

CONTACT INFORMATION

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12/08/86

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: CHETO #1

ALTERNATE NAMES: GURLEY BENTONITE MCCARRELL-GURLEY PIT

APACHE COUNTY MILS NUMBER: 300

LOCATION: TOWNSHIP 21 N RANGE 29 E SECTION 23 QUARTER C LATITUDE: N 35DEG 12MIN 44SEC LONGITUDE: W 109DEG 14MIN 32SEC TOPO MAP NAME: SANDERS - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:

3

CLAY BENTONITE

BIBLIOGRAPHY:

ADMMR FILE USBM OP:MC CARRELL & GURLEY

Opache Cocenty

UNITED DESSICANTS United Catalyst, Inc.

Corporate Headquarters - P.O. Box 32370, Louisville, KY 40232 - Phone (502) 634-7200 - Processing plant c/o United Dessicants, 101 Christine Drive, Belen, NM 87002 - Phone (505) 864-6691.

Cheto No. 1 T21N R29E Sec. 23

Employees: 10 - Located approximately six miles southeast of Sanders in northeastern Arizona - Surface strip bentonite mine - Seasonal operation by mining contractors - Used in catalysts and in production of desiccants. Vice President (Louisville) Bill Monin General Manager (Belen) George Klett Technical Director (Belen) Mathew Rix

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Cheto No. 1

T21N R29E Sec. 23 nders in NE AZ - Surface

Located approximately six miles southeast of Sanders in NE AZ - Surface strip bentonite mine - Seasonal operation by mining contractors - Employees - 10 - Used in catalysts and in production of desiccants.

Vice President (Louisville) Bill Monin Operations Manager (Belen) Robert Deuble

UNITED DESSICANTS GATES United Catalyst, Inc.

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CHETO # 1

APACHE COUNTY

MG WR 10/31/87: Mr. Ted Eyde (card) reports that the Cheto clay of Apache County is one of the finest known for its ability to be acid-activated and for its character as a desiccant. The clay sells for about \$1.00 lb.

RRB WR 4/1/88: Randy Smith and Marvin Campbell, attorneys representing Harshaw Filtrol Corp called to ask how "Arizona's new mine reclamation law" would affect Cheto, Cheto #1 and Chambers property in Apache County. They report that the Cheto operation is on land that was returned to the government by Santa Fe for Indian Reservation. However, Santa Fe retained the mineral rights and they are leased to Harshaw. After I told them that the law was to protect the public from idle mine openings they said that there were several on the chambers property. I referred him to the Mine Inspector's office for details.

CHETO #1 MINE

APACHE COUNTY

Telephone conversation, March 26, 1976, John H. Jett; E. H. Gleason, 5300 N. East Palm Road, Paradise Valley, reported his company, Silver Fox Packaging Corp., sold their interest in the Gurley Bentonite Mine. It was sold to Culligan International. The Culligan Desiccant Div. is mining and shipping at this time. Mr. John Womack, Gallup, New Mexico, 505-863-9341 is the plant manager.

John H. Jett Travel, 5/25/77: Stopped at Gurley Bentonite, production is intermittent. Jim McDonald is Superintentend, Mr. Gurley, Gallup, is President. A Mr. John Pena (with Gurley Motors in Gallup, New Mexico), Telephone 505-722-6624 is the contact for sales and other information.

MG WR 3/12/82: United Catalyst, Inc., P.O. Box 32370, Louisville, Kentucky, 40232, phone (502) 637-9751, owns the McCarrel-Gurley (Cheto Mo. 1) bentonite mine in Arache County. Contact either Mr. Bill Monin or Mr. Paul Jeffries, at United Catalyst, to see if the operation should be in our next directory of active mines. The mine is adjacent to the Cheto No. 2 mine owned by the Filtrol Corp. United Catalyst mines the bentonite generally between April and November of each year. The clay is used as a catalyst and in the production of desiccants (drying agents).

MG WR 2/12/82: Learned indirectly that bentonite production at the United Catalyst property in Apache County is about 12,000 TPY.

NJN WR 8/26/83: Alden Jack reported that United Catalyst operates the Cheto #1 pit, Apache County, intermittently. They were active in June and mined 5,000 tons which was shipped to the Culligan Company.

RRB WR 10/24/86: Richard Power (c), landman, United Catalyst Inc (c) reports that they have purchased land next to their Cheto #1 (f) property, Apache County as a site for a processing plant if one is feasible. They are now_shipping_to their plant in Belen, NM.

RRB WR 4/24/87: Charles Cordallis, consulting geologist from Montana was in to find a driller for about 100 ft of holes. He is consulting for United Catalyst Inc and is defining more reserves at the Cheto No. 1 (file) bentonite mine near Sanders, Apache County. I suggested several drillers that might be interested in a small job.

