

■ FILL FLUID OVERVIEW

Yokogawa Code	Type		Application	Page
	Code			
A	SH704	Silicone	General Use	2
B	SH200	Silicone	General Use	3
C	SH705	Silicone	High Temperature Use	4
D	N/A	Fluorinated Oil	Oil Prohibited Use	5
E	N/A	Ethylene Glycol	Low Temperature Use	6
P	N/A	Propylene Glycol	General Use	7
1	SH704	Silicone	High Temperature High Vacuum Use	8
2	SH705	Silicone	High Temperature High Vacuum Use	9
4	SH704	Silicone	High Vacuum Use	10



EJA118E

Yokogawa Fill Fluid code: A

Manufacturer: Dow Corning Toray

Type: SH704 Silicone

Availability: EJA118E, EJA210E, EJA438E, EJX118A, EJX210A, and EJX438A

Specifications (≥ 14.7 psia)

Process Temperature Limits	Ambient Temperature Limits	Viscosity @ +25°C (+77°F)	Specific Gravity @ +25°C (+77°F)
-10 to +250°C (+14 to +482°F)	-10 to +60°C (+14 to +140°F)	44 cP	1.07

Coefficient of Thermal Expansion	Chemical Name	CAS Number
0.00095 cc/cc/C (0.00053 cc/cc/F)	Tetramethyltetraphenyltrisiloxane	

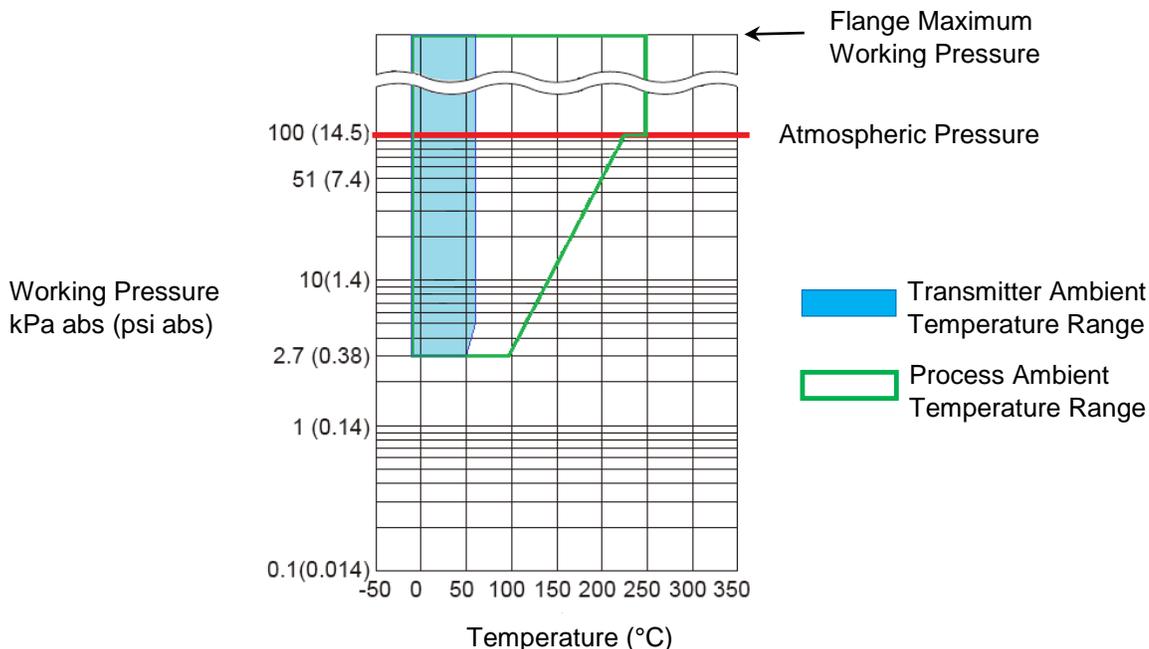
MSDS Number
939119-00001

Application

Yokogawa code A should be used in general applications where the pressure is ≥ 14.7 psia; but, a higher process temperature limit than Yokogawa code B is needed.

For applications where the pressure is < 14.7 psia, use Yokogawa Fill Fluid code 1 or 4.

