

DEFENSE & COMMERCIAL  
AVIATION LINE



THE CHEMISTRY  
OF CARE

PRODUCT GUIDE



## FLUROSILICONES IN A BROAD RANGE OF TEMPERATURES

NuSil silicones maintain elasticity and low modulus over a broad temperature range—useful especially for those in the defense and commercial aviation industries.

### Fluorosilicones

Our fluorosilicones provide swell resistance against hydrocarbons such as jet fuel, de-icing fluids or crude oil and operate in a broad temperature range.

### Broad Operating Temperature

NuSil's broad operating temperature silicones are optimized to remain flexible at extremely low temperatures and to resist breakdown at elevated temperatures. Our silicones are proven in these environments through heritage in Low Earth Orbit (LEO) and Geosynchronous Orbit (GEO).

### Process Efficiencies

NuSil's curable film adhesives are superior solutions to traditional liquid adhesives: they offer bond line control and ease of use with no mixing required and minimal cleanup.



### ADHESIVES & SEALANTS - ONE PART

NUSIL PRODUCT NUMBER	CURE SYSTEM	VISCOSITY (cP/mPa·sec) EXTRUSION (g/minute)	ADHESION LAP SHEAR psi (MPa)	DUROMETER TYPE A	TENSILE psi (mPa)	ELONGATION %	WORK TIME (TACK FREE TIME)	COLOR	BROAD OPERATING TEMPERATURE	SPECIAL FEATURES
FLUROSILICONE										
FS-3730	ACETOXY	180 g/minute	275 (1.9)	35	900 (6.2)	440	(25 m)	WHITE		Available in gray, black, and translucent
FS3-3730	ACETOXY	230 g/minute	200 (1.4)	35	820 (5.7)	400	(15 m)	TRANSLUCENT		Available in white, fast cure
FS-3775	ACETOXY	250 g/minute	-	30	450 (3.1)	400	(8 m)	TRANSLUCENT	•	Broad operating temperature
GENERAL PURPOSE										
R-1140	ACETOXY	THIXOTROPIC	625 (4.3)	30	700 (4.8)	350	(7 m)	TRANSLUCENT		Available in black
R4-1140	ACETOXY	THIXOTROPIC	-	25	1,400 (9.65)	750	(10 m)	TRANSLUCENT		-
R-1130	OXIME	THIXOTROPIC	485 (3.3)	35	850 (5.86)	325	(25 m)	TRANSLUCENT		-

### ADHESIVES & SEALANTS - TWO PART

NUSIL PRODUCT NUMBER	CURE SYSTEM	VISCOSITY (cP/mPa·sec) EXTRUSION (g/minute)	ADHESION LAP SHEAR psi (MPa)	DUROMETER TYPE A	TENSILE psi (mPa)	ELONGATION %	WORK TIME (TACK FREE TIME)	COLOR	BROAD OPERATING TEMPERATURE	SPECIAL FEATURES
FLUROSILICONE										
CF1-3510	PLATINUM	70,000	-	20	185 (1.3)	135	7 h	RED		-
CF2-3521	PLATINUM	11 g/minute	350 (2.1)	35	750 (5.2)	325	-	TRANSLUCENT		Fast cure, available in black
CF2-3521-2	PLATINUM	THIXOTROPIC	350 (2.1)	35	600 (4.1)	265	60 m	BLACK		-
R7-3521-11	PLATINUM	-	-	30	500 (3.4)	260	60 m	GRAY		-
GENERAL PURPOSE										
R-2550	ALKOXY	9,000	-	35	500 (3.5)	175	6 h	TRANSLUCENT	•	-
R-2560	ALKOXY	31,000	385 (2.7)	55	700 (4.8)	125	1 h	RED	•	-
R-2146	ALKOXY	165,000	330 (2.3)	35	540 (3.7)	355	3.3 h	GRAY		-
R-2588	ALKOXY	825,000	675 (4.7)	65	750 (5.2)	95	-	RED		-
R-2145	PLATINUM	412 g/minute	145 (1.0)	45	1,050 (7.20)	400	15 m	GRAY		Fast cure
R1-2145	PLATINUM	400 g/minute	145 (1.0)	45	1,000 (6.89)	400	60 m	GRAY		-
R3-2160	PLATINUM	15 g/minute	250 (1.75)	35	550 (3.8)	525	72 h	RED	•	Radiation resistant
R-2187	PLATINUM	23,000	675 (4.7)	42	790 (5.4)	190	7 h	TRANSLUCENT		-
R31-2186	PLATINUM	142,500	110 (0.76)	20	1,000 (6.9)	775	15 m	TRANSLUCENT		-
R-2160	PLATINUM	284,400	-	20	750 (5.17)	625	50 m	RED	•	-

