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Geological Survey

ZEOLITE MINERAL GROUP

BIBLIOGRAPHY

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INTRODUCTION

This report is a compendium of selected reference material that has been assembled for use by geologists and researchers in the field of zeolite mineralogy.

The compilers searched for those literature citations dealing with data of physical and chemical properties including, chemical analyses, crystallographic parameters, and most particularly powder diffraction data. This is a preliminary compilation and thus is not intended to be comprehensive, but is representative of currently available references.

The bibliography was assembled with the assistance of the computerized bibliographic search system, GEOREF, and the extensive bibliography files of Michael Fleischer. A constantly updated set of the latter are maintained in the mineralogy laboratory of the U. S. Geological Survey in Lakewood, Colorado, and are available to any authorized person who wishes to use them in the laboratory.

For ease of search, the citations in this zeolite bibliography have been listed alphabetically and also categorized by species. The bibliography by species, Index I, includes for each mineral a formula and those references which contain, in the compilers opinion, useful comparative powder diffraction data.

A unique index of zeolite minerals with their various synonyms, Index II, has also been included. The synonym index is alphabetized by zeolite species. It lists a formula for each mineral and synonyms for many of the zeolites. References to these synonyms are listed where available. For those synonyms which are not referenced, the source is from files compiled by Authur J. Gude 3rd and Richard A. Sheppard, both of the U. S. Geological Survey, Lakewood, Colorado.

For the rare zeolites, the reference cited is usually for the original work defining that mineral. For more common zeolites, the reader is referred to the Species Bibliography, Index I, of this report where a list of citations is given for each mineral.

Table I, a listing of all zeolite mineral names encountered during the compilation of this bibliography, has been included to clarify what the compilers included in the bibliography. All names used in the literature are alphabetically listed and their correct identification is included.

Table 1. Alphabetical listing of all zeolite names cited in the bibliography

[Accepted mineral names are underscored. Synonyms of accepted names which were used in one or more citation are listed followed by the accepted name in parenthesis. Those names which are in the literature but are questionable are followed by a question mark and discredited names and/or minerals are listed in brackets]

