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A database of sources of information on mineral reaction kinetics

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BRITISH GEOLOGICAL SURVEY

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A database of sources of information on mineral reaction kinetics

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Foreword

Predictive geochemical computer modelling is becoming increasingly important for investigating many different scenarios relatively rapidly. Although such models are capable of modelling rate-controlled dissolution and precipitation, there is no standard database of kinetic functions. As a consequence, it is sometimes difficult to locate sources of information to aid modelling.

The aim of this report is to facilitate predictive modelling exercises by providing information on literature sources of mainly mineral reaction rate data. This has been done in the form of a searchable EndNote electronic database.

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The rate and magnitude of geochemical reactions can be described by two main processes; thermodynamics which determines the end point of reaction (i.e. approach to equilibrium conditions), and kinetics which determines how rapidly the reaction proceeds. There have been many studies that have investigated equilibrium conditions and have generated a wealth of data. However, for many systems the rate at which the end point of the reaction is reached is of equal, and possibly greater importance (e.g. the behaviour of waste products stored within the geosphere or during weathering).

Predictive geochemical computer modelling is becoming increasingly important for investigating many different scenarios relatively rapidly. Although such models are capable of modelling rate-controlled dissolution and precipitation, there is no standard database of kinetic functions. As a consequence, it is sometimes difficult to locate sources of information to aid modelling.

The overall aim of this report, is to provide information on literature sources of mainly mineral reaction rate data. It is hoped that this will facilitate predictive modelling exercises, or laboratory experimental studies addressing gaps in data coverage. Information on the sources of literature information has been produced in the form of an EndNote electronic database (see Appendix I). This study does not however, go as far as extracting and tabulating all the individual data points within these references.

1 Introduction

All chemical reactions proceed in a way that minimises the free energy of the system involved. In other words, reactions will proceed towards chemical equilibrium. The underlying chemistry and physics of such reactions are equally applicable to geochemistry as to industrial chemical processing, and it is possible to use models based upon classical chemistry to describe geochemical reactions, provided that the appropriate basic data are available. The rate and magnitude of chemical reactions can be described by two main processes: thermodynamics which determines the end point of reaction (i.e. approach to equilibrium conditions), and kinetics which determines how rapidly the reaction proceeds.

There have been many studies that have investigated equilibrium conditions and have generated a wealth of data. These data have been assimilated and compiled into a variety of thermodynamic (equilibrium) databases. These databases can be used with various predictive modelling packages to describe the end points of reactions for given pressure and temperature conditions (e.g. EQ3/6 [Wolery 1992], PHREEQE [Parkhurst *et al.*, 1980], PHREEQC [Parkhurst 1985] and PRECIP [Noy 1998]). However, for many chemical systems the rate at which the end point of the reaction is reached is of equal, and possibly greater importance. Understanding the rate at which reactions occur is a key factor in many industrial and natural processes, and once again, chemical theory can provide a basic understanding for this process. It is possible to take this basis and build upon it for use in predictive geochemical models such as those mentioned above, where the issue of timescale is important.

For certain geological systems the assumption of equilibrium conditions is often a valid first approximation. However, many geological processes involve mass transport, and as a consequence dissolution and precipitation processes must have been active. Both of these processes necessitate non-equilibrium conditions and illustrate their importance in natural reactions in the geosphere. For example, weathering often involves the breakdown and dissolution of minerals formed under relatively dry conditions at high temperatures (e.g. feldspars in a granite), and their replacement by minerals that form under wet, low temperature conditions (e.g. clays).

Anthropogenic influences often involve the virtually instantaneous (relative to geological processes) formation of non-equilibrium chemical systems. Examples could include all forms of waste disposal (e.g. landfill, CO_2 injection, nuclear, fly ash), mining operations (e.g. ingress of oxygen into sulphide-rich mine working, leaching of spoil heaps), construction projects (e.g. concrete foundations, building stones), hydrocarbon extraction (e.g. improved oil recovery by seawater or gas injection, steam flooding, caustic flooding). Such systems result in very great chemical disequilibrium and the rapid initiation of chemical reactions. That such reactions do not occur instantaneously highlights the importance of reaction kinetics upon the systems. For example, mining operations can be a source of pollution for tens or hundreds of years until much of the accessible sulphide ore has been oxidised and heavy metals leached away. Similarly, concrete foundations of buildings do not give way immediately, but over tens of years might undergo sulphate attack leading to structural collapse.

The overall progression of reactions such as those highlighted above is most likely to be controlled by the rates at which particular minerals dissolve or precipitate. Investigation of these dissolution/precipitation reactions can thus provide data for inclusion into predictive models that simulate extended timescales. Unfortunately, precipitation reactions are less well

understood compared to dissolution reactions. This may arise because the necessary experiments are more complex than for dissolution experiments. As a consequence of the limited kinetic data available, most relates to dissolution kinetics alone. However, these dissolution reactions can still be very important when considering the release of pollutants or as rate limiting steps in a series of interconnected reactions.

The dissolution rate of a particular mineral will be a function of its atomic structure (i.e. the strength of the bonds that need to be broken) and the particular reaction mechanism. As a consequence, for any given surface area, each mineral will have a maximum (limiting) dissolution rate which can be investigated under 'far from equilibrium' conditions. Study of such reactions can thus give a maximum (i.e. best/worst possible case) rate of reaction that can be used in modelling studies. However, as equilibrium is approached this rate will decrease towards zero. Theories capable of handling chemical systems both 'far from' and 'near to' equilibrium exist, and mathematical, functions to describe these are incorporated into various geochemical modelling packages. However, experimental data to parameterise these codes are generally lacking. It is vital therefore, that if accurate predictions are to be made with geochemical modelling packages kinetic data need to be either sourced or generated, and then assimilated before they can be readily utilised.

Predictive computer modelling is becoming increasingly important as many different scenarios can be explored relatively rapidly. However, any model is only as good as its programme and its database of underlying information. In the field of geochemistry much thermodynamic (equilibrium) data already exist, and though far from perfect, can be used to help explain various natural chemical systems. However, many codes based upon thermodynamic data do not adequately explain systems reacting relatively rapidly as they do not address the impact of kinetics upon chemical reactions. The term 'kinetics' could be equally applicable to gas-fluid, fluid-fluid, and gas-mineral reactions as well as fluid-mineral reactions. However, this report will concentrate upon fluid-mineral reactions, and in particular mineral dissolution kinetics. Mineral dissolution has a strong control on solution chemistry as it can both supply pollutant ions to solution, or act to control the source of ameliorating ions to solution.

Some dissolution kinetic data are available, but are limited in extent and not available in any concise, self-consistent database. Some predictive models do allow the user to input specific kinetic functions, but unlike thermodynamic data, no database of dissolution kinetic data is supplied with the code. One drawback to this, is that it is sometimes difficult to locate sources of information in the literature. The overall aim of this report therefore, is to provide information on sources of dissolution kinetics data for use by computer modellers. This has been produced in the form of an EndNote electronic database of sources of literature information (see Appendix I). This study does not however, go as far as extracting and tabulating all the individual data points within these references.

2 Some comments on the rates of mineral reactions

Mineral dissolution is influenced by a variety of factors. The most important of these include; temperature, solution composition (in particular pH), surface area available for dissolution, and degree of saturation. Other factors that can have an impact include; the presence of ligands to enhance dissolution by complexing with atoms/molecules at the mineral/solution interface, the presence of inhibitors that reduce dissolution, and for aluminosilicates the presence of dissolved Al.

The vast majority of dissolution rate studies are based on laboratory experiments. Of these, virtually all consider 'far from equilibrium conditions' (i.e. the experiments are run in such a way that the mineral under study dissolves at its maximum rate for the conditions of the experiment). A small proportion of studies have considered field systems, and even fewer have considered how dissolution (and precipitation) rate varies with degree of saturation of the solution.

For many experimental studies, a common approach used to describe reaction rates has been to use an expression that takes account of the most important factors influencing dissolution. Other factors affecting dissolution are reported if they can be identified, though there is usually not enough information to form a specific rate expression. The basic rate expression chosen (Lasaga, 1984) is commonly of the form:

$$\text{Rate} = k\,A\,(a_{H+})^n\,(1-Q/K) \qquad [1]$$

Where
- k = rate constant
- A = surface area
- $(a_{H+})^n$ = dependence of the dissolution rate upon a_{H+} (i.e. pH)
- $(1-Q/K)$ = saturation state of the solution
- Q = ion activity product
- K = equilibrium constant

Equation [1] can be simplified if solutions are far from equilibrium:

$$\text{Rate} \approx k\,A\,(a_{H+})^n \qquad [2]$$

Both [1] and [2] are relatively simple rate expressions. More complex expressions (for example that might take account of Al concentration in solution) could be formulated from dissolution studies having a sufficient number of experimental observations.

The presence of the (1-Q/K) function is to reduce the overall rate value as the solution approaches equilibrium with the mineral being considered (i.e. when Q/K = 1, the overall rate drops to zero). It does however, assume an appropriate equilibrium constant is being used.

Surface areas are user specified for the particular system being addressed. It is noteworthy that when considering real systems, geometric surface areas may greatly underestimate actual surface areas, as factors such as surface roughness and the presence of open pores are not considered. Similarly, surface areas can change as reaction progresses, temporarily increasing if dissolution causes significant surface roughness, or decreasing as mineral grains are dissolved or get covered with secondary precipitates). The influence of surface area upon mineral dissolution rate is possibly the largest single source of uncertainty in dissolution studies. There is currently much debate amongst geoscientists about what measurements of

surface area actually represent, what proportion of the mineral surface is actively reacting, and how surface area is treated in predictive models.

Derivation of rate constants from laboratory experiments is usually the goal of most studies, and is also the main focus of this review. These constants are expressed as moles of mineral dissolved per unit surface area per unit time. Two common ways of expressing rates are used; mol $cm^{-2}s^{-1}$ and mol $m^{-2}s^{-1}$. These constants are also often expressed as log_{10} values, with rate versus pH plots being essentially a log/log plot. This allows a wide range of values to be easily contained within a single diagram.

Dissolution rates are also commonly found to vary proportional to H^+ ion activity. For example, most minerals have a minimum rate of dissolution under neutral conditions, but this increases towards the extremes of pH (as an example, see Figure 1). This variation is usually expressed as a dependence on $(a_{H+})^n$, where 'n' is usually a fractional number. As dissolution rates generally increase towards the extremes of pH, then the 'n' will change sign depending on the acidity/alkalinity of the solution. Indeed, for near neutral solutions dissolution rates may be independent of pH, with n = 0. As a_{H+} and a_{OH-} are directly linked (via the disproportionation of water), it is also viable to use an $(a_{OH-})^n$ expression provided that the rate constant is adjusted accordingly.

As an example of how rate constants and dependence on $(a_{H+})^n$ or $(a_{OH-})^n$ are linked, consider the following. Assume that at a particular temperature, a certain mineral has a log dissolution rate of -15 mol $cm^{-2}s^{-1}$ at pH 11 and -14 mol $cm^{-2}s^{-1}$ at pH 13. As a consequence, 'n' (effectively the gradient of the line between the points in rate versus pH space) would be equal to -0.5. An extrapolation of this line to pH 0 gives a log dissolution rate of -20.5 mol $cm^{-2}s^{-1}$, and at pH 14 gives a log dissolution rate of -13.5 mol $cm^{-2}s^{-1}$. Thus, -20.5 mol $cm^{-2}s^{-1}$ could be used as a rate constant for $(a_{H+})^n$, and -13.5 mol $cm^{-2}s^{-1}$ could be used as a rate constant for $(a_{OH-})^n$. However, it should be noted that dissolution mechanisms may be different at high pH to those at low pH, and extrapolation of alkaline data to pH = 0 is 'meaningless' in terms of reality, but it may be a computational necessity depending on the type of predictive code used.

In recent years there has been increasing interest in investigating mineral dissolution rates in 'real' (i.e. field) situations. A relatively small number of studies have been undertaken and have mainly been confined to silicate minerals under neutral to slightly acidic conditions (e.g. biotite [Murphy *et al.*, 1998], quartz [Schulz and White, 1999], basalt [Benedetti *et al.*, 1992], silicate-rich soil [Drever *et al.*, 1994; Swoboda-Colberg and Drever, 1993], and various other minerals [Velbel, 1993]). These studies have the advantage of being more 'realistic' than rather idealised laboratory experiments, in that they can incorporate various 'environmental' factors such as corroded mineral grains, surface coatings, or partly saturated porewaters. They are however, more complex to interpret. Although there is much variation in the data, dissolution rates for silicate minerals derived from field measurements can be up to 4 orders of magnitude slower than those derived from laboratory measurements.

3 Compilation of an EndNote database of reference sources

As of March 2005, over 420 individual sources of information have been entered into the EndNote database. In general terms, references were included if they contained any information on the rates of mineral reactions, and especially if quantitative data were given. Primary sources of data and review articles were included. As the authors of this report have worked in the field of hyperalkaline systems for some years, more data sources relevant to higher pH conditions may have been included than would have otherwise been the case. This may be beneficial, in that there is a general bias towards studies at lower pH conditions.

For each reference included in the library, the following details were included:

- Author
- Title
- Year
- Journal: title, volume, issue and page numbers
- Keywords

The latter point is a very important part of the database, as the keywords are the primary method of interrogating the database and focussing in on the most important references of interest. The key words were split into several different groupings that reflect different aspects of the studies they cover (most of which are experimental). The titles of these groupings are not present in the EndNote database itself, but are included below to aid location of a suitable key word. It worth noting that these keywords have been assembled assuming that the studies used natural materials and far from equilibrium conditions (unless specified).

Type of study

field study	laboratory study
laboratory versus field study	modelling study
review study	theoretical study

Type of kinetics

crystallisation kinetics	depolymerisation kinetics
dissolution kinetics	nucleation kinetics
oxidation kinetics	precipitation kinetics
reduction kinetics	

Experimental/field conditions

acidic	low pH
neutral	mid pH
alkaline	high pH
low temperature	elevated temperature
high temperature	low pressure
elevated pressure	high pressure
near equilibrium	oxidising conditions
reducing conditions	

Note: 1) For pH, it is assumed that acidic conditions are <5, and alkaline conditions are >9.

2) For temperature, it is assumed that a 'low temperature' is room temperature or less, elevated temperature (e.g. room temp to 100°C), and a high temperature is >100°C.
3) For pressure, it is assumed that a 'low pressure' is atmospheric pressure, an 'elevated pressure' is just a few bars, and a high pressure is > a few bars.
4) 'Reducing conditions' are assumed to include anoxic and anaerobic conditions.

Type of laboratory experiments

batch experiments
column experiments
flow experiments
flow-through experiments
fluidised bed experiments
free drift experiments
mixed flow experiments
pH-stat experiments
rotating disc experiments

Note: 'Mixed flow experiments' are essentially the same as those using continuous-flow stirred tank reactors (CSTR).

Other experimental techniques

AFM
atomic force microscopy
colourimetry
depth profiling
FTIR
infra-red
ion beam
interferometry
isotopes
raman
second harmonic generation
SHG
surface titration
XPS
X-ray photoelectron spectroscopy
X-ray reflectivity
zeta potential

Other experimental parameters

activation energy
armouring
chemical affinity
corrosion
depolymerisation
dislocations
hydrolysis
inhibition
ion exchange
ionic strength
leaching
leached layers
ligands
point of zero charge
PZC
reaction mechanisms
saturation state
site potential
stirring
surface areas
surface charge
surface chemistry
surface coatings
surface complexes
surface hydration
surface layers
surface roughness
surface speciation

Mineral group

carbonates
clays
elements
feldspars
fluorides
garnets
gels
hydroxides
micas
oxides
phosphates
pyroxenes
silicates
sulphates

sulphides

zeolites

Minerals and similar

adularia
albite
almandine
analcime
analcite
anorthite
apatite
aragonite
AsS
augite
bauxite
bentonite
birnessite
bytownite
calcium silicate hydrates
cement minerals
chalcopyrite
cinnabar
Co_2SiO_4
cristobalite
diopside
dolomite
epidote
faujasite
Fe oxide
FeS
foshagite
galena
glauconite
gypsum
hematite
HgS
hornblende
hydrogrossular
illite
K-feldspar
kyanite
lepidocrocite
maghematite
magnetite
mercury sulphide
microcline
monazite
montmorillonite
MnO_2
Mn oxide
Nepheline
oligoclase

akaganeite
Al_2O_3
aluminia
andalusite
anhydrite
anthophyllite
apophyllite
arsenopyrite
As_2S_3
autunite
bayerite
BeO_2
brucite
calcite
celadonite
chalcedony
chlorite
clinoptilolite
corundum
CSH
disthene
enstatite
ettringite
ferrihydrite
Fe_2O_3
forsterite
Friedel's salt
gibbsite
goethite
gyrolite
heulandite
hillebrandite
hydrogarnet
hydrotalcite
jadeite
kaolinite
labradorite
leucite
magnesite
marcasite
metacinnabar
moganite
monohydrocalcite
mordemite
MnOOH
$MnSiO_3$
$Ni(OH)_2$
olivine

opal
orthoclase
PbS
phillipsite
plagioclase
prehnite
pyrrhotite
realgar
sanidine
selenite
siderite
silicalite
smectite
sphalerite
Sr-feldspar
stellerite
strontianite
sulphur
titanite
tourmaline
troilite
uranium oxide
uranophane
witherite
zeolite precursors
ZnO
orpiment
paragonite
perthite
phlogopite
portlandite
pyrite
quartz
rutile
saponite
sepiolite
silica
SiO_2
soddyite
spodumene
staurolite
stilbite
sulfur
tephroite
tobermorite
tricarboaluminate
UO_2
uranium silicate
willemite
wollastonite
zircon
ZnS

Rocks and similar

alabaster
basalt
dacite
glass
lava
marble
sandstone
shells
borosilicate
ceramic
diorite
granite
limestone
rhyolite
serpentine
soil

Fluids

acetate
ascorbate
benzoate
citrate
EDTA
fulvic acid
glycine
humic acid
malonate
oxalic acid
organics
phosphoric acid
propionate
acetic acid
ascorbic acid
catechol
CO_2
formate
gluconate
lactate
lactic acid
oxalate
organic acids
oxine
phthalate
pyrophosphate

salicylate
silicic acid
tracers
seawater
supercritical water
xylose

Other study information

Al-polymers
bacteria
cementation
diagenesis
environmental conditions
lichen
microbes
plants
synthetic
upland
weathering
amorphous
biogenic
denudation
dislocations
impurities
lowland
morphology
siderophores
uncertainty
veins

4 Summary

The rate and magnitude of geochemical reactions can be described by two main processes: thermodynamics which determines the end point of reaction (i.e. approach to equilibrium conditions), and kinetics which determines how rapidly the reaction proceeds. There have been many studies that have investigated equilibrium conditions and have generated a wealth of data. However, for many systems the rate at which the end point of the reaction is reached is of equal, and possibly greater importance (e.g. the behaviour of waste products stored within the geosphere or during weathering).

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Knauss, K.G. and Wolery, T.J. (1986). Dependence of albite dissolution kinetics on pH and time at 25 °C and 70 °C. Geochimica et Cosmochimica Acta, 50, 2481-2497.

