

Acrylic fiber packing — Technical Data Sheet / Datasheet / TDS

1) Standard Acrylic (PTFE / lubricant impregnated) — general-purpose

A — Properties / Attributes

- Composition: high-molecular acrylic filament yarn braided and thoroughly impregnated with PTFE suspensoid and high-temp lubricant (some vendors use MoS₂ + PTFE).
- Typical continuous service temperature: up to ~250 - 260 ° C (≈ 500 ° F) depending on grade and impregnant.
- Speed / pressure guidance (typical): vendor examples list rotating speeds to ~8 - 15 m/s (≈ 1500 - 1850 fpm) and pressure guidance for rotary service in the tens of bar (example: Phoenix P-305 spec lists up to ~20 bar rotary). Always confirm grade limits.
- Chemical resistance: good to neutral and many mildly corrosive media; PTFE impregnations improve chemical compatibility vs plain acrylic. Typical pH service range quoted by vendors is roughly pH 4 - 11 (grade dependent).
- Mechanical / frictional behaviour: low friction, good conformability and good break-in characteristics; moderate abrasion resistance. Suitable for general pumps & valves.
- Advantages: low initial cost, easy installation, low shaft wear when correctly installed & lubricated.

2) Acrylic + Aramid (aramid corner reinforcement) —

anti-extrusion high-pressure variant

A — Properties / Attributes

- Construction: acrylic braid with aramid (Kevlar®-type) corner yarns or reinforcement strands; after braiding a PTFE coating/impregnation is applied to faces. The aramid corner yarns reduce extrusion and increase maximum usable gland pressures.
- Temperature & chemistry: similar chemical tolerance to PTFE-impregnated acrylic; temperature limit usually $\sim 200 - 260$ ° C depending on impregnation and aramid content.
- Mechanical: improved pressure capability and lower extrusion tendency; good for higher pressure pumps and heavier gland loads compared with pure acrylic.
- Limitations: aramid corners bring higher mechanical strength but can be more abrasive to soft shafts — consider shaft sleeves or harder shaft finishes.

3) Acrylic treated with graphite (graphite-lubricated) — high-T & hotter sliding service

A — Properties / Attributes

- Construction: acrylic braid treated/impregnated with graphite lubricant (sometimes in addition to PTFE) to improve hot-sliding lubrication and thermal dissipation.
- Temperature: may be recommended for higher-temperature or higher-pressure applications than plain acrylic (many supplier datasheets show improved high-T performance for graphite-treated styles).
- Uses: good where higher temperature, moderate chemical exposure and improved lubricity are required — e.g., hot water, steam traces (moderate T), and

medium chemical duty.

4) Acrylic with metal / mesh jacket (jacketed) — severe abrasion / extrusion control

A — Properties / Attributes

- Construction: acrylic braided core with an outer metal mesh or filaments (stainless steel / Inconel) or metal-woven jacket. This construction prevents rapid braid erosion and dramatically improves extrusion resistance for slurry/mining duties.
- Advantages: extreme abrasion resistance and long life in slurry, pulp & paper and heavy mining auxiliary pumps.
- Cautions: metal jacket increases cost and can be abrasive to soft shafts — sleeves/hardening are recommended; metallurgy must be selected to match process chemistry.

5) Pre-formed / molded acrylic packing rings & specialty styles

A — Properties / Attributes

- Molded rings are compressed/molded variants of acrylic braid or acrylic composites produced to precise OD/ID and thickness — they give uniform density and repeatable sealing behaviour, useful for mechanical seals, low-leak rotary faces and where strict thickness control matters. TEADIT and other vendors list molded/pressed ring styles.