APACHE COUNTY

Visited the Gurley pit - no one working. FTJ WR 5-17-68

Active Mine List April 1969 - 2 men Active Mine List Oct. 1969 - 2 men - McCarrell-Gurley, Sanders - T21N, R29E

Clay (bentonite) was mined by McCarrell and Gurley near Sanders during the quarter. FTJ QR 4-3-70

Visited McCarrell-Gurley pit - slowed down according to workman. FTJ WR 5-15-70

Active Mine List May 1970 - 2 men Active Mine List Oct.1970 - 2 men

To McCarrell-Gurley bentonite mine near Sanders - idle but according to Mr. Bean they mine as they receive orders. FTJ WR 5-17-71

Directory of Mining - August 1971 - 2 employees.

McCarrell-Gurley Pit was inactive but equipment on the property. Their shipments of bentonite is irregular. WR FTJ 7/17/72

Active Mine List - October 1972 - Empl. 2

JHJ Note 3/73 - McCarrell-Gurleyar call home of W.A. McDonald, 688-2659; Mr. Gurley can be reached through Central Motors in Gallup, New Mexico.

Mr. Bean (Filtrol Corp.) said the McCarrell-Gurley bentonite pit hadn't operated for sometime but he gave directions to James McDonald's place. Mrs. McDonald, neice of the deceased Mr. McCarrell said Mr. Gurley was the present owner, he also operates the Central Motors and lives in Gallup. She said her husband loads the bentonite into trucks after the clay is stripped by a contractor. The 4-600 tons monthly production is mainly trucked to the Silver Fox plant (formerly W. R. Grace Co.) in Gallup. Hpwever, some clay is still shipped by rail to Culligan Co. in San \mathbb{X} Fransisco. Their selling price for the best quality clay is 12.50/ton. Due to poor road condition in wet weather the Gurley pit doesn't operate. GW WR 11-2-73 - 10(29)

E.H. Gleason, 5300 North East Royal Palm Road, Paradise Valley, 85253, part owner of the Gurley Bentonite operation, called to explain that the same group hopes to establish a plant to produce sodium silicate. The plant will need sources of lime, sodium chloride brine and sulfuric acid. KAP WR 3/19/75

CHETO #1 MINE

APACHE COUNTY

This property active Sept. 1960 - 2 men working - C. H. McCarrell, Chambers, Arizona

Visited the Alba Mining Corporation's bentonite operations on Sec. 8, T21N, R29E, near and southeast of Sanders, also the site of McCarrell's small intermittent bentonite operation on Sec. 6. Spencer Balcomb, mgr. for Alba, said that his shipments are at an average rate of 8 cars per week to the parent company's (Filtrol) plant in the Los Anglees area. The crew comprises from 6-10 men. McCarrell's production is variable and only 2 men are employed at occasional periods. TPL WR 8-5-61

Property active Oct. 1961

Property acitve Feb. 1962 - 2 men working

C. H. McCarrell is deceased. McCarrell and Gurley had the property some years back and probably remained partners. According to Stovall, mechanic at the Alba shops, Gurley is "head man" now. Grimes and a helper are doing little at the property. They have several thousand tons stockpiled. Mine was idle. Visit - FPK - 8-30-62

Mine inactive. FTJ WR 9-17-65

BENTONITE AND SPECIALTY SAND DEPOSITS IN THE BIDAHOCHI FORMATION

TED H. EYDE and DAN T. EYDE, GSA Resources Inc., 1235 E. Moonridge Rd., Tucson, AZ 85718

Specialty sand and bentonite are produced in the plateau province from the Bidahochi Formation near Sanders, Apache County, Arizona. It appears that deposits of both sand and bentonite formed during the Pliocene in a series of interconnected lakes along the west side of the Defiance uplift.

The bentonite is an alteration product of airborne vitric ash that fell into these lakes. In the Cheto district, the individual bentonite horizons, which range from less than a foot to more than 10 feet thick, are restricted to the position of the medial volcanic member. Bentonite production began at the Allentown mine in 1924 and at the Chambers mine in 1926. In 1933, strip mining of the extensive deposits in the Cheto district commenced. Production increased each year to a peak of 270,000 tons in 1957. As a result of the introduction of synthetic zeolites into petroleum refining, production declined. At present, about 40,000 tons of bentonite are produced from the district each year. Bentonite is shipped and processed into desiccants, thickeners, and acid-activated clay products.