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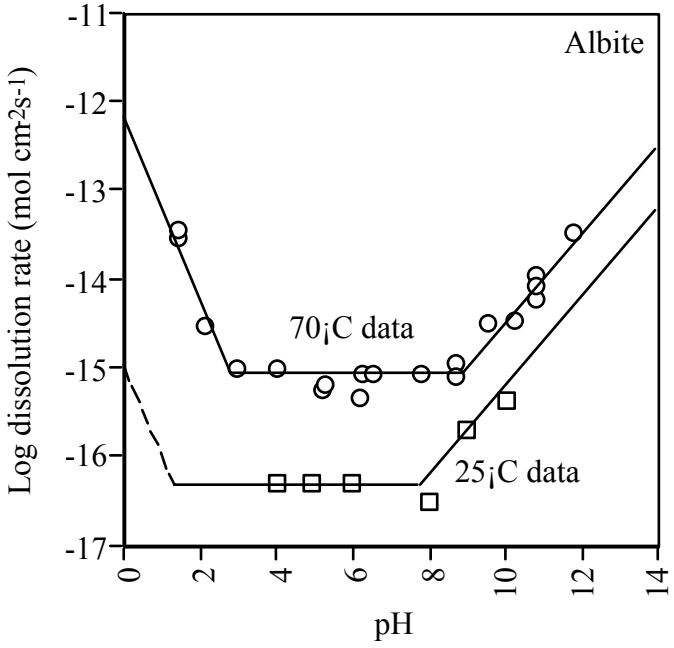
Velbel, M.A. (1993). Constancy of silicate-mineral weathering-rate ratios between natural and experimental weathering: Implications for hydrologic control of differences in absolute rates. Chemical Geology, 105, 89-99.

Wolery, T.J. (1992). EQ3NR, a computer program for geochemical aqueous speciation-solubility calculations: Theoretical manual, users guide, and related documentation. Lawrence Livermore National Laboratory Report UCRL-MA-110662 PT IV.

Figure 1 Dissolution rate of albite as a function of pH and temperature (based upon data in Knauss and Wolery [1986]). Note that dissolution rate increases at higher temperatures and towards the extremes of pH.



Appendix 1

Listing of information held within the EndNote database

Reference Type: Journal Article
Record Number: 253
Author: Abraitis, P.K.; Livens, F.R.; Monteith, J.E.; Small, J.S.; Trivedi, D.P.; Vaughan, D.J.; Wogelius, R.A.
Year: 2000
Title: The kinetics and mechanisms of simulated British magnox waste glass dissolution as a function of pH, silicic acid activity and time in low temperature aqueous systems
Journal: Applied Geochemistry
Volume: 15
Pages: 1399-1416
Keywords: glass, amorphous, dissolution kinetics, silicic acid, radioactive waste, borosilicate, low temperature, elevated temperature, low pH, mid pH, neutral, high pH, laboratory study, low pressure, batch experiments, acidic, alkaline

Reference Type: Journal Article
Record Number: 57
Author: Acker, J.G.; Bricker, O.P.
Year: 1992
Title: The influence of pH on biotite dissolution and alteration kinetics at low temperature
Journal: Geochimica et Cosmochimica Acta
Volume: 56
Pages: 3073-3092
Keywords: biotite, dissolution, micas, low temperature

Reference Type: Journal Article
Record Number: 290
Author: Al, T.A.; Martin, C.J.; Blowes, D.W.
Year: 2000
Title: Carbonate-mineral/water interactions in sulphide-rich mine tailings
Journal: Geochimica et Cosmochimica Acta
Volume: 64
Issue: 23
Pages: 3933-3948
Keywords: carbonates, calcite, siderite, dissolution kinetics, precipitation kinetics, field study

Reference Type: Journal Article
Record Number: 441
Author: Aldushin, K.; Jordan, G.; Rammensee, W.; Schmahl, W.W.; Becker, H.W.
Year: 2004
Title: Apophyllite (001) surface alteration in aqueous solutions studied by HAFM
Journal: 68
Volume: 2

Reference Type: Journal Article
Record Number: 112
Author: Alekseyev, V.A.; Medvedeva, L.S.; Prisyagina, N.I.; Meshalkin, S.S.; Balabin, A.I.
Year: 1977
Title: Change in the dissolution rates of alkali feldspars as a result of secondary mineral precipitation and approach to equilibrium
Journal: Geochimica et Cosmochimica Acta
Volume: 61
Issue: 6
Pages: 1125-1142
Keywords: silicates, feldspars, alkali feldspar, albite, sanidine, dissolution kinetics, analcite, precipitation kinetics, laboratory study, high temperature, high pressure, high pH, near equilibrium, alkaline

Reference Type: Conference Proceedings
Record Number: 193
Author: Alekseyev, V.A.; Medvedeva, L.S.; Prisyagina, N.I.; Meshalkin, S.S.; Senin, V.G.; Andrianova, S.I.
Year of Conference: 1995
Title: Kinetics of feldspar dissolution at 300 °C and pH 9
Editor: Kharaka, Y.F.; Chudaev, O.V.
Conference Name: 8th International Symposium on Water-Rock Interaction - WRI-8
Conference Location: Vladivostok, Russia, 15-19 August 1995
Publisher: A.A. Balkema
Pages: 137-140
Keywords: silicates, feldspars, albite, K-feldspar, dissolution kinetics, laboratory study, high temperature, high pressure, high pH, alkaline

Reference Type: Journal Article
Record Number: 385
Author: Alkattan, M.; Oelkers, E.H.; Dandurand, J-L.; Schott, J.
Year: 2002
Title: An experimental study of calcite dissolution rates at acidic conditions and 25C in the presence of $NaPO_3$ and $MgCl_2$
Journal: Chemical Geology
Volume: 190
Issue: 1-4
Pages: 291-302
Date: 4 September 2002
Keywords: low temperature, low pressure, low pH, acidic, carbonates, calcite, laboratory study, dissolution kinetics, rotating disk kinetics, inhibition, surface chemistry, surface speciation

Reference Type: Journal Article
Record Number: 151
Author: Alkattan, M.; Oelkers, R.C.; Dandurand, J.-L.; Schott, J.
Year: 1998
Title: An experimental study of calcite and limestone dissolution rates as a function of pH from -1 to 3 and temperature from 25 to 80°C
Journal: Chemical Geology
Volume: 151
Pages: 199-214
Keywords: carbonates, calcite, limestone, dissolution kinetics, low pH, low temperature, elevated temperature, rotating disc experiments, acidic, laboratory study

Reference Type: Journal Article
Record Number: 110
Author: Altaner, S.P.
Year: 1986
Title: Comparison of rates of smectite illitization with rates of K-feldspar dissolution
Journal: Clays and Clay Minerals
Volume: 34
Issue: 5
Pages: 608-611
Keywords: clays, silicates, smectite, K-feldspar, adularia, dissolution kinetics, laboratory study, review study, elevated temperature, high temperature, high pressure, high pH, alkaline

Reference Type: Journal Article
Record Number: 97
Author: Amrhein, C.; Suarez, D.L.
Year: 1988

Title: The use of a surface complexation model to describe the kinetics of ligand-promoted dissolution of anorthite
Journal: Geochimica et Cosmochimica Acta
Volume: 52
Pages: 2785-2793
Keywords: feldspars, silicates, anorthite, dissolution kinetics, oxalate, laboratory study, low temperature, low pressure, low pH, mid pH, neutral, high pH, batch experiment, acidic, alkaline

Reference Type: Journal Article
Record Number: 106
Author: Amrhein, C.; Suarez, D.L.
Year: 1992
Title: Some factors affecting the dissolution kinetics of anorthite at 25 °C
Journal: Geochimica et Cosmochimica Acta
Volume: 56
Pages: 1815-1826
Keywords: feldspars, silicates, anorthite, dissolution kinetics, laboratory study, low temperature, low pressure, batch experiments, low pH, neutral, mid pH, acidic

Reference Type: Journal Article
Record Number: 98
Author: Anbeek, C.
Year: 1992
Title: The dependence of dissolution rates on grain size for some fresh and weathered feldspars
Journal: Geochimica et Cosmochimica Acta
Volume: 56
Pages: 3957-3970
Keywords: silicates, feldspars, weathering, adularia, microcline, labradorite, laboratory study, low temperature, low pressure, low pH, flow-through experiments, acidic

Reference Type: Journal Article
Record Number: 254
Author: Antoni´c, T.; Ci¨zmek, A.; Kosanovi´c, C.; Suboti´c, B.
Year: 1993
Title: Dissolution of amorphous aluminosilicate zeolite precursors in alkaline solutions. Part 1 - Kinetics of the dissolution
Journal: Journal of the Chemical Society Faraday Transactions
Volume: 89
Issue: 11
Pages: 1817-1822
Keywords: zeolite precursors, gels, zeolites, amorphous, elevated temperature, high pH, batch experiments, dissolution kinetics, alkaline, laboratory study

Reference Type: Journal Article
Record Number: 255
Author: Antoni´c, T.; Ci¨zmek, A.; Suboti´c, B.
Year: 1994
Title: Dissolution of amorphous aluminosilicate zeolite precursors in alkaline solutions. Part 2 - Mechanism of the dissolution
Journal: Journal of the Chemical Society Faraday Transactions
Volume: 90
Issue: 13
Pages: 1973-1977
Keywords: zeolite precursors, gels, zeolites, amorphous, elevated temperature, high pH, batch experiments, dissolution kinetics, alkaline, laboratory study

Reference Type: Journal Article
Record Number: 231
Author: Arakaki, T.; Mucci, A.
Year: 1995
Title: A continious and mechanistic representation of calcite reaction-controlled kinetics in dilute solutions at 25°C and 1 atm total pressure
Journal: Aquatic Geochemistry
Volume: 1
Pages: 105-130
Keywords: carbonates, calcite, dissolution kinetics, batch experiment, free drift experiments, CO_2, low temperature, low pressure, laboratory study

Reference Type: Conference Proceedings
Record Number: 422
Author: Arvidson, R.S.
Year of Conference: 2002
Title: The distribution of dissolution rates on the calcite cleavage surface
Conference Name: Denver Annual Meeting
Conference Location: Colorado Convention Center: Exhibit Hall
Volume: 84-6
Date: October 28, 2002

Reference Type: Journal Article
Record Number: 404
Author: Arvidson, R.S.; Ertan, I.E.; Amonette, J.E.; Luttge, A.
Year: 2003
Title: Variation in calcite dissolution rates: A funamental problem?
Journal: Geochimica et Cosmochimica Acta
Volume: 67
Issue: 9
Pages: 1623-1634
Date: September 3, 2002
Keywords: carbonates, calcite, dissolution kinetics, laboratory study, review, AFM, atomic force microscopy, mid pH, neutral, low temperature, low pressure, flow experiment

Reference Type: Journal Article
Record Number: 307
Author: Astilleros, J.M.; Pina, C.M.; Fernández-Díaz, L.; Putnis, A.
Year: 2000
Title: The effect of barium on calcite {1014} surfaces during growth
Journal: Geochimica et Cosmochimica Acta
Volume: 64
Issue: 17
Pages: 2965-2972
Keywords: calcite, carbonates, precipitation kinetics, low temperature, low pressure, laboratory study, batch experiments, AFM, atomic force microscopy, flow experiments, alkaline, high pH, synthetic, inhibition

Reference Type: Journal Article
Record Number: 218
Author: Awad, A.; Groos, A.F. Koster van; Guggenheim, S.
Year: 2000
Title: Forsteritic olivine: Effect of crystallographic direction on dissolution kinetics
Journal: Geochimica et Cosmochimica Acta
Volume: 64
Issue: 10

Pages: 1765-1772
Keywords: silicates, fosterite, olivine, dissolution kinetics, low pH, low temperature, elevated temperature, laboratory study, batch experiments, acidic

Reference Type: Conference Proceedings
Record Number: 337
Author: Azaroual, M.; Plagnes, V.; Matsunaga, I.
Year of Conference: 2001
Title: Soultz granite - saline water interactions at 175-200°C and 10-50 bar: experimental and thermo-kinetic modeling approaches
Editor: Cidu, R.
Conference Name: 10th International Symposium on Water-Rock Interaction - WRI-10
Conference Location: Villasimius, Italy, 10-15 July 2001
Publisher: A.A. Balkema, Rotterdam
Volume: 1
Number of Volumes: 2
Pages: 231-234
Keywords: modelling study, dissolution kinetics, high temperature, elevated pressure, mid pH, neutral, quartz, K-feldspar, plagioclase, biotite, illite, hematite, calcite, clays, micas, carbonates, feldspars, silicates, oxides

Reference Type: Conference Proceedings
Record Number: 249
Author: Banerjee, D.; Nesbitt, H.W.
Year of Conference: 1999
Title: XPS study of reductive dissolution of birnessite by oxalate: rates and mechanistic aspects of dissolution and redox processes
Conference Name: Geochimica et Cosmochimica Acta
Volume: 63
Pages: 3025-3038
Keywords: birnessite, manganese oxide, MnO_2, dissolution kinetics, oxalate, XPS, laboratory study, low temperature, low pressure

Reference Type: Conference Proceedings
Record Number: 214
Author: Banwart, S.A.; Perez, J.R.; Malmström, M.; Berg, A.; Strömberg, B.
Year of Conference: 1996
Title: Weathering kinetics and the chemodynamics of pH and redox buffering at the atmosphere-geosphere interface
Editor: Bottrell, S.H.
Conference Name: Fourth International Symposium on the Geochemistry of the Earth's Surface
Conference Location: Ilkley, Yorkshire, UK
Pages: 723-727
Keywords: dissolution kinetics, review study, laboratory versus field study, pyrite, chalcopyrite, anorthite, albite, biotite, sulphides, feldspars, silicates, micas

Reference Type: Journal Article
Record Number: 263
Author: Barnett, M.O.; Turner, R.R.; Singer, P.C.
Year: 2001
Title: Oxidative dissolution of metacinnabar (b-HgS) by dissolved oxygen
Journal: Applied Geochemistry
Volume: 16
Pages: 1499-1512
Keywords: metacinnabar, cinnabar, HgS, mercury sulphide, sulphides, neutral, mid pH, laboratory study, low temperature, low pressure, batch experiments, flow experiments, column experiments, oxidising conditions, oxidation kinetics, dissolution kinetics, low pH, acidic, activation energy, synthetic, stirring

Reference Type: Book Section
Record Number: 322
Author: Barrer, R.M.
Year: 1985
Title: Synthesis of zeolites
Editor: Drzaj, B.; Hocevar, S.; Pejovnik, S.
Book Title: Zeolites. Synthesis, structure, technology and application
Publisher: Elsevier
Pages: 1-26
Series Title: Studies in surface science and catalysis 24
Keywords: silicates, zeolites, precipitation kinetics, crystallization kinetics, nucleation kinetics, gels, faujasite, amorphous, activation energy, laboratory study

Reference Type: Journal Article
Record Number: 6
Author: Barton, A.F.M; Wilde, N.M.
Year: 1971
Title: Dissolution rates of polycrystalline samples of gypsum and orthorhombic forms of calcium sulphate by a rotating disc method
Journal: Transactions of the Faraday Society
Volume: 67
Pages: 3590-3597
Keywords: sulphates,gypsum, dissolution kinetics, low pressure, low temperature, rotating disc experiments, neutral, mid pH, laboratory study

Reference Type: Journal Article
Record Number: 146
Author: Bauer, A.; Gerger, G.
Year: 1998
Title: Kaolinite and smectite dissolution rate in high molar KOH solutions at 35°C and 80°C
Journal: Applied Geochemistry
Volume: 13
Issue: 7
Pages: 905-916
Keywords: silicates, clays, kaolinite, smectite, dissolution kinetics, elevated temperature, high pH, batch experiments, alkaline, laboratory study

Reference Type: Conference Proceedings
Record Number: 201
Author: Benedetti, M.; Menard, O.; Noack, Y.
Year of Conference: 1992
Title: Geochemistry of water and chemical weathering rates under a humid tropical climate
Editor: Kharaka, Y.K.; Maest, A.S.
Conference Name: 7th International Symposium on Water-Rock Interaction - WRI-7
Conference Location: Park City, Utah, USA, 13-18 July 1992
Publisher: A.A. Balkema
Volume: 1
Number of Volumes: 2
Pages: 545-548
Keywords: dissolution kinetics, laboratory versus field study

Reference Type: Journal Article
Record Number: 346
Author: Benner, S.G.; Blowes, D.W.; Ptacek, C.J.; Mayer, K.U.