h = hours  
m = minutes

### FILM ADHESIVES

NUSIL PRODUCT NUMBER	ADHESION LAP SHEAR psi (MPa)	THICKNESS (INCHES)	CURE SYSTEM	COLOR	SPECIAL FEATURES
R1-2680-4	-	0.004	PLATINUM	TRANSLUCENT	2-part curable film adhesive
R-2682-12	313 (3.3)	0.014	PLATINUM	TRANSLUCENT	2-part curable film adhesive
R1-2684	-	-	PLATINUM	TRANSLUCENT	Sprayable film adhesive

### PRIMERS

NUSIL PRODUCT NUMBER	% SOLIDS	SPECIAL FEATURES
SP-120	4	-
CF1-135	4.5	Platinum cure systems
CF6-135	8.7	Platinum cure systems, difficult substrates
SP-272	9	Low-VOC, can extend work time of adhesives
SP-270	15	Platinum cure systems, inhibiting substrates, available in red

All products available in red

It is the sole responsibility of each purchaser to ensure that any use of these materials is safe and complies with all applicable laws and regulations. It is the user's responsibility to adequately test and determine the safety and suitability for their applications and NuSil Technology makes no warranty concerning fitness for any use or purpose.

## CONDUCTIVITY IN EXTREME ENVIRONMENTS, INSIDE AND OUT

### Electrical Conductivity and Static Dissipation

Static accumulation and discharge can damage sensitive electronic components. We incorporate electrically conductive additives into our silicones, allowing the material to carry a current. This enables static to dissipate continuously rather than allowing it to accumulate and discharge rapidly. The electrical conductivity is measured by volume resistivity ( $\Omega\cdot\text{cm}$ ) and is used to gauge the shielding effectiveness of the material.

### Thermal Management

Our thermally conductive silicones aid in the movement of heat from electronic devices without adding stress to the systems. Unlike thermal pads, our silicone adhesives and encapsulants conform to complex geometries, making them ideal for use in a wide array of avionics assemblies.



### ELECTRICALLY CONDUCTIVE / STATIC DISSIPATIVE

NUSIL PRODUCT NUMBER	VOLUME RESISTIVITY (ohm-cm)	VISCOSITY (cP/mPa-sec) EXTRUSION (gpm)	CURE SYSTEM	DUROMETER TYPE A	TENSILE psi (mPa)	ELONGATION %	WORK TIME	COLOR	SPECIAL FEATURES
R-2634	0.001	160 g/minute	ALKOXY	80	250 (1.7)	90	3 h	GRAY-GREEN	Low / High temperature
R-2637	0.006	THIXOTROPIC	PLATINUM	60	210 (2.1)	275	4 h	TAN	-
R-2630	6	11,700	PLATINUM	60	690 (4.7)	95	15 h	BLACK	-
R-1505	8	THIXOTROPIC	OXIME	75	525 (3.6)	25	-	BLACK	One part
R-2631	70	100 g/minute	PLATINUM	45	-	-	-	BLACK	-

### THERMALLY CONDUCTIVE

NUSIL PRODUCT NUMBER	THERMAL CONDUCTIVITY W/(mK)	VISCOSITY (cP/mPa-sec)	CURE SYSTEM	DUROMETER TYPE A	TENSILE psi (mPa)	ELONGATION %	WORK TIME	SPECIAL FEATURES
<b>FLUOROSILICONE</b>								
CF1-3800	1.39	THIXOTROPIC	PLATINUM	50	125 (0.86)	50	90 m	-
<b>GENERAL PURPOSE</b>								
R-2930	1.46	THIXOTROPIC	PLATINUM	80	260 (1.72)	20	3 h	-
R-2940	0.84	THIXOTROPIC	PLATINUM	90	700 (4.8)	35	5 h	Gray
R-2939	0.75	70,000	PLATINUM	70	300 (2.1)	70	4 h	-
R-2949	0.75	75,000	PLATINUM	75	275 (4.8)	50	3.5 h	-

h = hours  
m = minutes

### GELS

NUSIL PRODUCT NUMBER	VISCOSITY (cP/mPa-sec)	PENETRATION (mm) (Durometer)	WORK TIME	COLOR	SPECIAL FEATURES
<b>FLUOROSILICONE</b>					
FS-3502-1	1,200	(10 'A')	-	WHITE	-
GEL-3500	11,250	(50 '00')	12h	TRANSLUCENT	-
<b>GENERAL PURPOSE</b>					
GEL-8150	500	5.0	4 h	TRANSLUCENT	-
GEL-8170	600	9.0	-	TRANSLUCENT	-
GEL-8250	650	5.0	2 h	TRANSLUCENT	Broad operating temperature
GEL1-8155	14,500	0.4	-	TRANSLUCENT	-

All platinum cure system.

