

Ramie Packing — Technical Data Sheet / Datasheet / TDS

A — Pure Ramie (paraffin / mineral-oil impregnated)

1) Attributes (typical)

Attribute	Typical / notes
Composition	Braided 100% ramie yarns impregnated with paraffin / mineral oil or lubricating grease.
Appearance & form	Square or round braid; natural/dyed fibre colour darkened by impregnant. Supplied on spools/coils.
Temperature range	approx. -50 ° C to +100 - 120 ° C typical (upper limit depends on impregnant & vendor). Use supplier TDS for exact Tmax.
Pressure / speed guidance	Typical rotating speeds and pressure limits are modest — vendors list practical rotary speeds and pressure guidance (see datasheets). Example: some ramie packings rated up to ~20 - 30 bar (service-dependent).
Chemical compatibility	Good for cold water, seawater and mild oils; limited resistance to strong oxidisers, concentrated acids, high-temperature steam and many organic solvents.
Mechanical behavior	Fair compressibility, good conformability; moderate wear & shaft-protecting if lubricated properly. Not as durable as synthetic aramid/PTFE packings.
Typical industries / uses	Marine stern tubes & rudder posts, water/wastewater pumps, low-pressure valves, general service centrifugal pumps.
Advantages	Low cost, rot/mildew resistant, easy to cut & install.
Limitations	Poor high-T & harsh chemical resistance; not ideal for heavy abrasive slurry or high-temperature steam.

B — Ramie + PTFE (PTFE suspensoid impregnated) — most common commercial type

1) Attributes (typical)

Attribute	Typical / notes
Composition	Ramie yarn braided, impregnated with PTFE suspensoid (fine PTFE dispersion) + lubricants. This combines natural fibre strength + improved chemical/lubricity.
Temperature range	approx. $-50\text{ }^{\circ}\text{C}$ to $+130\text{ }^{\circ}\text{C}$ (many vendor datasheets state $T_{\text{max}} \approx 120 - 130\text{ }^{\circ}\text{C}$ for PTFE-impregnated ramie).
Pressure / speed	Improved low-friction performance vs pure ramie; rotating speeds up to several m/s (supplier example: rotary speed up to 7 m/s reported for some PTFE ramie packings). Pressure limits vary — see vendor data.
Chemical compatibility	Better than pure ramie — PTFE improves inertness so these are suitable for cold oils, seawater, general chemicals (not for strong oxidisers or high-T steam).
Mechanical & sealing	Low friction → lower shaft wear; good sealing for water, wastewater, pulp & paper and many light chemical services.
Typical uses	Marine (stern glands, rudder posts), water & sewage pumps, pulp & paper, general service pumps & valves.

C — Ramie + Graphite impregnated

1) Attributes (typical)

Attribute	Typical / notes
Composition	Ramie yarn with graphite impregnation (or graphite + lubricants) to improve high-temperature lubrication and sealing.
Temperature & chemistry	Slightly improved high-temperature lubrication vs paraffin, but still limited vs full graphite/aramid packings — suitable for hotter water/steam traces up to moderate temps (check TDS).
Typical uses	Harder wear applications where a better lubricating film is useful — some pump & valve services in pulp/paper & mining (non-extreme slurry).

D — Ramie / Cotton blended packings (ramie-cotton blends)

/ for low-cost general service

1) Attributes (typical)

Attribute	Typical / notes
Composition	Mix of ramie and cotton yarns, typically paraffin-impregnated. Lower cost, similar water performance but slightly less strength than pure ramie.
Uses	Very common in low-duty water pumps, small valves, general service where cost is primary.