Year: 2002
Title: Rates of sulfate reduction and metal sulfide precipitation in a permeable reactive barrier
Journal: Applied Geochemistry
Volume: 17
Pages: 301-320
Keywords: sulphides, precipitation kinetics, reducing conditions, low pressure, low temperature, bacteria, field study, activation energy

Reference Type: Journal Article
Record Number: 81
Author: Bennett, P.C.
Year: 1991
Title: Quartz dissolution in organic-rich aqueous systems
Journal: Geochimica et Cosmochimica Acta
Volume: 55
Pages: 1781-1797
Keywords: silicates, quartz, dissolution kinetics, organic acids, low temperature, elevated temperature , batch experiments, low pressure, laboratory study, oxalate, citrate, phthalate, salicylate

Reference Type: Journal Article
Record Number: 314
Author: Berg, A.; Banwart, S.A.
Year: 2000
Title: Carbon dioxide mediated dissolution of Ca-feldspar: implications for silicate weathering
Journal: Chemical Geology
Volume: 163
Pages: 25-42
Keywords: silicates, feldspars, anorthite, plagioclase, laboratory study, low temperature, low pressure, mid pH, neutral pH, flow-through experiments, CO_2, reaction mechanism, surface speciation, oxalate, review study, weathering

Reference Type: Conference Proceedings
Record Number: 165
Author: Berger, G.
Year of Conference: 1995
Title: The dissolution rate of sanidine between 100 and 300°C
Editor: Kharaka, Y.K.; Chudaev, O.V.
Conference Name: 8th International Symposium on Water-Rock Interaction (WRI-8)
Conference Location: Vladivostok, Russia, 15-19 August 1995
Publisher: A.A. Balkema, Rotterdam
Pages: 141-144
Keywords: silicates, sanidine, feldspars, dissolution kinetics, mixed flow experiments, elevated pressure, high temperature, low pH, mid pH, neutral, high pH, acidic, alkaline, laboratory study

Reference Type: Conference Proceedings
Record Number: 279
Author: Berger, G.; Beaufort, D.; Lacharpagne, J.-C.
Year of Conference: 1998
Title: Dissolution of sanidine up to 300°C near equilibrium at approximately neutral pH
Editor: Arehart, G.B.; Hulston, J.R.
Conference Name: 9th International Symposium on Water-Rock Interaction (WRI-9)
Conference Location: Taupo, New Zealand, 30 March-3 April 1998
Publisher: A.A. Balkema, Rotterdam
Pages: 823-826
Keywords: silicates, sanidine, feldspars, dissolution kinetics, laboratory study, batch experiments, elevated temperature, high temperature, low pressure, elevated pressure, neutral, mid pH, leached layers

Reference Type: Journal Article
Record Number: 132
Author: Berner, R.A.; Morse, J.W.
Year: 1974
Title: Dissolution kinetics of calcium carbonate in sea water IV: Theory of calcite dissolution
Journal: American Journal of Science
Volume: 274
Pages: 108-134
Keywords: carbonates, calcite, dissolution kinetics, theoretical study, review study, low pH, mid pH, neutral, acidic

Reference Type: Conference Proceedings
Record Number: 332
Author: Betts, J.; Grandstaff, D.E.
Year of Conference: 2001
Title: Glauconite dissolution rates and the chemical evolution of vadose waters in the Hornerstown Formation, Hornerstown, New Jersey
Editor: Cidu, R.
Conference Name: 10th International Symposium on Water-Rock Interaction - WRI-10
Conference Location: Villasimius, Italy, 10-15 July 2001
Publisher: A.A. Balkema, Rotterdam
Volume: 1
Number of Volumes: 2
Pages: 363-366
Keywords: silicates, micas, glauconite, dissolution kinetics, field study, weathering, neutral, mid pH, low temperature, low pressure

Reference Type: Journal Article
Record Number: 99
Author: Bevan, J.; Savage, D.
Year: 1989
Title: The effect of organic acids on the dissolution of K-feldspar under conditions relevent to burial diagenesis
Journal: Mineralogical Magazine
Volume: 53
Pages: 415-425
Keywords: silicates, feldspars, K-feldspar, dissolution kinetics, organic acids, batch experiments, elevated temperature, high pressure, laboratory study, low pH, high pH, oxalic acid, acidic, alkaline

Reference Type: Journal Article
Record Number: 265
Author: Bildstein, O.; Worden, R.H.; Brosse, E.
Year: 2001
Title: Assessment of anhydrite dissolution as the rate-limiting step during thermochemical sulfate reduction
Journal: Chemical Geology
Volume: 176
Pages: 173-189
Keywords: sulphates, anhydrite, reduction kinetics, armouring, modelling study, elevated temperature, high temperature, theoretical study, reducing conditions, reaction mechanisms

Reference Type: Journal Article
Record Number: 187
Author: Blake, R.E.; Walter, L.M.
Year: 1999

Title: Kinetics of feldspar and quartz dissolution at 70-80°C and near-neutral pH: Effects of organic acids and NaCl
Journal: Geochimica et Cosmochimica Acta
Volume: 63
Issue: 13/14
Pages: 2043-2059
Keywords: silicates, feldspars, labradorite, orthoclase, albite, quartz, dissolution kinetics, elevated temperature, low pressure, mid pH, neutral, organic acids, laboratory study, batch experiments

Reference Type: Thesis
Record Number: 135
Author: Blanchard, I.G.
Year: 1994
Title: Epidote dissolution kinetics: An experimental study at 250 °C and 500 bars between pH 3.4 and pH 12
Academic Department: Earth Sciences
City: Leeds
University: Leeds
Number of Pages: 43
Thesis Type: MSc
Keywords: silicates, epidote, dissolution kinetics, laboratory study, batch experiment, high temperature, high pressure, low pH, mid pH, neutral, high pH, acidic, alkaline

Reference Type: Journal Article
Record Number: 22
Author: Blum, A.; Lasaga, A.
Year: 1988
Title: Role of surface speciation in the low-temperature dissolution of minerals
Journal: Nature
Volume: 331
Pages: 431-433
Keywords: surface speciation, low temperature, dissolution kinetics, reaction mechanisms, albite, feldspar, olivine, silicates, feldspars

Reference Type: Journal Article
Record Number: 197
Author: Blum, A.; Schulz, M.; White, A.
Year: 1998
Title: Controls on silicate weathering rates in soils
Journal: Mineralogical Magazine
Volume: 62A
Pages: 172-173
Keywords: dissolution kinetics, review study, laboratory versus field study
Notes: Proceedings of the 1998 V.M. Goldschmidt Conference, Toulouse, France

Reference Type: Journal Article
Record Number: 113
Author: Blum, A.E.; Lasaga, A.C.
Year: 1991
Title: The role of surface speciation in the dissolution of albite
Journal: Geochimica et Cosmochimica Acta
Volume: 55
Pages: 2193-2201
Keywords: silicates, albite, feldspars, dissolution kinetics, surface speciation, reaction mechanism, laboratory study, review study, low temperature, low pressure, low pH, mid pH, neutral, high pH, acidic, alkaline

Reference Type: Journal Article
Record Number: 87
Author: Blum, A.E.; Yund, R.A.; Lasaga, A.C.
Year: 1990
Title: The effect of dislocation density on the dissolution rate of quartz
Journal: Geochimica et Cosmochimica Acta
Volume: 54
Pages: 283-297
Keywords: quartz, synthetic, dissolution kinetics, dislocations, low temperature, elevated temperature, laboratoy study, fluidised bed experiments, low pressure

Reference Type: Conference Proceedings
Record Number: 426
Author: Boram, L.H.
Year of Conference: 2003
Title: Feldspar dissolution as a source of cations for carbonate growth in a carbon sequestration context: EQ3/6 modeling and laboratort experiments
Conference Name: AAPG Annual meeting 2003
Date: 2003

Reference Type: Book Section
Record Number: 412
Author: Bosbach, D.
Year: 2002
Title: Linking molecular-scale barite precipitation mechanisms with macroscopic crystal growth rates
Editor: Hellmann, R.; Wood, S.A.
Book Title: Water-Rock Interactions, Ore Deposits, and Envionmental Geochemistry: A Tribute to David A. Crear
Publisher: The Geochemical Society, Special Publication No. 7, 2002
Pages: 97-110
Keywords: sulphates, precipitation kinetics, barite, laboratory study, low temperature, low pressure, AFM, atomic force microscopy, flow experiment, mid pH, neutral

Reference Type: Journal Article
Record Number: 40
Author: Bosbach, D.; Jordan, G.; Rammensee, W.
Year: 1995
Title: Crystal growth and dissolution kinetics of gypsum and fluorite: An in situ Scanning Force Microscope study
Journal: Eur. J. Mineral.
Volume: 7
Pages: 267-276
Keywords: sulphates, fluorides, gypsum, fluorite, dissolution kinetics, precipitation kinetics, laboratory study, atomic force microscopy, AFM

Reference Type: Journal Article
Record Number: 316
Author: Bosnar, S.; Subotic, B.
Year: 1999
Title: Mechanism and kinetics of the growth of zeolite microcrystals. Part 1: Influence of the alkalinity of the system on the growth kinetics of zeolite A microcrystals
Journal: Microporous and Mesoporous Materials
Volume: 28
Pages: 483-493
Keywords: silicates, synthetic, zeolites, precipitation kinetics, crystallization kinetics, gels, laboratory study, batch experiments, alkaline, high pH, elevated temperature, low pressure, amorphous

Reference Type: Conference Proceedings
Record Number: 175
Author: Bourcier, W.L.; Weed, H.C.; Nguyen, S.N.; Nielsen, J.K.; Morgan, L.; Newton, L.; Knauss, K.G.
Year of Conference: 1992
Title: Solution compositional effects on the dissolution kinetics of borosilicate glass
Editor: Kharaka, Y.K.; Maest, A.S.
Conference Name: 7th International Symposium on Water-Rock Interaction - WRI-7
Conference Location: Park City, Utah, USA, 13-18 July 1992
Publisher: A.A. Balkema
Volume: 1
Number of Volumes: 2
Pages: 81-84
Keywords: borosilicate, glass, amorphous, dissolution kinetics, elevated temperatures, flow-through experiments, low pH, mid pH, neutral, high pH, acidic, alkaline, laboratory study

Reference Type: Conference Proceedings
Record Number: 205
Author: Brady, P.V.
Year of Conference: 1992
Title: Surface complexation and mineral growth: Sepiolite
Editor: Kharaka, Y.K.; Maest, A.S.
Conference Name: 7th International Symposium on Water-Rock Interaction - WRI-7
Conference Location: Park City, Utah, USA, 13-18 July 1992
Publisher: A.A. Balkema
Volume: 1
Number of Volumes: 2
Pages: 85-88
Keywords: sepiolite, clays, precipitation kinetics, laboratory study, batch experiments, low temperature, low pressure, high pH, alkaline

Reference Type: Journal Article
Record Number: 243
Author: Brady, P.V.; Dorn, R.I.; Brazel, A.J.; Clark, J.; Moore, R.B.; Glidewell, T.
Year: 1999
Title: Direct measurement of the combined effects of lichen, rainfall, and temperature on silicate weathering
Journal: Geochimica et Cosmochimica Acta
Volume: 63
Issue: 19/20
Pages: 3293-3300
Keywords: dissolution kinetics, environmental conditions, field study, low temperature, low pressure, plagioclase, olivine, lichen, weathering, silicates, feldspars

Reference Type: Journal Article
Record Number: 82
Author: Brady, P.V.; Walther, J.V.
Year: 1989
Title: Controls on silicate dissolution rates in neutral and basic pH solutions at 25 °C
Journal: Geochimica et Cosmochimica Acta
Volume: 53
Pages: 2823-2830
Keywords: review study, dissolution kinetics, silicates, feldspars, pyroxenes, quartz, anorthite, nepheline, bytownite, chrysotile, forsterite, enstatite, kaolinite, corundum, low pH, mid pH, neutral, high pH, low temperature, elevated temperature, acidic, alkaline, clays, serpentine, olivine

Reference Type: Journal Article
Record Number: 93
Author: Brady, P.V.; Walther, J.V.
Year: 1990
Title: Kinetics of quartz dissolution at low temperatures
Journal: Chemical Geology
Volume: 82
Pages: 253-264
Keywords: silicates, quartz, dissolution kinetics, laboratory study, batch experiments, low temperature, elevated temperature, low pressure, low pH, mid pH, neutral, high pH, acid, alkaline

Reference Type: Journal Article
Record Number: 309
Author: Brady, P.V.; Walther, J.V.
Year: 1992
Title: Surface chemistry and silicate dissolution at elevated temperatures
Journal: American Journal of Science
Volume: 292
Pages: 639-658
Keywords: dissolution kinetics, laboratory study, review study, surface charge, laboratory study, silica, SiO_2, alumina, Al_2O_3, albite, feldspars, plagioclase, kaolinite, forsterite, olivine, muscovite, mica, silicates, low pH, acidic, mid pH, neutral, high pH, alkaline, low temperature, low pressure, elevated temperature, clays, oxides, site potential

Reference Type: Journal Article
Record Number: 402
Author: Brandt, F.; Bosbach, D.; Krawczyk-Barsch, E.; Arnold, T.; Bernhard, G.
Year: 2003
Title: Chlorite dissolution in the acid pH-range: A combined microscopic and macroscopic approach
Journal: Geochimica et Cosmochimica Acta
Volume: 67
Issue: 8
Pages: 1451-1461
Date: October 15, 2002
Keywords: chlorite, dissolution kinetics, mixed flow experiments, AFM, atomic force microscopy, low temperature, low pH, mid pH, silicates, micas, laboratory study, acidic, neutral, low pressure

Reference Type: Conference Proceedings
Record Number: 206
Author: Brantley, S.L.
Year of Conference: 1992
Title: Kinetics of dissolution and precipitation - Experimental and field results
Editor: Kharaka, Y.K.; Maest, A.S.
Conference Name: 7th International Symposium on Water-Rock Interaction - WRI-7
Conference Location: Park City, Utah, USA, 13-18 July 1992
Publisher: A.A. Balkema
Volume: 1
Number of Volumes: 2
Pages: 3-6
Keywords: dissolution kinetics, precipitation kinetics, review study, laboratory versus field study

Reference Type: Conference Proceedings
Record Number: 340
Author: Brantley, S.L.; Bau, M.; Yau, S.; Alexander, B.; Chesley, J.
Year of Conference: 2001

Title: Interpreting kinetics of groundwater-mineral interaction using major element, trace element, and isotopic tracers
Editor: Cidu, R.
Conference Name: Proceedings of the 10th International Symposium on Water-Rock Interaction - WRI-10
Conference Location: Villasimius, Italy, 10-15 July 2001
Publisher: A.A. Balkema, Rotterdam
Volume: 1
Number of Volumes: 2
Pages: 13-17
Keywords: modelling study, field study, tracers, isotopes, dissolution kinetics

Reference Type: Journal Article
Record Number: 107
Author: Brantley, S.L.; Stillings, L.
Year: 1994
Title: An integrated model for feldspar dissolution under acid conditions
Journal: Mineralogical Magazine
Volume: 58A
Pages: 117-118
Keywords: silicates, feldspars, dissolution kinetics, review study, weathering, laboratory study, field study, low pH, acidic
Notes: Proceedings of the 1994 V.M. Goldschmidt Conference, Edinburgh, Scotland

Reference Type: Journal Article
Record Number: 96
Author: Brantley, S.L.; Stillings, L.
Year: 1996
Title: Feldspar dissolution at 25 °C and low pH
Journal: American Journal of Science
Volume: 296
Pages: 101-127
Keywords: silicates, feldspars, dissolution kinetics, leached layer, surface chemistry, albite, microcline, review study

Reference Type: Journal Article
Record Number: 242
Author: Brosse, É.; Matthews, J.; Bazin, B.; Gallo, Y. Le; Sommer, F.
Year: 2000
Title: Related quartz and illite cementation in the Brent sandstones: A modelling approach
Journal: Special Publication of the International Association of Sedimentologists
Volume: 29
Pages: 51-66
Keywords: modelling study, review study, elevated temperature, high temperature, high pressure, quartz, K-feldspar, albite, kaolinite, illite, calcite, silicates, feldspars, clays, carbonates

Reference Type: Journal Article
Record Number: 380
Author: Brown, J.G.; Glynn, P.D.
Year: 2003
Title: Kinetic dissolution of carbonates and Mn oxides in acidic water: measurement of in situ field rates and reactive transport modeling
Journal: Applied Geochemistry
Pages: 1225-1239
Date: 3 January 2003
Keywords: carbonates, calcite, dolomite, dissolution kinetics, pyrolusite, low pH, mid pH, neutral, acidic, MnO_2, oxides, field study, low temperature, low pressure

Reference Type: Journal Article
Record Number: 15
Author: Bruno, J.; Casas, I.; Puigdomenech, I.
Year: 1991
Title: The kinetics of UO_2 under reducing conditions and the influence of an oxidised surface layer (UO_{2+x}): Application of a continuous flow-through reactor
Journal: Geochimica et Cosmochimica Acta
Volume: 55
Pages: 647-658
Keywords: oxides, uranium oxide, UO_2, reducing conditions, flow-through experiments, dissolution kinetics, laboratory study, batch experiment, flow experiments

Reference Type: Conference Proceedings
Record Number: 282
Author: Bullen, T.D.; White, A.F.; Vivit, D.V.; Schulz, M.S.
Year of Conference: 1998
Title: Granitoid weathering in the laboratory: Chemical and Sr isotope perspectives on mineral dissolution rates
Editor: Arehart, G.B.; Hulston, J.R.
Conference Name: 9th International Symposium on Water-Rock Interaction (WRI-9)
Conference Location: Taupo, New Zealand, 30 March-3 April 1998
Publisher: A.A. Balkema, Rotterdam
Pages: 383-386
Keywords: granite, dissolution kinetics, weathering, flow experiments, column experiments, isotopes, laboratory study, low temperature, low pressure, mid pH, neutral

Reference Type: Journal Article
Record Number: 229
Author: Busenberg, E.; Clemency, C.V.
Year: 1976
Title: The dissolution kinetics of feldspars at 25°C and 1 atm CO_2 partial pressure
Journal: Geochimica et Cosmochimica Acta
Volume: 40
Pages: 41-49
Keywords: silicates, feldspars, K-feldspar, plagioclase, low temperature, low pressure, batch experiments, CO_2, low pH, acidic, laboratory study, dissolution kinetics

Reference Type: Book Section
Record Number: 116
Author: Busenberg, E.; Plummer, L.N.
Year: 1986
Title: A comparative study of the dissolution and crystal growth kinetics of calcite and aragonite
Editor: Mumpton, F.A.
Book Title: Studies in Diagenesis
Publisher: U.S. Geological Survey
Volume: 1578
Pages: 139-168
Series Title: U.S. Geological Survey Bulletin
Keywords: carbonates, calcite, aragonite, dissolution kinetics, precipitation kinetics, laboratory study, pH-stat experiments, low pH, mid pH, neutral, high pH, acidic, alkaline

Reference Type: Journal Article
Record Number: 166
Author: Cama, J.; Ayora, C.
Year: 1998

Title: Modelling the dissolution behaviour of a clayey barrier
Journal: Mineralogical Magazine
Volume: 62A
Pages: 271-272
Keywords: silicates, smectite, clays, dissolution kinetics, modelling study, flow-through experiments, mid pH, neutral, high pH, elevated temperatures, alkaline
Notes: Proceedings of the 1998 V.M. Goldschmidt Conference, Toulouse, France

Reference Type: Conference Proceedings
Record Number: 167
Author: Cama, J.; Ayora, C.; Lasaga, A.C.
Year of Conference: 1996
Title: The effect of deviation from equilibrium on the dissolution rate and on apparent variations in the activation energy
Editor: Bottrell, S.H.
Conference Name: Fourth International Symposium on the Geochemistry of the Earth's Surface
Conference Location: Ilkley, Yorkshire, UK
Pages: 548-553
Keywords: theoretical study, low pH, dissolution kinetics, activation energy, near equilibrium, acidic

Reference Type: Journal Article
Record Number: 188
Author: Cama, J.; Ayora, C.; Lasaga, A.C.
Year: 1999
Title: The deviation-from-equilibrium effect on dissolution rate and on apparent variations in activation energy
Journal: Geochimica et Cosmochimica Acta
Volume: 63
Issue: 17
Pages: 2481-2486
Keywords: silicates, kaolinite, clays, dissolution kinetics, theoretical study, review study, low pH, low temperature, elevated temperature, acidic

Reference Type: Journal Article
Record Number: 267
Author: Cama, J.; Ganor, J.; Ayora, C.; Lasaga, A.C.
Year: 2000
Title: Smectite dissolution kinetics at 80°C and pH 8.8
Journal: Geochimica et Cosmochimica Acta
Volume: 64
Issue: 15
Pages: 2701-2717
Keywords: clays, silicates, smectite, dissolution kinetics, elevated temperature, neutral, mid pH, high pH, mixed flow experiments, flow-through experiments, laboratory study, alkaline, low pressure, saturation state, near equilibrium

Reference Type: Journal Article
Record Number: 30
Author: Cama, J.; Ganor, J.; Lasaga, A.C.
Year: 1994
Title: The kinetics of smectite dissolution
Journal: Mineralogical Magazine
Volume: 58A
Pages: 140-141
Keywords: silicates, clays, smectite, dissolution kinetics, batch experiments, mixed flow experiments, laboratory study, elevated temperature, mid pH
Notes: Proceedings of the 1994 V.M. Goldschmidt Conference, Edinburgh, Scotland

