FILTER AND WATER WELL
SILICA SANDS & GRAVELS

PRODUCT

TARGET® Filter Silica Sands and Filter Gravels are high-silica materials processed in our Morinville plant to meet the requirements of individual water filtration systems. In addition to the standard grades listed below, sands and gravels can be manufactured for projects with other specifications. In addition Target supplies a premium filter sand to meet conditions in the most demanding environments. TARGET Premium Filter Sand is a high grade silica sand that is very uniform and clean to ensure superior filtration performance.

Certified to NSF/ANSI/CAN 61

Target Products filter sands and gravels are NSF 61 Certified and meet all AWWA B100 standards.

USES AND ADVANTAGES

TARGET Filter Sand is suitable for many rapid and slow filtration systems. The washed feedstock is dried, to sterilize the materials, then sized to meet effective size and uniformity coefficient specifications. Rigorous quality control testing, during production, assures that the final product meets the requirements of the American Water Works Association Standard B100 and is tested and certified to ANSI/NSF 61 Standards for filtering materials.

PHYSICAL PROPERTIES

	Standard Media		**Premium Media**
Colour	Tan		Light Beige
Grain Shape	Sub-rounded		Sub-round to rounded
Bulk Density	95 – 100 lb/ft^3 (1,520 – 1,600 kg/m^3)		95-1000 lb/ft^3
	Filter Sand	1.50 tonnes per m^3	1.50 tonnes per m^3
	Fine Filter Gravels	1.53 tonnes per m^3	-
	Coarse Filter Gravels	1.60 tonnes per m^3	-
Hardness, Mohs	6.5 – 7.0		6.9-7.0
Specific Gravity	2.60 – 2.65		2.63 – 2.65
Moisture Content	<0.1% weight		<0.1% weight
Acid Solubility	<5% weight		<1% weight

Bulk density values vary with particle size. Values for individual products can be determined at the time of shipping if required.

PACKAGING

Target Filter Sands are available in 22.7 kg (50 lb) plastic bags, in 25 kg (55 lb) poly woven bags, packaged 56 bags per pallet or in 1.75 tonne (3,850 lb) bulk bags packaged 1 per pallet. Target Filter Gravels are usually supplied in 25 kg (55 lb) poly woven bags packaged 56 bags per pallet or 1.75 tonne (3,850 lb) bulk bags packaged one per pallet. Other bag sizes and bulk deliveries are available on request.

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TYPICAL SIEVE ANALYSES - Percent Passing

Sieve Size		SANDS, Cumulative % Passing					
ASTM	**Metric**	**10 – 20**	**16 – 30**	**Standard 20 – 40**	**Premium 20-40**	**30 – 50**	**40 – 70**
No. 8	2.36 mm	100					
No. 10	2.00 mm	99 – 100					
No. 12	1.70 mm	90 – 100	100				
No. 16	1.18 mm	10 – 35	95 – 100	100	100		
No. 20	0.850 mm	0 – 3	30 – 55	90 – 100	93 - 97	100	100
No. 30	0.600 mm	0 – 1	5 – 10	20 – 45	15 - 40	80+	98+
No. 40	0.420 mm		0 – 3	5 – 10	0 - 5	30 – 45	60 – 80
No. 50	0.300 mm		0 – 1	0 – 1	0 - 1	0 – 10	15 – 30
No. 70	0.212 mm					0 – 2	1 – 3
No. 80	0.180 mm						0 – 1
Effective Size, d_{10}, mm		0.85 – 1.25	0.55 – 0.65	0.45 – 0.55	0.45 – 0.55	0.30 – 0.40	0.20 – 0.30
Uniformity Coefficient, d_{60}/d_{10}		< 1.4	< 1.6	< 1.6	< 1.4	< 1.6	< 1.6

Sieve Size		GRAVELS, Cumulative % Passing						
ASTM	**Metric**	**1 – 2"**	**½ - 1"**	**¼ - ½"**	**⅛ - ¼"**	**1/16 - ⅛"**	**4 – 10**	**8 – 16**
2"	50 mm	100						
1 ½"	38 mm	88 – 92						
1"	25 mm	0 – 10	100					
¾"	19 mm	0 – 1	92 – 98	100				
½"	12.5 mm		4 – 10	98 – 100	100			
3/8"	9.5 mm		0 – 1	50 – 80	95 – 100			
No. 3	6.7 mm			2 – 8	50 – 75	100	100	
No. 4	4.75 mm						90 – 100	100
No. 6	3.36 mm				0 – 5	99 – 100	30 – 60	98 – 100
No. 8	2.36 mm						0 – 10	85 – 95
No. 10	2.00 mm					5 – 15	0 – 1	35 – 55
No. 14	1.41 mm					0 – 1		
No. 16	1.18 mm							0 – 1
Effective Size, d_{10}, mm		19 – 24	12 – 15	7 – 8	3.0 – 3.5	1.4 – 1.7	2.4 – 2.9	1.4 – 1.7
Uniformity Coefficient, d_{90}/d_{10}		< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	< 1.4	< 1.5

The sieve analyses given in the tables are typical values. Because actual values could change from time to time please confirm that effective size and uniformity coefficient values remain within specification.

