



**PILLAR EDP™ Packing Series**

# EDP17

(P/#6710+P/#6617)

**Emission Defense Packing**

Designed to meet the most demanding  
Fugitive Emission requirements for valves.

**World's first Fugitive Emission  
compatible PTFE FREE Packing**



**PTFE  
FREE**

**PILLAR Corporation**



Organization	Standard
API (American Petroleum Institute)	API STD 622 3rd. Edition (Including high temp. test) certified. Used in numerous OEM valves qualified for API 624 STD. and API 641 STD.
ISO (International Organization for Standardization)	ISO15848-1 Class BH tested and qualified in numerous OEMs valves
Ta-Luft (Technische Anleitung zur Reinhaltung der Luft)	Ta-Luft/VDI2440 certified
Shell plc	Shell MESC 85/203, 85/204 (PILLAR's flexible graphite)



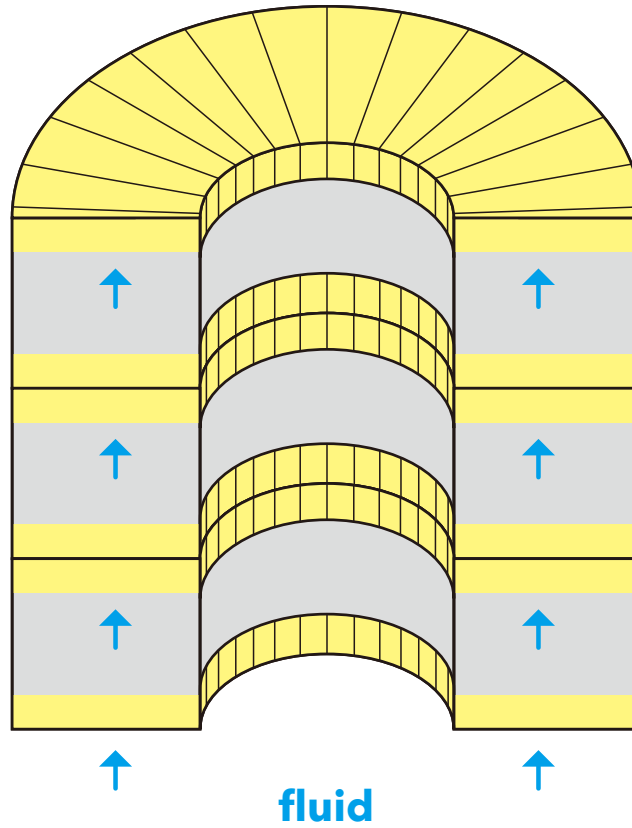
(P/#6710)



(P/#6617)

**Capable of in house mass production.**

# Structure



 **Lids** (Impermeable treatment section)

## Specification

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pH : 0 to 14

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Temperature : -270°C ~ +650°C (-454 ~ 1200°F)  
\*below 450°C (850°F) under the oxidizing atmosphere

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Pressure : ASME class 4500  
(77.6MPaG, 776barG, 11250psiG)

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Application : 1) Refinery, Petro-chemical  
2) Chemical  
3) Cryogenic, e.t.c.

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# API622 FE & HT test report



**United Valve**  
The Valve Service Specialists

## API 622 Testing Summary (Fugitive Emission Section Only)

**Customer:** Nippon Pillar Packing Co., Ltd.  
7-1 Shinmachi 1-chome  
Nishi-ku, Osaka 550-0013 Japan


**Work order:** 121191  
**Start date:** 10-30-2023  
**End date:** 11-7-2023


**Packing Information**  
**Packing Description:** Nippon Pillar EDP17X  
**Packing Set:** Three die-formed tape style rings with two braided graphite wipers  
**Packing Cross Section:** 3/4"  
**Test Fixture:** Linear Actuated API 622 Test Fixture

Testing Criteria	
Maximum Allowable Leakage	100 PPM
Test Pressure (Ambient)	600 PSIG
Test Pressure (500°F)	600 PSIG
Test Media	99% Methane
Recommended Nut Torque	29.5 Ft-Lbs
Tested Stem Travel Per Stroke	4 Inches
Stroke Time	22 Seconds per Stroke
Cycle Time	45 Seconds per Cycle
Test Standard	API 622 3 <sup>rd</sup> Edition