<u>Acadialite</u> (Chabazite)	<u>Flokite</u> (Mordenite)	<u>Natrolite</u>
<u>Amicite</u>	<u>Foresite</u> (Stilbite)	[<u>Nekoite</u>]
<u>Analcime</u>	<u>Furgite</u> (Natrolite)	<u>Offretite</u>
<u>Analcite</u> (Analcime)	<u>Galactite</u> (Natrolite)	
<u>Antrimolite</u> (Mesolite)	<u>Garronite</u>	[<u>Okenite</u>]
<u>Apoanalcite</u> (Analcime)	<u>Gismondine</u>	<u>Orizite</u> (?) (Epistilbite)
[<u>Apophyllite</u>]	<u>Glottalite</u> (Chabazite and	<u>Oryzite</u> (Heulandite)
<u>Arduinite</u> (Gmelinite)	Edingtonite)	<u>Ozarkite</u> (Thomsonite)
<u>Ashtonite</u> (Mordenite)	<u>Gmelinite</u>	<u>Parastilbite</u> (Epistilbite)
<u>Barrerite</u>	<u>Gonnardite</u>	<u>Paulingite</u>
<u>Bavenite</u> (Thomsonite)	<u>Goosecreekite</u>	<u>Pectolite</u> (?)
<u>Beaumontite</u> (Heulandite)	<u>Groddeckite</u> (Gmelinite)	<u>Phacolite</u> (Chabazite)
<u>Bergmannite</u> (Natrolite)	<u>Gyrolite</u>	<u>Phillipsite</u>
<u>Bikitaite</u>	<u>Harmotome</u> (Ba Phillipsite)	<u>Picranalcime</u> (Analcime)
<u>Bityite</u> (Thomsonite)	<u>Harringtonite</u> (Mesolite and	<u>Picrotinsinite</u> (Natrolite)
<u>Brevicite</u> (Natrolite)	Thomsonite)	[<u>Pollucite</u>]
<u>Brewsterite</u>	<u>Haydenite</u> (Chabazite)	<u>Pseudomesolite</u> (Mesolite)
<u>Caporcianite</u> (Laumontite)	<u>Herschelite</u> (Chabazite)	<u>Ptilolite</u> (Mordenite)
<u>Chabazite</u>	<u>Heulandite</u>	<u>Puflerite</u> (Stilbite)
<u>Christianite</u> (Phillipsite)	<u>Kalithomsonite</u> (Thomsonite)	<u>Ranite</u> (Gonnardite)
<u>Clinoptilolite</u>	<u>Kehoeite</u> (?)	<u>Reissite</u> (Epistilbite)
<u>Comptonite</u> (Thomsonite)	<u>Laubanite</u> (Natrolite and	[<u>Rhodesite</u>]
<u>Cowelsite</u>	Kehoeite)	<u>Savite</u> (Natrolite)
<u>Dachiardite</u>	<u>Laumontite</u>	<u>Schiederite</u> (Laumontite)
<u>Desmine</u> (Stilbite)	<u>Lederite</u> (Gmelinite)	<u>Scolecite</u>
<u>Echellite</u> (Thomsonite)	<u>Leonhardite</u>	<u>Seebachite</u> (Herschellite and
<u>Eddingtonite</u>	<u>Levyne</u>	Chabazite)
<u>Elagite</u> (Natrolite)	<u>Levynite</u> (Levyne)	<u>Sloanite</u> (Natrolite)
<u>Epidesmine</u> (Epistilbite)	<u>Lintonite</u> (Thomsonite)	<u>Spreustein</u> (Natrolite)
<u>Epistilbite</u>	<u>Mazzite</u>	<u>Stellerite</u>
<u>Erionite</u>	<u>Merlionite</u>	<u>Stilbite</u>
[<u>Eucryptite</u>]	<u>Mesolite</u>	<u>Svetlozarite</u>
<u>Eudnophite</u> (Analcime)	<u>Mesotype</u> (Natrolite)	<u>Thomsonite</u>
<u>Euthallite</u> (Analcime)	<u>Metascolecite</u> (Mesolite)	<u>Truscottite</u> (?)
<u>Falkensteinite</u> (Thomsonite)	<u>Mordenite</u>	<u>Uigite</u> (Thomsonite)
<u>Faroite</u> (Thomsonite)	[<u>Mountainite</u>]	<u>Viseite</u> (?)
<u>Faujasite</u>		<u>Wairakite</u>
<u>Ferrierite</u>		<u>Wellsite</u>
		[<u>Xonotlite</u>]
		<u>Yugawaralite</u>
		<u>Zeagonite</u> (Gismondine)

TABLE I

ZEOLITE AND RELATED SPECIES INDEX

SPECIES	FORMULA	REFERENCE
AMICITE	K ₄ NA ₄ AL ₈ Si ₈ O ₃₂ 10H ₂ O	ALDERTI AND OTHERS, 1979
ANALCINE	NA AL Si ₂ O ₆ H ₂ O	COOMBS, 1955 GRIVAKOV AND SUPRYCHEV, 1965 KLITCHENKO AND SUPRICHOV, 1974 KNOWLES AND OTHERS, 1965 UTADA AND MINATO, 1971
ASHTONITE (SR-NORDENITE)	(CA SR NA ₂ K ₂) ₄ AL ₈ Si ₄₀ O ₉₆ 28H ₂ O	REAY AND COOMBS, 1971
BARRERITE	NA ₈ AL ₈ Si ₂₈ O ₇₂ 26H ₂ O	PASSAGLIA AND FONGILUPPI, 1974
DIKITAITE	Li ₂ AL ₂ Si ₄ O ₁₂ 2H ₂ O	HURLBUT, 1957 PHITNEY AND STEWART, 1961
BREWSTERITE	(SR BA CA) AL ₂ Si ₆ O ₁₆ 5H ₂ O	KHOMYAKOV AND OTHERS, 1970 PERROTTA AND SMITH, 1964 STRUNZ AND TENNYSON, 1956