The specialty sand was derived from Permian sandstones and deposited in a deltaic environment where streams draining the Defiance Plateau entered the lakes. Although these stream channels are usually restricted to the upper member of the Bidahochi, stratigraphically above the bentonite horizon, a few actually cut through the bentonite. The well-sorted sand, suitable for use as a proppant in hydraulically fractured oil and gas wells, is localized in elongate lenses along the margins of the channels. These lenses range from 5 to 50 feet in thickness and often extend thousands of feet in both width and length. The sand is about 97 percent silica, has a yield of 40 percent in the minus-20 plus-40 mesh-size fraction, and has a roundness of .6 to .7 on the Krumbein scale. Production of this sand began about 1961. All of the current production, which amounts to about 40,000 tons per year, is sold in the petroleum-producing area near Farmington, New Mexico.

THE BOWIE CHABAZITE DEPOSIT

TED H. EYDE and DAN T. EYDE, GSA Resources Inc., 1235 E. Moonridge Rd., Tucson, AZ 85718

The Bowie chabazite deposit has yielded the most mined tonnage of any natural zeolite deposit in the United States. Since 1962 the deposit has yielded about 12,000 tons of crude chabazite, with an estimated market value of \$30 million when sold as an activated molecular-sieve product.

Between 1,000 and 1,500 tons of high-purity, crude lump chabazite is now produced annually by stripping and selectively mining the lower, massive, half-foot-thick, "high-grade" bed. All of the chabazite is still shipped out of State for grinding prior to extrusion and activation. Zeolite minerals were discovered at the Bowie deposit in 1875, when Oscar Lowe identified a hydrous silicate related to chabazite or stilbite from a tuff bed that cropped out in the San Simon Valley. It was not until 1959, however, that chabazite, erionite, and clinoptilolite were positively identified as the principal constituents of an altered vitric-tuff horizon that crops out in the area originally described by Lowe.

Shortly after this rediscovery of zeolite minerals in the San Simon Valley, several of the major producers of synthetic zeolites acquired land positions covering the outcrops, including projected extensions, and began exploration drilling. By 1980 all of the known chabazite reserves had been acquired by five companies and two individuals.

The more than 3,000 holes drilled to explore the deposit and the excellent exposures provided by the strip-mined areas indicate that the chabazite-bearing horizon (known as the marker tuff) is confined to a flat-lying lacustrine section known to the operators as the Green Lake Beds. The deposition of the parent airborne vitric ash and subsequent zeolitic alteration was controlled by many factors, including the lake-bottom topography, depth and cation content of the saline-alkaline lake water, and proximity to postdepositional erosion surfaces.

Zeolitic alteration was complete when an extensive system of younger paleochannels deeply eroded the Green Lake Beds. This left only a few erosional remnants of the marker tuff and the lower "high-grade bed" that constitute the present deposit. Both the channel gravels and the Green Lake Beds are overlain by a section of halite-bearing brown mudstones, known as the Brown Lake Beds. The Bowie chabazite deposit can be used as a model to guide the exploration and development of other zeolite deposits that formed in saline-alkaline lacustrine environments.

ARIZONA PORTLAND CEMENT COMPANY'S RILLITO OPERATION

J.W. RAINS, California Portland Cement Company, P.O. Box 947, Colton, CA 92324

Arizona Portland Cement Company's limestone deposit (called Twin Peaks) is approximately 4 miles southeast of the cement plant. The plant is adjacent to both the Southern Pacific Railroad and Interstate 10, about 17 miles northwest of Tucson.

Placer claims were filed on the Twin Peaks deposit in 1923. From that time until the present, geologic data have been accumulated and evaluated to define more closely the quantity and quality of the limestones.

The cement plant at Rillito was originally constructed as a one-kiln plant in 1949. Capacity was increased in 1952 and 1956, bringing the plant to an annual capacity of 440,000 tons of cement. In 1972 another expansion program was completed, brining annual cement capacity to 1.1 million tons.

Geologically, the Twin Peaks contain formations ranging from the Precambrian Pinal Schist to the Pennsylvanian Naco Formation. Within this sequence, other exposed formations include the Cambrian Bolsa Quartzite and Abrigo Formation, Devonian Martin Limestone, Mississippian Escabrosa Limestone, and Pennsylvania Naco Formation.

255-5971



CHE #1 (File)

Office of State Mline Inspector

WAN 27 1304

705 W. Wing, Capitol Building Phoenix, Arizona 85007

NOTICE TO ARIZONA STATE MINE INSPECTOR

In compliance with Arizona Revised Statute 27-303, we are submitting this written notice to the Arizona State Mine Inspector (705 West Wing, Capitol Building, Phoenix, Arizona 85007) of our intent to start stop (please circle one) a mining operation. COMPANY NAME Black Rock Construction, Inc. CHIEF OFFICER Phill E. McKinnon COMPANY ADDRESS P.O. Box 789 - Holbrook, Arizona 86025 COMPANY TELEPHONE NUMBER 524-6159 or 6150 MINE OR PLANT NAME Gurley Mine 44.4 MINE OR PLANT NAME Gurley Mine 44.4 MINE OR PLANT LOCATION (including county and nearest town, as well as directions for locating by vehicle) Sanders, Arizona - 10 Miles East of Sanders. Apache County

STARTING DATE January 24, 1984 CLOSING DATE Not known at this time. DURATION OF OPERATION

PERSON SENDING THIS NOTICE Paulda Duffy

TITLE OF PERSON SENDING THIS NOTICE Office Manager

DATE NOTICE SENT TO STATE MINE INSPECTOR 1/24/84

PLEASE NOTE: Any operation found operating, without having sent this notice to the Arizona State Mine Inspector, will be charged with a petty offense.

