



DB Series and SP Series: Advanced Sodium Hypochlorite Handling Technologies

Sodium hypochlorite, commonly known as bleach, is a chemical compound with the formula NaOCl. In household form at 3-6%, it's used for the bleaching and laundering of clothes. A 12% solution is used in waterworks for the chlorination of water. At 15%, sodium hypochlorite is used for disinfection of waste water in treatment plants.

The relative density, or specific gravity, of sodium hypochlorite at 6% and 15% is 1.1 and 1.21, respectively. Sodium hypochlorite solution decomposes slowly. Decomposition is speeded up by heat (temperatures above 104°F/40°C) and light. It's typically not pumped above these temperatures.

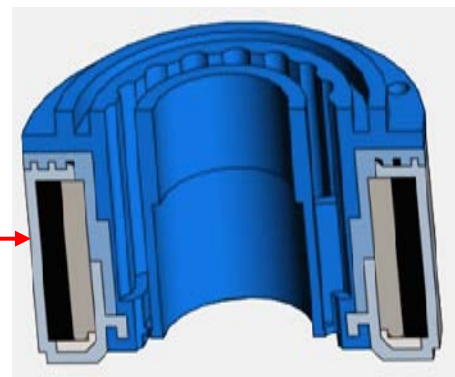
Sodium hypochlorite is a strong oxidizer and is corrosive to most metals. For handling, common options are either expensive metals or glass, such as Hastelloy C, titanium or borosilicate glass, or engineered plastics such as CPVC, PVDF or PTFE. Because sodium hypochlorite in liquid and vapor form can burn skin and cause eye damage, particularly when used in concentrated forms, most handlers prefer to use a sealless pump, such as a centrifugal magnetic drive pump, molded in PVDF.

Finish Thompson's DB Series and SP Series centrifugal magnetic-drive pumps offer unique and world-leading technology for the safe and reliable handling of concentrated sodium hypochlorite.

Inner Drive Magnets Encapsulated in Unfilled PVDF

One of the leading causes of pump failure from sodium hypochlorite occurs when the solution wicks the filler in the plastic over the magnets and penetrates and corrodes the magnets. In the DB and SP Series, the magnets are completely encapsulated in unfilled PVDF or PP, making wicking of filler impossible.

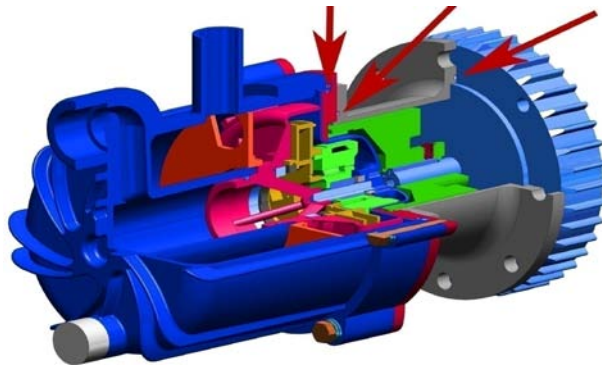
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Vapor Protection System

Another leading cause of pump failure from handling sodium hypochlorite occurs when the outer drive magnets and hub are attacked by the solution's corrosive vapors. Finish Thompson's DB and SP Series employ the use of non-wetted O-rings to seal off both the outer drive magnet hub and the motor's shaft end from the pump's environment, thereby preventing corrosive vapors in the atmosphere from making contact with them. This design essentially leaves the outer drive magnet hub in pristine, functioning condition for years, as well as prolongs the life of the motor.

Three additional o-rings protect the outer drive magnet and motor face from exposure to corrosive vapors and fumes.



Nickel Plated Outer Drive Magnets

In addition to the vapor protection package, the magnets on the motor drive hub of the DB and SP Series are plated with nickel, which gives an extra layer of protection against corrosive fumes and vapors. Then the entire drive hub, including magnets, is covered with an epoxy primer followed by a two-component polyurethane.

Suitable Materials of Construction

The DB and SP Series pump are offered in a variety of materials of construction. For sodium hypochlorite, Finish Thompson recommends PVDF pump casing, PTFE impeller bushing and FKM elastomer materials. This combination has proven successful in hundreds of sodium hypochlorite applications over dozens of years.