CHADAZITE

CA AL2 SI4 O12 6H20

CERNY AND POVONRA, 1965
 GUDE AND SHEPPARD, 1966
 ISHIBASHI, 1974
 NAKAO AND OTHERS, 1969
 PASSAGLIA, 1970
 SEKI AND OTHERS, 1971
 SHEPPARD AND GUDE, 1970

CLINOPTILOLITE

(NA K)4 CA AL6 SI30 O72 24H20

AOKI, 1974
 BROWN AND OTHERS, 1969
 FUJIWARA AND SHOYA, 1975
 HATHAWAY AND SACHS, 1965
 HAWKINS AND ORDONEZ, 1972
 KASHKAI AND BABAEV, 1976
 MASON AND SAND, 1960
 HUMPTON, 1960
 OGAWA, 1967
 SEKI AND OTHERS, 1968
 SHEPPARD AND OTHERS, 1965
 UTADA AND MINATO, 1969
 WISE AND OTHERS, 1969

COWLESITE

CA AL2 SI3 O10 6H20

WISE AND TSCHERNICH, 1975

DACHIARDITE

(K2 NA2 CA)2.5 AL5 SI19 O48 18H20

ALBERTI, 1975
 GALLI, 1965

EDINGTONITE

BA AL2 SI3 O10 4H20

NOVAK, 1970

EPISTILBITE	CA AL2 SI6 O16 5H2O	PERROTTA, 1967 SEKI AND OTHERS, 1968 SLAUGHTER AND KANE, 1969
ERIONITE	(NA2 K2 CA)4.5 AL9 SI27 O72 27H2O	BELITSKIY AND BUKIN, 1968 BENNETT AND GROSE, 1978 DEFFEYES, 1959 SHEPPARD AND GUDE, 1969-A SHEPPARD AND OTHERS, 1965
EUCRYPTITE	LI AL SI O4	HURLBUT, 1962 ROSSOVSKIY, 1971
FAUJASITE	(NA2 CA)1.75 AL3.5 SI8.5 O24 16H2O	BARRER AND OTHERS, 1959B BRECK AND FLANIGEN, 1968
FERRIERITE	(NA K)4 Mg2 Al6 Si30 O72 (OH)2 18H2O	IYAYAKAWA AND SUZUKI, 1970 KLITCHENKO AND SUPRICHOV, 1974 STAPLES, 1955 WISE AND OTHERS, 1969 YAJIMA AND OTHERS, 1971 ZIRKL, 1973
GARRONITE	NA CA2.5 AL6 SI10 O32 14H2O	BARRER AND OTHERS, 1959 FEOKTISTOV AND OTHERS, 1969 TAYLOR AND ROY, 1964

GISMONDINE	CA AL2 SI2 O8 4H2O	FISCHER, 1963 IJIMA AND HARADA, 1969
GHELINITE	(NA2 CA) AL2 SI4 O12 6H2O	BARRER AND OTHERS, 1959B KUHLE AND MIALE, 1978 STRUNZ, 1956
GONNARDITE	NA2 CA AL4 SI6 O20 5H2O	MEIXNER AND OTHERS, 1958
GOOSECREEKITE	CA AL2 SI6 O16 5H2O	DUNN AND OTHERS, 1980
CYROLITE	CA4 (SI6 O15) (OH)2 3H2O	ASSARSSON, 1957
HARMOTOME	BA2 AL4 SI12 O32 12H2O	SAHAMA AND LEHTINEN, 1968 SHEPPARD AND GUDÉ, 1971
HERSCHELITE (NA-CHADAZITE)	NA4 AL4 SI8 24O 11H2O	GUDÉ AND SHEPPARD, 1966 ISHIBASHI, 1974

HEULANDITE

(CA NA2)4 AL8 SI28 O72 24H2O

CERNY AND POVONDRA, 1969
GRANGE AND WATELLE-MARION, 1966
MERKLE AND SLAUGHTER, 1968
MILLER AND GHENT, 1973
MUMPTON, 1960
OGAWA, 1967
SIMONOT-GRANGES, 1970

