

SUPERSLICK UHMW-PE PLASTIC PUMPS HANDLING WIDEST RANGE OF CORROSIVE & ABRASIVE FLUIDS

1. **Pump Material:** All wetted parts are moulded to shape in UHMW-PE material. It is the toughest thermoplastic having unmatched abrasion resistance (outlasts other plastic materials and several metals, comparable to Alloy-20, Hastalloy), widest chemical resistance, withstands higher temperature up to 90°C, exceptional impact strength at sub-zero temperature.

2. **Pump Types & Range:** Our current range covers following types.

Model **SSH:** Horizontal, foot-mounted, with special mechanical seals or with packed gland, in back pull-out design as per DIN 24256. Flow to 500 M³/H, Head to 80 M.

Model **SSM:** Vertical, outside mounted with positive suction head, unique double mechanical seal system requiring simple cooling. Flow to 200 M³/H, Head to 80 M.

Model **SSL:** Vertical Glandless with double bearing housing and coupling, outside mounted for negative suction as well as positive suction head. Flow to 500 M³/H, Head to 80 M.

Model **SS:** Vertical Glandless, mono-type, directly assembled on motor shaft, without its own bearing housing, for light duties. Flow to 50M³/H, Head to 50 M.

3. **Typical Case Histories:** Our pumps are successfully handling following liquids.

Acids: HCl, HF recovery/ transfer / unloading; 12% HCl+AlCl₃+Aluminium Hydroxide; 65-75% H₂SO₄ at 70°C; 98% H₂SO₄ at 40°C; Spent Acid at 80°C; Mixture of 48% H₂SO₄+40% HF at 80°C; Mixture of HCl +H₂SO₄ +CH₃COOH at 85°C; Mixed Acid containing 45% H₂SO₄ + 15% HNO₃ + 3% Oxalic Acid; 25% Chromic Acid; Dilute HF + Glass powder Slurry in Glass Etching Process ; FeCl₃ in Etching Process; Fluoboric Acid; H₃PO₄.

Dyes: Phthalocyanine Green / Crude Green (10-12% HCl + Aluminium Chloride + Dyes slurry at 95°C); Dye Intermediates slurry with Bromine + HBr; VAT Dyes (dil. H₂SO₄ + dye slurry at 80°C) for filter press feeding.

Scrubbing: HCl gas using NaOH at 60°-70°C (Sodium Hypochlorite); NaOH+HCl+Methylene Chloride; washing/scrubbing SO₂ gas (10%H₂SO₄ + silica / copper dust at 80°C in Zinc/ Copper Smelter). Fluorine gas (15-18%H₂SiF₆+5-10% silica solids at 60-70°C in SSP Plants); Chlorine/Bromine (HCl/HBr); 33% Sodium Dichromate+20-30% H₂SO₄ at 80°C in Basic Chrome Sulphate manufacture; HCl gas with 5-7% glass powder in Optical Fibre plant; HgCl₂+Hg₂Cl₂+HCl+H₂SO₄+Fines in Chlorination/Condensate Plant.

Slurries: Slurry of BaCO₃+NaCl+BaSO₄+26% solids at 85°C; 13%H₂SO₄+23%CaCl₂+9%HCl at 50-65°C; Dichlorobenzene Sulphate slurry+30% H₂SO₄ with 30% solids; Pulp 3% with sand; 20% Lime Slurry at 70-80°C; 20% Al₂O₃ Slurry in metal polishing process; 60-70%/wt Fe₂O₃ Slurry in Semi-Conductor industry; 60-70% w/w SiO₂ slurry feed to Filter-press in semi-conductor industry.

Others: Chlorine Back Water; 10% Na₂CO₃ soln; Saturated Brine; Ferric Alum; 45% Caustic soln; Aqueous Ammonia; Raw/Mixed effluents of varying pH from sump with priming tank system.

TYPICAL CASES

1. Replacing Submersible Pump: Vertical submersible pump replaced with our '**SSL**' Vertical Glandless Pump in Sulphuric Acid plant in **SO₂ Gas Washing**/Scrubbing system for handling **Acidic Sludge**; pump with priming tank arrangement (without foot-valve) is in operation for over three years. Similar arrangement in a large Fertilizer plant for handling raw chemical effluents working successfully for over six years.
2. Replacing Diaphragm Pump: Our vertical pumps '**SSM**' with mechanical seal used in Filter Press Feed of highly corrosive **acidic Dyes slurry** (HCl + AlCl₃ at 90-95°C) replacing air operated diaphragm pumps. Faster feeding has resulted in more batches per shift and thus more production. Similarly, in **semi-conductor** industry, '**SSM**' pumps have replaced double diaphragm pumps in **Attritors** handling 65-70%/wt **Fe₂O₃** slurry.
3. Replacing Pumps of other materials: UHMWPE has the widest chemical resistance and unmatched wear resistance as compared to other plastics. Our pumps have replaced pumps made from PP, PVDF, PTFE, FRP, GRP, Alloy-20, Hastalloy, Titanium, and now CD4MCu etc.
4. **Tail Gas Treatment** (TGT) Plants: Superslick UHMWPE Vertical Glandless Pumps working successfully for following applications in Tail Gas Treatment plants of metal refineries (smelters).

Original MOC specified: CD4MCu : Horizontal pumps of this metallic casting material are prone to corrosion-erosion in this aerated chemical environment resulting in pre-mature pump failure.

PUMPS OF FLOW RATE UPTO 480M³/H, HEADS TO 35M

- Feeding Zinc Calcine Slurry (Zinc Calcine-200gpl) to Scrubber Re-Circulation Tank
- Pumping Scrubber Liquid to Splashers of SO₂ Scrubbers (slurry of Zinc Sulphite, Zinc Sulphate, SiO₂ – 150gpl)
- Pumping Scrubber Liquid to Splashers for cleaning purpose (Zinc Sulphite, Zinc Sulphate – 150gpl)
- Pumping Scrubber Liquid to Splashers for Aeration (Zinc Sulphite, Zinc Sulphate, SiO₂-150gpl)
- Pumping Bleed liquid to Aerators for final oxidation (120gpl Zinc Sulphate, Sulphite, SiO₂)
- Pumping Scrubber liquid to TGS (Zinc Sulphate, Zinc Sulphite, impurities-120gpl)