Reference Type: Journal Article
Record Number: 384
Author: Cama, J.; Metz, V.; Ganor, J.
Year: 2002
Title: The effect of pH and temperature on kaolinite dissolution rate under acidic conditions
Journal: Geochimica et Cosmochimica Acta
Volume: 66
Issue: 22
Pages: 3913-3926
Date: May 6, 2002
Keywords: silicates, kaolinite, clays, dissolution kinetics, laboratory study, low pH, low temperature, low pressure, acidic, elevated temperature, inhibition, flow-through experiments

Reference Type: Conference Proceedings
Record Number: 336
Author: Cama, J.; Querol, X.; Ayora, C.; Sanz, E.; Ganor, J.
Year of Conference: 2001
Title: Dissolution of synthetic zeolites at low temperature - preliminary results
Editor: Cidu, R.
Conference Name: 10th International Symposium on Water-Rock Interaction - WRI-10
Conference Location: Villasimius, Italy, 10-15 July 2001
Publisher: A.A. Balkema, Rotterdam
Volume: 1
Number of Volumes: 2
Pages: 247-250
Keywords: silicates, synthetic, zeolites, dissolution kinetics, laboratory study, flow-through experiments, low pH, low temperature, elevated temperature, low pressure, acidic

Reference Type: Conference Proceedings
Record Number: 168
Author: Cappellen, P. van
Year of Conference: 1996
Title: In situ reaction kinetics in Earth's surficial environments
Editor: Bottrell, S.H.
Conference Name: Fourth International Symposium on the Geochemistry of the Earth's Surface
Pages: 517-519
Keywords: dissolution kinetics, field study, laboratory study, laboratory versus field study

Reference Type: Journal Article
Record Number: 74
Author: Carroll, S.A.; Walther, J.V.
Year: 1990
Title: Kaolinite dissolution at 25°, 60° and 80 °C
Journal: American Journal of Science
Volume: 290
Pages: 797-810
Keywords: clays, silicates, kaolinite, dissolution kinetics, low temperature, elevated temperature, low pH, mid pH, neutral, high pH, review study, acidic, alkaline

Reference Type: Journal Article
Record Number: 28
Author: Casas, I.; Gimenez, J.; Marti, V.; Torrero, M.E.; Pablo, J. de
Year: 1994
Title: Kinetic studies of unirradiated UO_2 dissolution under oxidising conditions in batch and flow experiments

Journal: Radiochimica Acta
Volume: 66/67
Pages: 23-27
Keywords: oxides, uranium oxide, UO_2, dissolution kinetics, oxidising conditions, laboratory study, mid pH, low temperature, low pressure, batch experiments, flow experiments, neutral

Reference Type: Journal Article
Record Number: 85
Author: Casey, W.H.; Lasaga, A.C.; Gibbs, G.V.
Year: 1990
Title: Mechanisms of silica dissolution as inferred from the kinetic isotope effect
Journal: Geochimica et Cosmochimica Acta
Volume: 54
Pages: 3369-3378
Keywords: dissolution kinetics, hydrolysis, silicates, quartz, synthetic, isotopes, low temperatures, low pressures, low pH, neutral, mid pH, high pH, laboratory study, acidic, alkaline

Reference Type: Journal Article
Record Number: 67
Author: Casey, W.H.; Sposito, G.
Year: 1992
Title: On the temperature dependence of mineral dissolution rates
Journal: Geochimica et Cosmochimica Acta
Volume: 56
Pages: 3825-3830
Keywords: review study, dissolution kinetics, tephroite, andalusite, quartz, Co_2SiO_4, kaolinite, willemite, anorthite, nepheline, low pH, mid pH, neutral, high pH, acidic, alkaline, silicates, clays, feldspars, olivine

Reference Type: Journal Article
Record Number: 21
Author: Casey, W.H.; Westrich, H.R.; Banfield, J.F.; Ferruzzi, G.; Arnold, G.W.
Year: 1993
Title: Leaching and reconstruction at the surfaces of dissolving chain-silicate minerals
Journal: Nature
Volume: 366
Pages: 253-256
Keywords: leaching, silicates, surface hydration, raman, reaction mechanisms

Reference Type: Journal Article
Record Number: 103
Author: Casey, W.H.; Westrich, H.R.; Massis, T.; Banfield, J.F.; Arnold, G.W.
Year: 1989
Title: The surface of labradorite feldspar after acid hydrolysis
Journal: Chemical Geology
Volume: 78
Pages: 205-218
Keywords: silicates, feldspars, labradorite, dissolution kinetics, hydrolysis, laboratory study, low temperature, low pressure

Reference Type: Conference Proceedings
Record Number: 335
Author: Cavé, L.C.; Fey, M.V.; Nordström, D.K.
Year of Conference: 2001
Title: Dissolution rate of apophyllite. The effects of pH and implications for underground water storage
Editor: Cidu, R.

Conference Name: 10th International Symposium on Water-Rock Interaction - WRI-10
Conference Location: Villasimius, Italy, 10-15 July 2001
Publisher: A.A. Balkema, Rotterdam
Volume: 1
Number of Volumes: 2
Pages: 251-254
Keywords: silicates, apophyllite, dissolution kinetics, laboratory study, low temperature, low pH, acidic, mid pH, neutral, high pH, alkaline, low pressure, batch experiments

Reference Type: Journal Article
Record Number: 76
Author: Chin, P-K.F.; Mills, G.L.
Year: 1991
Title: Kinetics and mechanisms of kaolinite dissolution: effects of organic ligands
Journal: Chemical Geology
Volume: 90
Pages: 307-317
Keywords: silicates, clays, kaolinite, dissolution kinetics, organic acids, low pH, laboratory study, low temperature, low pressure, batch experiments, oxalate, malonate, salicylate, phthalate, acidic

Reference Type: Journal Article
Record Number: 115
Author: Chou, L.; Garrels, R.M.; Wollast, R.
Year: 1989
Title: Comparative study of the kinetics and mechanisms of dissolution of carbonate minerals
Journal: Chemical Geology
Volume: 78
Pages: 269-282
Keywords: calcite, aragonite, dolomite, magnesite, witherite, carbonates, dissolution kinetics, laboratory study, fluidised bed experiments, low temperature, low pressure, low pH, mid pH, neutral, high pH, acidic, alkaline

Reference Type: Journal Article
Record Number: 400
Author: Chou, L.; Wollast, R.
Year: 1984
Title: Study of the weathering of albite at room temperature and pressure with a fluidized bed reactor
Journal: Geochimica et Cosmochimica Acta
Volume: 48
Pages: 2205-2217
Date: July 30, 1984
Keywords: silicates, albite, feldspars, dissolution kinetics, amorphous, laboratory study, low pH, mid pH, neutral, high pH, low temperature, low pressure, acidic, alkaline, weathering, leached layers, fluidised bed experiments

Reference Type: Journal Article
Record Number: 327
Author: Chou, L.; Wollast, R.
Year: 1985
Title: Steady-state kinetics and dissolution mechanisms of albite
Journal: American Journal of Science
Volume: 285
Pages: 963-993
Keywords: silicates, feldspars, albite, plagioclase, dissolution kinetics, reaction mechanisms, leached layers, laboratory study, low pH, acidic, mid pH, neutral, high pH, alkaline, low temperature, low pressure, fluidised bed experiments

Reference Type: Journal Article
Record Number: 9
Author: Christoffersen, J.; Christoffersen, M.R.
Year: 1976
Title: The kinetics of dissolution of calcium sulphate dihydrate in water
Journal: Journal of Crystal Growth
Volume: 35
Pages: 79-88
Keywords: gypsum, sulphates, dissolution kinetics, laboratory study, mid pH, neutral, low temperature, low pressure

Reference Type: Journal Article
Record Number: 223
Author: Christoffersen, J.; Christoffersen, M.R.; Johansen, T.
Year: 1996
Title: Some new aspects of surface nucleation applied to the growth and dissolution of fluorapatite and hydroxyapatite
Journal: Journal of Crystal Growth
Volume: 163
Pages: 304-310
Keywords: phosphates, apatite, dissolution kinetics, precipitation kinetics, nucleation kinetics, theoretical study, low pH, acidic

Reference Type: Journal Article
Record Number: 230
Author: Cizmek, A.; Komunjer, L.; Subotic, B.; Aiello, R.; Crea, F.; Nastro, A.
Year: 1994
Title: Kinetics of zeolite dissolution: Part 4. Influence of the concentration of silicon in the liquid phase on the kinetics of ZSM-5 dissolution
Journal: Zeolites
Volume: 14
Pages: 182-189
Keywords: silicates, zeolites, dissolution kinetics, elevated temperature, high pH, batch experiments, alkaline, laboratory study

Reference Type: Journal Article
Record Number: 233
Author: Cizmek, A.; Subotic, B.; Aiello, R.; Crea, F.; Nastro, A.; Tuoto, C.
Year: 1995
Title: Dissolution of high-silica zeolites in alkaline solutions I. Dissolution of silicalite-1 and ZSM-5 with different aluminium content
Journal: Microporous Materials
Volume: 4
Pages: 159-168
Keywords: silicates, zeolites, elevated temperature, high pH, dissolution kinetics, batch experiments, low pressure, alkaline, laboratory study

Reference Type: Journal Article
Record Number: 235
Author: Clemency, C.V.; Lin, F.-C.
Year: 1981
Title: Dissolution kinetics of phlogopite. II. open system using an ion-exchange resin
Journal: Clays and clay minerals
Volume: 29
Issue: 2

Pages: 107-112
Keywords: silicates, phlogopite, micas, dissolution kinetics, low temperature, low pressure, low pH, batch experiments, laboratory study

Reference Type: Journal Article
Record Number: 351
Author: Cocozza, C.; Tsao, C.C.G.; Cheah, S-F.; Kraemer, S.M.; Raymond, K.N.; Miano, T.M.; Sposito, G.
Year: 2002
Title: Temperature dependence of goethite dissolution promoted by trihydroxamate siderophores
Journal: Geochimica et Cosmochimica Acta
Volume: 66
Issue: 3
Pages: 431-438
Date: July 13, 2001
Keywords: oxides, hydroxides, goethite, siderophores, synthetic, batch experiments, elevated temperature, activation energy, dissolution kinetics, laboratory study, mid pH, neutral, low temperature, low pressure

Reference Type: Journal Article
Record Number: 56
Author: Cornell, R.M.; Schindler, P.W.
Year: 1987
Title: Photochemical dissolution of goethite in acid/oxalate solution
Journal: Clays and Clay Minerals
Volume: 35
Issue: 5
Pages: 347-352
Keywords: oxides, hydroxides, goethite, dissolution kinetics, oxalate, laboratory study, low temperature, low pH, low pressure, acidic

Reference Type: Conference Proceedings
Record Number: 88
Author: Crerar, D.A.; Dove, P.M.
Year of Conference: 1990
Title: Kinetics of quartz dissolution in electrolyte solutions using a hydrothermal mixed flow reactor
Conference Name: Geochemistry of the Earth's Surface and of Mineral Formation - 2nd International Symposium
Conference Location: Aix en Provence, France
Pages: 301-304
Keywords: quartz, dissolution kinetics, laboratory study, silicates, mixed flow experiments, high temperature, high pressure, mid pH, neutral

Reference Type: Journal Article
Record Number: 457
Author: Cubillas, P.; Köhler, S.; Prieto, M.; Chaïrat, C.; Oelkers, E.H.
Year: 2005
Title: Experimental determination of the dissolution rates of calcite, aragonite, and bivalves
Journal: Chemical Geology
Volume: 216
Pages: 59-77
Keywords: laboratory study, dissolution kinetics, low pressure, low temperature, low pH, acidic, mid pH, neutral, high pH, alkaline, mixed flow experiments, carbonates, calcite, aragonite, shells, saturation state, surface areas, chemical affinity

Reference Type: Journal Article
Record Number: 145

Author: Cuevas, J.; Garralon, A.; Ramirez, S.; Leguey, S.
Year: 1998
Title: Kinetic approach to the mineral reaction processes during hydrothermal treatment of a saponitic clay
Journal: Clay Minerals
Volume: 33
Pages: 409-421
Keywords: silicates, clays, saponite, dissolution kinetics, precipitation kinetics, elevated temperature, high temperature, elevated pressure

Reference Type: Journal Article
Record Number: 159
Author: Dahlgren, R.A.; Ugolini, F.C.; Casey, W.H.
Year: 1999
Title: Field weathering rates of Mt. St. Helens tephra
Journal: Geochimica et Cosmochimica Acta
Volume: 63
Issue: 5
Pages: 587-598
Keywords: weathering, tephra, ash, field study, low temperature, mid pH, neutral

Reference Type: Journal Article
Record Number: 288
Author: Davis, K.J.; Dove, P.M.; Yoreo, J.J. De
Year: 2000
Title: The role of Mg^{2+} as an impurity in calcite growth
Journal: Science
Volume: 290
Pages: 1134-1137
Keywords: impurities, calcite, carbonates, precipitation kinetics, inhibition, AFM, atomic force microscopy, laboratory study, low pressure, low temperature, mid pH, neutral

Reference Type: Conference Proceedings
Record Number: 261
Author: Deng, T.; Ke, J.
Year of Conference: 2000
Title: Kinetics of disproportionation of elemental sulphur under hydrothermal conditions
Editor: Yanagisawa, K.; Feng, Q.
Conference Name: Joint Sixth International Symposium on Hydrothermal Reactions & Fourth International Conference on Solvo-Thermal Reactions
Conference Location: Kochi, Japan
Pages: 61-63
Keywords: elements, sulphur, laboratory study, high temperature, elevated pressure, batch experiments, dissolution kinetics, mid pH, neutral, sulfur, activation energy

Reference Type: Journal Article
Record Number: 452
Author: Descostes, M.; Vitorge, P.; Beaucaire, C.
Year: 2004
Title: Pyrite dissolution in acidic media
Journal: Geochimica et Cosmochimica Acta
Volume: 68
Issue: 22
Pages: 4559-4569
Keywords: sulphides, pyrite, dissolution kinetics, oxidation kinetics, oxidising conditions, low pressure, low temperature, batch experiments, laboratory study, low pH, acidic, reaction mechanisms

Reference Type: Journal Article
Record Number: 137
Author: Devidal, J.-L.; Schott, J.; Dandurand, J.-L.
Year: 1997
Title: An experimental study of kaolinite dissolution and precipitation kinetics as a function of chemical affinity and solution composition at 150°C, 40 bars, and pH 2, 6.8 and 7.8
Journal: Geochimica et Cosmochimica Acta
Volume: 61
Issue: 24
Pages: 5165-5186
Keywords: silicates, clays, kaolinite, dissolution kinetics, precipitation kinetics, low pH, mid pH, neutral, high temperature, elevated pressure, acidic

Reference Type: Conference Proceedings
Record Number: 174
Author: Devidal, J.L.; Dandurand, J.L.; Schott, J.
Year of Conference: 1992
Title: Dissolution and precipitation kinetics of kaolinite as a function of chemical affinity (T = 150°C, pH = 2 and 7.8)
Editor: Kharaka, Y.K.; Maest, A.S.
Conference Name: 7th International Symposium on Water-Rock Interaction - WRI-7
Conference Location: Park City, Utah, USA, 13-18 July 1992
Publisher: A.A. Balkema
Volume: 1
Number of Volumes: 2
Pages: 93-96
Keywords: kaolinite, silicates, clays, dissolution kinetics, precipitation kinetics, low pH, neutral, mid pH, high temperature, elevated pressure, mixed flow experiments, acidic, laboratory study

Reference Type: Conference Proceedings
Record Number: 331
Author: Díaz, P.A.; Alvarado, V.; Rodríguez, M.I.
Year of Conference: 2001
Title: Dissolution of calcite in $CaCO_3$-CO_2-H_2O systems in porous media
Editor: Cidu, R.
Conference Name: 10th International Symposium on Water-Rock Interaction - WRI-10
Conference Location: Villasimius, Italy, 10-15 July 2001
Publisher: A.A. Balkema, Rotterdam
Volume: 1
Number of Volumes: 2
Pages: 379-382
Keywords: calcite, carbonates, dissolution kinetics, low temperature, elevated temperature, low pressure, laboratory study, flow-through experiments, column experiments, neutral, mid pH, low pH, acidic pH, CO_2, laboratory study

Reference Type: Journal Article
Record Number: 323
Author: Dibble, W.E.; Tiller, W.A.
Year: 1981
Title: Kinetic model of zeolite paragenesis in tuffaceous sediments
Journal: Clays and Clay Minerals
Volume: 29
Issue: 5
Pages: 323-330
Keywords: silicates, zeolites, precipitation kinetics, crystallization kinetics, gels, theoretical study, amorphous

Reference Type: Journal Article
Record Number: 298
Author: Dietzel, M.
Year: 2000
Title: Dissolution of silicates and the stability of polysilicic acid
Journal: Geochimica et Cosmochimica Acta
Volume: 64
Issue: 19
Pages: 3275-3281
Keywords: silicic acid, depolymerisation kinetics, laboratory study, low temperature, low pressure, low pH, acidic, depolymerisation

Reference Type: Journal Article
Record Number: 392
Author: Dixit, S.; Cappellen, P.V.
Year: 2002
Title: Surface chemistry and reactivity of biogenic silica
Journal: Geochimica et Cosmochimica Acta
Volume: 66
Issue: 14
Pages: 2559-2568
Date: January 18, 2002

Reference Type: Journal Article
Record Number: 89
Author: Dove, P.M.
Year: 1994
Title: The dissolution kinetics of quartz in sodium chloride solutions at 25° to 300 °C
Journal: American journal of Science
Volume: 294
Pages: 665-712
Keywords: silicates, quartz, dissolution kinetics, laboratory study, low temperature, elevated temperature, high temperature, low pressure, high pressure, low pH, mid pH, neutral, high pH, acidic, alkaline

Reference Type: Journal Article
Record Number: 241
Author: Dove, P.M.
Year: 1999
Title: The dissolution kinetics of quartz in aqueous mixed cation solutions
Journal: Geochimica et Cosmochimica Acta
Volume: 63
Issue: 22
Pages: 3715-3727
Keywords: silicates, quartz, dissolution kinetics, neutral, mid pH, high temperature, high pressure, laboratory study, mixed flow experiment

Reference Type: Journal Article
Record Number: 91
Author: Dove, P.M.; Crerar, D.A.
Year: 1990
Title: Kinetics of quartz dissolution in electrolyte solutions using a hydrothermal mixed flow reactor
Journal: Geochimica et Cosmochimica Acta
Volume: 54
Pages: 955-969

Keywords: silicates, quartz, dissolution kinetics, mixed flow experiment, laboratory study, high temperature, high pressure, mid pH, neutral

Reference Type: Journal Article
Record Number: 90
Author: Dove, P.M.; Elston, S.F.
Year: 1992
Title: Dissolution kinetics of quartz in sodium chloride solutions: Analysis of existing data and a rate model for 25 °C
Journal: Geochimica et Cosmochimica Acta
Volume: 56
Pages: 4147-4156
Keywords: silicates, quartz, dissolution kinetics, review study, low temperature, elevated temperature

Reference Type: Journal Article
Record Number: 92
Author: Dove, P.M.; Nix, C.J.
Year: 1997
Title: The influence of the alkaline earth cations, magnesium, calcium, and barium on the dissolution kinetics of quartz
Journal: Geochimica et Cosmochimica Acta
Volume: 61
Issue: 16
Pages: 3329-3340
Keywords: silicates, quartz, dissolution kinetics, laboratory study, high temperature, high pressure, mid pH, neutral