Working Pressure and Process Temperature



FGP350.01a

▪ **Yokogawa Fill Fluid code: B**

Manufacturer: Dow Corning Toray

Type: SH200-10 Silicone (10 cs)

Availability: EJA118E, EJA210E, EJA438E, EJX118A, EJX210A, and EJX438A

• **Specifications (≥14.7 psia)**

Process Temperature Limits	Ambient Temperature Limits	Viscosity @ +25°C (+77°F)	Specific Gravity @ +25°C (+77°F)
-30 to +180°C (-22 to +356°F)	-15 to +60°C (+5 to +140°F)	9.5 cP	0.94

Coefficient of Thermal Expansion	Chemical Name	CAS Number
0.00108cc/cc/°C (0.0060cc/cc/°F)	Dimethyl Polysiloxane	556-67-2

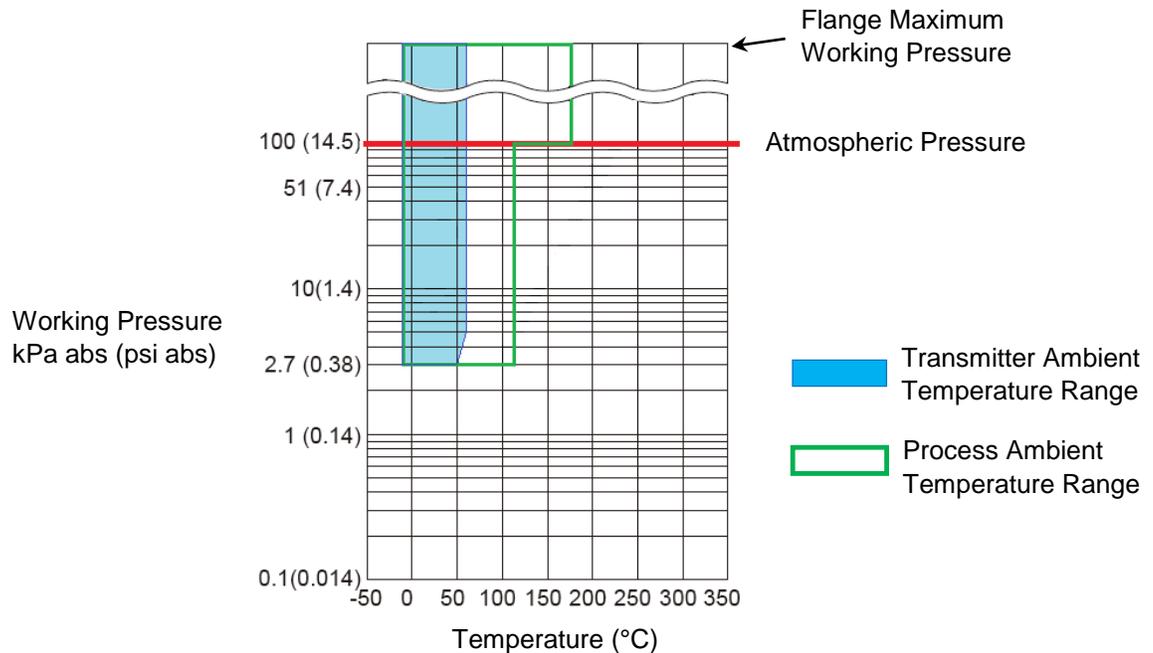
MSDS Number
956804-00001

• **Application**

Yokogawa code B is the most used fill fluid option for Yokogawa diaphragm seal transmitters. The SH200-10 offers a wide range of both process and ambient temperatures together with low viscosity to give a good all-around performance.

For applications where the pressure is < 14.7 psia, use Yokogawa Fill Fluid code 1, 2, or 4.

