



# HOLEPLUG<sup>®</sup>

## Graded Sodium Bentonite

**Description** HOLEPLUG is a naturally occurring Wyoming sodium bentonite clay that is a sized and graded chip material used to seal and plug earthen boreholes.

HOLEPLUG is available in two particle size grades:

- Y HOLEPLUG 3/4" (100% of particles pass through 3/4" screen; all particles retained on 3/8" screen)
- Y HOLEPLUG 3/8" (100% of particles pass through 3/8" screen; all particles retained on 1/4" screen)

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- Applications/Functions**
- Y Highly recommended for use in grouting annulus in all types of wells, particularly environmental monitoring well applications
  - Y Seal above gravel packs
  - Y Plug decommissioned boreholes
  - Y Stemming shotholes
  - Y Seal around conductor pipe
  - Y Seal lost circulation zones
  - Y Shut off artesian flow

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- Advantages**
- Y Prevents entry of surface water into boreholes
  - Y High swelling potential
  - Y In situ swelling to provide a superior seal with excellent casing stabilization
  - Y Easier to apply than pellets
  - Y Cost effective
  - Y Simple to apply, mixing not required
  - Y Prevents vertical movement of fluids in the hole between porous zones
  - Y Forms a permanent, flexible downhole seal
  - Y Allows hole re-entry
  - Y Rehydratable
  - Y ANSI/NSF Standard 60 certified

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<b>Typical Properties</b>	Volume of 50-lb (22.7 kg) sack
	HOLEPLUG 3/4" 0.73 ft <sup>3</sup> or 0.027 yd <sup>3</sup> or 0.021 m <sup>3</sup>
	HOLEPLUG 3/8" 0.70 ft <sup>3</sup> or 0.026 yd <sup>3</sup> or 0.020 m <sup>3</sup>
	Permeability 1.5 x 10 <sup>-9</sup> cm/sec (in fresh water)
	Appearance Beige to tan chips

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**Recommended  
Treatment**

***Plugging and Stemming Drill Holes***

Due to shipping and handling, a small amount of fine bentonite particles may be present. For optimum results, HOLEPLUG® should be poured over a mesh or screen with ¼" (6.4 mm) openings to "sift out" the smaller particles. The screen should be large enough (approx. 1 yd<sup>2</sup> or 1m<sup>2</sup>) to be folded into a "V" shape to allow sifting while the product is being poured into the hole. Also, HOLEPLUG should be poured slowly. Allow approximately two minutes to pour a 50-lb (22.7 kg) bag.

1. Position the screen with the lower end placed over the borehole
2. Slowly pour HOLEPLUG down the "V" so that fine particles fall through the screen before the larger particles fall into the borehole
3. Fill hole as required (above static water level or to ground level)
4. Observe all regulatory specifications

***Stopping loss of circulation and stabilizing unconsolidated formations***

1. Pull drill pipe out of hole
2. Pour HOLEPLUG into hole to fill above problem zone
3. Drill ahead slowly with reduced pump pressure

***Plugging flowing wells***

Pour HOLEPLUG into hole until water flow subsides or hole is filled to surface.

**Treatment  
Considerations**

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§ Adequate annular space should be present to allow for the placement of HOLEPLUG into the area of concern without bridging. It is recommended that a minimum annular space of two inches on either side of the outside dimension of the casing be present. This will facilitate the placement of tremie lines and reduce the potential of the HOLEPLUG bridging during pouring operations. The use of this product should always correspond with applicable federal, state and local well construction guidelines.

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**Application  
Amounts**

<b>Amounts of HOLEPLUG® Required for Plugging Applications</b>				
Hole Diameter (inches)	Hole Volume (ft <sup>3</sup> /ft)	Pounds HOLEPLUG Needed to Fill One Foot	Feet Filled by One Bag HOLEPLUG	Bags HOLEPLUG Needed to Fill 100 ft
2	0.022	1.6	32.6	3.2
2.5	0.034	2.4	20.5	5.0
3	0.049	3.5	14.3	7.0
3.5	0.067	4.8	10.4	9.6
4	0.087	6.3	7.9	12.6
4.5	0.110	7.9	6.3	15.8
5	0.136	9.8	5.1	19.6
5.5	0.165	11.9	4.2	23.8
6	0.196	14.1	3.5	28.2
6.5	0.230	16.6	3.0	33.2
7	0.267	19.2	2.6	38.4
7.5	0.307	22.1	2.3	44.2
8	0.349	25.1	2.0	50.2
8.5	0.394	28.4	1.8	56.8
9	0.442	31.8	1.6	63.6
9.5	0.492	35.4	1.4	70.8
10	0.545	39.2	1.3	78.4
11	0.660	47.5	1.1	95.0
12	0.785	56.5	0.89	113.0
15	1.227	88.3	0.57	176.6
18	1.767	127.2	0.39	254.4
20	2.182	157.1	0.32	314.2
25	3.409	245.4	0.20	490.8
30	4.909	353.4	0.14	706.8

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**Application  
Amounts  
(metric equivalents)**

<b>Amounts of HOLEPLUG® Required for Plugging Applications</b>				
Hole Diameter (mm)	Hole Volume (m <sup>3</sup> /m)	Kilograms HOLEPLUG Needed to Fill One Meter	Meters Filled by One Bag HOLEPLUG	Bags HOLEPLUG Needed to Fill 10 meters
51	0.002	2.3	9.87	1.0
64	0.003	3.6	6.31	1.6
76	0.005	5.2	4.38	2.3
89	0.006	7.0	3.22	3.1
102	0.008	9.2	2.47	4.1
114	0.010	11.6	1.95	5.1
127	0.013	14.4	1.58	6.3
140	0.015	17.4	1.30	7.7
152	0.018	20.7	1.10	9.1
165	0.021	24.3	0.93	10.7
178	0.025	28.2	0.81	12.4
191	0.029	32.4	0.70	14.3
203	0.032	36.8	0.62	16.2
216	0.037	41.6	0.55	18.2
229	0.041	46.6	0.49	20.5
241	0.046	51.9	0.44	22.9
254	0.051	57.5	0.39	25.3
279	0.061	69.6	0.33	30.7
305	0.073	82.8	0.27	36.5
381	0.114	129.4	0.18	57.0
457	0.164	186.4	0.12	82.1
508	0.203	230.1	0.10	101.4
635	0.317	359.5	0.06	158.4
762	0.456	517.7	0.04	228.1

**Packaging**

HOLEPLUG graded bentonite is packaged in 50-lb (22.7 kg) multiwall paper bags.

**Availability**

HOLEPLUG can be purchased through any Baroid Industrial Drilling Products Distributor. To locate the Baroid IDP distributor nearest you contact the Customer Service Department in Houston or your area IDP Sales Representative.

**Baroid Industrial Drilling Products,**

A Product and Service Line of Halliburton Energy Services, Inc.  
3000 N. Sam Houston Pkwy E.  
Houston, TX 77032

**Customer Service** (800) 735-6075 Toll Free (281) 871-4612  
**Technical Service** (877) 379-7412 Toll Free (281) 871-4613