Reference Type: Journal Article
Record Number: 31
Author: Drever, J.I.; Murphy, K.M.; Clow, D.W.
Year: 1994
Title: Field weathering rates versus laboratory dissolution rates : an update
Journal: Mineralogical Magazine
Volume: 58A
Pages: 239-240
Keywords: silicates, weathering, dissolution kinetics, laboratory study, field study, review study, albite, feldspars
Notes: Proceedings of the 1994 V.M. Goldschmidt Conference, Edinburgh, Scotland

Reference Type: Journal Article
Record Number: 220
Author: Dron, R.; Brivot, F.
Year: 1993
Title: Thermodynamic and kinetic approach to the alkali-silica reaction. Part 2: experiment
Journal: Cement and concrete Research
Volume: 23
Pages: 93-103
Keywords: silicates, silica, quartz, glass, amorphous, chalcedony, cristobalite, opal, dissolution kinetics, high pH, elevated temperature, laboratory study, batch experiments, alkaline

Reference Type: Journal Article
Record Number: 376
Author: Duckworth, O.W.; Martin, S.T.
Year: 2001
Title: Surface complexation and dissolution of hematite by C1-C6 dicarboxylic acids at pH = 5.0

Journal: Geochimica et Cosmochimica Acta
Volume: 65
Issue: 23
Pages: 4289-4301
Date: May 14, 2001
Keywords: oxides, hematite, synthetic, infra-red, batch experiments, organics, organic aciids, oxalate, malonate, succinate, glutarate, adipate, low temperature, low pressure, low pH, acidic, mid pH, neutral, surface chemistry, surface complexes, dissolution kinetics, laboratory study

Reference Type: Journal Article
Record Number: 59
Author: Duebendorfer, E.M.; Frost, B.R.
Year: 1988
Title: Retrogressive dissolution of garnet: Effect on garnet-biotite goethermometry
Journal: Geology
Volume: 16
Pages: 875-877
Keywords: silicates, micas, garnet, biotite, dissolution kinetics, strain-induced dissolution, field study

Reference Type: Journal Article
Record Number: 399
Author: Eisenlohr, L.; Meteva, K.; Gabrovsek, F.; Dreybrodt, W.
Year: 1999
Title: The inhibiting action of intrinsic impurities in natural calcium carbonate minerals to their dissolution kinetics in aqueous H_2O-CO_2 solutions
Journal: Geochimica et Cosmochimica Acta
Volume: 63
Issue: 78
Pages: 989-1002
Date: September 24, 1998
Keywords: carbonates, calcite, dissolution kinetics, laboratory study, mid pH, neutral, limestone, marble, low temperature, low pressure, free drift experiments, batch experiments, impurities, CO_2

Reference Type: Thesis
Record Number: 345
Author: Fairwood, D.S.
Year: 2000
Title: Dissolution kinetics and solubility of stilbite and stellerite
Academic Department: Department of Environmental Science
City: Nottingham
University: University of Nottingham
Thesis Type: MSc
Keywords: stilbite, stellerite, zeolites, dissolution kinetics, laboratory study, low temperature, elevated temperature, low pressure, mid pH, neutral, high pH, alkaline, batch experiments

Reference Type: Conference Proceedings
Record Number: 259
Author: Fehr, K.T.; Zuern, S.G.
Year of Conference: 2000
Title: Mechanisms of calcium-silicate-hydrates formation under hydrothermal conditions
Editor: Yanagisawa, K.; Feng, Q.
Conference Name: Joint Sixth International Symposium on Hydrothermal Reactions & Fourth International Conference on Solvo-Thermal Reactions
Conference Location: Kochi, Japan
Pages: 278-281

Keywords: CSH, calcium silicate hydrate, cement minerals, precipitation kinetics, laboratory study, tobermorite, high temperature, elevated pressure, batch experiments, high pH, alkaline, silicates

Reference Type: Journal Article
Record Number: 383
Author: Fenter, P.; Park, C.; Cheng, L.; Zhang, Z.; Krekeler, M.P.S.; Sturchio, N.C.
Year: 2002
Title: Orthoclase dissolution kinetics probed by in situ X-ray reflectivity: Effects of temperature, pH, and crystal orientation
Journal: Geochimica et Cosmochimica Acta
Volume: 67
Issue: 2
Pages: 197-211
Date: July 27, 2002
Keywords: feldspars, orthoclase, dissolution kinetics, X-ray reflectivity, activation energy, low pH, acidic, elevated temperature, K-feldspar, flow-through experiments, laboratory study, high pH, alkaline, silicates

Reference Type: Journal Article
Record Number: 430
Author: Ferris, F.G.; Phoenix, V.; Fujita, Y.; Smith, R.W.
Year: 2003
Title: Kinetics of calcite precipitation induced by ureolytic bacteria at 10 to 20^{o}C in artificial groundwater
Journal: Geochimica et Cosmochimica Acta
Volume: 67
Issue: 8
Pages: 1701-1722

Reference Type: Journal Article
Record Number: 364
Author: Fletcher, R.C.; Merino, E.
Year: 2001
Title: Mineral growth in rocks: Kinetic-rheological models of replacement, vein formation, and syntectonic crystallization
Journal: Geochimica et Cosmochimica Acta
Volume: 65
Issue: 21
Pages: 3733-3748
Date: May 31, 2001

Reference Type: Journal Article
Record Number: 153
Author: Frogner, P.; Schweda, P.
Year: 1998
Title: Hornblende dissolution kinetics at 25°C
Journal: Chemical geology
Volume: 151
Pages: 169-179
Keywords: silicates, hornblende, dissolution kinetics, low temperature, flow-through experiments, low pH, acidic, laboratory study

Reference Type: Journal Article
Record Number: 248
Author: Furrer, G.; Gfeller, M.; Wehrli, B.
Year: 1999
Title: On the chemistry of the Keggin Al_{13} polymer: Kinetics of proton-promoted decomposition

Journal: Geochimica et Cosmochimica Acta
Volume: 63
Issue: 19/20
Pages: 3069-3076
Keywords: Al polymers, laboratory study, low pH, low temperature, elevated temperature, low pressure, batch experiments, flow-through experiments, low pressure, acidic

Reference Type: Book Section
Record Number: 50
Author: Furrer, G.; Zysset, M.; Schindler, P.W.
Year: 1993
Title: Weathering kinetics of montmorillonite: Investigations in batch and mixed-flow reactors (Chapter 10 in 'Geochemistry of Clay-Pore Fluid Interactions')
Editor: Manning, D.A.C.; Hall, P.L.; Hughes, C.R.
Book Title: Geochemistry of Clay-Pore Fluid Interactions
City: London
Publisher: Chapman & Hall
Keywords: silicates, clays, smectite, montmorillonite, weathering, batch experiments, mixed flow experiments, low pressure, low temperature, low pH, acidic, laboratory study

Reference Type: Journal Article
Record Number: 393
Author: Gallinari, M.; Ragueneau, O.; Corrin, L.; Demaster, D.J.; Treguer, P.
Year: 2002
Title: The importance of water column processes on the dissolution properties of biogenic silica in deep-sea sediments I. Solubility
Journal: Geochimica et Cosmochimica Acta
Volume: 66
Issue: 15
Pages: 2701-2717
Date: February 5, 2002

Reference Type: Journal Article
Record Number: 32
Author: Ganor, J.; Lasaga, A.C.
Year: 1994
Title: The effects of oxalic acid on kaolinite dissolution rate
Journal: Mineralogical magazine
Volume: 58A
Pages: 315-316
Keywords: silicates, clays, kaolinite, oxalic acid, dissolution kinetics, organic acids, elevated temperature, mixed-flow experiments, low pH, laboratory study, low pressure, acidic
Notes: Proceedings of the 1994 V.M. Goldschmidt Conference, Edinburgh, Scotland

Reference Type: Conference Proceedings
Record Number: 334
Author: Ganor, J.; Metz, V.
Year of Conference: 2001
Title: To stir or not to stir - implications for silicate dissolution experiments
Editor: Cidu, R.
Conference Name: 10th International Symposium on Water-Rock Interaction - WRI-10
Conference Location: Villasimius, Italy, 10-15 July 2001
Publisher: A.A. Balkema, Rotterdam
Volume: 1
Number of Volumes: 2
Pages: 271-274

Keywords: dissolution kinetics, laboratory study, flow-through experiments, silicates, clays, kaolinite, low pH, acidic, low pressure, low temperature, elevated temperature, stirring,

Reference Type: Journal Article
Record Number: 163
Author: Ganor, J.; Mogollón, J.L.; Lasaga, A.C.
Year: 1999
Title: Kinetics of gibbsite dissolution under low ionic strength conditions
Journal: Geochimica et Cosmochimica Acta
Volume: 63
Issue: 11/12
Pages: 1635-1651
Keywords: synthetic, hydroxides, gibbsite, dissolution kinetics, low temerature, low pH, flow-through experiments, column experiments, laboratory study

Reference Type: Journal Article
Record Number: 455
Author: Ganor, J.; Roueff, E.; Erel, Y.; Blum, J.D.
Year: 2005
Title: The dissolution kinetics of a granite and its minerals - Implications for comparison between laboratory and field dissolution rates
Journal: Geochimica et Cosmochimica Acta
Volume: 69
Issue: 3
Pages: 607-621
Keywords: dissolution kinetics, laboratory study, low pressure, low temperature, low pH, acidic, flow experiments, flow-through experiments, silicates, feldspars, micas, plagioclase, microcline, biotite

Reference Type: Conference Proceedings
Record Number: 192
Author: Gas'kova, O.L.; Kolonin, G.R.
Year of Conference: 1995
Title: Theoretical modeling of mineral dissolution at sulphide mine dumps and tailings: A kinetic approach
Editor: Kharaka, Y.F.; Chudaev, O.V.
Conference Name: 8th International Symposium on Water-Rock Interaction - WRI-8
Conference Location: Vladivostok, Russia, 15-19 August 1995
Publisher: A.A. Balkema
Pages: 149-152
Keywords: sulphides, pyrite, galena, sphalerite, chalcopyrite, dissolution kinetics, oxidation kinetics, review study, low temperature, low pressure, low pH, acidic

Reference Type: Conference Proceedings
Record Number: 179
Author: Gautelier, M.; Schott, J.; Dandurand, J.-L.
Year of Conference: 1996
Title: Dissolution kinetics of dolomite in hydrochloric acid
Conference Name: 1996 V.M. Goldschmidt Conference
Conference Location: Heidelberg, Germany, March 31 - April 4, 1996
Publisher: Cambridge Publications
Pages: 195
Series Title: Journal of Conference Abstracts
Keywords: carbonates, dolomite, dissolution kinetics, mixed flow equipment, low temperature, elevated temperature, low pH, acidic

Reference Type: Journal Article

Record Number: 273
Author: Gautier, J.-M.; Oelkers, E.H.; Schott, J.
Year: 2001
Title: Are quartz dissolution rates proportional to B.E.T. surface areas?
Journal: Geochimica et Cosmochimica Acta
Volume: 65
Issue: 7
Pages: 1059-1070
Keywords: silicates, quartz, dissolution kinetics, laboratory study, surface areas, high temperature, high pressure, mixed flow experiments, surface roughness, mid pH, neutral

Reference Type: Journal Article
Record Number: 181
Author: Gautier, J.-M.; Schott, J.; Oelkers, E.H.
Year: 1998
Title: An experimental study of quartz precipitation and dissolution rates at 200°C
Journal: Mineralogical Magazine
Volume: 62A
Pages: 509-510
Keywords: silicates, quartz, dissolution kinetics, precipitation kinetics, high temperature, high pressure, mid pH, neutral, laboratory study
Notes: Proceedings of the 1998 V.M. Goldschmidt Conference, Toulouse, France

Reference Type: Journal Article
Record Number: 156
Author: Gérard, F.; Fritz, B.; Clément, A.; Crovisier, J.-L.
Year: 1998
Title: General implications of aluminium speciation-dependant kinetic dissolution rate law in water-rock modelling
Journal: Chemical Geology
Volume: 151
Pages: 247-258
Keywords: dissolution kinetics, silicates, micas, modelling study, albite, K-feldspar, feldspars, muscovite, low pH, mid pH, neutral pH, high pH, low temperature, high temperature, acidic, alkaline

Reference Type: Journal Article
Record Number: 407
Author: Gerson, A.R.; O'Dea, A.R.
Year: 2003
Title: A quantum chemical investigation of the oxidation and dissolution mechanisms of galena
Journal: Geochimica et Cosmochimica Acta
Volume: 67
Issue: 5
Pages: 813-822
Date: August 20, 2002
Keywords: galena, sulphides, activation energy, theoretical study, dissolution kinetics, oxidation kinetics, PbS, reaction mechanisms

Reference Type: Conference Proceedings
Record Number: 330
Author: Ghiara, M.R.; Petti, C.; Lonis, R.
Year of Conference: 2001
Title: Experimental study on clinoptilolite and mordenite crystallization
Editor: Cidu, R.
Conference Name: 10th International Symposium on Water-Rock Interaction - WRI-10
Conference Location: Villasimius, Italy, 10-15 July 2001

Publisher: A.A. Balkema, Rotterdam
Volume: 1
Number of Volumes: 2
Pages: 709-712
Keywords: silicates, clinoptilolite, mordenite, zeolites, glass, amorphous, laboratory study, high temperature, elevated pressure, batch experiments, high pH, alkaline, precipitation kinetics

Reference Type: Journal Article
Record Number: 389
Author: Giammar, D.E.; Hering, J.G.
Year: 2002
Title: Equilibrium and kinetic aspects of soddyite dissolution and secondary phase precipitation in aqueous suspension
Journal: Geochimica et Cosmochimica Acta
Volume: 66
Issue: 18
Pages: 3235-3245
Date: April 22, 2002
Keywords: silicates, soddyite, dissolution kinetics, flow-through experiments, uranium silicate, batch experiments, low temperature, low pressure, laboratory study, neutral , mid pH

Reference Type: Journal Article
Record Number: 24
Author: Gin, S.; Godon, N.; Mestre, J.P.; Vernaz, E.Y.
Year: 1994
Title: Experimental investigation of aqueous corrosion of R7T7 nuclear glass at 90^{o}C in the presence of organic species
Journal: Applied Geochemistry
Volume: 9
Pages: 255-269
Keywords: nuclear, glass, amorphous, corrosion, organic acids, dissolution kinetics, low pH, mid pH, elevated temperature, laboratory study, batch experiments, low pressure, acidic, neutral

Reference Type: Conference Proceedings
Record Number: 333
Author: Gin, S.; Jégou, C.
Year of Conference: 2001
Title: Limiting mechanisms of borosilicate glass alteration kinetics: Effect of glass composition
Editor: Cidu, R.
Conference Name: 10th International Symposium on Water-Rock Interaction - WRI-10
Conference Location: Villasimius, Italy, 10-15 July 2001
Publisher: A.A. Balkema, Rotterdam
Volume: 1
Number of Volumes: 2
Keywords: borosilicate, glass, amorphous, dissolution kinetics, laboratory study, elevated temperature, low pressure, high pH, alkaline

Reference Type: Journal Article
Record Number: 42
Author: Gislason, S.R.; Heaney, P.J.; Oelkers, E.H.; Schott, J.
Year: 1997
Title: Kinetic and thermodynamic properties of maganite, a novel silica polymorph
Journal: Geochimica et Cosmochimica Acta
Volume: 61
Issue: 6
Pages: 1193-1204

Keywords: silicates, silica, moganite, dissolution kinetics, mixed flow experiments, laboratory study, low pH, elevated temperature, elevated pressure, acidic

Reference Type: Journal Article
Record Number: 378
Author: Gislason, S.R.; Oelkers, E.H.
Year: 2003
Title: Mechanism, rates, and consequences of basaltic glass dissolution : II. An experimental study of the dissolution rates of basaltic glass as a function of pH and temperature
Journal: Geochimica et Cosmochimica Acta
Volume: 67
Issue: 20
Pages: 3817-3832
Date: February 18, 2003
Keywords: glass, basalt, amorphous, dissolution kinetics, laboratory study, mixed flow experiments, low temperature, acidic, high pH, alkaline, low pH, mid pH, neutral, elevated temperature, high temperature, activation energy

Reference Type: Journal Article
Record Number: 388
Author: Giudici, G. De
Year: 2002
Title: Surface control vs. diffusion control during calcite dissolution: Dependence of step-edge velocity upon solution pH
Journal: American Mineralogist
Volume: 87
Pages: 1279-1285
Date: 2002
Keywords: carbonates, calcite, dissolution kinetics, low temperature, low pressure, flow experiments, low pH, acidic, neutral, mid pH, laboratory study, AFM, atomic force microscopy

Reference Type: Journal Article
Record Number: 269
Author: Giudici, G.D.; Zuddas, P.
Year: 2001
Title: In situ investigation of galena dissolution in oxygen saturated solution: Evolution of surface features and kinetic rate
Journal: Geochimica et Cosmochimica Acta
Volume: 65
Issue: 9
Pages: 1381-1389
Keywords: galena, sulphides, dissolution kinetics, laboratory study, AFM, atomic force microscopy, flow experiments, low pH, low temperature, oxidising conditions, acidic, low pressure, surface layers

Reference Type: Thesis
Record Number: 447
Author: Glover, E.
Year: 2003
Title: Dissolution kinetics of stilbite and stellerite at pH 8-12.5
Academic Department: School of Life and Environmental Sciences
City: Nottingham
University: University of Nottingham
Number of Pages: 14
Keywords: silicates, dissolution kinetics, laboratory study, acid pH, neutral, high pH, alkaline, batch experiments, stillbite, stellerite, zeolites

Reference Type: Journal Article
Record Number: 180
Author: Golubev, S.V.; Pokrovsky, O.S.; Savenko, V.S.
Year: 1998
Title: Kinetics of calcium and magnesium phosphates precipitation from seawater
Journal: Mineralogical Magazine
Volume: 62A
Pages: 533-534
Keywords: precipitation kinetics, apatite, phosphates, low temperature, mid pH, neutral
Notes: Proceedings of the 1998 V.M. Goldschmidt Conference, Toulouse, France

Reference Type: Journal Article
Record Number: 391
Author: Gonzalez, E.; Ballesteros, M.C.; Rueda, E.H.
Year: 2002
Title: Reductive dissolution kinetics of Al-substituted goethites
Journal: Clays and Clay Minerals
Volume: 50
Issue: 4
Pages: 470-477
Date: 2002
Keywords: oxides, hydroxides, geothite, dissolution kinetics, laboratory study, mid pH, neutral, low temperature, low pressure, elevated temperature, reducing conditions, batch experiments, laboratory study, activation energy, synthetic, EDTA

Reference Type: Journal Article
Record Number: 95
Author: Gout, R.; Oelkers, E.H.; Schott, J.; Zwick, A.
Year: 1997
Title: The surface chemistry and structure of acid-leached albite: New insights on the dissolution mechanism of the alkali feldspars
Journal: Geochimica et Cosmochimica Acta
Volume: 61
Issue: 14
Pages: 3013-3018
Keywords: silicates, albite, feldspars, dissolution kinetics, mixed flow experiments, laboratory study, low pH, high temperature, high pressure, raman, surface chemistry, acidic

