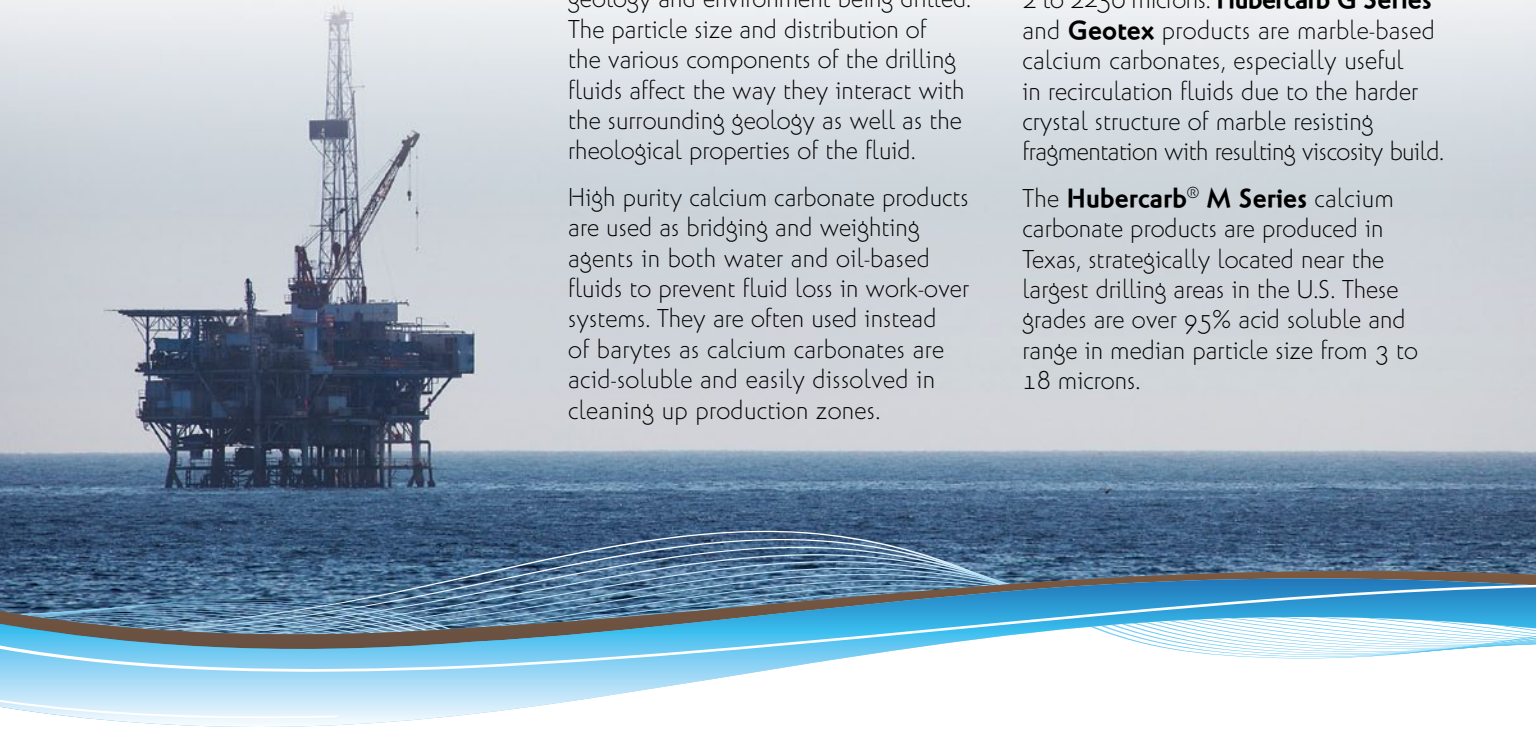
HUBER ENGINEERED MATERIALS

Hubercarb® and Geotex® Ground Calcium Carbonates

for Drilling Fluid Applications

HUBER ENGINEERED MATERIALS



Drilling fluids are complex water or oil-based suspensions that fulfill several important functions in hydrocarbon extraction. They are specifically formulated to meet the demands of the geology and environment being drilled. The particle size and distribution of the various components of the drilling fluids affect the way they interact with the surrounding geology as well as the rheological properties of the fluid.

High purity calcium carbonate products are used as bridging and weighting agents in both water and oil-based fluids to prevent fluid loss in work-over systems. They are often used instead of barytes as calcium carbonates are acid-soluble and easily dissolved in cleaning up production zones.

Hubercarb® G Series, **Hubercarb® Q Series** and **Geotex®** calcium carbonate products from Huber Engineered Materials are over 97% acid soluble and available in median particle sizes from 2 to 2250 microns. **Hubercarb G Series** and **Geotex** products are marble-based calcium carbonates, especially useful in recirculation fluids due to the harder crystal structure of marble resisting fragmentation with resulting viscosity build.

The **Hubercarb® M Series** calcium carbonate products are produced in Texas, strategically located near the largest drilling areas in the U.S. These grades are over 95% acid soluble and range in median particle size from 3 to 18 microns.

