



PRODUCT INFORMATION

KleerKleen™ 4002

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Technical Data:

Description: *KleerKleen 4002* is a high quality blend of chemicals formulated for the cleaning and pretreatment of stainless steel products prior to passivation. *KleerKleen 4002* is an alkaline solution specifically designed to enhance the performance of the *CitriSurf* line of cleaning and passivation products, providing low cost and efficient removal of contaminants from the surface of stainless steel. *KleerKleen 4002* can be used to effectively clean stainless steel surfaces by spray, automatic washers or immersion in a tank.

KleerKleen 4002 is especially effective in removing sulfur and carbon from the surface to allow optimum passivation of grades of stainless containing high amounts of these materials.

Physical Properties:

Density	1.2
Form	Solid beads
Chemical Composition	Sodium hydroxide, sequestering agents
Operating Temperature	Room temp or higher (150-180°F preferred)
Flash Point	None
Water solubility	Complete
Normal working concentration	0.5 to 3 lb. per gallon
pH at working concentration	approx. 11.0

Physical properties are provided for informational purposes only, and are not intended for use as requirements or specifications.

Packaging: 2 lb. or 50 lb. plastic containers.

Application Procedure: *KleerKleen 4002* should be mixed by slowly adding the dry powder to clean water (purified water if desired) at a ratio of **0.5 to 3 lbs. of *KleerKleen 4002* per gallon of water** to fill the tank used so as to adequately cover all parts to be cleaned. Polypropylene, stainless steel or equivalents should be used for construction of all tanks and devices used in the *KleerKleen* bath. Agitation of the solution in the tank is recommended to attain optimum results. Optimum results can be obtained with many parts by using *KleerKleen* in an ultrasonic tank.

Heat the solution for optimum performance. 150-180°F is typical. Room temperature is often adequate depending on the condition of the parts. Teflon coated (or equivalent), stainless steel or titanium heating devices are recommended.

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Completely immerse the parts to be cleaned in the solution for a period sufficient to remove all dirt, oils and contaminants from the surface. This is typically 15 minutes to 1 hour, depending on temperature, use of ultrasonics, and the kind and amount of contaminants. Your tests should indicate the best combination of bath parameters for the products you manufacture.

Rinse the parts thoroughly with clean water. Flowing water is optimum. Dry completely in air, or go on to the next phase of the process (such as the next chemical bath) immediately. Drying can be accelerated by use of a hot air oven or other drying medium.

Notes on Use: Although very safe in normal use, *KleerKleen 4002* is a **Sodium Hydroxide based material - a very toxic chemical when coming in contact with exposed surfaces of the body.**
SEE SAFETY DATA SHEET BEFORE USING THIS MATERIAL.

***KleerKleen 4002* should NOT be used to clean aluminum, zinc or galvanized steel.** Contact Stellar Solutions regarding the use intended before placing materials in this solution.

Maintenance: Check the pH of *KleerKleen* solution mixed at the concentration and temperature you use in your process, then maintain the cleaning bath by adding fresh *KleerKleen* if the pH drops 0.5 below your original value. Replace the bath as needed when it becomes very dirty or saturated with undesired materials.

Disposal: Neutralize (using acid) and dispose of according to all federal, state and local regulations.

Storage: *KleerKleen 4002* should be stored indoors at temperatures between 50°F and 120°F.

Technical Services: For technical assistance, please contact Stellar Solutions at (847) 854-2800.

Testing of your products with *KleerKleen 4002* before using in production is recommended. Every product and production facility is different, and requires testing to ensure that *KleerKleen 4002* is compatible with the particular situation. No warranty is implied, or may be given in writing or verbally without the written permission of Stellar Solutions, Inc.

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