Results	
Number Mechanical Cycles Required	1,510
Number Mechanical Cycles Completed	1,510
Number Thermal Cycles Required	5
Number Thermal Cycles Completed	5
Packing Adjustments Allowed	0
Packing Adjustments Made	0
Status	Pass

Stem Seal Leakage (PPMv)		Gland Torque (Ft-Lbs)	
Avg.	Max.	Avg.	Max.
16.6	44	26.3	29.5

Tested By:  Witnessed By: \_\_\_\_\_



**United Valve**  
The Valve Service Specialists

## API 622 Testing Summary (High Temperature Test Section Only)

**Customer:** Nippon Pillar Packing Co., Ltd.  
7-1 Shinmachi 1-chome  
Nishi-ku, Osaka 550-0013 Japan


**Work order:** 121446  
**Start date:** 12-20-2023  
**End date:** 12-23-2023

**Packing Information**  
**Packing Description:** Nippon Pillar EDP17X (#6617-X + #6710)  
**Packing Set:** Three die-formed tape style rings with two braided graphite wiper rings  
**Packing Cross Section:** 1/4"  
**Test Fixture:** Linear Actuated API 622 Test Fixture

Testing Criteria		
Maximum Allowable Leakage	100	PPM
Test Pressure (Ambient)	600	PSIG
Test Pressure (750°F)	200	PSIG
Test Media (Ambient)	99%	Methane
Test Media (750°F)	99%	Helium
Recommended Nut Torque	29.5	Ft-Lbs
Tested Stem Travel Per Stroke	4	Inch
Stroke Time	20	Seconds per Stroke
Cycle Time	42	Seconds per Cycle
Test Standard	API 622 3 <sup>rd</sup> Edition	

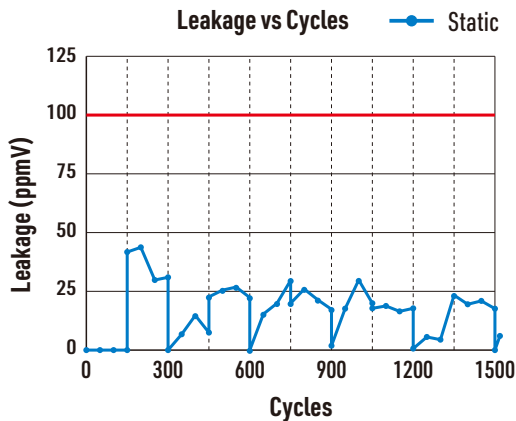
Results	
Number Mechanical Cycles Required	300
Number Mechanical Cycles Completed	300
Number Thermal Cycles Required	3
Number Thermal Cycles Completed	3
Packing Adjustments Allowed	1
Packing Adjustments Made	1
Status	Pass

Stem Seal Leakage (PPMv)		Gland Torque (Ft-Lbs)	
Avg.	Max.	Avg.	Max.
13.5	50	27.3	29.5