### FOAM

NUSIL PRODUCT NUMBER	FOAM DENSITY lbs/ft <sup>3</sup> (g/ml)	VISCOSITY (cP/mPa-sec) EXTRUSION (g/minute)	COLOR	CURE SYSTEM	SPECIAL FEATURES
<b>FLUOROSILICONE</b>					
CF1-3710-2	50	1 g/minute	GRAY	PLATINUM	-
<b>GENERAL PURPOSE</b>					
R-2370	10	4,700	TAN	ALKOXY	-
R-2380	19	3,600	TAN	ALKOXY	-
SFM5-2350	25	52,500	GRAY	PLATINUM	Flame resistant

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# CREATING COMPLETE SOLUTIONS

## Fabricated Parts

NuSil manufactures silicone gaskets for complex engines, silicone tapes and appliques for exterior coatings of aircraft or other platforms (both manned and unmanned) as well as silicone vibration dampening devices for sophisticated electrical and pneumatic systems. These components often incorporate complex, highly proprietary fillers that are too challenging for others to process.

## Ice Release Coatings

Ice buildup is a serious problem with a major economic impact on the aircraft industry. Silicone ice release coatings can significantly reduce ice adhesion when applied to aerodynamic surfaces.



## MOLDING MATERIALS

NUSIL PRODUCT NUMBER	CURE SYSTEM	DUROMETER TYPE A	TENSILE psi (mPa)	ELONGATION %	TEAR ppi (kN/m)	WORK TIME	EXTRUSION (g/minute)	SPECIAL FEATURES
FLUROSILICONE								
FS-3781	PEROXIDE	30	850 (5.9)	300	40 (7.1)	-	-	Extrusion or compression molding
FS-3511	PLATINUM	40	1,150 (7.9)	335	60 (10.6)	>24 h	40 g/minute	Liquid injection molding
GENERAL PURPOSE								
LSR-58X0	PLATINUM	10-80	≤ 450 (3.1)	≤ 250	≤ 60 (10.6)	>72 h	≤ 50	Liquid injection molding line
R-2200-11	PLATINUM	60	800 (5.5)	155	90 (15.9)	2.5 h	-	Mold making

h = hours

## PAINTS & COATINGS

NUSIL PRODUCT NUMBER	CURE SYSTEM	VISCOSITY (cP/mPa·sec)	DUROMETER TYPE A	TENSILE psi (mPa)	ELONGATION %	COLOR	ICE RELEASE	SPECIAL FEATURES
FLUROSILICONE								
R-3930	ACETOXY	THIXOTROPIC	30	750 (5.1)	400	TRANSLUCENT	•	Available in Federal Color Standards 36118, 36622, 36375, 36099
R-3975	ACETOXY	1,625	25	425 (2.9)	400	TRANSLUCENT	•	Broad operating temperature
GENERAL PURPOSE								
R-1182	ACETOXY	-	-	-	-	TRANSLUCENT		Low friction coating
R-1082	ACETOXY	700	25	1,425 (9.8)	950	TRANSLUCENT	•	-
CF19-2615	PLATINUM	1,300	30	120 (0.82)	100	TRANSLUCENT	•	Solventless
R-2180	PLATINUM	3,075	40	1,700 (11.7)	1,050	TRANSLUCENT	•	Available in black
R3-1075	OXIME	3,300	40	700 (4.8)	350	TRANSLUCENT		Conformal
R-1009	OXIME	6,150	45	1,150 (7.9)	650	TRANSLUCENT	•	Conformal

## RESIN

NUSIL PRODUCT NUMBER	VISCOSITY (cP/mPa·sec)	DUROMETER TYPE D	COLOR	SPECIAL FEATURES
CF2-4721	130	75	LIGHT AMBER	Precatalyzed with Dicumyl Peroxide

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## FROM THE MARS ROVER TO THE PALM OF YOUR HAND.

We know that standard solutions don't always fit. After three decades serving the most demanding industries, we've honed our processes and proprietary equipment to take customization to a mass scale.

Let us show you how we're transforming the science of silicone into the **Chemistry of Care™**.

Today, we have over 3,000 standard products that can easily be mass customized to your precise, unique specifications.

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