



**James C. Ray**  
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February 3, 2012

Via Email: [snr\\_tec@sbcglobal.net](mailto:snr_tec@sbcglobal.net)

SNR Technologies  
20406 Autumn Shore Drive  
Katy, TX 77450

RE: City of Austin  
Austin, TX

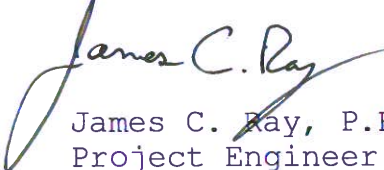
Gentlemen:

Please find enclosed information as requested. A typical gradation for the materials requested is as shown below:

	<u>Sieve Size</u>	<u>% Passing</u>
3/8"-3/16"	3/8"	99.7
	5/16"	79.3
	1/4"	41.6
	#4	3.5

	<u>Sieve Size</u>	<u>% Passing</u>
3/16"-3/32"	#4	97.8
	#6	54.7
	#8	3.4
	#10	2.1

Yours very truly,

  
James C. Ray, P.E.  
Project Engineer

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MATERIAL SAFETY DATA SHEET

Arkholo Sand & Gravel Co.  
P.O. Box 1627  
Ft. Smith, AR 72902  
479/785-4271

Page 1  
Date Prepared: 08/01/2008  
Date Printed: 08/01/2008  
MSDS No: 0366115-002.001

GRAVEL

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Material Identity

Product Name: GRAVEL

General or Generic ID: GRAVEL

Company

APAC  
Atlanta, Georgia

Emergency Telephone Number:

CHEMTREC 1-800-424-9300  
24 hours everyday

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2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient(s)	CAS Number	% (by weight)
GRAVEL		100.0

Quartz(CAS Number 14808-60-7) is a common constituent of gravel and occurs in varying amounts depending on the type of rock.

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3. HAZARDS IDENTIFICATION

Potential Health Effects

Eye

Dust can cause eye irritation. Symptoms include stinging, tearing, redness, and swelling of eyes.

Skin

May cause skin irritation. Symptoms may include redness, burning, and swelling of skin. This material is unlikely to pass into the body through the skin.

Swallowing

This material is not likely to be swallowed.

Inhalation

This material is a dust or may produce dust. Symptoms usually occur at air concentrations higher than the recommended exposure limits (See Section 8). Prolonged or repeated breathing of dust may result in progressive and permanent lung disease (fibrosis) which may cause death from respiratory and/or heart failure. Symptoms include coughing and difficult breathing which becomes worse with physical activity. Another form of fibrosis, acute silicosis, can occur with exposures to very high concentrations of respirable silica

GRAVEL

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over shorter periods of time, sometimes as short as a few months. Symptoms of acute silicosis include progressive shortness of breath, fever, cough and weight loss. Acute silicosis is fatal.

Symptoms of Exposure

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: irritation (nose, throat, airways).

Target Organ Effects

Overexposure to this material (or its components) has been suggested as a cause of the following effects in humans: chronic bronchitis, emphysema, kidney damage.

Developmental Information

There are no data available for assessing risk to the fetus from maternal exposure to this material.

Cancer Information

The International Agency for Research on Cancer (IARC) and the National Toxicology Program have determined that there is sufficient evidence in humans for the carcinogenicity of inhaled crystalline silica in the form of quartz or cristobalite. In addition, IARC has determined that there is sufficient evidence for the carcinogenicity of quartz and cristobalite in experimental animals. Among individuals with silicosis, lung cancer occurs more frequently in those who smoke.

Other Health Effects

There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of immunologic disorders and autoimmune diseases such as scleroderma (a disorder manifested by fibrosis of the lungs, skin and other internal organs), systemic lupus erythematosus and sarcoidosis (chronic inflammatory diseases).

Primary Route(s) of Entry

Inhalation, Skin contact, Eye contact.

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4. FIRST AID MEASURES

Eyes

If symptoms develop, immediately move individual away from exposure and into fresh air. Flush eyes gently with water for at least 15 minutes while holding eyelids apart; seek immediate medical attention.

Skin

Remove contaminated clothing. Wash exposed area with soap and water. If symptoms persist, seek medical attention. Launder

GRAVEL

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clothing before reuse.

Swallowing

First aid is not normally required. If symptoms develop, seek medical attention.

Inhalation

If symptoms develop, move individual away from exposure and into fresh air. If symptoms persist, seek medical attention. If breathing is difficult, administer oxygen. Keep person warm and quiet; seek immediate medical attention.

Note to Physicians

Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material: lung (for example, asthma-like conditions), kidney. Silicosis predisposes the individual to the development of mycobacterial infections including tuberculosis or to fungal infections. This is most likely to occur after the age of 50 and in association with moderate to severe silicosis.

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5. FIRE FIGHTING MEASURES

Flash Point

Not applicable

Explosive Limit

No data

Autoignition Temperature

No data

Hazardous Products of Combustion

No data

Fire and Explosion Hazards

No data

Extinguishing Media

No data

Fire Fighting Instructions

No data

NFPA Rating

Health - 1, Flammability - 1, Reactivity - 0

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6. ACCIDENTAL RELEASE MEASURES

GRAVEL

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Small Spill

Minimize dust by wetting down spilled material. Sweep up material.

Large Spill

Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Minimize dust by wetting down spilled material. Sweep up spilled material.

7. HANDLING AND STORAGE

Handling

Minimize dust exposure. Use wet methods to reduce dust exposure.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye Protection

Wear safety glasses in compliance with OSHA regulations. (Consult your safety representative.)