Tested By:  Witnessed By: \_\_\_\_\_



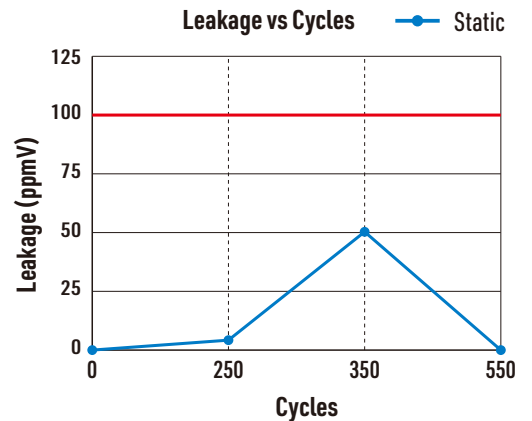
No adhesion



No extrusion



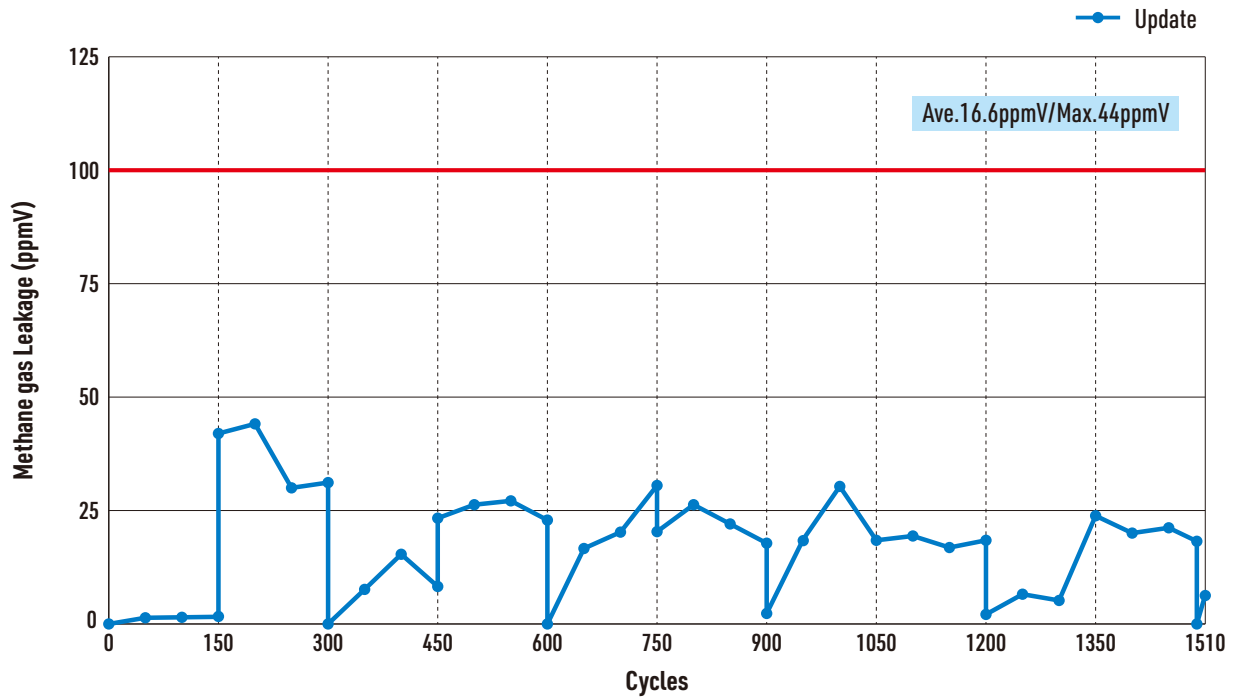
No adhesion



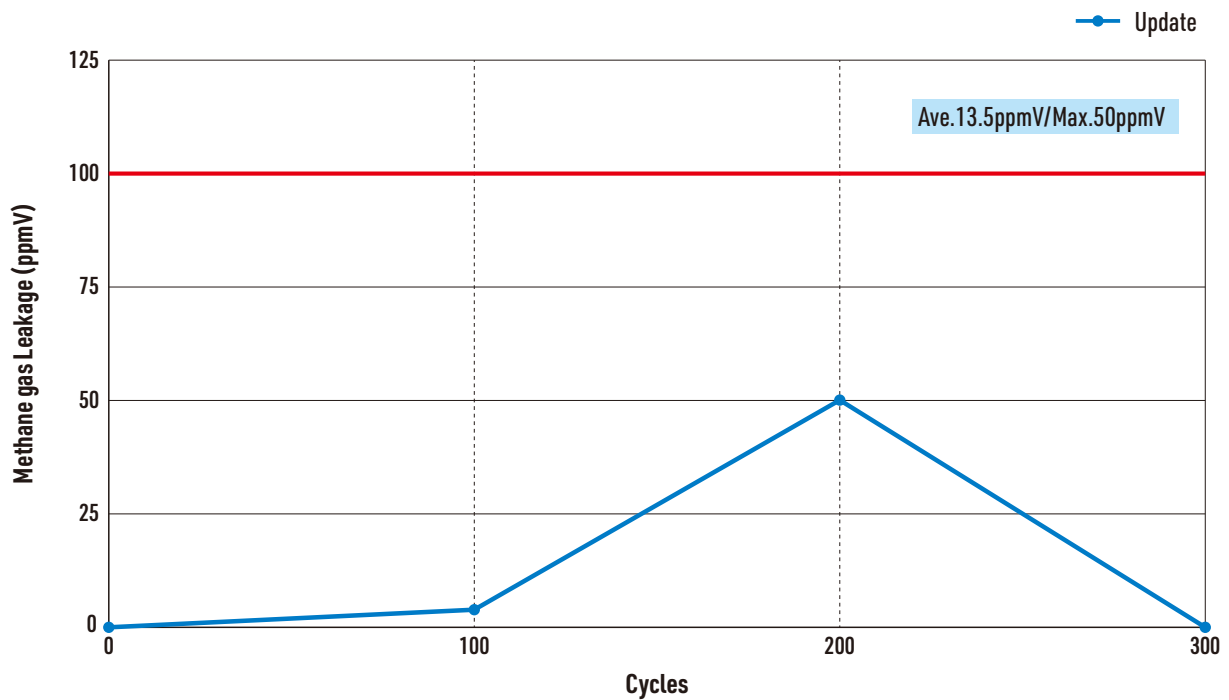
No extrusion

# Technical data

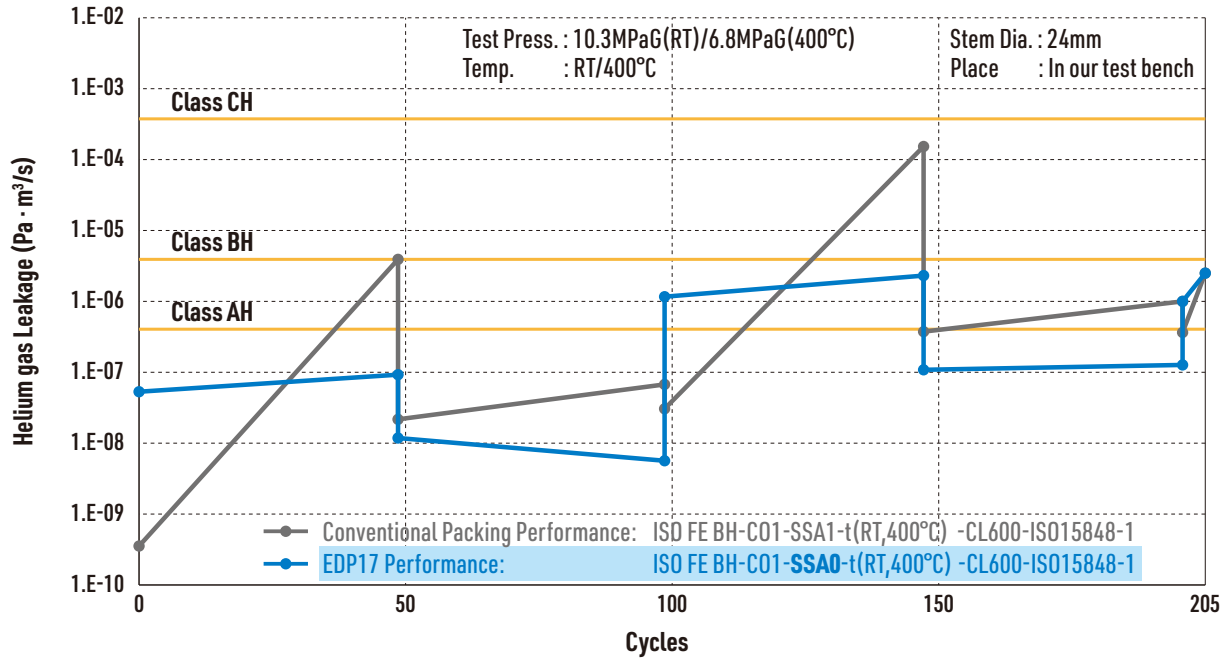