Hubercarb® G Series and Geotex® Marble Calcium Carbonates

Typical Physical Properties

Produced in Marble Hill, Georgia

Hubercarb® G Series	G2	G3	G35	G6	G8	G325	G325 PC	G260	G60	Geotex® 40-200	Geotex® 30-200	Geotex® FXZ	Geotex® TXS	Geotex® 30-50	Geotex® 16-40	Geotex® 10-20
Median Particle Size (µ,SediGraph®)	2	3.2	3.2	5.5	7											
Median Particle Size (µ, LLS-CILAS®)						10.5	13	22	61*	184*	231*	232*	565*	415*	777*	1387*
Oil Absorption (lbs oil/100 lbs, ASTM D-281)	19	18	18.5	15	15	15		12								
Water Demand (ml/100 gms)	69	57	58	45	41	42		38								
Moisture (%, ASTM D-280)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Loose Bulk Density (lbs/ft^3, ASTM C-110)	39	47	51	51	50	52	61	58	70	87	87	89	92	95	95	95
Compacted Bulk Density (lbs/ft^3, ASTM C-110)	55	60	63	85	85	79	88	82	101	108	108	110	120	105	100	100
Weight Per Gallon (lbs/solid gallon)	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6
325 Mesh Residue (max, %)	0.005	0.005	0.005	0.05	0.6											

*Calculated Value

Particle Size (Screen) Analysis

Mesh Size	G325	G325 PC	G260	G60	Geotex 40-200	Geotex 30-200	Geotex FXZ	Geotex TXS
-20				100	100	100	100	100
-40				99.9	95	99	98	11.8
-60			100	99	70	57	65	1.1
-100	100	100	99.9	88	39	28	13	1
-200	99.9	99.9	97	60	12	8	11	1
-325	99	99	90	43	3	2	7	0.5

Mesh Size	Geotex 30-50	Geotex 16-40	Geotex 10-20
+10			2
+16		2	
-20			8
+30	2		
-40		8	
-50	20		

Hubercarb® Q Series Calcium Carbonate

Typical Physical Properties

Produced in Quincy, Illinois

Hubercarb® Q Series	Q2	Q3	Q4	Q6	Q325	Q200	Q100	Q60	Q40-200	Q12-40	Q6-40	Q5-20
Median Particle Size (µ,SediGraph®)	2	3.2	4.3	6								
Median Particle Size (µ, LLS-CILAS®)					13	22	24	20	223*	799*	1165*	2250*
Oil Absorption (lbs oil/100 lbs, ASTM D-281)	18	18	17	16	14	12	12	12				
Water Demand (ml/100 gms)	68	55	54	45	40	36	36					
Moisture (%, ASTM D-280)	0.2	0.2	0.2	0.15	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Loose Bulk Density (lbs/ft^3, ASTM C-110)	44	40	40	45	50	55	55	55	85	90	86	88
Compacted Bulk Density (lbs/ft^3, ASTM C-110)	52	60	60	65	80	80	80	95	98	100	101	98
Weight Per Gallon (lbs/solid gallon)	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6
325 Mesh Residue (max, %)	0.005	0.005	0.005	0.01								

*Calculated Value

Particle Size (Screen) Analysis

Mesh Size	Q325	Q200	Q100	Q60	Q40-200	Q12-40	Q6-40	Q5-20
-4							100	100
-6							99.5	95
-8						100	86	59
-12						95	68	12
-16						72	51	4
-20					100	56	34	3
-40			100	100	97	7	9	
-60		100	99.9	99.6	60	3		
-100	100	99.9	99	96.5	23			
-200	99.9	99	79	78	6			
-325	99.5	82	66	61				

Hubercarb® M Series Calcium Carbonate

Typical Physical Properties

Produced in Marble Falls, Texas

Hubercarb® M Series	M3	M4	M6	M300	M200	M70
Median Particle Size (µ,SediGraph®)	3.3	4.5	5			
Median Particle Size (µ, LLS-CILAS®)				8	15	18
Oil Absorption (lbs oil/100 lbs, ASTM D-281)	17	17	16	13	12	11
Water Demand (ml/100 gms)	50	45	45	44	37	34
Moisture (%, ASTM D-280)	0.2	0.2	0.15	0.1	0.1	0.1
Loose Bulk Density (lbs/ft^3, ASTM C-110)	40	40	45	50	60	65
Compacted Bulk Density (lbs/ft^3, ASTM C-110)	60	60	65	65	80	90
Weight Per Gallon (lbs/solid gallon)	22.6	22.6	22.6	22.6	22.6	22.6
325 Mesh Residue (max, %)	0.01	0.01	0.01			

Particle Size (Screen) Analysis

Mesh Size	M300	M200	M70
-20			100
-40			99.8
-60	100	100	98
-100	99.9	99.9	90
-200	99	98.5	75
-325	98	84	60

HUBER ENGINEERED MATERIALS

HUBER ENGINEERED MATERIALS

Huber Engineered Materials looks forward to working with you. For more information on our calcium carbonate products or to order samples for your next drilling fluids project, contact us:

Phone: 866-JMHUBER (866-564-8237)
Email: hubermaterials@huber.com
Click: hubermaterials.com/drillingfluids

GCC/DrillingFluids/RevIV/April2019