

TECHNICAL REFERENCE · PRINT & KEEP

Caster Selection by Environment: Washdown to Heat Spec

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Quick answer. Environment is the first filter in caster selection, before load or speed. Washdown service requires NSF H1 urethane or 316 stainless wheels with 304 or 316 stainless rigs; high heat (325 to 475°F) requires phenolic or forged steel; freezers need glass-filled nylon; outdoor duty needs UV-stable urethane. Standard casters last 30 to 90 days in washdown environments.

Environment-to-Spec Matrix

Environment	Wheel	Rig	Fastener	Seal
Standard industrial	Urethane 85A-95A	Painted steel	Grade 5	Nitrile
Washdown (FDA/USDA)	NSF H1 urethane or 316 SS	304 or 316 SS	A4-80 stainless	Silicone/FDA
Chemical exposure	Chemical-spec poly or PTFE	Stainless + PTFE isolation	Stainless per chemical	Viton
High-temp (180°-325°F)	Phenolic or high-temp urethane	Zinc or stainless	Grade 8	Viton
Oven (325°-475°F)	Forged steel	304 SS	Grade 8 stainless	Dry bronze or Viton
Freezer (-40°F to 32°F)	Glass-filled nylon	Zinc or stainless	Grade 8	Silicone
Outdoor/weather	UV-stable urethane or pneumatic	Zinc or stainless	Stainless	Viton or weatherproof

Chemical Exposure

Chemical	Primary Wheel	Secondary Option	Avoid
Dilute acids (H2SO4, HCl <10%)	316 SS or PTFE	Chemical-spec urethane	Carbon steel, zinc
Concentrated acids	PTFE tread or 316 SS	Hastelloy	All polymers
Dilute bases (NaOH <10%)	Chemical-spec urethane	316 SS	Aluminum hub
Solvents (ketones, esters)	PTFE or nylon	Phenolic	Urethane, rubber
Hydrocarbons (oil, fuel)	Nitrile-resistant urethane	Nylon	Standard rubber
Oxidizers (H2O2, bleach)	316 SS or PTFE	FKM tread	All polyurethane



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