Reference Type: Journal Article
Record Number: 216
Author: Grasby, S.E.; Hutcheon, I.
Year: 1999
Title: Chemical dynamics and weathering rates of a carbonate basin Bow River, southern Alberta
Journal: Applied Geochemistry
Volume: 15
Issue: 1
Pages: 67-77
Keywords: dissolution kinetics, weathering rates, denudation, field study

Reference Type: Journal Article
Record Number: 83
Author: Gratz, A.J.; Bird, P.
Year: 1993
Title: Quartz dissolution: Theory of rough and smooth surfaces
Journal: Geochimica et Cosmochimica Acta

Volume: 57
Pages: 977-989
Keywords: silicates, quartz, dissolution kinetics, surface roughness, theoretical study

Reference Type: Journal Article
Record Number: 84
Author: Gratz, A.J.; Bird, P.
Year: 1993
Title: Quartz dissolution: Negative crystal experiments and a rate law
Journal: Geochimica et Cosmochimica Acta
Volume: 57
Pages: 965-976
Keywords: silicates, quartz, dissolution kinetics, laboratory study, low pH, mid pH, neutral, high pH, surface areas, acidic, alkaline

Reference Type: Journal Article
Record Number: 86
Author: Gratz, A.J.; Bird, P.; Quiro, G.B.
Year: 1990
Title: Dissolution of quartz in aqueous basic solution, 106-236 °C: Surface kinetics of 'perfect' crystallographic faces
Journal: Geochimica et Cosmochimica Acta
Volume: 54
Pages: 2911-2922
Keywords: silicates, quartz, dissolution kinetics, high temperature, high pressure, laboratory study, batch experiments, high pH, alkaline

Reference Type: Journal Article
Record Number: 123
Author: Greenberg, J.; Tomson, M.
Year: 1992
Title: Precipitation and dissolution kinetics and equilibria of aqueous ferrous carbonate vs temperature
Journal: Applied Geochemistry
Volume: 7
Pages: 185-190
Keywords: carbonates, siderite, dissolution kinetics, precipitation kinetics, laboratory study, elevated temperature, elevated pressure, batch experiments, reducing conditions

Reference Type: Journal Article
Record Number: 379
Author: Guidry, M.W.; Mackenzie, F.T.
Year: 2003
Title: Experimental study of igneous and sedimentary apatite dissolution: Control of pH, distance from equilibrium, and temperature on dissolution rates
Journal: Geochimica et Cosmochimica Acta
Volume: 67
Issue: 16
Pages: 2949-2963
Date: April 8, 2003
Keywords: phosphates, apatite, dissolution kinetics, laboratory study, low temperature, neutral, mid pH, low pH, acidic, fluidised bed experiments, mixed flow experiments, weathering, near equilibrium, activation energy, low pressure

Reference Type: Journal Article
Record Number: 366

Author: Hamilton, J.P.; Brantley, S.L.; Pantano, C.G.; Criscenti, L.J.; Kubicki, J.D.
Year: 2001
Title: Dissolution of nepheline, jadeite and albite glasses: Toward better models for aluminosilicate dissolution
Journal: Geochimica et Cosmochimica Acta
Volume: 65
Issue: 21
Pages: 3683-3702
Date: June 20, 2001
Keywords: silicates, nepheline, jadeite, albite, dissolution kinetics, laboratory study, batch experiments, low temperature, low pressure, low pH, mid pH, glass, amorphous, feldspars, leaded layers, leaching, surface layers, reaction mechanisms, pyroxenes, neutral, high pH, alkaline, dissolution

Reference Type: Journal Article
Record Number: 195
Author: Hamilton, J.P.; Pantano, C.G.; Brantley, S.L.
Year: 1998
Title: The dissolution behaviour of crystalline and amorphous albite in acidic and basic environments at 25°C
Journal: Mineralogical Magazine
Volume: 62A
Pages: 565-566
Keywords: silicates, albite, feldspar, dissolution kinetics, amorphous, laboratory study, low pH, mid pH, neutral, high pH, low temperature, low pressure, acidic, alkaline
Notes: Proceedings of the 1998 V.M. Goldschmidt Conference, Toulouse, France

Reference Type: Journal Article
Record Number: 268
Author: Hamilton, J.P.; Pantano, C.G.; Brantley, S.L.
Year: 2000
Title: Dissolution of albite glass and crystal
Journal: Geochimica et Cosmochimica Acta
Volume: 64
Issue: 15
Pages: 2603-2615
Keywords: silicates, albite, amorphous, feldspars, dissolution kinetics, laboratory study, low pH, mid pH, neutral, low temperature, low pressure, batch experiments, acidic, flow-through experiments, XPS, X-ray photoelectron spectroscopy, mixed flow experiments, surface layers, leached layers, synthetic

Reference Type: Journal Article
Record Number: 429
Author: Harouiya, N.; Oelkers, E.H.
Year: 2004
Title: An experimental study of the effect of aqueous fluoride on quartz and alkali-feldspar dissolution rates.
Journal: Chemical Geology
Volume: 205
Pages: 155-167

Reference Type: Journal Article
Record Number: 70
Author: Hawkins, D.B.
Year: 1981
Title: Kinetics of glass dissolution and zeolite formation under hydrothermal conditions
Journal: Clays and Clay Minerals
Volume: 29
Issue: 5
Pages: 331-340

Keywords: glass, amorphous, dissolution kinetics, zeolites, laboratory study, high temperature, high prerssure, mordenite, phillipsite, clinoptilolite, batch experiments

Reference Type: Journal Article
Record Number: 7
Author: Hayes, D.; Cody, R.D.
Year: 1987
Title: Gypsum dissolution using a soxhlet extractor
Journal: Journal of Sedimentary Petrology
Volume: 57
Issue: 4
Pages: 772-773
Keywords: sulphates, gypsum, dissolution kinetics, mid pH, neutral, low pressure, laboratory study

Reference Type: Book Section
Record Number: 69
Author: Hayhurst, D.T.; Sand, L.B.
Year: 1977
Title: Crystallization kinetics and properties of Na, K-phillipsites
Editor: Katzer, J.R.
Book Title: Molecular sieves II
Publisher: American Chemical Society Symposium Series
Volume: 40
Pages: 219-232
Keywords: silicates, zeolites, phillipsite, precipitation kinetics, laboratory study, low temperature, low pressure, high temperature, high pressure, batch experiments

Reference Type: Journal Article
Record Number: 313
Author: Hayward, P.J.; Doern, D.C.; George, I.M.
Year: 1990
Title: Dissolution of a sphene glass-ceramic, and of its component sphene and glass phases, in Ca-Na-Cl brines
Journal: Journal of the American Ceramic Society
Volume: 73
Issue: 3
Pages: 544-551
Keywords: silicates, sphene, glass, ceramic, dissolution kinetics, laboratory study, batch experiments, low temperature, high temperature, low pressure, neutral, mid pH, amorphous, elevated temperature

Reference Type: Journal Article
Record Number: 108
Author: Hellmann, R.
Year: 1994
Title: A leached layer hydrolysis model: a better way to understand feldspar dissolution at elevated temperatures and pressures?
Journal: Mineralogical Magazine
Volume: 58A
Pages: 400-401
Keywords: silicates, feldspars, dissolution kinetics, leached layer, elevated temperature, high temperature, high pressure, review study
Notes: Proceedings of the 1994 V.M. Goldschmidt Conference, Edinburgh, Scotland

Reference Type: Journal Article
Record Number: 102
Author: Hellmann, R.; Eggleston, C.M.; Hochella, M.F. Jr.; Crerar, D.A.

Year: 1990
Title: The formation of leached layers on albite surfaces during dissolution under hydrothermal conditins
Journal: Geochimica et Cosmochimica Acta
Volume: 54
Pages: 1267-1281
Keywords: silicates, albite, feldspars, dissolution kinetics, leached layer, high temperature, high pressure, laboratory study, flow experiments

Reference Type: Journal Article
Record Number: 131
Author: Herman, J.S.; White, W.B.
Year: 1985
Title: Dissolution kinetics of dolomite: Effects of lithology and fluid flow velocity
Journal: Geochimica et Cosmochimica Acta
Volume: 49
Pages: 2017-2026
Keywords: carbonates, dolomite, dissolution kinetics, laboratory study, batch experiments, low temperature, low pressure, low pH, acidic

Reference Type: Journal Article
Record Number: 318
Author: Heydemann, A.
Year: 1966
Title: Über die chemische verwitterung von tonmineralen (experimentelle untersuchungen) (in german)
Journal: Geochimica et Cosmochimica Acta
Volume: 30
Pages: 995-1035
Keywords: silicates, smectite, kaolinite, illite, montmorillonite, clays, dissolution kinetics, laboratory study, low pH, acidic, mid pH, neutral, high pH, alkaline, low temperature, low pressure

Reference Type: Journal Article
Record Number: 390
Author: Higgins, S.R.; Jordan, G.; Eggleston, C.M.
Year: 2002
Title: Dissolution kinetics of magnesite in acidic aqueous solution: A hydrothermal atomic force microscopy study assessing step kinetics and dissolution flux
Journal: Geochimica et Cosmochimica Acta
Volume: 66
Issue: 18
Pages: 3201-3210
Date: April 2, 2002
Keywords: carbonates, magnesite, dissolution kinetics, acidic, laboratory study, AFM, atomic force microscopy, low pH, low temperature, elevated temperature, low pressure, flow experiments, activation energy

Reference Type: Book Section
Record Number: 411
Author: Higgins, S.R.; Stack, A.G.; Knauss, K.G.; Eggleston, C.M.; Jordan, G.
Year: 2002
Title: Probing molecular-scale adsorbtion and dissolution-growth processes using nonlinear optical and scanning probe methods suitable for hydrothermal applications
Editor: Hellman, R.; Wood, S.A.
Book Title: Water-Rock Interactions, Ore Deposits, and Envionmental Geochemistry: A Tribute to David A. Crear
Publisher: The Geochemical Society, Special Publication No. 7, 2002
Pages: 111-128

Keywords: sulphates, barite, dissolution kinetics, precipitation kinetics, AFM, atomic force microscopy, SHG, elevated temperature, low pressure, mid pH, neutral, flow experiment, second harmonic generation, laboratory study

Reference Type: Journal Article
Record Number: 283
Author: Hinsinger, P.; Barros, O.N.F.; Benedetti, M.F.; Noack, Y.; Callot, G.
Year: 2001
Title: Plant-induced weathering of a basaltic rock: Experimental evidence
Journal: Geochimica et Cosmochimica Acta
Volume: 65
Issue: 1
Pages: 137-152
Keywords: dissolution kinetics, weathering, basalt, laboratory experiments, low temperature, low pressure, neutral, mid pH, plants

Reference Type: Conference Proceedings
Record Number: 258
Author: Hirano, N.; Hayashi, Y.; Tsuchiya, N.; Nakatsuka, K.
Year of Conference: 2000
Title: Dissolution behaviour of quartz by supercritical water
Editor: Yanagisawa, K.; Feng, Q.
Conference Name: Joint Sixth International Symposium on Hydrothermal Reactions & Fourth International Conference on Solvo-Thermal Reactions
Conference Location: Kochi, Japan
Pages: 298-301
Keywords: silicates, quartz, dissolution kinetics, laboratory study, supercritical water, high temperature, high pressure, batch experiments

Reference Type: Journal Article
Record Number: 194
Author: Hodson, M.E.
Year: 1998
Title: Measurements of internal and external surface area in feldspars - implications for mineral dissolution studies
Journal: Mineralogical Magazine
Volume: 62A
Pages: 634-635
Keywords: silicates, feldspars, sanidine, perthite, microcline, dissolution kinetics, surface areas, laboratory study
Notes: Proceedings of the 1998 V.M. Goldschmidt Conference, Toulouse, France

Reference Type: Journal Article
Record Number: 150
Author: Hodson, M.E.
Year: 1999
Title: Micropore surface area variation with grain size in unweathered alkali feldspars: Implications for surface roughness and dissolution studies
Journal: Geochimica et Cosmochimica Acta
Volume: 62
Issue: 21/22
Pages: 3429-3435
Keywords: silicates, feldspars, dissolution kinetics, surface roughness, surface areas, laboratory study, sanidine, perthite, microline

Reference Type: Conference Proceedings

Record Number: 418
Author: Hodson, M.E.
Year of Conference: 2002
Title: Is BET surface area proportional to reactive surface area?
Conference Name: Geochemistry of Crustal Fluids
Conference Location: Seefeld in Tirol, Austria
Pages: 86-87
Keywords: surface areas, dissolution kinetics, laboratory study, hornblende, anorthite, orthoclase, silicates, feldspars, acidic, low pH, flow experiments, low temperature, low pressure

Reference Type: Journal Article
Record Number: 438
Author: Hodson, M.E.
Year: 2003
Title: The influence of Fe-rich coatings on the dissolution of anorthite at pH 2.6.
Journal: Geochimica et Cosmochimica Acta
Volume: 67
Issue: 18
Pages: 3355-3363

Reference Type: Journal Article
Record Number: 16
Author: Holdren, G.R. Jr.; Adams, J.E.
Year: 1982
Title: Parabolic dissolution kinetics of silicate minerals: An artifact of nonequilibrium precipitation processes
Journal: Geology
Volume: 10
Pages: 186-190
Keywords: silicates, dissolution kinetics, laboratory study, low pressure, low temperature, mid pH, neutral

Reference Type: Journal Article
Record Number: 237
Author: Holmes, P.R.; Crundwell, F.K.
Year: 2000
Title: The kinetics of the oxidation of pyrite by ferric ions and dissolved oxygen: An electrochemical study
Journal: Geochimica et Cosmochimica Acta
Volume: 64
Issue: 2
Pages: 263-274
Keywords: pyrite, sulphides, dissolution kinetics, oxidation kinetics, low temperature, low pressure, low pH, laboratory study, acidic

Reference Type: Journal Article
Record Number: 104
Author: Huang, W-L.; Longo, J.M.
Year: 1992
Title: The effect of organics on feldspar dissolution and the development of secondary porosity
Journal: Chemical geology
Volume: 98
Pages: 271-292
Keywords: silicates, feldspars, oligoclase, K-feldspar, anorthite, organics, laboratory study, elevated temperature, high pressure, low pH, mid pH, neutral, acidic

Reference Type: Conference Proceedings
Record Number: 260

Author: Huber, M.; Fehr, K.T.; Zuern, S.G.
Year of Conference: 2000
Title: Kinetics of Al-tobermorite formation under hydrothermal conditions
Editor: Yanagisawa, K.; Feng, Q.
Conference Name: Joint Sixth International Symposium on Hydrothermal Reactions & Fourth International Conference on Solvo-Thermal Reactions
Conference Location: Kochi, Japan
Pages: 274-277
Keywords: CSH, calcium silicate hydrate, cement minerals, precipitation kinetics, laboratory study, tobermorite, hydrogarnet, hydrogrossular, high temperature, elevated pressure, batch experiments

Reference Type: Journal Article
Record Number: 286
Author: Huertas, F.J.; Caballero, E.; Cisneros, C.J. de; Huertas, F.; Linares, J.
Year: 2001
Title: Kinetics of montmorillonite dissolution in granitic solutions
Journal: Applied Geochemistry
Volume: 16
Pages: 397-407
Keywords: silicates, montmorillonite, clays, smectite, dissolution kinetics, laboratory study, low temperature, elevated temperature, mid pH, neutral, low pressure, batch experiments, activation energy

Reference Type: Journal Article
Record Number: 65
Author: Huertas, F.J.; Chou, L.; Wollast, R.
Year: 1998
Title: Mechanism of kaolinite dissolution at room temperature and pressure: Part 1. Surface speciation
Journal: Geochimica et Cosmochimica Acta
Volume: 62
Issue: 3
Pages: 417-431
Keywords: silicates, clays, kaolinite, dissolution kinetics, low pH, mid pH, neutral, high pH, surface speciation, low pressure, low temperature, laboratory study, acidic, alkaline

Reference Type: Journal Article
Record Number: 244
Author: Huertas, F.J.; Chou, L.; Wollast, R.
Year: 1999
Title: Mechanism of kaolinite dissolution at room temperature and pressure. Part II: kinetic study
Journal: Geochimica et Cosmochimica Acta
Volume: 63
Issue: 19/20
Pages: 3261-3275
Keywords: silicates, kaolinite, clays, dissolution kinetics, low temperature, low pressure, batch experiments, low pH, mid pH, neutral, high pH, laboratory study, acidic, alkaline

Reference Type: Journal Article
Record Number: 374
Author: Huertas, F.J.; Chou, L.; Wollast, R.
Year: 2001
Title: Kaolinite dissolution rates in batch experiments at room temperature and pressure: Reply to "On the interpretation of closed system mineral dissolution experiments," Comment by Eric H. Oelkers, Jacques Schott, and Jean-Luc Devidal
Journal: Geochimica et Cosmochimica Acta
Volume: 65
Issue: 23

Pages: 4433-4434
Date: June 11, 2001
Keywords: silicates, clays, kaolinite, dissolution kinetics, batch experiments, low pH, low temperature, acidic, low pressure, laboratory study

Reference Type: Journal Article
Record Number: 12
Author: Hull, A.B.; Hull, J.R.
Year: 1987
Title: Geometric modelling of dissolution kinetics: Application to apatite
Journal: Water Resources Research
Volume: 23
Issue: 4
Pages: 707-714
Keywords: phosphates, apatite, modelling study, dissolution kinetics, review study

Reference Type: Journal Article
Record Number: 287
Author: Icenhower, J.P.; Dove, P.M.
Year: 2000
Title: The dissolution kinetics of amorphous silica into sodium chloride solutions: Effects of temperature and ionic strength
Journal: Geochimica et Cosmochimica Acta
Volume: 64
Issue: 24
Pages: 4193-4203
Keywords: silicates, amorphous, silica, dissolution kinetics, laboratory study, elevated temperature, high temperature, low pressure, batch experiments, flow-through experiments, mixed flow experiments, neutral, mid pH, high pressure, low temperature, activation energy, ionic strength, synthetic

Reference Type: Journal Article
Record Number: 312
Author: Iwasaki, A.; Sano, T.
Year: 1997
Title: Dissolution behavior of silicalite crystal
Journal: Zeolites
Volume: 19
Pages: 41-46
Keywords: silicates, zeolites, silicalite, dissolution kinetics, laboratory study, batch experiments, alkaline, high pH, high temperature, elevated pressure, activation energy

Reference Type: Conference Proceedings
Record Number: 305
Author: Iwasaki, H.; Iwasaki, F.; Mar'ina, E.A.; Balitsky, V.S.
Year of Conference: 2000
Title: Influence of the degree of supersaturation on growth rates of hydrothermally grown quartz
Conference Name: Joint Sixth International Symposium on Hydrothermal Reactions & Fourth International Conference on Solvo-Thermal Reactions
Conference Location: Kochi, Japan
Keywords: silicates, quartz, precipitation kinetics, saturation state, laboratory study, high temperature, high pressure, neutral, mid pH, high pH, alkaline

Reference Type: Journal Article
Record Number: 349
Author: Jacobson, A.D.; Blum, J.D.; Chamberlain, C.P.; Poage, M.A.; Sloan, V.F.