• **Working Pressure and Process Temperature**



FGP350.02a

Yokogawa Fill Fluid code: C

Manufacturer: Dow Corning Toray

Type: SH705 Silicone

Availability: EJA118E, EJA438E, EJX118A, and EJX438A

Specifications (≥ 14.7 psia)

Process Temperature Limits	Transmitter Ambient Temperature Limits	Viscosity @ +25°C (+77°F)	Specific Gravity @ +25°C (+77°F)
+10 to +310°C (+50 to 590°F)	+10 to +60°C (+50 to +140°F)	192 cP	1.094

Coefficient of Thermal Expansion	Chemical Name	CAS Number
8.0×10^{-4} cc/cc/°C	Pentaphenyl-Trimethyl-Trisiloxane	

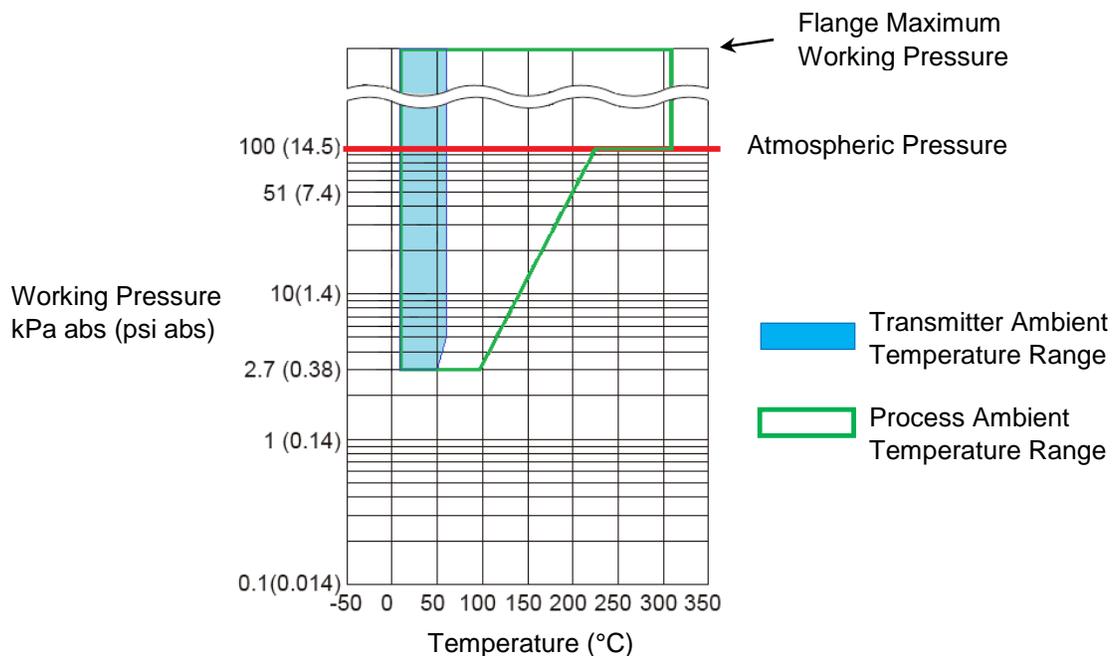
MSDS Number
901562-00001 V1.0

Application

Yokogawa code C is the used fill fluid option for applications operating at higher temperatures. The SH705 offers a higher range of both process and ambient temperatures.

For applications where the pressure is < 14.7 psia, use Yokogawa Fill Fluid code 1, 2, or 4.

Working Pressure and Process Temperature



FGP350.03a

▪ **Yokogawa Fill Fluid code: D**

Manufacturer: Daikin

Type: Daifoil no. 3

Availability: EJA118E, EJA210E, EJA438E, EJX118A, EJX210A, and EJX438A

• **Specifications (≥14.7 psia)**

Process Temperature Limits	Ambient Temperature Limits	Viscosity @ +25°C (+77°F)	Specific Gravity @ +25°C (+77°F)
-20 to +120°C (-4 to +248°F)	-10 to +60°C (+14 to +140°F)	50	1.91

Coefficient of Thermal Expansion	Chemical Name	CAS Number
0.00078 cc/cc/°C (0.00052 cc/cc/°F)	Chlorotrifluoro-Ethylene	9002-83-9