5/79

	ZONA DEPARTMENT OF MINE RESOURCES Mineral Building, Fairgrounds
	Phoenix, Arizona
1.	Information from: Lester Beau
	Address: Sanders, ariz.
2.	Mine: Cheto No. 1 3. No. of Claims - Patented
	Unpatented
4.	Location:Chan bers
5.	Sec Tp_2/N_ Range 29 E 6. Mining District Opache Co
7.	Owner:
8.	Address:
9.	Operating Co.: Mc Carrell - Jurley
0.	Address:
1.	President:12. Gen. Mgr.:
3.	Principal Metals:14. No. Employed:
5.	Mill, Type & Capacity:
б.	Present Operations: (a) Down (b) Assessment work (c) Exploration (d) Production (e) Ratetpd.
7.	New Work Planned:
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Date	10/5-107	
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(Signature)

DEPARTMENT OF MINERAL RESOURCES STATE OF ARIZONA FIELD ENGINEERS REPORT

Mine	CHETO # 1	Date	September 2, 1959
District	(Apache County)	Engineer	Frank P. Knight

Subject:

visit

Owned and operated by C. H. McCarrell. Ray Grimes, Sanders, in charge of 2 men drilling north of mines area.

Not mining at present. HAve about 10,000 tons of bleaching clay stockpiled. Shipped 4 cars in August to chemical firms. CHETO #1

APACHE COUNTY

Interviewed C. H. McCarrell at his ranch near Chambers re bentonite operations at Chambers and at Cheto. He reported that he had not renewed the Cheto lease to Filtrol, Corp.. This lease expired in Sept. 1958 and since that time the mining contractor for Filtrol, Alba' Mining Corp., has been shipping out bentonite which had been stockpiled at Sanders. The stockpile has been reduced from about 60,000 tons to about 30,000 tons and current shipments are averaging 4000 TPM. Mr. McCarrell is mining and shipping several cars a month for his own account.

1

T. P. LANE 4-20-59 WR

DEPARTMENT OF MINERAL RESOURCES STATE OF ARIZONA FIELD ENGINEERS REPORT

CHETO # Date NOVEMBER 14, 1958 FRANK P. KNIGHT District Engineer

Subject:

Spencer Balcomb told the writer that McCarrell was intermittently operating the Cheto # 1 with about 3 men.

Mine

DEPARTMENT OF MINERAL RESOURCES STATE OF ARIZONA FIELD ENGINEERS REPORT

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CHETO # 1 Date NOVEMBER 14, 1958 Engineer FRANK P. KNIGHT

Subject:

Spencer Balcomb told the writer that McCarrell was intermittently operating the Cheto #1 with about 3 men.

Mine District

DEPARTMENT OF MINERAL RESOURCES state of arizona field engineers report

Cheto Mines

Date 7-13-58

XHANKER Frank P. Knight, Director

District

Subject:

Visit being on Sunday, no one was at the properties. There was not much change from last year in Cheto No. 1 but Cheto No. 2 pit showed extraction of about half of the large area stripped last year. Some stripping equipment evidently had been moved away and stripping appeared to have been stopped.

Several thousand tons were stockpiled at the loading site at Sanders, and residents said that the reason was that Alba Mining could not come to terms for extension of their lease, so were taking out and storing as much as remaining time allowed.

Called on Mr. McCarrel at his ranch at Chambers. He is part owner of the Cheto deposits and operates No. 1 at the west end with about 5 men. No. 2 uses about 25 men.

Mine

4-9-58

LEE HAMMONS Field Engineer

V Cheto #1 Mine - Lectorite

V

*

Active on reduced scale (employs 4 men) according to Mr. C. H. McCarrell. Seeking new markets.

W. End of Sounder deposit

Active Mine list - 2-15-58 -

\ Mr. C. H. McCarrell, - Operator McCarrell & Gurley, Chambers, Arizona





Tnited Desiccants is a member of the United Catalysts Inc. group, which has administrative and sales offices, and manufacturing facilities in Louisville, KY. United Catalysts built a modern facility located in Belen, New Mexico which was completed in October, 1983 for the processing and packaging of a very high grade of activated clay from the United Desiccants' mine in Arizona into packaged desiccant products. We established this facility to produce the highest

quality clay desiccant on the market.

