

ZACLON LLC

ZACSIL® AG

NUTRIENT BUFFER SOLUTION

Zaclon potassium silicates are a family of environmentally friendly products, with properties that vary with the ratio of potassium oxide to meet the requirements of a wide range of end uses. They are available as water solutions or in solid form as glass flakes. The Chemical Abstracts index name for potassium silicate is silicic acid, potassium salt, and the CAS Registry Number is 1312-76-1.

USES

Zacsil AG is intended for use as an additive to agriculture feed systems, particularly those used in commercial greenhouses. Because Zacsil AG is alkaline (pH approximately 11), it can be used as a buffer to mitigate against the increased acid conditions that may occur over time in various growth media. In addition to its ability to buffer or neutralize aqueous feed solutions, Zacsil AG also serves as a source of bioavailable potassium, an essential plant nutrient.

PROPERTIES

Specifications and Typical Properties* Zacsil AG Solution

Typical Properties

Grade	Ratio		% SiO ₂	%K ₂ O	Be'	Dens. @ 60	Viscosity @ 77 F
	Wt.	Mole				Lbs./Gal	Cps
AG	2.07	3.33	26.00	12.50	40.20	11.6	325

(*) This table contains properties based on historical production performance. Zaclon does not make any express or implied warranty that all future production will demonstrate or continue to demonstrate these typical properties.

Notice: Potassium silicate solutions may irritate the eyes and skin. See personal safety and first aid section.

Potassium silicate glass is a colorless super-cooled melt of potassium carbonate and pure silica sand. It is slightly hygroscopic, but will remain free flowing if stored in the original unopened drum.

Potassium silicate solution, like Zacsil AG, are prepared by dissolving potassium silicate glass in hot water. By varying the silica-to-potassium oxide ratio, products of definite but widely different properties are produced.

STORAGE AND HANDLING

Carbon-steel tanks, pipes and equipment are generally suitable for storage and handling of potassium silicate solutions. Cast-iron or steel rotary gear or centrifugal pumps are recommended for potassium silicate solution transfer.

The freezing point of liquid silicate solutions is very close to that of water. Storage tanks and transfer equipment must be designed or located to prevent freezing. Drums should be stored in a heated area. If the solution is exposed to temperatures below 32 F (0 C), move the container to warm storage until thawed and mix thoroughly before using.

All spills of potassium silicate solutions should be washed away immediately to a chemical sewer with large volumes of water to avoid slippery footing. Prompt action is recommended because spills can build up layers and become more difficult to remove later.

SHIPPING CONTAINERS

Zaclon ships Zacsil AG Nutrient Buffer Solution in 55 gallon non-returnable plastic drums containing net weights of 620 Lbs. (281 kg). Bulk delivery in tank trucks is available upon request.

Potassium Silicate if not regulated as a hazardous material by the United States Department of Transportation(*).

- (*) Due to the changing governmental regulations such as those of the Department of Transportation, Department of Labor, U.S. Environmental Protection Agency, and the Food and Drug Administration, references herein to governmental requirements may be superceded. Each user should consult and follow the current governmental regulations, such as Hazard Classification, Labeling, Food Use Clearances, Worker Exposure Limitations, and Waste Disposal Procedures for the up-to-date requirements for potassium silicate.

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