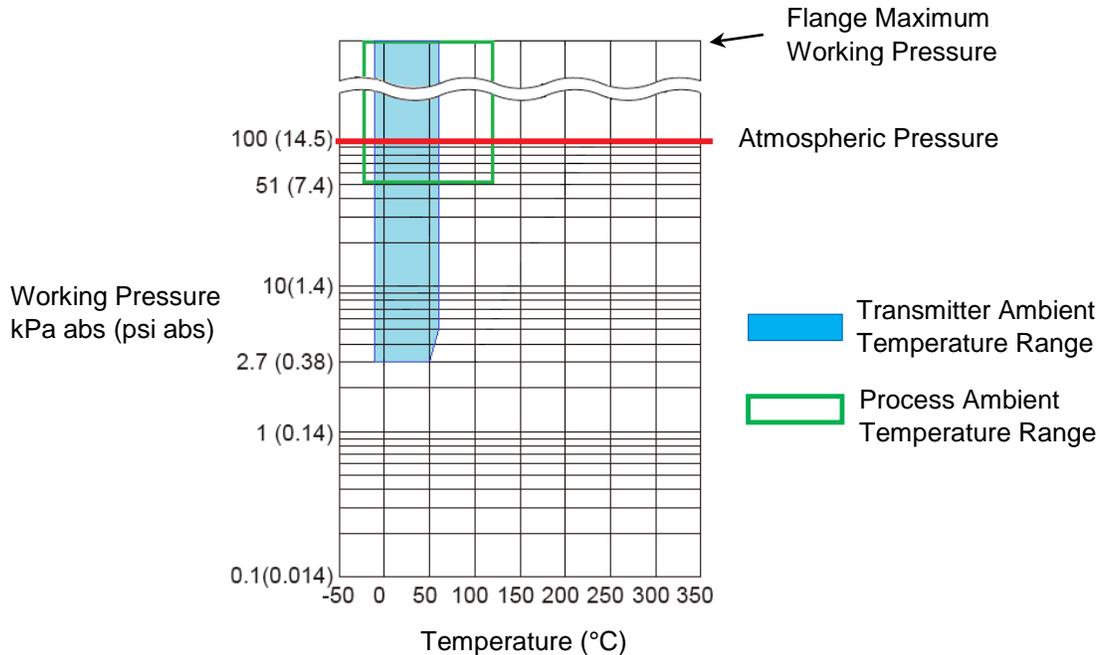
MSDS Number
20.01.2009

• **Application**

Yokogawa code D is the fill fluid option for applications requiring oil-prohibited use. This fill fluid should only be used in conjunction with option code /K1 or /K5.

For applications where the pressure is < 14.7 psia, use Yokogawa Fill Fluid code 1, 2, or 4.

• **Working Pressure and Process Temperature**



FGP350.04a

Yokogawa Fill Fluid code: E

Manufacturer: Sigma-Aldrich

Type: Ethylene Glycol (79%) and Purified Water (21%)

Availability: EJA118E, EJA438E, EJX118A, and EJX438A

Specifications (≥ 14.7 psia)

Process Temperature Limits	Ambient Temperature Limits	Viscosity @ +25°C (+77°F)	Specific Gravity @ +25°C (+77°F)
-50 to +100°C (-58 to +212°F)	-40 to +60°C (-40 to +140°F)	11 cP	1.09

Coefficient of Thermal Expansion	Chemical Name	CAS Number
0.00061 cc/cc/°C (0.00032cc/cc/°F)	Ethylene Glycol (79%) Purified Water (21%)	107-21-1