KENOITE

ZN CA AL02 PO2 32H2O

MCCORNELL, 1964

LAUMONTITE

CA AL2 SI4 O12 4H2O

DARTL AND FISCHER, 1967
KOPORULIN, 1972
LAPHAM, 1963
LIOU, 1971
MILLER AND GHENT, 1973
SEKI AND OTHERS, 1968
SEKI AND OTHERS, 1971
YOSHITANI, 1965

LEONHARDITE

CA AL2 SI4 O12 3.5H2O

COOMBS, 1952
LAPHAM, 1963
HAUSEN AND MURATA, 1970
NATIEL, 1974

LEVYNE

CA AL2 SI4 O12 6H2O

FEOKTISTOV AND OTHERS, 1971
SHEPPARD AND OTHERS, 1974
STRUNZ, 1956

HAZZITE

K2 MO2 CA1.5 AL9 SI27 O72 28H2O

GALLI AND OTHERS, 1974

HERLINOITE	K5 CA2 AL9 SI23 O64 24H2O	PASSAGLIA AND OTHERS, 1977
HESOLITE	NA2 CA2 AL6 SI9 O32 8H2O	IARADA AND OTHERS, 1968 PENG, 1955
MORDENITE	(NA2 K2 CA) AL2 SI10 O24 7H2O	DUBININ, 1968 FUJIWARA AND SHOYA, 1975 HARRIS AND BRINDLEY, 1954 MOIOLA, 1964 NEGISHI, 1972 PASSAGLIA, 1975 SEKI AND OTHERS, 1968 TOHITA AND OTHERS, 1970 YOSHITANI, 1965
MOUNTAINITE	(CA NA2 K2)2 SI4 O10 3H2O	RUSSEN AND OTHERS, 1973 GARD AND OTHERS, 1958
NATROLITE	NA4 AL4 SI6 O20 4H2O	ANDERSEN, 1969 CERNY AND POVONDRÁ, 1966 ISHIBASHI, 1974 MEIER, 1960
OFFRETITE	(K2 NG CA NA2)2.5 AL5 SI13 O36 15H2O	BENNETT AND GROSE, 1978 SHEPPARD AND GUDE, 1969-A SHEPPARD AND OTHERS, 1974

OKENITE	CA SI2 05 2H2O	HELLER AND TAYLOR, 1956
PAULINGITE	(K2 NA2 CA BA)76 AL152 SI525 01354 700H2O	GORDON AND OTHERS, 1966 KAMB AND OKE, 1960
PECTOLITE	NA CA2 SI3 08 OH	HILDEBRAND, 1953 HAJER AND BARIE, 1971 STOYNOVA AND STOYNOVA, 1973
PHILLIPSITE	(K2 NA2 CA)3 AL6 SI10 032 12H2O	BARKER AND OTHERS, 1959B DEER AND OTHERS, 1963 CALLI AND CHITTONI, 1972 HARADA AND OTHERS, 1967 HAY, 1964 STEINFINK, 1962 U.S.G.S. MINERALOGY LABORATORY, 1982
POLLUCITE	(CS NA) AL SI2 06 XH2O	SAKURI AND OTHERS, 1972
SCOLECITE	CA2 AL4 SI6 020 6H2O	HARADA AND OTHERS, 1968 SMITH AND VALLS, 1971
STELLERITE	CA4 AL8 SI28 072 28H2O	GALLI AND PASSAGLIA, 1973 PASSAGLIA AND PONGILUPPI, 1974

STILRITE

(CA NA2 K2)4 AL8 SI28 O72 28H20

AUMENTO, 1966
HARADA AND OTHERS, 1967
JUAN AND LO, 1973
NEVES AND NUNES, 1968
SEKI AND OTHERS, 1968
SEKI AND OTHERS, 1971
SIMONOT-GRANGES, 1970
TAKASHIMA AND KERIJIRO, 1973
YOSHITANI, 1965