Desiccants. They are indispensible in today's world of high technology and diversified manufacturing. At United Desiccants we know that quality desiccants are absolutely essential to insure moisture-free product protection. Our desiccants are relied upon by manufacturers in the electronics, pharmaceutical, food and aerospace industries.

In distributing all over the world, we have earned a reputation for providing the desiccants that are most effective at adsorbing moisture vapor in packaged products.



Our laboratory utilizes modern equipment to assure that our desiccants meet MIL-D-3464E specifications. The Belen, NM facility processes and stores Desi Pak.®







DESI PAK®

DESI PAK[®] is the trade name for United Desiccants' packaged clay desiccant. DESI PAK[®] is a low-cost, efficient desiccant which will protect the contents of a properly sealed container until it is opened. The contents of a sealed container will be in the same condition as when packaged for shipment or storage.

The addition of a humidity indicator card in each DESI PAK[®] pail or drum allows the container to be visually inspected to insure that the desiccant remains active and the contents safe.



DESI PAK[®] Tyvek[®]* bags, a United Desiccants' innovation in the industrial desiccants market, are non-dusting. DESI PAK[®] Tyvek[®] bags contain no sulphur, which is present in the creped kraft paper bags. Sulphur, when placed in contact with a product, may cause corrosion in many applications, such as the electronics industry. The DESI PAK[®] Tyvek[®] bag solves this longstanding problem.

Tyvek[®] is made from highdensity polyethylene fibers and is a spunbonded olefin. Tyvek[®] is strong, lightweight, flexible, smooth, low-linting, and is resistant to water, chemicals, abrasion and aging. The Tyvek[®] bag is also extremely tear-resistant, providing extra protection for your product. Mil-D-3464E dust testing has yielded a result of less than 0.5 mg of dust – truly a dust-free desiccant!





BAGS & PACKETS

Desi Pak®	-clay
Sorb-It®	-silica gel
Tri-Sorb®	-molecular sieve
Getter®	-activated carbon
2-in-1	-silica gel and/or
	clay and activated
	carbon
Continu-Strip [®]	-continuous strip
	packets
Container Dri®	-clay/calcium
	chloride

CANISTERS

Sorb-It [®] Can	-silica gel
Desi Can®	-clay
Getter [®] Can	-activated carbor
Tri-Sorb® Can	-molecular sieve
2-in-1 Can	-silica gel or clay
	and activated
	carbon

ACETATE CAPSULES

Humi-Caps[®] -white or blue silica gel

INDICATING BAGS AND PACKETS

Desi View[®] -one side Tyvek[®]/ one side clear film bags filled with a mixture of clay, silica gel or molecular sieve and blue indicating gel.

Typical Applications

Electronic Components Packaging Machine Parts Military Instruments and Armaments Pharmaceuticals Motors **Circuit Boards** Relays and Communication Devices Oceanographic Devices Documents and Paper Storage Instruments Photographic Equipment & Film **Binoculars** Foodstuffs Batteries Vitamins **Optical Devices** Dry Fuel Propellants Safes Medical Equipment Diagnostics Candy Museum Storage



Bulk density: 62.00 lbs./cu. ft.

Particle size: 12.50mm 0.0% 0.18-12.5mm 99.9% 0.18 mm 0.1%

Chemical Composition:

SiO ₂ 65.7%	MnO0.1%	
Al ₂ O ₃ 17.3%	MgO3.6%	
TiO ₂ 0.3%	CaO3.2%	
Fe ₂ O ₃ 2.8%	K ₂ O0.3%	1
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DESI PAK[®] unit bags exceed the requirements of Mil-D-3464E in actual performance and will exceed the moisture vapor adsorption of silica gel at government specification levels. The performance characteristic of DESI PAK[®] is indicated on the chart at right, showing the amount of moisture vapor adsorbed at various humidity levels.

The DESI PAK® performance curve exceeds both military specifications, which is the industry standard, and the silica gel performance curve for these same specifications. At 20% relative humidity, DESI PAK® will adsorb 50% more moisture than required by Mil-D-3464E, whereas silica gel will only adsorb 3.5% more moisture than required by Mil-D-3464E.



All desiccants manufactured at United Desiccants for commercial or military use, meet or exceed





Mil-D-3464E which is the specification that governs desiccant materials. This means that all of the raw materials that we use at this manufacturing site are tested and inspected prior to use.

Daily production is also tested by our highly trained laboratory staff for volume and content, adsorption rate, adsorption capacity, dust, and bag strength. All of these tests guarantee that our materials conform to Mil-D-3464E.



