PERLITE AS AN ABSORBENT OR CARRIER

What is Perlite?

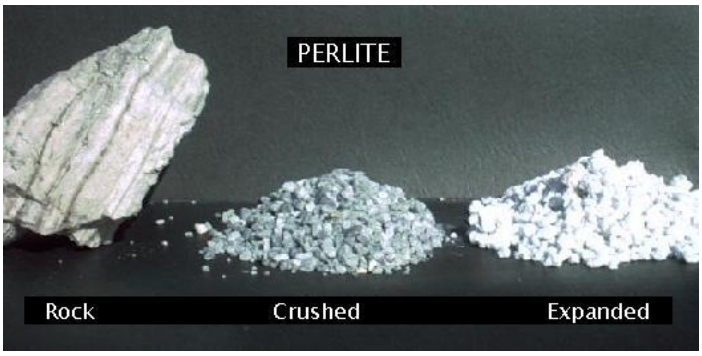
Perlite is not a trade name but a generic term for a naturally occurring siliceous volcanic rock. The distinguishing feature which sets perlite apart from other volcanic glasses is that when heated to a suitable point in its softening range, it expands four to twenty times its original volume.

This expansion is due to the presence of two to six percent combined water in the crude perlite rock. When quickly heated to above 870° C (1600° F) the crude rock pops in a manner similar to popcorn as the combined water vaporizes and created lightweight particles with countless internal cells and high surface area. It is this multicellular nature and high surface area which accounts for the excellent absorption properties of perlite.

Expanded Perlite Particle

Expanded perlite can be used to control and clean up liquid spills. The perlite may also be used to provide rapid deodorization and dehydration of animal waste liquids. In these applications the perlite may be used in granular form and compressed into pellets of the desired size and shape. Perlite is also suggested as an absorbent media in enclosed containers for the disposal of liquid toxic waste substances.

By activating the expanded perlite with hydrochloric acid and/or sulfuric acid the material can be used as a purifying agent for waste and process waters.



Three stages of Perlite production is shown above.

The expansion process also creates on of perlite's most distinguishing characteristics: its white color. While the crude rock may range from transparent to light gray to glossy black, the color of expanded perlite ranges from snowy white to grayish white.

Expanded perlite can be manufactured to weigh from 32 kg/m³ (2 lb/ft³) to 240 kg/m³ (15 lb/ft³) making it adaptable for numerous uses, including filtration, horticulture applications, insulation, inert carriers and a multitude of filler applications.

TYPICAL CHEMICAL ANALYSIS*		
Silicon		33.8
Aliminum		7.2
Potassium		3.5
Sodium		3.4
Iron		0.6
Calcium		0.6
Magnesium		0.2
Traces		0.2
Oxygen (by difference)		47.5
Net Total		97
Bound Water		3.0
Total	%	100.0

*** All analysis are shown in elemental form even though the actual forms present are mixed glassy silicates. Free silica may be present in small amounts, characteristic of the particular ore body. More specific information can be obtained from the ore supplier involved.**

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Perlite as a Carrier

Expanded perlite is recommended as a carrier for pesticides, feed concentrates, herbicides, and other similar applications.

As a carrier for feed concentrates perlite will readily absorb the concentrate while remaining free flowing (anti-caking), and chemically resistant to micro-biological degradation. The perlite also permits quick liquid movement between the carrier surface and the recipient of the feed concentrate.

TYPICAL PRODUCT CHARACTERISTICS				
	Color	White		
	G.E. Brightness. %	80-85	Flowability (when damp)	Good
	Refractive Index	1.47	Handleability (caking resistance)	Good
	Specific Gravity	2.34	Absorption rate	Instantaneous
Apparent Density	kg/m³	40-170	Particle size, mesh (range) 20-200	U.S. Standard
	lb/ft³	2.5 - 10.5		(0.74-.8 mm)
	Water absorption, % wt.	200-600	Weight gain, % *	
	Oil absorption, gms oil/gm	50-100	(50% R.H.-5 days)	7.0 max
	Moisture. %	< 1.0	(90% R.H.-5 days)	14.0 max.
	Ignition Loss. (1 hour at 980° C)	2.0% max.	pH (water slurry)	Neutral
Wet density	kg/m³	80-320	Solubility	Slightly soluble (< 3% in Mineral Acids (IN)
	lb/ft³	5.0-20.0		
			* Weight gain of Perlite concentrate (Perlite and material being carried)	

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