## API622 FE test report



## API622 HT test report



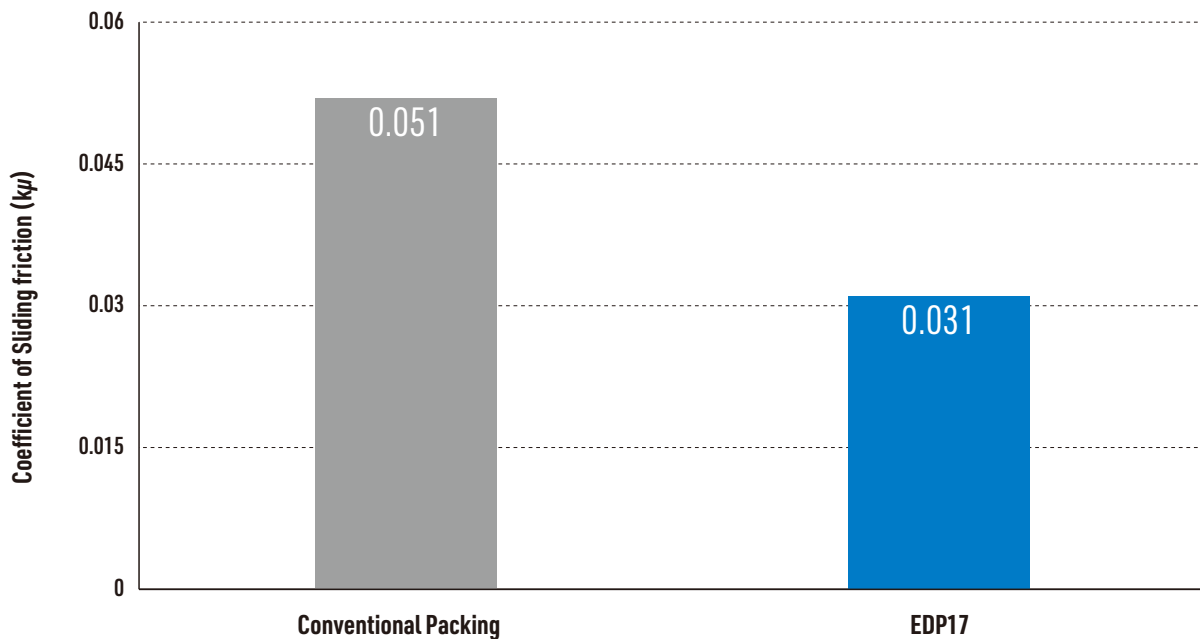
## ISO15848-1 test report



EDP17 achieves BH class without the need for re-tightening.

## Stem Friction test report

EDP17(6brings) Coefficient of Sliding friction  $k\mu$ (at sliding)



EDP17 boasts over 30% lower friction compared to conventional packing design, with a 39% reduction confirmed through testing.

# Advantage of PTFE Free packing

## Stem Corrosion test report

Tested at 455°C(851°F) over 24 hours.