SVETLOZARITE

(CA K2 NA2) AL2 SI12 O28 6H20

MALEYEV, 1977

THOMSONITE

NA CA2 AL5 SI5 O20 6H20

ISHIBASHI, 1974
JUAN AND LO, 1966
MULLER AND DEISINGER, 1971

TRUSCOTTITE

CA14 SI24 O58 (OH)8 2H20

JUAN AND OTHERS, 1970
MIRATO AND KATO, 1967

VISEITE

NA CA5 AL10 (SI04)3 (F04)5 (OH)14 16H20

(?)
MCCONNELL, 1952

WAIRAKITE

CA AL2 SI4 O12 2H20

AMES AND SAND, 1958
COOMBS, 1955
CUENOD AND MARTINI, 1966
DONNELLY, 1962
SEKI AND OTHERS, 1968

WELLSITE

CA1.5 BA0.5 K AL5 SI11 032 12H20

CERRY, 1960

XONOLITE

CA6 (SI6 017) (OH)2

JUAN AND OTHERS, 1970
MAJER AND BARIE, 1971

YUGAWARALITE

CA AL2 SI6 016 4H20

DARRER AND MARSHALL, 1965
EDERLEIN AND OTHERS, 1971
LEIMER AND SLAUGHTER, 1969
SEKI AND OKUMURA, 1968

I N D E X I I - - - - Z E O L I T E A N D R E L A T E D S P E C I E S S Y N O N Y M S

MAJOR SPECIES.....	* SYNONYMS AND FORMULA.....	REFERENCE
ANICITE	K4 NA4 AL8 SI8 O32 10H2O	ALBERTI AND OTHERS, 1979
+ANALCINE	NA AL SI2 O6 H2O	
	ANALCITE APOANALCITE EUDNOPHITE EUTHALLITE PICRANALCINE	WINCHELL AND WINCHELL, 1951 DANA AND FORD, 1932 DANA AND FORD, 1932 DANA AND FORD, 1932
BARRERITE	NA8 AL8 SI28 O72 26H2O	PASSAGLIA AND PONGILUPPI, 1974
+BIKITAITE	LI2 AL2 SI4 O12 2H2O	
+BREWSTERITE	(SR BA CA) AL2 SI6 O16 5H2O	
+CHABAZITE	CA AL2 SI4 O12 6H2O	DANA AND FORD, 1932 BRECK, 1974 DANA AND FORD, 1932 DANA AND FORD, 1932 DANA AND FORD, 1932
+CLINOPTILOLITE	(NA K)4 CA AL6 SI30 O72 24H2O	
COULESITE	CA AL2 SI3 O10 6H2O	WISE AND TSCHERNICH, 1975
DACHIARDITE	(K2 NA2 CA)2.5 AL5 SI19 O48 18H2O	GALLI, 1965

EDINGTONITE	BA AL2 SI3 O10 4H2O	NOVAK, 1970
	GLOTTALITE	BRECK, 1974
+EPISTILBITE	CA AL2 SI6 O16 5 H2O	
	EPIDESMINE ORIZITE (?) PARASTILBITE REISSITE	DANA AND FORD, 1932 DANA AND FORD, 1932
+ERIONITE	(NA2 K2 CA)4.5 AL9 SI27 O72 27H2O	
+FAUJASITE	(NA2 CA)1.75 AL3.5 SI8.5 O24 16H2O	
+FERRIERITE	(NA K)4 MG2 AL6 SI30 O72 (OH)2 18H2O	
+GARRONITE	NA CA2.5 AL6 SI10 O32 14H2O	
GISHMONDINE	CA AL2 SI2 O8 4H2O	IJIMA AND HARADA, 1969
	ZEAGONITE	
GHELINITE	(NA2 CA) AL2 SI4 O12 6H2O	
	AKOINITE GRODDECKITE LEDERITE	DANA AND FORD, 1932 BRECK, 1974
+GONNARDITE	NA2 CA AL4 SI6 O20 5H2O	
	RANITE	BRECK, 1974
GOOSECREEKITE	CA AL2 SI6 O16 5H2O	DUNN AND OTHERS, 1980
HARNOTOME	BA2 AL4 SI12 O32 12H2O	SAHAMMA AND LEHTINEN, 1968
+HEULANDITE	(CA NA2)4 AL8 SI28 O72 24H2O ORIZITE BEAUMONTITE	BRECK 1974