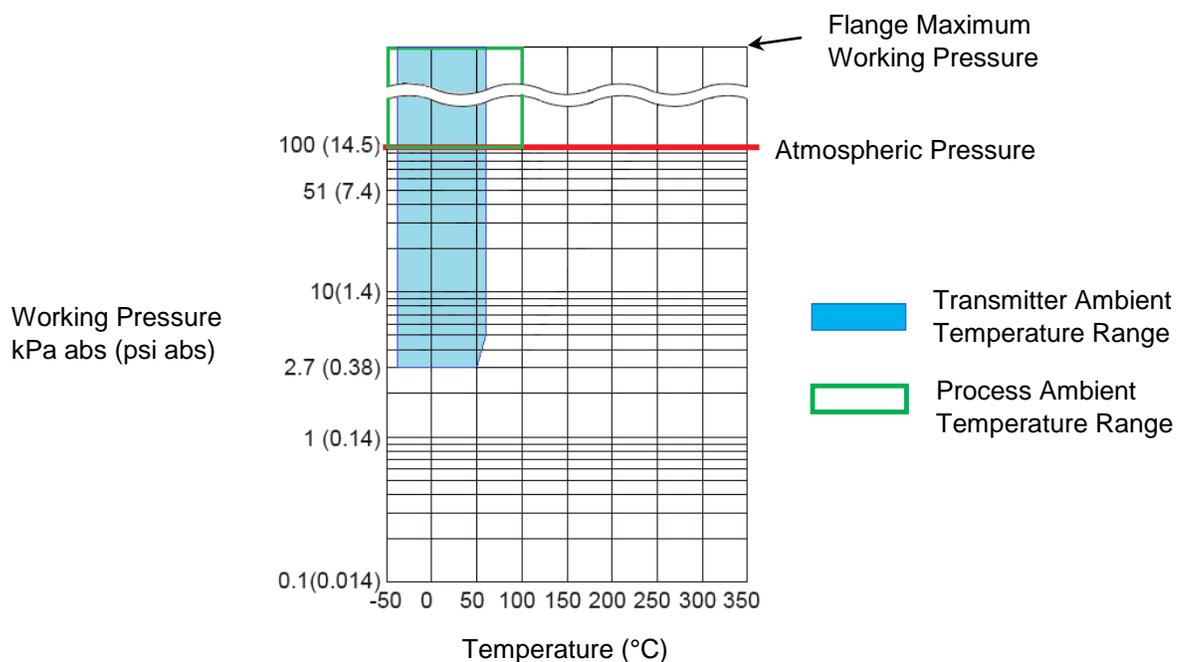
SDS Number
03750 Fluka V5.8

Application

Yokogawa code E is the fill fluid option for applications requiring operation in very low process temperatures. This fill fluid is not to be used in any process that will see vacuum.

For applications where the pressure is < 14.7 psia, use Yokogawa Fill Fluid code 1, 2, or 4.

Working Pressure and Process Temperature



FGP350.05a

▪ Yokogawa Fill Fluid code: P

Manufacturer: Adeka

Type: Propylene Glycol

Availability: EJA210E and EJX210A

• Specifications (≥ 14.7 psia)

Process Temperature Limits	Ambient Temperature Limits	Viscosity @ +25°C (+77°F)	Specific Gravity @ +25°C (+77°F)
-10 to +120°C (-14 to +248°F)	-10 to +85°C (+14 to +185°F)	42.6 cP	1.033

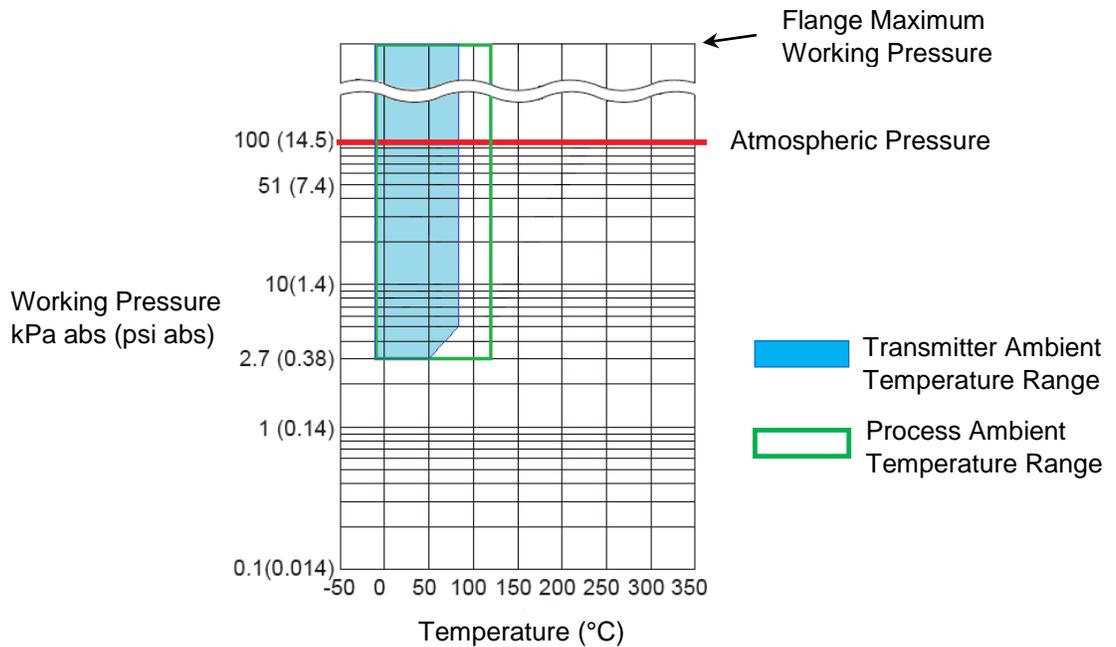
Coefficient of Thermal Expansion	Chemical Name	CAS Number
0.000695 cc/cc/°C (0.000312 cc/cc/°F)	Propylene Glycol	57-55-6

