen	Flow, Leveling Aid	Lubricant	Slip, Mar Resistance	Wetting
FZ-77 ²	-	-	-	-	X	-	-	X
FZ-2110	X	-	-	X	X	X	X	X
FZ-2123	-	X	X	X	X	-	-	X
FZ-7604	-	X	X	-	-	-	-	X

²Meets the requirements of US EPA regulation 40 CFR 180.910 regarding "tolerances and exemption from tolerances for pesticide chemicals in or on raw agricultural commodities."

The low surface tension of *Dow Corning* FZ-Series Surfactants will enhance leveling and wetting on virtually any surface. At very low concentrations, *Dow Corning* FZ-Series Surfactants can reduce the surface tension of water from 72 dynes/cm to as low as 20 dynes/cm. This superior wetting will enhance leveling performance in coatings applications and improve adhesion to substrates.

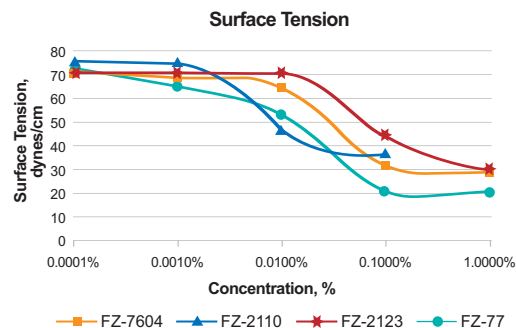


Table 2. Structural Information

Dow Corning® Surfactant	CAS Number	Type	EO/PO Ratio	Cap	Molecular Weight	Percent Solids
FZ-77	27306-78-1	Trisiloxane	100/0	Me	600	100
FZ-2110	68440-66-4	Pendant	100/0	Me	2015	100
FZ-2123	68938-54-5	Pendant	100/0	Me	2775	100
FZ-7604	68937-54-2	Pendant	100/0	H	4000	100

Table 3. Typical Physical Properties

Dow Corning® Surfactant	Appearance	Specific Gravity ¹	Viscosity	Aqueous Surface Tension at 1%, dynes/cm	Cloud Point, °C	Flash Point Value, °C	Estimate HLB ²
FZ-77	Clear, amber	1.01	22.1	20.5	- ³	>100	Low
FZ-2110	Clear	0.99	128	- ⁴	- ³	>100	Low
FZ-2123	Clear, light tan	1.04	84.4	30.1	35.4	>100	High
FZ-7604	Clear, light tan	1.06	562	28.4	51.5	>100	High

¹Apparent specific gravity at 25/25°C. ²Low (5-8), medium (9-12), high (13-17). ³Solution cloudy at 1% at room temperature.

⁴Not soluble at 1%; no surface energy data reported.

Dow Corning FZ-Series Surfactants are soluble or dispersible in a wide range of solvents, allowing for greater formulation flexibility.

Table 4. Solubility at 0.1, 1, 5 and 10% Dow Corning Surfactant Concentration¹

Dow Corning® Surfactant	DI Water	IPA	Propylene Glycol	Acetone	Methyl n-Amyl Ketone	Toluene	Hexane	VM&P Naphtha	t-Butyl Acetate	Methyl Acetate	PCBTF (OX SOL ^{®2})	Xylene	3% Xylene in Kerosene
FZ-77	DDDI	SSSS	SSSS	SSSS	SSSD	SSSS	SDII	SSSD	SSSS	SSSS	SSSS	SSSS	SSII
FZ-2110	DIII	SSSS	DIII	SSSS	SSSS	SSSS	SSSS	SSSS	SSSS	SSSS	SSSS	SSSS	SSSS
FZ-2123	SDDD	SSSS	SSSS	SSSS	SSSS	SSSS	SDII	SSII	SSSS	SSSS	SSSS	SSSS	SSII
FZ-7604	SSDD	SSSS	SSII	SSSS	SSSD	SSSS	IIII	IIII	SSSD	SSSS	SSSS	SSSS	IIII

¹S = Soluble, D = Dispersible, I = Insoluble.

²OX SOL is a registered trademark of Makhteshim Agan Industries.

For More Information and Product Samples

Contact your Dow Corning distributor. Product samples, technical data sheets, and information about Dow Corning's extensive line of silicone surfactants are also available at www.dowcorning.com/chemicals. For application assistance and formulation advice, chat with a Dow Corning expert online or contact your nearest Dow Corning global Technical Information Center.

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