DESI PAK[®] meets Method II packaging standards described in Mil-P-116-E, which covers the basic requirements of military packaging methods of preservation. This involves packaging an item inside a sealed waterproof and moisture vapor-proof container with the inclusion of a desiccant to prevent rust, mildew or corrosion damage. In Method II packaging, the package is maintained at a safe humidity below 40% RH during the normal storage period of 18 months to 2 years.

No matter how much care is exercised in producing a desiccant, it is only effective when it is active. Each pail or drum of DESI PAK[®] contains a humidity indicator card to insure that the desiccant is active when received and opened. To insure that the desiccant remains active, it is essential that the lid be tightly resealed on its container.

The part on the right has not been protected by Desi Pak® and shows signs of moisture-induced corrosion. The part on the left has been properly protected with Desi Pak.®

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NEW PAKO

U.D.G. PENNSAUKEN, NJ

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Structure and Composition

DESI PAK[®] is a chemically inert calcium aluminosilicate clay. The internal structure of this calcium-rich montmorillonite clay is a layer structure which attracts and adsorbs moisture on its surface and in between its layers. At full moisture vapor capacity, DESI PAK[®] remains dry and free-flowing. There is no change in size, shape or texture of the desiccant.

DESI PAK[®] montmorillonite clay is a naturally occurring mineral as opposed to the chemically synthesized adsorbent. Therefore, it is more economical than silica gel or molecular sieve.



Specifications

DESI PAK[®] bags are available in tear-resistant, general purpose bags and non-dusting bags. DESI PAK[®] Tyvek[®] Type II bags are ideal for applications where nondusting is required, such as in electronic parts, aerospace and missile components, pharamceuticals, etc. DESI PAK[®] Type I general purpose bags of crepe or rayon are also available.

Meets FDA Specifications

DESI PAK[®] Tyvek[®] activated clay desiccant bags meet the requirements of the U. S. Food and Drug Administration for use in contact with food and drugs. As stated in the Code of Federal Regulations, the bags meet the specifications based on the following:

 The desiccant is non-toxic.
Chemically, the desiccant is sodium calcium aluminosilicate, hydrated. This is a "Generally Recognized as Safe" (GRAS) material, and is covered by Title 21 of The Code of Federal Regulations, Part 182, Subpart C, Section 182.2729.

3. The desiccant is sealed in packages. The Tyvek[®] package meets the requirements of Title 21 of The Code of Federal Regulations, Section 177.1520. This is for direct food contact at temperatures up to 100° Centigrade.

4. The desiccant bag bears a statement warning consumers against accidental ingestion.

		CONTAIL	NER DATA	1. 1. 1. 1.	
	TYVEK® Bags			Gross Ship	
Catalog	Catalog	Bag	Bags Per	Wt. Container	
Number	Number	Size	Container	Lbs.	Туре*
	Ī	RUMS - HEAT	SEALED BAC	GS	
	72026020	16 Unit	150	189	1 & II
	72024020	8 Unit	300	192	I & II
71022020	72022020	4 Unit	500	163	I & II
71020020	72020020	2 Unit	800	136	I & II
71014020	72014020	1 Unit	1300	114	I & II
	STE	EL PAILS - HE	EAT SEALED E	AGS	
71018020	72018020	2 Unit	150	29	I & II
71011020	72011020	1 Unit	300	29	I & II
71008020	72008020	1/2 Unit	550	27	I & II
71007020	72007020	1/3 Unit	700	25	I & II
71006020	72006020	1/6 Unit	1200	24	I & II
	DRUMS	- STRING SE	WN BAGS WI	TH TIES	
71041020		80 Unit	30	188	I
71036020		16 Unit	150	190	I
71039020		16 Unit	150	191	II
71030020		8 Unit	300	180	I
71033020		8 Unit	300	180	II

*Type I is general purpose. Type II is non-dusting.

Desi Pak Unit Size	U.S. Federal Stock Number	Bag Dimensions Width-Length-Thickness
1/6	6850-00-264-6564	3 x 3 x ¹ /8
1/3	6850-00-264-6561	3 x 3 ¹ /4 x ³ /16
1/2	6850-00-264-6568	3 x 3 ¹ / ₂ x ¹ / ₄
1	6850-00-264-6035	5 x 3 ¹ / ₂ x ¹ / ₄
2	6850-00-264-6573	5 x 4 ³ /4 x ³ /8
4	6850-00-264-6574	5 x 6 x ¹ /2
8	6850-00-264-6571	5 x 8 x 1 ¹ /8
16	6850-00-264-6572	5 ³ /4 x 10 x 1 ¹ /2
80	<u> </u>	8 ³ /4 x 12 ¹ /2 x 2 ¹ /4







The pharmaceutical and food industries use vast quantities of desiccant. DESI PAK® Tyvek®, which is more economical than packaged silica gel, can be used for these applications, where in the past, the more expensive silica gel had been the only approved desiccant.