MSDS Number
US-14214

• Application

Yokogawa code P is the fill fluid option for applications requiring sanitary classification.

• Working Pressure and Process Temperature



FGP350.06a

Yokogawa Fill Fluid code: 1

Manufacturer: Dow Corning Toray

Type: SH704 Silicone

Other: Special cleaning process and Overfill

Availability: EJA118E, EJA438E, EJX118A, and EJX438A

Specifications (≥ 14.7 psia)

Process Temperature Limits	Ambient Temperature Limits	Viscosity @ +25°C (+77°F)	Specific Gravity @ +25°C (+77°F)
-10 to +250°C (+14 to +482°F)	-10 to +60°C (+14 to +140°F)	44 cP	1.07

Coefficient of Thermal Expansion	Chemical Name	CAS Number
0.00095 cc/cc/C (0.00053 cc/cc/F)	Tetramethyltetraphenyltrisiloxane	

MSDS Number
939119-00001

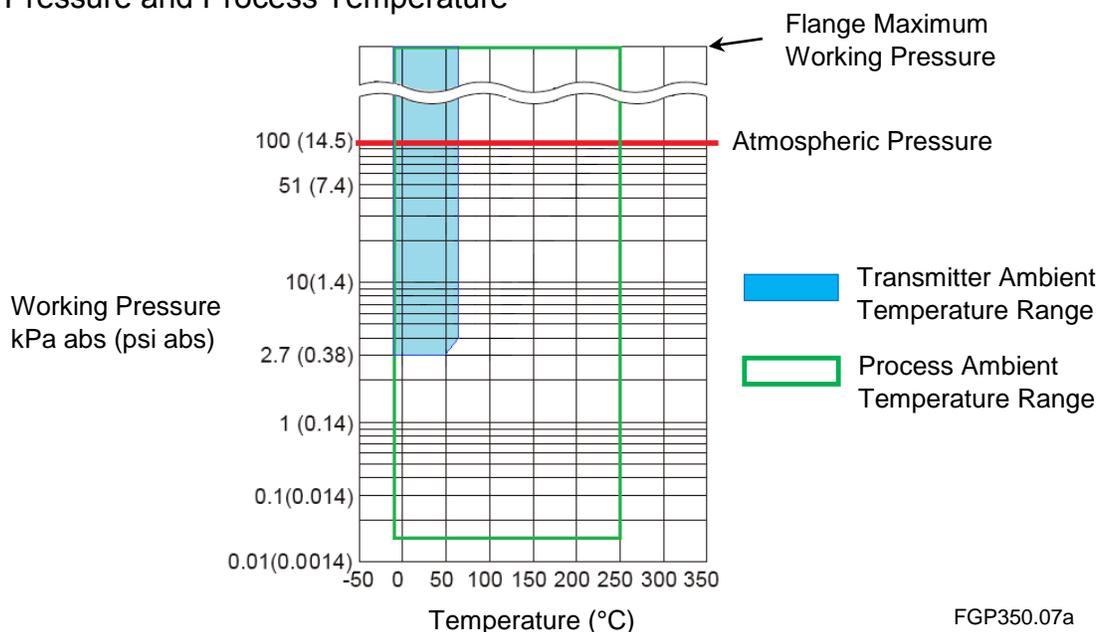
Special Cleaning: A special process cleans up contaminants such as gas and oil residue that maybe included in the fill fluid, capsule body, or diaphragm. Small volumes of gas are stored in many metals. When the transmitter is exposed to high temperature or a high vacuum environment, the gas stored in the metal is released into the fill fluid and bubbles are produced. The transmitter's output will fluctuate with temperature change due to the contraction and expansion of the gas bubbles. Also, if oil residue is left on the surface of the metal, the residue is converted to gas causing bubbles in the fill fluid.