Year: 2002
Title: Ca/Sr and Sr isotope systematics of a Himalayan glacial chronosequence: Carbonate versus silicate weathering rates as a function of landscape surface age
Journal: Geochimica et Cosmochimica Acta
Volume: 66
Issue: 1
Pages: 13-27
Date: June 28, 2001
Keywords: carbonates, silicates, weathering, field study, dissolution kinetics, upland

Reference Type: Journal Article
Record Number: 219
Author: Janzen, M.P.; Nicholson, R.V.; Scharer, J.M.
Year: 2000
Title: Pyrrhotite reaction kinetics: reaction rates for oxidation by oxygen, ferric iron, and for nonoxidative dissolution
Journal: Geochimica et Cosmochimica Acta
Volume: 64
Issue: 9
Pages: 1511-1522
Keywords: pyrrhotite, sulphides, low pH, batch experiments, laboratory study, dissolution kinetics, oxidation kinetics, acidic

Reference Type: Journal Article
Record Number: 284
Author: Jeschke, A.A.; Vosbeck, K.; Dreybrodt, W.
Year: 2001
Title: Surface controlled dissolution rates of gypsum in aqueous solutions exhibit nonlinear dissolution kinetics
Journal: Geochimica et Cosmochimica Acta
Volume: 65
Issue: 1
Pages: 27-34
Keywords: gypsum, sulphates, synthetic, alabaster, dissolution kinetics, laboratory study, batch experiments, low temperature, low pressure, mid pH, neutral, inhibition

Reference Type: Journal Article
Record Number: 371
Author: Jimenez-Lopez, C.; Caballero, E.; Huertas, F.J.; Romanek, C.S.
Year: 2001
Title: Chemical, mineralogical and isotope behavior, and phase transformation during the preciptation of calcium carbonate minerals from intermediate ionic solution at 25C
Journal: Geochimica et Cosmochimica Acta
Volume: 65
Issue: 19
Pages: 3219-3231
Date: May 4, 2001
Keywords: carbonates, calcite, monohydrocalcite, precipitation kinetics, low temperature, low pressure, batch experiments, mid pH, neutral, laboratory study

Reference Type: Journal Article
Record Number: 443
Author: Jiminez-Lopez, C.; Romanek, C.S.
Year: 2004
Title: Precipitation kinetics and carbon isotope partitioning of inorganic siderite at 25^{o}C and 1 atm
Journal: Geochimica et Cosmochimica Acta
Volume: 68

Issue: 3
Pages: 557-571
Keywords: carbonates, precipitation kinetics, siderite, laboratory study, mid pH, neutral, low temperature, low pressure, free drift experiments, reducing conditions, batch experiments, pH-stat experiments, isotopes

Reference Type: Journal Article
Record Number: 377
Author: Jordan, G.; Higgins, S.R.; Eggleston, C.M.; Knauss, K.G.; Schmahl, W.W.
Year: 2001
Title: Dissolution kinetics of magnesite in acidic aqueous solution, a hydrothermal atomic force microscopy (HAFM) study: Step orientation and kink dynamics
Journal: Geochimica et Cosmochimica Acta
Volume: 65
Issue: 23
Pages: 4257-4266
Date: June 8, 2001
Keywords: carbonates, magnesite, dissolution kinetics, acidic, laboratory study, AFM, atomic force microscopy, low pH, elevated temperature, flow experiments, low pressure

Reference Type: Journal Article
Record Number: 246
Author: Jordan, G.; Higgins, S.R.; Eggleston, C.M.; Swapp, S.M.; Janney, D.E.; Knauss, K.G.
Year: 1999
Title: Acidic dissolution of plagioclase: In-situ observations by hydrothermal atomic force microscopy
Journal: Geochimica et Cosmochimica Acta
Volume: 63
Issue: 19/20
Pages: 3183-3191
Keywords: silicates, plagioclase, feldspars, dissolution kinetics, labradorite, anorthite, high temperature, high pressure, low pH, laboratory study, AFM, atomic force microscopy, acidic

Reference Type: Journal Article
Record Number: 5
Author: Jordan, G.; Rammensee, W.
Year: 1996
Title: Dissolution rates and activation energy for dissolution of brucite (001) : A new method based on the micropictography of crystal surfaces
Journal: Geochimica et Cosmochimica Acta
Volume: 60
Issue: 24
Pages: 5055-5062
Keywords: hydroxides, brucite, dissolution kinetics, activation energy, low temperature, low pressure, laboratory study, low pH, atomic force microscopy, AFM, acidic

Reference Type: Journal Article
Record Number: 186
Author: Jove, C.F.; Oelkers, E.H.; Schott, J.
Year: 1998
Title: An experimental study of the effect of mineral dissolution reactions on the reactive surface and permeability of sandstone
Journal: Mineralogical Magazine
Volume: 62A
Pages: 727-728
Keywords: silicates, quartz, sandstone, laboratory study, flow experiments, low temperature, elevated temperature, high pH, surface areas, alkaline
Notes: Proceedings of the 1998 V.M. Goldschmidt Conference, Toulouse, France

Reference Type: Journal Article
Record Number: 256
Author: Kacirek, H.; Lechert, H.
Year: 1975
Title: Investigations on the growth of zeolite type NaY
Journal: Journal of Physical Chemistry
Volume: 79
Issue: 15
Pages: 1589-1593
Keywords: silicates, synthetic, zeolites, faujasite, precipitation kinetics, laboratory study, batch experiments, low temperature, high pH, low pressure, alkaline

Reference Type: Journal Article
Record Number: 311
Author: Kacirek, H.; Lechert, H.
Year: 1976
Title: Rates of crystallization and a model for the growth of NaY zeolites
Journal: Journal of Physical Chemistry
Volume: 80
Issue: 12
Pages: 1291-1296
Keywords: amorphous, elevated temperature, low pressure, silicates, synthetic, zeolites, faujasite, precipitation kinetics, crystallization kinetics, gels, laboratory study, batch experiments, alkaline, high pH, activation energy

Reference Type: Journal Article
Record Number: 154
Author: Kalinowski, B.E.; Faith-Ell, C.; Schweda, P.
Year: 1998
Title: Dissolution kinetics and alteration of epidote in acidic solutions at 25°C
Journal: Chemical geology
Volume: 151
Pages: 181-197
Keywords: silicates, epidote, dissolution kinetics, low temperature, low pH, mid pH, neutral, flow-through experiments, acidic, laboratory study

Reference Type: Journal Article
Record Number: 3
Author: Kalinowski, B.E.; Schweda, P.
Year: 1996
Title: Kinetics of muscovite, phlogopite and biotite dissolution and alteration at pH 1-4, room temperature
Journal: Geochimica et Cosmochimica Acta
Volume: 60
Issue: 3
Pages: 367-385
Keywords: silicates, micas, muscovite, phlogopite, biotite, dissolution kinetics, laboratory study, low temperature, low pressure, low pH, acidic

Reference Type: Journal Article
Record Number: 306
Author: Kile, D.E.; Eberl, D.D.; Hoch, A.R.; Reddy, M.M.
Year: 2000
Title: An assessment of calcite crystal growth mechanisms based on crystal size distributions
Journal: Geochimica et Cosmochimica Acta
Volume: 64

Issue: 17
Pages: 2937-2950
Keywords: calcite, carbonates, precipitation kinetics, low temperature, low pressure, laboratory study, batch experiments, synthetic, mid pH, high pH, neutral, alkaline

Reference Type: Conference Proceedings
Record Number: 173
Author: Klammer, D.
Year of Conference: 1992
Title: Dissolution of nepheline in an open system
Editor: Kharaka, Y.K.; Maest, A.S.
Conference Name: 7th International Symposium on Water-Rock Interaction - WRI-7
Conference Location: Park City, Utah, USA, 13-18 July 1992
Publisher: A.A. Balkema
Volume: 1
Number of Volumes: 2
Pages: 97-99
Keywords: silicates, nepheline, dissolution kinetics, elevated temperature, low pH, mid pH, neutral, acidic, laboratory study, batch experiments

Reference Type: Journal Article
Record Number: 185
Author: Klewicki, J.K.; Morgan, J.J.
Year: 1998
Title: Rates of dissolution of MnOOH by ligands: pyrophosphate, ethylenediaminetetraacetate, and citrate
Journal: Mineralogical Magazine
Volume: 62A
Pages: 791-792
Keywords: oxides, hydroxides, dissolution kinetics, organics, pyrophosphate, phosphate, EDTA, citrate, laboratory study, low temperature, mid pH, neutral
Notes: Proceedings of the 1998 V.M. Goldschmidt Conference, Toulouse, France

Reference Type: Journal Article
Record Number: 94
Author: Knauss, K.G.; Wolery, T.J.
Year: 1986
Title: Dependence of albite dissolution kinetics on pH and time at 25 °C and 70 °C
Journal: Geochimica et Cosmochimica Acta
Volume: 50
Issue: 11
Pages: 2481-2497
Keywords: silicates, albite, feldspars, dissolution kinetics, laboratory study, low temperature, elevated temperature, low pressure, low pH, mid pH, neutral, high pH, flow-through experiments, acidic, alkaline

Reference Type: Journal Article
Record Number: 80
Author: Knauss, K.G.; Wolery, T.J.
Year: 1988
Title: The dissolution kinetics of quartz as a function of pH and time at 70 °C
Journal: Geochimica et Cosmochimica Acta
Volume: 52
Issue: 1
Pages: 43-53
Keywords: silicates, quartz, dissolution kinetics, elevated temperature, laboratory study, flow-through experiments, low pressure, low pH, mid pH, neutral, high pH, acidic, alkaline

Reference Type: Journal Article
Record Number: 4
Author: Knauss, K.G.; Wolery, T.J.
Year: 1989
Title: Muscovite dissolution kinetics as a function of pH and time at 70°C
Journal: Geochimica et Cosmochimica Acta
Volume: 53
Pages: 1493-1501
Keywords: silicates, micas, muscovite, dissolution kinetics, laboratory study, elevated temperature, flow-through experiments, low pH, acidic, mid pH, neutral, high pH, alkaline, low pressure

Reference Type: Journal Article
Record Number: 43
Author: Knowles-VanCappellen, V.L.; Cappellen, P. Van; Tiller, C.L.
Year: 1997
Title: Probing the charge of reactive sites at the mineral-water interface: Effect of ionic strength on crystal growth kinetics of fluorite
Journal: Geochimica et Cosmochimica Acta
Volume: 61
Issue: 9
Pages: 1871-1877
Keywords: fluorides, fluorite, precipitation kinetics, batch experiments, mid pH, low temperature, low pressure, neutral, laboratory study

Reference Type: Journal Article
Record Number: 439
Author: Kohler, S.J.; Dufaud, F.; Oelkers, E.H.
Year: 2003
Title: An experimental study of illite dissolution kinetics as a function of pH from 1.4 to 12.4 and temperature from 5 to 50^{o}C.
Journal: Geochimica et Cosmochimica Acta
Volume: 67
Issue: 19
Pages: 3583-3594
Keywords: clays, silicates, illite, dissolution kinetics, low temperature, elevated temperature, low pressure, batch experiments, laboratory study, low pH acidic, mid pH, neutral, high pH, alkaline

Reference Type: Journal Article
Record Number: 326
Author: Kokot, Z.J.; Wojciechowska, H.
Year: 1993
Title: A rotating disk study on the rates of hydrotalcite dissolution at 25 °C
Journal: Pharmazie
Volume: 48
Pages: 287-289
Keywords: rotating disc experiments, cement minerals, hydrotalcite, dissolution kinetics, laboratory study, low temperature, low pressure, batch experiments, low pH, acidic

Reference Type: Conference Proceedings
Record Number: 257
Author: Kostomarov, D.V.; Demianets, L.N.; Kuzmina, I.P.
Year of Conference: 2000
Title: Growth kinetics of zinc oxide single crystals in mixed KOH+LiOH solutions
Editor: Yanagisawa, K.; Feng, Q.

Conference Name: Joint Sixth International Symposium on Hydrothermal Reactions & Fourth International Conference on Solvo-Thermal Reactions
Conference Location: Kochi, Japan
Pages: 313-317
Keywords: oxides, ZnO, precipitation kinetics, laboratory study, high temperature, high pressure, impurities

Reference Type: Journal Article
Record Number: 459
Author: Kovanda, F.; Kolousek, D.; Cílová, Z.; Hulínsky, V.
Year: 2005
Title: Crystallization of synthetic hydrotalcite under hydrothermal conditions
Journal: Applied Clay Science
Volume: 28
Pages: 101-109
Keywords: laboratory study, crystallization kinetics, elevated pressure, high pressure, high temperature, batch experiments, hydroxides, carbonates, hydrotalcite, surface areas

Reference Type: Journal Article
Record Number: 47
Author: Kraemer, S.M.; Hering, J.G.
Year: 1997
Title: Influence of solution saturation state on the kinetics of ligand-controlled dissolution of oxide phases
Journal: Geocgimica et Cosmochimica Acta
Volume: 61
Issue: 14
Pages: 2855-2866
Keywords: oxides, hydroxides, saturation state, goethite, dissolution kinetics, laboratory study, batch experiments, mixed flow experiments, ligands, mid pH, low temperature, neutral

Reference Type: Journal Article
Record Number: 44
Author: Kubicki, J.D.; Blake, G.A.; Apitz, S.E.
Year: 1997
Title: Molecular orbital calculations for modelling acetate-aluminosilicate adsorption and dissolution reactions
Journal: Geochimica et Cosmochimica Acta
Volume: 61
Issue: 5
Pages: 1031-1046
Keywords: silicates, dissolution kinetics, theoretical study, acetic acid, acetate, organic acids

Reference Type: Journal Article
Record Number: 232
Author: Lagache, M.
Year: 1965
Title: Contribution à l'étude de l'alt´ration des feldspaths, dans l'eau, entre 100 et 200°C, sous diverses pressions de CO_2, et application à la synthèse des minéraux argileux (in french)
Journal: Bull. Soc. Franç. Minér. Crist.
Volume: 88
Pages: 223-252
Keywords: silicates, dissolution kinetics, high temperature, high pressure, feldspars, albite, labradorite, adularia, batch experiments, laboratory study, CO_2

Reference Type: Journal Article
Record Number: 238
Author: Lång, L.-O.

Year: 2000
Title: Heavy mineral weathering under acidic soil conditions
Journal: Applied Geochemistry
Volume: 15
Pages: 415-423
Keywords: silicates, low pH, soil, apatite, titanite, hornblende, garnet, epidote, zircon, field study, low temperature, low pressure, acidic

Reference Type: Conference Proceedings
Record Number: 304
Author: Laptev, Y.V.; Pal'yanova, G.A.; Kolonin, G.R.
Year of Conference: 2000
Title: Experimental and thernodynamic study of CaF_2 dissolution in water and chloride solutions under hydrothermal conditions (extended abstract)
Conference Name: Joint Sixth International Symposium on Hydrothermal Reactions & Fourth International Conference on Solvo-Thermal Reactions
Conference Location: Kochi, Japan
Keywords: fluorides, fluorite, dissolution kinetics, laboratory study, flow-through experiments, high temperature, high pressure, mid pH, neutral

Reference Type: Journal Article
Record Number: 270
Author: Larsen, O.; Postma, D.
Year: 2001
Title: Kinetics of reductive bulk dissolution of lepidocrocite, ferrihydrite, and goethite
Journal: Geochimica et Cosmochimica Acta
Volume: 65
Issue: 9
Pages: 1367-1379
Keywords: oxides, lepidocrocite, ferrihydrite, goethite, dissolution kinetics, reducing conditions, Fe oxide, batch experiments, laboratory study, low temperature, low pressure, low pH, acidic, abscorbic acid, synthetic

Reference Type: Journal Article
Record Number: 51
Author: Lasaga, A.C.
Year: 1984
Title: Chemical kinetics of water-rock interactions
Journal: Journal of Geophysical Research
Volume: 89
Issue: B6
Pages: 4009-4025
Keywords: review study, dissolution kinetics, silicates, feldspars, pyroxenes, olivine, K-feldspar, nepheline, diopside, enstatite, forsterite, quartz, anorthite, Sr-feldspar, theoretical study

Reference Type: Journal Article
Record Number: 20
Author: Lasaga, A.C.; Rye, A.M.
Year: 1993
Title: Fluid flow and chemical reaction kinetics in metamorphic systems
Journal: American Journal of Science
Volume: 293
Pages: 361-404
Keywords: fluid flow, reaction kinetics, metamorphic systems, modelling, reaction-transport

Reference Type: Journal Article

Record Number: 329
Author: Lea, A.S.; Amonette, J.E.; Baer, D.R.; Liang, Y.; Colton, N.G.
Year: 2001
Title: Microscopic effects of carbonate, manganese, and strontium ions on calcite dissolution
Journal: Geochimica et Cosmochimica Acta
Volume: 65
Issue: 3
Pages: 369-379
Keywords: calcite, carbonates, dissolution kinetics, low temperature, low pressure, laboratory study, AFM, atomic force microscopy, neutral, mid pH, high pH, alkaline, flow experiments, surface chemistry, inhibition

Reference Type: Journal Article
Record Number: 250
Author: Lee, J.-U.; Fein, J.B.
Year: 2000
Title: Experimental study of the effects of *Bacillus subtilis* on gibbsite dissolution rates under near-neutral pH and nutrient-poor conditions
Journal: Chemical Geology
Volume: 166
Pages: 193-202
Keywords: oxides, hydroxides, gibbsite, dissolution kinetics, laboratory study, batch experiments, low temperature, low pressure, low pH, neutral, mid pH, bacteria, microbes, acidic

Reference Type: Journal Article
Record Number: 147
Author: Lee, M.R.; Hodson, M.E.; Parsons, I.
Year: 1998
Title: The role of intragranular microtextures in chemical and mechanical weathering: Direct comparisons of experimentally and naturally weathered alkali feldspars
Journal: Geochimica et Cosmochimica Acta
Volume: 62
Issue: 16
Pages: 2771-2788
Keywords: silicates, feldspars, dissolution kinetics, flow-through experiments, low pH, low temperature, low pressure, acidic, laboratory study, field study, laboratory versus field study

Reference Type: Journal Article
Record Number: 398
Author: Lee, Y-J.; Morse, J.W.
Year: 1999
Title: Calcite precipitation in synthetic veins: implications for the time and fluid volume necessary for vein filling
Journal: Chemical Geology
Volume: 156
Pages: 151-170
Date: 6 October 1998
Keywords: carbonates, precipitation kinetics, laboratory study, mid pH, neutral, low temperature, low pressure, flow experiment, morphology, veins

Reference Type: Journal Article
Record Number: 266
Author: Lengke, M.F.; Tempel, R.N.
Year: 2001
Title: Kinetic rates of amorphous As_2S_3 oxidation at 25 to 40°C and initial pH of 7.3 to 9.4
Journal: Geochimica et Cosmochimica Acta
Volume: 65