Class 100 Clean Room Compatible

United Desiccants' DESI PAK[®] Tyvek[®] bags were tested by an independent laboratory for Class 100 Clean Room use. The ¹/₆, ¹/₂, ¹/₃, 1, 2, 4 and 8 unit bags containing clay desiccant were evaluated. All bags tested emitted less than 100 particles 0.5 microns in size or larger per cubic foot of air, thereby certifying DESI PAK[®] bags as Class 100 Clean Room compatible.

Other Products

United Desiccants also offers packaged silica gel – Sorb-It[®], molecular sieve – Tri-Sorb[®], activated carbon – Getter[®], silica gel or clay, and activated carbon – 2-in-1, and any combination of these materials. Please call concerning your needs for this type of material or any combination of these materials so that we may supply you with a product which exactly meets your specifications.

Desi View[®] unit size bags and packets are composed of one side Tyvek[®] and one side clear film. They contain a combination of either clay or silica gel or molecular sieve and blue indicating gel. Upon visual inspection, one is able to quickly ascertain whether or not the desiccant bag has achieved its moisture vapor capacity, and whether or not the desiccant bag needs to be replaced.

Aqua-Tector[®] Detector Pads are used to detect moisture in aviation fuel, and are manufactured in our Belen, NM plant.

Container Dri[®] bags absorb condensation in shipping containers, trucks or railcars.

For custom designed desiccant bags or canisters, please call us with your specifications.







Pharmaceutical Applications

United Catalysts Inc. acquired the N. T. Gates Co. of Pennsauken, NJ in December of 1985. We purchased N. T. Gates due to their quality products, and because they were a company with a long tradition of responding to the needs of customers. N. T. Gates products are now manufactured at our Belen plant.

Our Belen plant now manufactures "drop-in" style compact desiccant packets, and canisters for high-speed automatic insertion of desiccants in specialized packaging operations for the pharmaceutical industry. Continu-Strip® packets were developed for automatic loading equipment.

The Belen plant also manufactures Humi-Caps[®], which are clear acetate dehydrators available in silica gel and blue indicating gel. Humi-Caps[®] are used in pharmaceutical, diagnostic and commercial industries for moisture damage protection.

All products are inspected as they come off the manufacturing line to insure high quality control standards. The desiccants for the pharmaceutical and food industry are manufactured in strict accordance with FDA regulations and specifications.

Service

If you should require technical assistance while testing DESI PAK[®], please call our Technical and Applications Lab in Belen, New Mexico. We will be happy to assist you in any way possible.

Perhaps our package types are not exactly what you need. If this is the case, please give us a call concerning your requirements and we will assist you in developing a custom package type to fit your needs.



The Belen, NM plant manufactures a large variety of desiccants for the pharmaceutical industry.







Commitment

It is our goal to manufacture the most effective desiccant products on the market today. We accomplish this goal by using only the best raw materials, by applying the most rigid quality control standards, and by offering excellent customer service. We're proud of our products and we will continue to make them better, while providing the essentials in custom packaging and private labelling. At United Desiccants we are committed to meeting your every need as your complete desiccants supplier.



The modern plant in Belen, NM was built in 1983.



REQUIREMENTS CHART

Desiccant is sold in unit size bags according to Mil-D-3464E. A unit, which is approximately one ounce of desiccant, is the amount of desiccant which will adsorb at least 3 grams of moisture vapor at 20% relative humidity, and at least 6 grams of moisture vapor at 40 % relative humidity at 25° C.

CONTAINER SIZE — DESICCANT REQUIREMENT

Moistur Flexible	Moisture Sealed Flexible Barriers		Sealed Barrier Coated Fiber Drums or Rigid Metal Containers			
Square Feet	Square Inches	Gallons	Cubic Feet	Cubic Inches	Units DESI PAK® Required	
0.1	15	1.1	0.14	237	1/6	
0.2	30	2.1	0.28	476	1/3	
0.3	45	3.2	0.42	714	1/2	
0.6	90	6.2	0.83	1,428	1	
1.3	180	12.5	1.67	2,856	2	
1.9	270	18.7	2.50	4,284	3	
2.5	360	25.0	3.33	5,712	4	
3.1	450	31.2	4.16	7,140	5	
3.8	540	37.4	5.00	8,568	6	
4.4	630	43.6	5.83	9,996	7	
5.0	720	50.0	6.66	11,424	8	
5.6	810	56.1	7.50	12,852	9	
6.3	900	62.3	8.33	14,280	10	
7.5	1,080	74.8	10.00	17,136	12	
8.8	1,260	87.3	11.66	19,992	14	
10.0	1,440	99.7	13.32	22,850	16	
20.0	2,880	199.4	26.64	45,700	32	
50.0	7,200	498.5	66.65	114,250	80	
100.0	14,400	997.0	133.30	228,500	160	
120.0	18,000	1240.0	166.00	285,600	200	
150.0	22,500	1550.0	207.00	357,000	250	

