Industrial Hose by Medium — Steam, Chemical and Food-Grade Tube Compounds Compared

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Why the tube compound, not the cover, decides an industrial hose (EPDM for steam, UPE for chemicals, butyl for food), reading a hose line like the stocked rows (bore, temperature, pressure), the STAMPED enquiry method, and the fitting and clamping rules each medium enforces.

Three media, three tube chemistries

Duty | Tube compound | Stocked example | The governing hazard |

Saturated steam | EPDM, steam-rated construction | Victoria 2 3, 210 °C, 18 bar; lighter synthetic-rubber grades for food-side steam like the Foodland 1 3 165 °C and 3/4 3 red | Popcorning: steam permeates the tube, then flashes inside it on shutdown — steam hoses are drained after use and retired on schedule, not on looks |

Chemicals | UPE (ultra-high-MW polyethylene) liner | Polypal Clean UPE 1 3, 2 3, 3 3 — 100 °C, 16 bar | Compatibility is per chemical AND concentration AND temperature — the resistance table rules, never the word "chemical hose" |

Foodstuffs | Butyl (IIR) or NR food-quality tube, white/taste-neutral | Foodflex IIR 1 3, 2 3, 3 3 — 120 °C CIP-capable | Traceability and CIP temperature — the hose must survive the cleaning regime, not just the product |

Every stocked row states the triad that matters — bore, max temperature, working pressure — and the pressure rating already includes the safety factor against burst; it is not a starting point for negotiation, and it falls as temperature rises.

STAMPED: the enquiry that gets the right hose

Size (bore and length) · Temperature (medium AND ambient, CIP included) · Application (pressure/suction? flexing? dragging?) · Medium (exact chemical, concentration) · Pressure (working, plus spikes) · Ends (fitting type — camlock letters, flanges, DIN couplings) · Delivery (assembly tested and tagged, or bulk). Six answers and a quotation comes back as a built, pressure-tested assembly within 24 hours.

Rules at the ends

Steam assemblies use bolted boss/clamp fittings, never worm-drive hose clamps and never camlocks — a steam hose end that lets go is a casualty, not a leak.

Suction duty needs the spiral-reinforced build (full vacuum collapses a pressure-only hose — same physics as the compensator's vacuum clause).

Bend radius is a spec: kinking a hose halves its life at the kink; route with the catalogue radius and support long verticals.

Electrical continuity (:’ Ö king) matters wherever flammables flow — the hose bonds tank to pump, or static does the connecting itself; conductive-pump logic from the AODD guide applies end to end.

Frequently asked questions
Why can't a general-purpose hose carry steam occasionally?Steam permeates ordinary tubes and flashes to vapour inside the wall on cool-down, delaminating it from within (popcorning) — failure arrives suddenly and scalds. Steam hose is a dedicated EPDM construction, drained after use and inspected on a schedule.What does UPE mean in a chemical hose? Ultra-high-molecular-weight polyethylene — the near-universal liner for aggressive chemistry at moderate temperature: smooth, taste-free and resistant across acids, solvents and esters where rubbers swell. The compatibility table per chemical and concentration still decides each duty.How is working pressure related to burst pressure?Industrial hose carries a design factor (typically 3:1 or 4:1 by type) between stamped working pressure and burst. The stamped figure is the ceiling at 20 °C — temperature derates it further; spikes and water hammer count against it too.Can food-grade hose be cleaned in place with steam?Within its stated CIP/steam-sterilisation limits — the stocked 120 °C butyl builds take hot CIP cycles, but live steam beyond the rating cooks the tube. The cleaning regime belongs in the hose specification alongside the product.What information is needed to order a hose assembly?The STAMPED list: size, temperature, application, medium, pressure, ends, delivery form. With those six, the assembly arrives built, crimped with the correct ferrules, pressure-tested and tagged — guesswork removed.

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