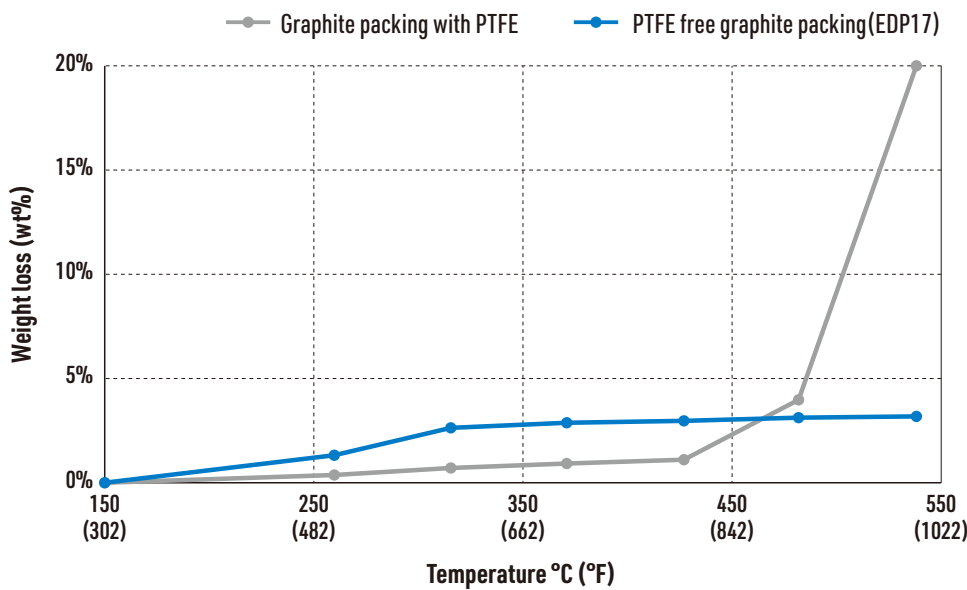
**Graphite packing with PTFE**



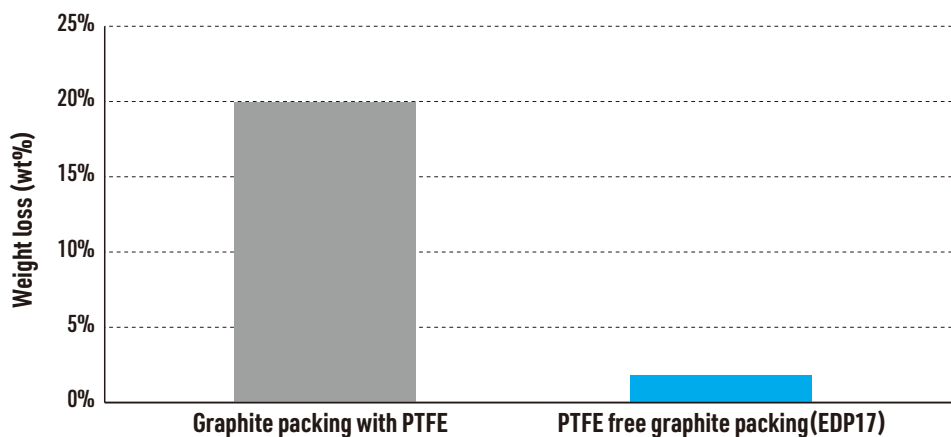
**PTFE Free Packing (EDP17)**

PTFE decomposes at high temperatures and corrodes metals.

## Weight loss test report



## Packing weight loss at 538°C (1000°F) × 1hr test report



EDP17 reduces weight loss by 75% compared to graphite packing with PTFE, improving safety margin at high temperatures.

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CLEAN SAFETY FRONTIER

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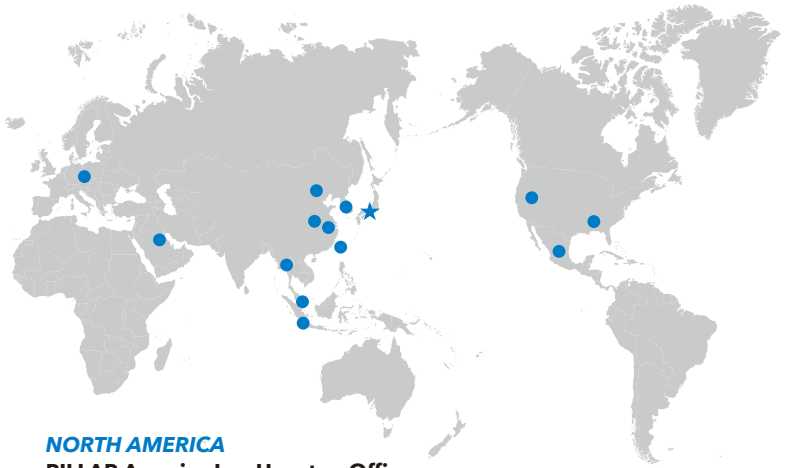
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## CAUTION

Follow the instructions, before installation and operation, for your safety.

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