Skin Protection

Wear normal work clothing covering arms and legs. If manual handling of material occurs, wear gloves to protect skin from cuts and scrapes.

Respiratory Protections

If overexposure occurs, a NIOSH/MSHA approved respirator with a particulate filter is advised in absence of proper engineering control.

Engineering Controls

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below TLV(s).

Exposure Guidelines

Component

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NATURAL SAND OR GRAVEL

No exposure limits established

QUARTZ (14808-60-7)

OSHA VPEL 0.100 mg/m3 - TWA respirable dust

ACGIH TLV 0.050 mg/m3 - TWA

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9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point

No data

Vapor Pressure

GRAVEL

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No data

Specific Vapor Density  
No data

Specific Gravity  
2.550 - 2.800 @ 77.00 F

Liquid Density  
No data

Percent Volatiles  
No data

Evaporation Rate  
No data

Appearance  
No data

State  
SOLID

Physical Form  
ANGULAR OR ROUND PARTICLES

Color  
MULTICOLORED

Odor  
NONE

pH  
No data

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10. STABILITY AND REACTIVITY

Hazardous Polymerization  
No data

Hazardous Decomposition  
No data

Chemical Stability  
No data

Incompatibility  
Avoid contact with: chlorine trifluoride, fluorine, hydrofluoric acid, manganese trifluoride, oxygen difluoride, strong oxidizing agents.

GRAVEL

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11. TOXICOLOGICAL INFORMATION

No data

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12. ECOLOGICAL INFORMATION

No data

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13. DISPOSAL CONSIDERATION

Waste Management Information

Dispose of in accordance with all applicable local, state and federal regulations.

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14. TRANSPORT INFORMATION

DOT Information - 49 CFR 172.101

DOT Description:

NON-REGULATED BY D.O.T.

RQ (Reportable Quantity) - 49 CFR 172.101

Not applicable

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15. REGULATORY INFORMATION

US Federal Regulations

CERCLA RQ - 40 CFR 302.4(a)

None listed

SARA 302 Components - 40 CFR 355 Appendix A

None

Section 311/312 Hazard Class - 40 CFR 370.2

Immediate(X) Delayed(X) Fire( ) Reactive( ) Sudden

Release of Pressure( )

SARA 313 Components - 40 CFR 372.65

None

OSHA Process Safety Management 29 CFR 1910

None listed

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EPA Accidental Release Prevention 40 CFR 68  
None listed

International Regulations  
Inventory Status  
Not determined

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16. OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

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# NSF/ANSI STANDARD 61

## Drinking Water System Components - Health Effects

**NOTE: Unless otherwise indicated for Materials, Certification is only for the Water Contact Material shown in the Listing. Click here for a list of [Abbreviations used in these Listings](#).**

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### APAC-Central, Inc.

755 East Millsap Road  
P.O. Box 9208  
Fayetteville, AR 72703  
United States  
479-785-4271

**Facility :** Van Buren, AR

#### Process Media

Trade Designation	Size	Water Contact Temp	Water Contact Material
Gravel Filter Gravel	[1]	CLD 23	SLDOX
[1] All sizes and gradations.			
Sand Filter Sand	[1]	CLD 23	SLDOX
[1] All sizes and gradations.			

NOTE: Certified for water treatment plant applications.  
This product has not been evaluated for point of use applications.

Job No.: 98-5537  
 Date: September 30, 1998  
 Project: Quality Control  
 Contactor: Arkhola Sand and Gravel Company  
 Reported to: Arkhola Sand and Gravel Company  
 Material Type: Arkansas River Gravel  
 Material Use: Arkhola's Van Buren, Arkansas Sand Plant  
 Sample Source: Arkhola Sand and Gravel Company  
 Sampled By: AWWA  
 Specification: 3/4"-1/2"  
 GRUBBS, HOSKYN,  
 BARTON, & WYATT, INC.,  
 P.O. BOX 11091  
 FORT SMITH, AR 72917

Sieve Size	1/4"-1/8"	1/2"-1/4"	3/4"-1/2"	No. 4 - No. 8	No. 10 - No. 20	.35MM - .45MM	.45MM - .55MM	.55MM - .65MM
No. 3/4"			93					
No. 5/8"			46					
No. 1/2"		100	2.7					
No. 3/8"	100	47						
No. 1/4"	99	1.1		100				
No. 4	47			100				
No. 6	4			34				
No. 8	0.3			0.6				
No. 10				0.2	97			
No. 12					85			100
No. 14					56			79
No. 16					27	100		64
No. 18					10	98		51
No. 20					5	88		31
No. 25					1.2	80	65	10
No. 30						69	40	3.1
No. 35						22	7	
No. 40						9	1.4	
No. 45						2.4		
No. 50								
Specific Gravity (Apparent)	2.58	2.62	2.59	2.57	2.64	2.58	2.63	2.63
Specific Gravity (SSD)	2.57	2.57	2.55	2.54	2.62	2.57	2.62	2.61
Specific Gravity (Bulk)	2.56	2.54	2.53	2.53	2.61	2.56	2.60	2.60
Absorption (%)	0.3	1.1	1.0	0.6	0.5	0.4	0.5	0.5
Acid Solubility (Loss) (%)	0.3	0.5	0.5	0.9	0.3	0.4	0.9	0.3
Effective Size (mm)					.99	.43	.52	.60
Uniformity Coefficient (mm)					1.36	1.40	1.33	1.58

**RECEIVED**  
**OCT 8 1999**  
**ARKHOLA ENGINEERING**