

PRODUCT DATASHEET

KITRIX® Model LGCIK

Flange Isolation Gasket Kit



PRODUCT OVERVIEW

The LGCIK kit electrically isolates one flange from its mating flange and from the bolting, interrupting the current path through the joint. It is used to separate cathodically protected sections of a pipeline, to isolate dissimilar metals against galvanic corrosion, and to block stray currents at equipment connections.

The sealing element sits in a precision groove machined into the insulating retainer. The retainer carries the bolt load, so the seal is protected from crushing and extrusion even where bolt load around the joint is uneven.

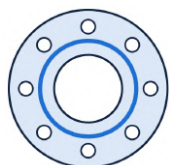
KEY FEATURES

- Encapsulated seal element — protected against uneven bolt load and blow-out
- Full-face (Type E) and ring (Type F) configurations
- Supplied as a complete kit — gasket, bolt sleeves, isolating washers and steel washers
- Suitable for hydrocarbon and water service, subject to seal- element compatibility (Sealing Element table)

KIT COMPONENTS

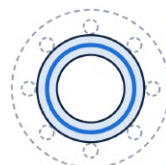
Item	Component	Function	Material options
1	Isolating gasket	Insulating retainer with seal element encapsulated in a machined groove; seals the joint and isolates the flange faces.	Retainer: Phenolic, NF Phenolic, G-7, G-10, G-11, PTFE. Seal: NBR, EPDM, FKM, CR, PTFE / PTFE-SE
2	Isolating sleeve	Full-length tube around each stud bolt; isolates the bolt from the flange bolt-hole bore.	Mylar®, Nomex®, Phenolic, G-10, G-11, PTFE, Mica
3	Isolating washer	Isolates the nut from the flange back face.	Phenolic, G-7, G-10, G-11, Mica, PTFE
4	Steel washer	Spreads nut load over the isolating washer and protects it from damage during tightening.	Zinc-plated steel (ZPS), Stainless steel (SS), Xylan®-coated carbon steel (XPS)

GASKET CONFIGURATIONS



Type E — Full face

Gasket OD equals flange OD, with bolt holes. Covers the full face; preferred for flat-face flanges and where debris could bridge an exposed gap.



Type F — Ring

Gasket sits inside the bolt circle, centred by the bolts. For raised-face flanges (flange outline shown dashed).

■ Insulating retainer — Seal element in groove

SERVICE TEMPERATURE & MATERIAL SELECTION

Rule: the service temperature of an assembled kit is the **overlap** of the ranges of every component — retainer, seal element, sleeve and isolating washer. The component with the narrowest range governs **i.e.** *The assembly's minimum temperature is the highest component minimum; its maximum temperature is the lowest component maximum.*

Example: G-10 retainer (−196 to +150 °C) + FKM seal (−29 to +177 °C) + G-10 sleeves and washers (−196 to +150 °C) → **kit rating −29 to +150 °C**

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RETAINER (GASKET) MATERIAL PROPERTIES

Property	ASTM	Phenolic	NF Phenolic ¹	G-7	G-10	G-11	PTFE
Water absorption, %	D570	1.6	1.6	0.07	0.1	0.1	0.01
Flexural strength, MPa (ksi)	D790	155 (22.5)	155 (22.5)	186 (27.0)	379 (55.0)	379 (55.0)	—
Compressive strength, MPa (ksi)	D695	172 (25.0)	172 (25.0)	276 (40.0)	345 (50.0)	345 (50.0)	—
Tensile strength, MPa (ksi)	D638 ²	138 (20.0)	138 (20.0)	172 (25.0)	345 (50.0)	283 (41.0)	15 (2.2)
Dielectric strength, kV/mm (V/mil)	D149	19.7 (500)	19.7 (500)	13.8 (350)	21.7 (550)	21.7 (550)	16.9 (430)
Insulation resistance, MΩ	D257	4.0 × 10 ⁴	4.0 × 10 ⁴	2.5 × 10 ³	2.0 × 10 ⁵	2.0 × 10 ⁵	2.0 × 10 ⁷
Compressibility, %	F36	—	—	—	—	—	10
Recovery, %	F36	—	—	—	—	—	40
Min. operating temp., °C	—	-54	-54	-196	-196	-196	-196
Max. operating temp., °C	—	+104	+79	+232	+150	+200	+260

NOTES:

1. NF Phenolic = Neoprene-faced phenolic; its maximum temperature is limited by the Neoprene facing.

2. PTFE tensile strength determined to ASTM F152; all other tensile values to ASTM D638.

SEALING ELEMENT

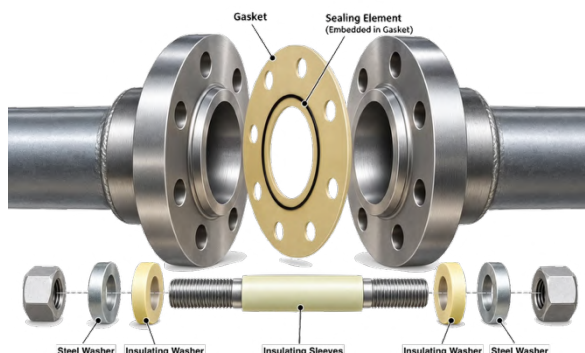
Seal element	Polymer	Temperature, °C	Typical service (guidance only)
NBR	Nitrile rubber	-40 to +121	Crude oil, fuels, oils, natural gas, water
EPDM	Ethylene propylene diene	-54 to +149	Water, steam, glycols — not for hydrocarbons or oils
FKM (Viton®)	Fluoroelastomer	-29 to +177	Hydrocarbons, fuels, aromatics; elevated temperature
CR (Neoprene)	Polychloroprene	-40 to +79	Water, refrigerants; moderate oil resistance
PTFE / PTFE-SE	Polytetrafluoroethylene	-196 to +260	Broad chemical resistance; cryogenic to high temperature

ISOLATING SLEEVE MATERIAL PROPERTIES

Property	ASTM	Mylar®	Nomex®	Phenolic	G-10	G-11	PTFE	Mica
Water absorption, %	D570	0.8	—	1.6	0.1	0.1	0.01	1.0
Flexural strength, MPa (ksi)	D790	90 (13.0)	138 (20.0)	110 (16.0)	379 (55.0)	379 (55.0)	—	200 (29.0)
Dielectric strength, kV/mm (V/mil)	D149	157 (4000)	15.7 (400)	15.7 (400)	21.7 (550)	21.7 (550)	16.9 (430)	12.0 (305)
Min. operating temp., °C	—	-54	-54	-54	-196	-196	-196	-200
Max. operating temp., °C	—	+149	+232	+104	+150	+200	+260	+700 ³

NOTES:

3. Mica components withstand +700 °C; the kit maximum remains limited by the seal element (≤ +260 °C).



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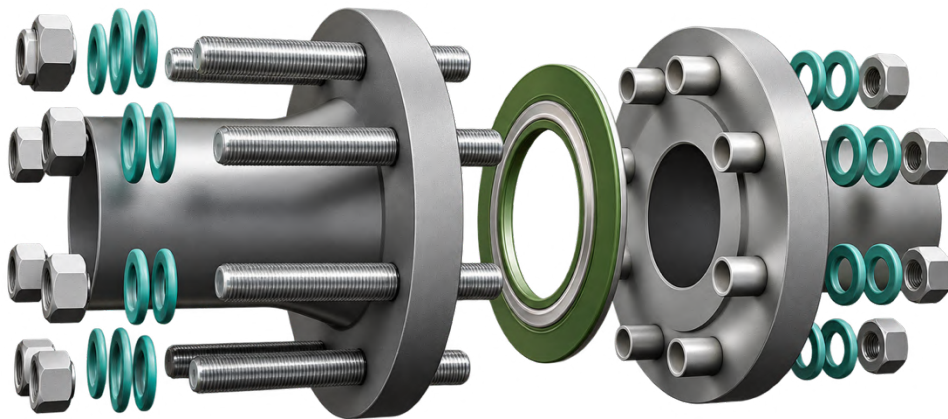
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ISOLATING WASHER MATERIAL PROPERTIES

Property	ASTM	Phenolic	G-7	G-10	G-11	Mica	PTFE
Water absorption, %	D570	1.6	0.07	0.1	0.1	1.0	0.01
Compressive strength, MPa (ksi)	D695	228 (33.0)	276 (40.0)	379 (55.0)	379 (55.0)	396 (57.5)	—
Dielectric strength, kV/mm (V/mil)	D149	19.7 (500)	13.8 (350)	21.7 (550)	21.7 (550)	25.0 (635)	16.9 (430)
Compressibility, %	F36	—	—	—	—	—	10
Min. operating temp., °C	—	-54	-196	-196	-196	-200	-196
Max. operating temp., °C	—	+104	+232	+150	+200	+700 ³	+260

STEEL WASHERS

Code	Material	Typical application
ZPS	Zinc-plated carbon steel	General onshore service
SS	Stainless steel	Offshore, coastal and corrosive environments
XPS	Xylan®-coated carbon steel	Corrosive atmospheres; low tightening friction



Information Required When Ordering

1. Flange size — NPS / DN
2. Pressure class / PN rating
3. Flange standard (e.g. ASME B16.5, EN 1092-1)
4. Flange facing (RF / FF)
5. Configuration — Type E or Type F
6. Retainer material
7. Seal element material
8. Sleeve material
9. Isolating washer material
10. Steel washer material
11. Stud bolt diameter and length
12. Medium, design pressure and temperature