Overfill: The volume of fill fluid in the system is slightly greater than normal. This ensures that the pressure sensor always sees a positive pressure.

Application

Yokogawa code 1 is the fill fluid option for applications with process conditions that have both high temperature and high vacuum.

Working Pressure and Process Temperature



▪ Yokogawa Fill Fluid code: 2

Manufacturer: Dow Corning Toray

Type: SH705 Silicone

Other: Special cleaning process and Overfill

Availability: EJA118E, EJA438E, EJX118A, and EJX438A

• Specifications (≥14.7 psia)

Process Temperature Limits	Transmitter Ambient Temperature Limits	Viscosity @ +25°C (+77°F)	Specific Gravity @ +25°C (+77°F)
+10 to +310°C (+50 to 590°F)	+10 to +60°C (+50 to +140°F)	192 cP	1.094

Coefficient of Thermal Expansion	Chemical Name	CAS Number
8.0×10^{-4} cc/cc/°C	Pentaphenyl-Trimethyl-Trisiloxane	

MSDS Number
901562-00001 V1.0

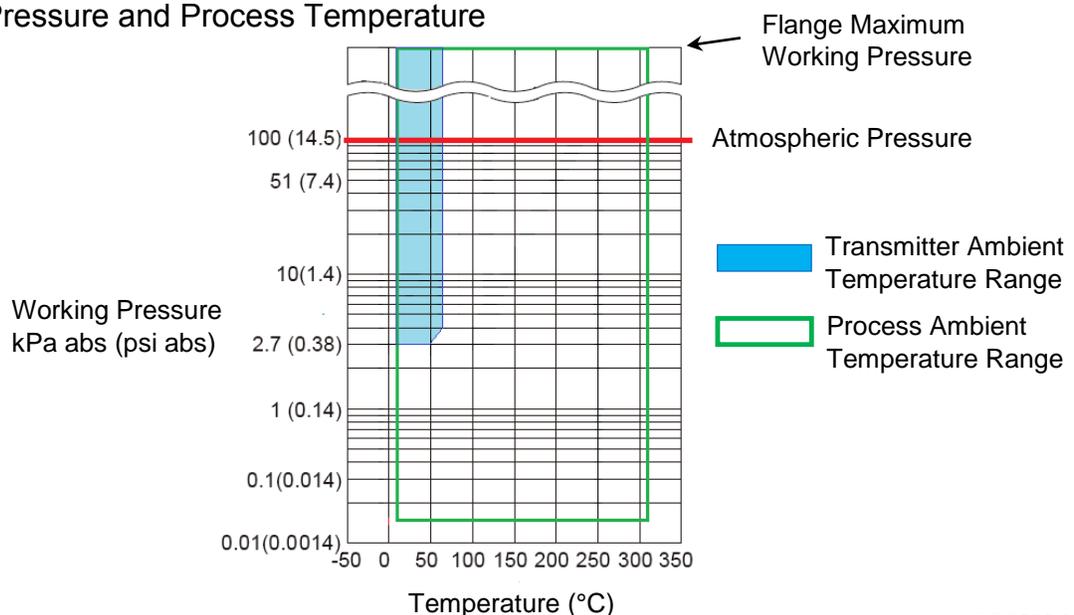
Special Cleaning: A special process cleans up contaminants such as gas and oil residue that maybe included in the fill fluid, capsule body, or diaphragm. Small volumes of gas are stored in many metals. When the transmitter is exposed to high temperature or a high vacuum environment, the gas stored in the metal is released into the fill fluid and bubbles are produced. The transmitter’s output will fluctuate with temperature change due to the contraction and expansion of the gas bubbles. Also, if oil residue is left on the surface of the metal, the residue is converted to gas causing bubbles in the fill fluid.

Overfill: The volume of fill fluid in the system is slightly greater than normal. This ensures that the pressure sensor always sees a positive pressure.

• Application

Yokogawa code 2 is the fill fluid option for applications with process conditions that have both high temperature and high vacuum. It has a higher upper temperature range than Fill Fluid code 1.