DUNNAGE (Interior Packing, Cushioning, Blocking and Bracing

Material)

	UNITS OF			
Weight of Dunnage	Cellulose And Wood Hairfelt and Misc.	Bound Fibers	Glass Fibers	Synthetic Foams and Rubber
1 ounce	1/3	1/3	1/6	1/6
2 ounce	1	1/2	1/3	1/6
4 ounce	2	1	1/2	1/3
8 ounce	4	2	1	1/3
12 ounce	6	3	2	1/2
1 pound	8	4	2	1/2
2 pound	16	8	4	1
5 pound	40	18	10	3
10 pound	80	36	20	5

1. Per MIL-P-116, to calculate the number of units of desiccants needed when storing in a moisture impervious container (e.g. rigid metal can):

- $U = K \times V$ Where:
- U = the number of units of desiccants
- K = a constant = 1.2 if the volume is in ft^3

= 0.0007 if the volume is in in³

V = Volume



desiccant needed when storing in a container other than a rigid metal container (e.g. flexible moisture barrier): U = C x A Where: U = the number of units of desiccants

2. Per MIL-P-116, to calculate the number of units of

- C = a constant = 0.011 when the barrier surface area is computed in in²
 - - = 1.6 when the barrier surface area is computed in ft²

A = Area

Example: for a barrier package having a surface area (front & back) of 10 ft2:

$$U = \frac{1.6 \text{ Units}}{1 \text{ EP}^2} \text{ x } \frac{10 \text{ EP}^2}{1} = 16 \text{ unit}$$

3. To calculate the number of units of desiccant needed when dunnage (packing materials) are enclosed within the sealed container, follow these steps.

a. Determine the weight of dunnage used.

- b. Multiply the weight x 8 for cellulosic material
 - x 3.6 for bound fibers
 - x 2 for glass fibers
 - x 0.5 for foams & rubber
 - products

c. Add this value to the number of units of desiccant needed as calculated in #1 or #2 above.

Example: If the rigid container in the first example container 10 lbs. of foam packing material,







Worldwide Offices and Distributors

DESI PAK[®] is available through a nationwide network of distributors. Three warehouses located in San Bernardino, California; Belen, New Mexico and Louisville, Kentucky have been established in order to quickly and reliably service your desiccant needs.



UNITED DESICCANTS

United Catalysts Inc. Desiccants Division

Administrative and Sales Offices

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Plant and Technical Lab

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465 North Mount Vernon Avenue Colton, CA 92324 (714) 825-1793 Fax: (714) 825-6271

SÜD-CHEMIE A.G. MÜNCHEN

In Europe, DESI PAK[®] is available from Süd-Chemie A. G. of Munich, West Germany. Phone 49-89-51100.

Additional Members of the Süd-Chemie Group:



Mineral Derivatives Ltd. Dalton Way Middlewich Motorway Est. Middlewich, Cheshire England CW10 0HS Phone: 060684 6346 Fax: 060684 6408



Dydra Société D'Exploitation du Conditionnement 12, Rue du Port de la Celle, 12 B. P. No. 11 77670 Saint-Mammès, France (6)070.52.51•Telex 600497 DYDRA Fax: 011-331-60701037

Süd-Chemie AG Sparte Herrmann Chemie und Packmittel Postfach 30 11 31 5000 Köln 30, West Germany (02 21) 5 4683-0 Fax: (02 21) 5 4683-24



DESI PAK[®] is packaged and sold in Japan by: Ohe Chemicals Inc. 2-2-15, Hoshin Higashiyodogawaku Osaka, Japan Tel: (06) 329-6651 Fax: (06) 321-2252



Disclaimer of Warranty

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The purchaser assumes all risk of use or handling whether or not in accordance with any statements made herein. Our liability, if any, for any action arising out of the material supplied shall be limited to replacement of the material. Statements made concerning possible or suggested uses of the products described herein are not intended to be recommendations for the use of such products in infringements of any patent, and the user assumes all liability as to the use of such products relative to patent infringement.

It's time for a change!

Have you ever wondered how long the desiccant pack will last? Now there is an answer. DESI VIEW[™]!

DESI VIEWTM is specially designed to visually indicate when the desiccant has reached its capacity to adsorb moisture.

Simply replace the DESI VIEW[™] bag when the blue crystals have changed to pink. It's that simple! No guesswork!

DESI VIEW[™] bags are tear resistant, dustless, and lint free. Perfect for protection of products for electronics, aerospace, industrial and electrical use.

For complete details phone us today!

Karen Knight-Wilburn Account Manager-Industrial Sales Direct Phone: 502-634-6801

UNITED DESICCANTS



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