

# Material Matters: Tsurumi's VANCS™ Series Corrosion Resistant Design



*In many pumping applications, corrosion is one of many primary factors affecting performance and lifespan. Whether caused by chemical exposure, salt water, or extreme pH levels, corrosion can degrade materials over time, leading to reduced efficiency or unexpected failure.*

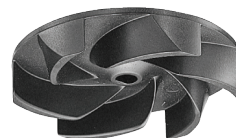
The impact of corrosion depends on several variables including fluid composition, temperature, and the specific components affected. While larger parts like volutes and impellers may wear gradually, corrosion affecting smaller components such as seals or gaskets can result in immediate failure and costly downtime.

Material selection is a key focus in pump design when addressing corrosion. Tsurumi Pump's VANCS™ Series strays from traditional cast iron materials by incorporating molded resin components alongside corrosion-resistant metals. Wetted parts are constructed from either 304 stainless steel or titanium, offering a higher level of corrosion resistance.

Tsurumi's PN, PSF, and PU submersible pumps are constructed from 304 stainless steel and resin molded plastic that can handle fluids with pH levels as low as 3. On the contrary, Tsurumi's TM models are similar, but constructed with titanium to handle pH levels of 1. This offers a higher level of corrosion resistance, making the VANCS Series well suited for applications involving chemical exposure or saltwater including wastewater, effluent, industrial, and raw water transfer.

Corrosion not only shortens component life but also increases maintenance demands. Over time, it can wear down impellers, volutes, and seals, or in more severe cases, lead to water intrusion in the motor. By utilizing corrosion resistant materials, the VANCS Series helps extend the lifespan of key components and reduce

### Vortex



### Closed



VANCS Pumps: Type of impeller

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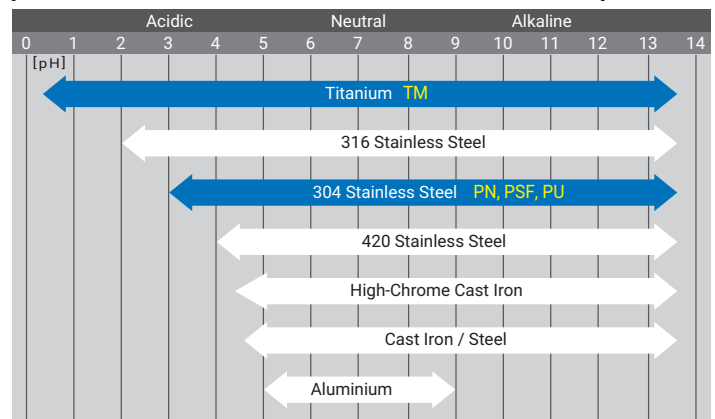
***Tsurumi’s VANCS™ Series uses corrosion-resistant materials like stainless steel, titanium, and resin to extend pump life and reduce maintenance in harsh, low-pH, or saltwater applications.***

the likelihood of sudden failure. This has a direct impact on maintenance; longer lasting components mean fewer service interruptions and more consistent operation.

The VANCS Series offers additional configurations including automatic and auto-alternating models. This allows for simplified operation without the need for external control panels.

For operators, corrosion isn’t just a material issue, it’s a day-to-day operational concern that can lead to longer issues down the road. By focusing on corrosion resistance at the design level, Tsurumi’s VANCS Series offers a solution that helps maintain consistent operation.

**pH Values and Corrosion Resistance of Tsurumi Pumps**



The above data is a rough indication for sulfuric acid (H<sub>2</sub>SO<sub>4</sub>) and sodium hydroxide (NaOH). Metals are affected by the type of acid/alkali, seal material, painting and abrasive environment.

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**ABOUT TSURUMI**

Tsurumi (America), Inc., a division of Tsurumi Manufacturing, was founded in 1979. Headquartered in Glendale Heights, Illinois, Tsurumi (America), Inc. has bases in Quebec, Canada; El Paso, Texas; and Salt Lake City. Globally, Tsurumi is active in 45 countries and has been an innovator in the pump industry since 1924. Tsurumi (America) is a provider of leading pumping technology in construction, civil engineering, mining, industrial wastewater, municipal wastewater, sewage treatment, flood control and scenery creation fields. Tsurumi products are backed by independent, third-party verification. Beyond leading pump technology, Tsurumi (America) is recognized for its robust distribution network and one of the largest on-hand inventories in North America.