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TYPICAL SIEVE ANALYSES - Percent Retained

Sieve Size			SANDS, Individual % Retained				
ASTM	**Metric**	**10 – 20**	**16 – 30**	**Standard 20 – 40**	**Premium 20-40**	**30 – 50**	**40 – 70**
No. 8	2.36 mm	0					
No. 10	2.00 mm	0 – 1	0				
No. 12	1.70 mm	0 – 10	0				
No. 16	1.18 mm	65 – 85	0 – 5		0		
No. 20	0.850 mm	10 – 30	40 – 65	0 – 10	3 – 7		
No. 30	0.600 mm	0 – 3	20 – 45	50 – 70	55 –75	5 – 25	0 – 2
No. 40	0.420 mm		5 – 10	15 – 35	15 – 40	40 – 60	20 – 40
No. 50	0.300 mm		0 - 2	5 – 10	0 – 1	20 – 35	45 – 65
No. 70	0.212 mm					0 – 10	15 – 25
Pan		0 – 1	0 – 1	0 – 1	0 – 1	0 – 2	1 – 3
Effective Size, d_{10}, mm		0.85 – 1.25	0.55 – 0.65	0.45 – 0.55	0.45 - 0.55	0.30 – 0.40	0.20 – 0.30
Uniformity Coefficient, d_{60}/d_{10}		< 1.4	< 1.6	< 1.6	< 1.4	<1.6	<1.6

Sieve Size		GRAVELS, Individual % Retained						
ASTM	**Metric**	**1 – 2"**	**½ - 1"**	**¼ - ½"**	**⅛ - ¼"**	**1/16 - ⅛"**	**4 – 10**	**8 – 16**
1 ½"	38 mm	8 – 12						
1"	25 mm	70 – 90	0					
¾"	19 mm	0 – 10	2 – 8					
½"	12.5 mm	0 – 1	80 – 10	0 – 2				
3/8"	9.5 mm		4 – 8	30 – 50				
No. 3	6.7 mm		0 – 1	30 – 50	0 – 5			
No. 4	4.75 mm						0 – 10	
No. 6	3.36 mm			2 – 8	85 – 95	0 – 3	40 – 60	0 – 2
No. 8	2.36 mm						30 – 55	5 – 15
No. 10	2.00 mm					85 – 95	0 – 10	35 – 55
No. 14	1.41 mm					5 – 10		
No. 16	1.18 mm							35 – 55
Pan					5 – 10	0 – 3	0 – 1	0 – 1
Effective Size, d_{10}, mm		19 – 24	12 – 15	7 – 8	3.0 – 3.5	1.4 – 1.7	2.4 – 2.9	1.4 – 1.7
Uniformity Coefficient, d_{90}/d_{10}		< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	< 1.4	< 1.5

The sieve analyses given in the tables are typical values. Because actual values could change from time to time please confirm that effective size and uniformity coefficient values remain within specification.

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TYPICAL CHEMICAL ANALYSIS and PROPERTIES

STANDARD FILTER SAND		
Chemical Compound		Typical Value, % weight
Silica	SiO_2	93.2 – 95.6
Alumina	Al_2O_3	3.5 – 4.6
Iron Oxide	Fe_2O_3	0.30 – 0.35
Calcium Oxide	CaO	0.25 – 0.65
Magnesium Oxide	MgO	0.08 – 0.15
Potassium Oxide	K_2O	0.70 – 0.90
Sodium Oxide	Na_2O	0.65 – 0.85
Titanium Oxide	TiO_2	0.1 maximum
Loss on Ignition		0.3 maximum

PREMIUM FILTER SAND		
Chemical Compound		Typical Value, % weight
Silica	SiO_2	98.0 – 99.0
Alumina	Al_2O_3	0 – 0.3
Iron Oxide	Fe_2O_3	0 – 0.2
Calcium Oxide	CaO	0 – 0.2
Magnesium Oxide	MgO	0 – 0.3
Potassium Oxide	K_2O	0 – 0.2
Sodium Oxide	Na_2O	0 – 0.4
Titanium Oxide	TiO_2	0 – 0.2
Loss on Ignition		0 – 0.1

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