+LAUMONTITE	CA AL2 Si4 O12 4H2O	DANA AND FORD, 1932
	CAFORCIANITE SCHEIDERITE	
+LEONHARDITE	CA AL2 Si4 O12 3.5H2O	
+LEVYNE	CA AL2 Si4 O12 6H2O	
	LEVYNITE	
HAZZITE	K2 Mg2 Ca1.5 Al9 Si27 O72 28H2O	GALLI AND OTHERS, 1974
HERLINOITE	K5 Ca2 Al9 Si23 O64 24H2O	PASSAGLIA AND OTHERS, 1977
MESOLITE	Na2 Ca2 Al6 Si9 O30 8H2O	HARADA AND OTHERS, 1968
	ANTRIMOLITE HARRINGTONITE METASCOLECITE PSEUDOMESOLITE	DANA AND FORD, 1932 DANA AND FORD, 1932 BRECK, 1974 DANA AND FORD, 1932
+MORDENITE	(Na2 K2 Ca) Al2 Si10 O24 7H2O	WINCHELL AND WINCHELL, 1951 WINCHELL AND WINCHELL, 1951
	ASHTONITE FLOKITE PTILOLITE	
+NATROLITE	Na4 Al4 Si6 O20 4H2O	BRECK, 1974
	BERGMANNITE DREVICITE ELAGITE FURGITE GALACTITE LAUDANITE MESOTYPE PICROTINSINITE SAVITE SLOANITE	BRECK, 1974 DANA AND FORD, 1932

TETRAGONAL NATROLITE	NA4 AL4 SI6 O20 4H2O	
+OFFRETITE	(K2 MG CA NA2)2.5 AL5 SI13 O36 15H2O	
PAULINGITE	(K2 NA2 CA BA)76 AL152 SI525 O1354 700 H2O	KAMB AND OKE, 1960
PHILLIPSITE	(K2 NA2 CA)3 AL6 SI10 O32 12H2O	
	CHRISTIANITE	WINCHELL AND WINCHELL, 1951
+POLLUCITE	(CS NA) AL SI2 O6 XH2O	
+SCOLECITE	CA2 AL4 SI6 O20 6H2O	
STELLERITE	CA4 AL8 SI28 O72 28H2O	GALLI AND PASSAGLIA, 1973
+STILBITE	(CA NA2 K2)4 AL8 SI28 O72 28H2O	
	DESHINE FORESITE PUFLERITE	BRECK, 1974 BRECK, 1974
SVETLOZARITE	(CA K2 NA2) AL2 SI12 O28 6H2O	MALEYEV, 1977
+THOMSONITE	NA CA2 AL5 SI5 O20 6H2O	
	DAVENITE BITYITE COMPTONITE ECHELLITE FALKENSTENITE FAROEITE HARRINGTONITE KALITHOMSONITE LINTONITE OZARKITE UIGITE	DANA AND FORD, 1932 DANA AND FORD, 1932 DANA AND FORD, 1932, BRECK, 1974 BRECK, 1974 BRECK, 1974 DANA AND FORD, 1932 DANA AND FORD, 1932 BRECK, 1974

+WAIRAKITE

CA AL2 Si4 O12 2H2O

WELLSITE

CA1.5 BaO.5 K AL5 Si11 O32 12H2O

CERNY AND OTHERS, 1977

+YUGANARALITE

CA AL2 Si6 O16 4H2O

+FOR REFERENCES, PLEASE CONSULT THE "ZEOLITE AND RELATED SPECIES BIBLIOGRAPHY" INDEX.

+FORMULAS PROVIDED BY RICHARD SHEPPARD

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