

Phenolic Packing — — Technical Data Sheet / Datasheet / TDS

A — Phenolic braided packings (Kynol® / phenolic yarn, PTFE-lubricated)

Property	Typical / notes
Composition	Braided from phenolic (Kynol®-type) heat-resistant synthetic yarns (phenolic-based), each strand typically impregnated / lubricated with PTFE suspensoid and special break-in lubricants.
Form	Round braided cord, square braid, ribbon — interlock or concentric braids commonly supplied.
Temperature range (typical)	approx. -100 ° C to +230...+250 ° C depending on grade and impregnation (vendor TDS gives exact limits). TEADIT-style phenolic packings show $T_{max} \approx 230 - 250$ ° C in supplier tables.
Chemical tolerance	Good resistance to many aqueous services, weak acids/bases and solvents typical for pulp & paper, water/wastewater and many chemical streams; check pH limits per grade (some phenolic packings report pH 1 - 13 for specialized types).
Wear / abrasion behavior	Designed for abrasive or slurry-laden fluids — phenolic yarns give good abrasion resistance and long life in particulate services.
Friction / shaft wear	PTFE lubrication reduces friction and shaft wear versus dry phenolic yarns; still recommend hardened/sleeved shafts in heavy duty service.
Typical strengths	High mechanical strength, good thermal stability vs organic fibers, good run-in behavior (low leakage after break-in).
Limitations / cautions	Not suitable for extremely aggressive oxidizers at high T; verify compatibility with strong acids / caustics at operating temperature for a selected grade. Follow vendor installation/run-in guides.

B — Phenolic braided — graphite / specialty impregnated variants

Property	Typical / notes
Composition	Phenolic yarn braid impregnated with graphite or graphite + PTFE to combine lubricity and heat dissipation. Some designs use phenolic yarn plus graphitic lubrication for higher temperature/sliding wear resilience.
Advantages	Graphite impregnation improves high-temperature lubrication and thermal conductivity; useful when particulate abrasion is present but some additional high-T lubrication is required.
Temperature & chemical	Similar practical Tmax to phenolic yarns, but specific graphite-impregnated grades may allow better performance under intermittent higher surface temperatures. Verify per grade.
Typical uses	Abrasive slurries, paper stock pumps, chemical services where graphite particulates are acceptable (not suitable where graphite contamination is forbidden).

C — Compressed phenolic sheet / phenolic gasket material (phenolic fiberboard / phenolic-NBR sheet)

Property	Typical / notes
Composition	Compressed phenolic fiber (cotton or synthetic fabric impregnated with phenolic resin) — sometimes combined with NBR binder to form composite gasket sheet (examples: Durlon® 8400 Phenolic/NBR).
Form & uses	Flat sheet panels used for die-cut/gasket rings, or molded rings for stuffing-box support; thicker boards used as insulating / wear plates.
Temperature & mechanical	Good mechanical strength, heat resistance and wear resistance; used where rigid, dimensionally stable sealing or insulation needed. Service temperatures and limits depend on resin/filler.
Typical industries	Structural gaskets, flange gaskets requiring stiffness, electrical insulation, high-wear components and places where a rigid phenolic gasket is advantageous.
Limitations	Not as conformable as braided packing; not intended for dynamic gland sealing as braided packings are (unless machined into rings for specific gland designs).