• Working Pressure and Process Temperature



FGP350.08a

▪ **Yokogawa Fill Fluid code: 4**

Manufacturer: Dow Corning Toray

Type: SH704 Silicone

Other: Overfill

Availability: EJA118E, EJA438E, EJX118A, and EJX438A

• **Specifications (≥14.7 psia)**

Process Temperature Limits	Ambient Temperature Limits	Viscosity @ +25°C (+77°F)	Specific Gravity @ +25°C (+77°F)
-10 to +100°C (+14 to +212°F)	-10 to +60°C (+14 to +140°F)	44 cP	1.07

Coefficient of Thermal Expansion	Chemical Name	CAS Number
0.00095 cc/cc/C (0.00053 cc/cc/F)	Tetramethyltetraphenyltrisiloxane	

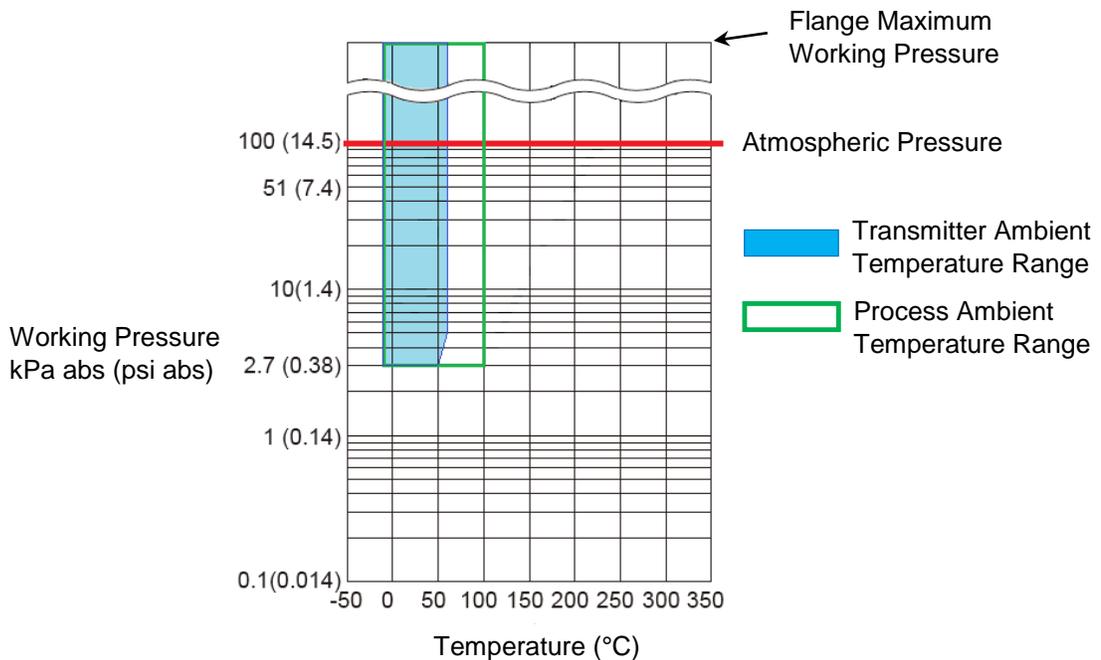
SDS Number
939119-00001

Overfill: The volume of fill fluid in the system is slightly greater than normal. This ensures that the pressure sensor always sees a positive pressure.

• **Application**

Yokogawa code 4 is the fill fluid option for applications with process conditions that have high vacuum.

• **Working Pressure and Process Temperature**



FGP350.09a

■ Availability Summary

Transmitter	Yokogawa Fill Fluid Code								
	A	B	C	D	E	P	1	2	4
EJA118E	✓	✓	✓	✓	✓		✓	✓	✓
EJA210E	✓	✓		✓		✓			
EJA438E	✓	✓	✓	✓	✓		✓	✓	✓
EJX118A	✓	✓	✓	✓	✓		✓	✓	✓
EJX210A	✓	✓		✓		✓			
EJX438A	✓	✓	✓	✓	✓		✓	✓	✓

Note: The General Specification (GS) of each transmitter takes precedence over this document.



EJX210A

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