Issue: 14
Pages: 2241-2255
Keywords: amorphous, As_2S_3, sulphides, low temperature, elevated temperature, low pressure, mid pH, neutral, high pH, oxidation kinetics, mixed flow experiments, oxidising conditions, alkaline, laboratory study, activation energy, synthetic

Reference Type: Journal Article
Record Number: 406
Author: Lengke, M.F.; Tempel, R.N.
Year: 2003
Title: Natural realgar and amorphous AsS oxidation kinetics
Journal: Geochimica et Cosmochimica Acta
Volume: 67
Issue: 5
Pages: 859-871
Date: September 19, 2002
Keywords: realgar, amorphous, sulphides, dissolution kinetics, oxidation kinetics, mid pH, neutral, low temperature, elevated temperature, activation energy, mixed flow experiments, neutral, synthetic, AsS, oxidising conditions, low pressure, laboratory study, reaction mechanisms

Reference Type: Journal Article
Record Number: 453
Author: Lengke, M.F.; Tempel, R.N.
Year: 2005
Title: Geochemical modeling of arsenic sulfide oxidation kinetics in a mining environment
Journal: Geochimica et Cosmochimica Acta
Volume: 69
Issue: 2
Pages: 341-356
Keywords: oxidation kinetics, modelling study, review study, low pressure, low temperature, elevated temperature, low pH, acidic, mid pH, neutral, high pH, alkaline, sulphides, AsS, As_2S_3, orpiment, realgar, amorphous, activation energy, chemical affinity, carbonates, silicates, feldspars, pyroxenes, pyrite, pyrrhotite, enstatite, diopside, augite, wollastonite, jadeite, spodumene, $MnSiO_3$, anthophyllite, quartz, albite, anorthite, sanidine, nepheline, microcline, calcite, aragonite, dolomite

Reference Type: Thesis
Record Number: 342
Author: Lenham, J.C.
Year: 2001
Title: Dissolution kinetics of heulandite and clinoptilolite under high pH conditions
Academic Department: Department of Life and Environmental Sciences
City: Nottingham
University: University of Nottingham
Thesis Type: MSc
Keywords: silicates, heulandite, clinoptilolite, zeolites, dissolution kinetics, laboratory study, low temperature, elevated temperature, low pressure, mid pH, neutral, high pH, alkaline, batch experiments

Reference Type: Journal Article
Record Number: 77
Author: Lerman, A.; MacKenzie, F.T.; Bricker, O.P.
Year: 1975
Title: Rates of dissolution of aluminosilicates in seawater
Journal: Earth and Planetary Science Letters
Volume: 25
Pages: 82-88

Keywords: silicates, clays, smectite, micas, zeolites, quartz, kaolinite, montmorillonite, bentonite, illite, muscovite, glauconite, analcite, phillipsite, prehnite, clinoptilolite, batch experiments, low temperature, low pressure, mid pH, neutral, dissolution kinetics, seawater

Reference Type: Journal Article
Record Number: 184
Author: Liang, L.; Gu, B.; Hofmann, A.
Year: 1998
Title: Kinetics of iron oxide dissolution as enhanced by organic ligands
Journal: Mineralogical Magazine
Volume: 62A
Pages: 887-888
Keywords: oxides, ferrihydrite, dissolution kinetics, organics, ligands, laboratory study, low pH, low temperature, batch experiments, acidic
Notes: Proceedings of the 1998 V.M. Goldschmidt Conference, Toulouse, France

Reference Type: Journal Article
Record Number: 226
Author: Liermann, L.; Kalinowski, B.E.; Brantley, S.L.; Ferry, J.G.
Year: 2000
Title: Role of bacterial siderophores in dissolution of hornblende
Journal: Geochimica et Cosmochimica Acta
Volume: 64
Issue: 4
Pages: 587-602
Keywords: silicates, hornblende, pyroxene, dissolution kinetics, bacteria, laboratory study, low pH, low temperature, batch experiments, microbes, acidic

Reference Type: Journal Article
Record Number: 236
Author: Lin, F.-C.; Clemency, C.V.
Year: 1981
Title: Dissolution kinetics of phlogopite. I. closed system
Journal: Clays and Clay Minerals
Volume: 29
Issue: 2
Pages: 101-106
Keywords: silicates, phlogopite, micas, low temperature, low pressure, low pH, CO_2, dissolution kinetics, batch experiments, surface areas, acidic

Reference Type: Journal Article
Record Number: 8
Author: Liu, S.; Nancollas, G.H.
Year: 1971
Title: The kinetics of dissolution of calcium sulfate dihydrate
Journal: J. Inorg. Nucl. Chem
Volume: 33
Pages: 2311-2316
Keywords: gypsum, sulfates, dissolution kinetics, low pressure, low temperature, laboratory study

Reference Type: Journal Article
Record Number: 224
Author: Liu, Z.; Dreybrodt, W.
Year: 1997

Title: Dissolution kinetics of calcium carbonate minerals in H_2O-CO_2 solutions in turbulent flow: The role of the difusion boundary layer and the slow reaction $H_2O + CO_2 = H^+ + HCO_3^-$
Journal: Geochimica et Cosmochimica Acta
Volume: 61
Issue: 14
Pages: 2879-2889
Keywords: carbonates, marble, limestone, rotating disk experiments, laboratory study, low temperature, low pressure, dissolution kinetics, precipitation kinetics, CO_2

Reference Type: Journal Article
Record Number: 61
Author: Luce, R.W; Bartlett, R.W.; Parks, G.A.
Year: 1972
Title: Dissolution kinetics of magnesium silicates
Journal: Geochimica et Cosmochimica Acta
Volume: 36
Pages: 35-50
Keywords: silicates, pyroxenes, serpentine, forsterite, enstatite, dissolution kinetics, laboratory study, low pH, mid pH, neutral, high pH, low temperature, low pressure, acidic, alkaline

Reference Type: Journal Article
Record Number: 130
Author: Lund, K.; Fogler, H.S.; McCune, C.C.
Year: 1973
Title: Acidization-1. The dissolution of dolomite in hydrochloric acid
Journal: Chemical Engineering Science
Volume: 28
Pages: 691-700
Keywords: carbonates, dolomite, dissolution kinetics, laboratory, study, rotating disc experiments, low temperature, high temperature, low pressure, high pressure, low pH, acidic

Reference Type: Journal Article
Record Number: 45
Author: Luther, G.W.
Year: 1997
Title: Comment on 'Confirmation of a sulphur-rich layer on pyrite after oxidative dissolution by Fe(III) ions around pH 2' by K. Sasaki, M. Tsunekawa, T. Ohtsuka and H. Konno
Journal: Geochimica et Cosmochimica Acta
Volume: 61
Issue: 15
Pages: 3269-3271
Keywords: sulphides, pyrite, oxidation kinetics, dissolution kinetics, review study

Reference Type: Journal Article
Record Number: 405
Author: Luttge, A.; Winkler, U.; Lasaga, A.C.
Year: 2003
Title: Interferometric study of the dolomite dissolution: A new conceptual model for mineral dissolution
Journal: Geochimica et Cosmochimica Acta
Volume: 67
Issue: 6
Pages: 1099-1116
Date: January 18, 2002
Keywords: dolomite, carbonates, dissolution kinetics, laboratory study, interferometry, low pH, acidic, low temperature, low pressure, flow experiment

Reference Type: Journal Article
Record Number: 328
Author: MacInnis, I.N.; Brantley, S.L.
Year: 1992
Title: The role of dislocations and surface morphology in calcite dissolution
Journal: Geochimica et Cosmochimica Acta
Volume: 56
Pages: 1113-1126
Keywords: calcite, carbonates, dissolution kinetics, low temperature, elevated temperature, low pressure, laboratory study, rotating disk experiments, neutral, mid pH, morphology, activation energy, dislocations

Reference Type: Conference Proceedings
Record Number: 291
Author: Made, B.; fritz, B.
Year of Conference: 1990
Title: The comparison of weathering solutions on granitic rocks: Comparison between field observations and water-rock interaction simulations based on thermodynamic and kinetic laws
Conference Name: 2nd International Symposium on the Geochemistry of the Earth's Surface and of Mineral Formation
Conference Location: Aix en Provence, France, July 2-8 1990
Pages: 100-103
Keywords: dissolution kinetics, weathering, granite, theoretical study, modelling study, biotite, K-feldspar, anorthite, albite, muscovite, quartz, silicates, micas, feldspars, activation energy, low temperature, low pressure

Reference Type: Conference Proceedings
Record Number: 172
Author: Made, B.; Fritz, B.
Year of Conference: 1992
Title: Theoretical approach and modelling of the dissolution and precipitation of minerals under kinetic control
Editor: Kharaka, Y.K.; Maest, A.S.
Conference Name: 7th International Symposium on Water-Rock Interaction - WRI-7
Conference Location: Park City, Utah, USA, 13-18 July 1992
Publisher: A.A. Balkema
Volume: 1
Number of Volumes: 2
Pages: 101-105
Keywords: theoretical study, dissolution kinetics, precipitation kinetics

Reference Type: Journal Article
Record Number: 68
Author: Malengreau, N.; Sposito, G.
Year: 1997
Title: Short-time dissolution mechanisms of kaolinite tropical soils
Journal: Geochimica et Cosmochimica Acta
Volume: 61
Issue: 20
Pages: 4297-4307
Keywords: silicates, clays, kaolinite, dissolution kinetics, weathering, batch experiments, low temperature, low pressure, laboratory study, low pH, mid pH, neutral, acidic

Reference Type: Journal Article
Record Number: 48
Author: Malmstrom, M.; Banwart, S.
Year: 1997
Title: Biotite dissolution at 25°C: The pH dependence of dissolution rate and stoichiometry

Journal: Geochimica et Cosmochimica Acta
Volume: 61
Issue: 14
Pages: 2779-2799
Keywords: silicates, micas, biotite, dissolution kinetics, laboratory study, flow experiments, low pH, acidic, mid pH, neutral, high pH, alkaline

Reference Type: Conference Proceedings
Record Number: 27
Author: Malmstrom, M.; Banwart, S.; Lewenhagen, J.; Duro, L.; Bruno, J.
Year of Conference: 1994
Title: The dissolution of biotite and chlorite at 25°C in the near neutral pH region
Conference Name: Fourth international conference on the chemistry and migration behaviour of actinides and fission products in the geosphere
Pages: 55-61
Keywords: silicates, micas, biotite, chlorite, dissolution kinetics, low temperature, low pressure, neutral, mid pH, flow-through experiments, batch experiments, laboratory study

Reference Type: Thesis
Record Number: 341
Author: Mann, N.
Year: 1999
Title: Dissolution kinetics of zeolites in the heulandite group
Academic Department: Department of Environmental Science
City: Nottingham
University: University of Nottingham
Thesis Type: MSc
Keywords: silicates, heulandite, clinoptilolite, zeolites, dissolution kinetics, laboratory study, low temperature, elevated temperature, low pressure, low pH, acidic, mid pH, neutral, high pH, alkaline, batch experiments

Reference Type: Journal Article
Record Number: 294
Author: Manning, D.A.C.; Rae, E.I.C.; Small, J.S.
Year: 1991
Title: An exploratory study of acetate decomposition and dissolution of quartz and Pb-rich potassium feldspar at 150°C, 50MPa (500 bars)
Journal: Mineralogical Magazine
Volume: 55
Pages: 183-195
Keywords: silicates, quartz, K-feldspar, feldspars, orthoclase, dissolution kinetics, laboratory study, organics, acetate, batch experiments, high temperature, high pressure, mixed flow experiments, mid pH, neutral, high pH, alkaline

Reference Type: Journal Article
Record Number: 415
Author: Marchand, A.M.E.; Haszeldine, R.S.; Smalley, P.C.; Macaulay, C.I.; Fallick, A.E.
Year: 2001
Title: Evidence for reduced quartz-cementation rates in oil-filled sandstones
Journal: Geology
Volume: 29
Issue: 10
Pages: 915-918
Date: October 2001
Keywords: silicates, quartz, precipitation kinetics, modelling study, elevated temperatures, cementation

Reference Type: Journal Article
Record Number: 234
Author: Margolis, H.C.; Moreno, E.C.
Year: 1992
Title: Kinetics of hydroxyapatite dissolution in acetic, lactic, and phosphoric acid solutions
Journal: Calcified Tissue International
Volume: 50
Pages: 137-143
Keywords: phosphates, apatite, dissolution kinetics, low pH, organic acids, organics, acetic acid, lactic acid, phosphoric acid, batch experiments, low temperature, low pressure, acidic, laboratory study

Reference Type: Journal Article
Record Number: 58
Author: Marshall, C.E.
Year: 1962
Title: III. Reactions of feldspars and micas with aqueous solutions
Journal: Economic Geology
Volume: 57
Pages: 1219-1227
Keywords: weathering, silicates, feldspars, micas, review study

Reference Type: Journal Article
Record Number: 105
Author: Massard, P.
Year: 1992
Title: Irreversible thermodynamics of silicate mineral dissolution: experimental study of an albite
Journal: Applied Geochemistry
Issue: Suplementary Issue 1
Pages: 167-177
Keywords: silicates, albite, feldspars, dissolution kinetics, low pH, mid pH, neutral, low temperature, elevated temperature, low pressure, laboratory study, acidic, batch experiments

Reference Type: Conference Proceedings
Record Number: 302
Author: Matsunaga, I.; Sasaki, M.; Sugita, H.; Tao, H.
Year of Conference: 2000
Title: Anhydrite precipitation experiment under hydrothermal conditions (extended abstract)
Conference Name: Joint Sixth International Symposium on Hydrothermal Reactions & Fourth International Conference on Solvo-Thermal Reactions
Conference Location: Kochi, Japan
Keywords: sulphates, anhydrite, precipitation kinetics, laboratory study, flow-through experiments, high temperature, high pressure, mid pH, neutral

Reference Type: Journal Article
Record Number: 274
Author: McGuire, M.M.; Edwards, K.J.; Banfield, J.F.; Hamers, R.J.
Year: 2001
Title: Kinetics, surface chemistry, and structural evolution of microbially mediated sulfide mineral dissolution
Journal: Geochimica et Cosmochimica Acta
Volume: 65
Issue: 8
Pages: 1243-1258
Keywords: sulphides, pyrite, marcasite, arsenopyrite, dissolution kinetics, microbes, low pH, low pressure, elevated temperature, oxidising conditions, acidic, surface coatings, surface speciations, laboratory study

Reference Type: Book Section
Record Number: 410
Author: Mellott, N.P.; Brantley, S.L.; Pantano, C.G.
Year: 2002
Title: Topography of polished plates of albite crystal and glass during dissolution
Editor: Hellmann, R.; Wood, S.A.
Book Title: Water-Rock Interactions, Ore deposits, and Envionmental Geochemistry: A Tribute to David A. Crear
Publisher: The Geochemical Society, Special Publication No. 7, 2002
Pages: 83-95
Keywords: albite, dissolution kinetics, laboratory study, low pH, high pH, low temperature, low pressure, AFM, atomic force microscopy, acidic, alkaline, silicates, feldspars, surface roughness, amorphous, synthetic

Reference Type: Journal Article
Record Number: 368
Author: Metz, V.; Ganor, J.
Year: 2001
Title: Stirring effect on kaolinite dissolution rate
Journal: Geochimica et Cosmochimica Acta
Volume: 65
Issue: 20
Pages: 3475-3490
Date: May 30, 2001
Keywords: silicates, clays, kaolinite, dissolution kinetics, laboratory study, flow-through experiments, elevated temperature, low temperature, low pressure, low pH, acidic, stirring

Reference Type: Journal Article
Record Number: 403
Author: Millot, R.; Gaillardet, J.; Dupre, B.; Allegre, C. J.
Year: 2003
Title: Northern latitude chemical weathering rates: Clues from the Mackenzie River Basin, Canada
Journal: Geochimica et Cosmochimica Acta
Volume: 67
Issue: 7
Pages: 1305-1329
Date: September 9, 2002
Keywords: dissolution kinetics, field study, carbonates, silicates, low temperature, low pressure, lowland, upland, isotopes

Reference Type: Journal Article
Record Number: 191
Author: Mogollon, J.L.; Ganor, J.; Soler, J.M.; Lasaga, A.C.
Year: 1996
Title: Column experiments and the full dissolution rate law of gibbsite
Journal: American Journal of Science
Volume: 296
Pages: 729-765
Keywords: hydroxides, gibbsite, dissolution kinetics, laboratory study, low temperature, low pH, column experiments, synthetic, acidic

Reference Type: Journal Article
Record Number: 36
Author: Mogollon, J.L.; Perez, D.A.; Monaco, S. Lo; Ganor, J.; Lasaga, A.C.
Year: 1994
Title: The effect of pH, $HClO_4$, HNO_3 and Delta G_r on the dissolution rate of natural gibbsite using column experiments

Journal: Mineralogical Magazine
Volume: 58A
Pages: 619-620
Keywords: hydroxides, gibbsite, dissolution kinetics, column experiments, low temperature, low pressure, low pH, laboratory study, acidic
Notes: Proceedings of the 1994 V.M. Goldschmidt Conference, Edinburgh, Scotland

Reference Type: Journal Article
Record Number: 228
Author: Mogollón, J.L.; Pérez-Diaz, A.; Monaco, S.L.
Year: 2000
Title: The effects of ion identity and ionic strength on the dissolution rate of gibbsitic bauxite
Journal: Geochimica et Cosmochimica Acta
Volume: 64
Issue: 5
Pages: 781-795
Keywords: hydroxides, gibbsite, bauxite, dissolution kinetics, low temperature, low pH, flow experiments, column experiments, acidic, laboratory study

Reference Type: Conference Proceedings
Record Number: 338
Author: Moore, C.H.
Year of Conference: 2001
Title: Examination of the effect of uncertainty in thermodynamic and kinetic data on computer simulations of complex systems
Editor: Cidu, R.
Conference Name: 10th International Symposium on Water-Rock Interaction - WRI-10
Conference Location: Villasimius, Italy, 10-15 July 2001
Publisher: A.A. Balkema, Rotterdam
Volume: 1
Number of Volumes: 2
Pages: 197-200
Keywords: uncertainty, modelling study, dissolution kinetics, theoretical study, precipitation kinetics

Reference Type: Journal Article
Record Number: 122
Author: Morse, J.W.
Year: 1974
Title: Dissolution kinetics of calcium carbonate in sea water. III: A new method for the study of carbonate reaction kinetics
Journal: American Journal of Science
Volume: 274
Pages: 97-107
Keywords: carbonates, calcite, dissolution kinetics, laboratory study, pH-stat experiment, batch experiments, low temperature, low pressure

Reference Type: Journal Article
Record Number: 417
Author: Morse, J.W.; Arvidson, R.S.
Year: 2002
Title: The dissolution kinetics of major sedimentary carbonate minerals
Journal: Earth-Science Reviews
Volume: 58
Issue: 1-2
Pages: 51-84
Date: July 2002

Keywords: calcite, carbonates, dissolution kinetics, review study, mid pH, neutral, low temperature, aragonite, dolomite, magnesite, reaction mechanisms, low pH, acid, alkaline, saturation state, activation energy, elevated temperature, inhibition, surface areas, surface chemistry, surface complexes

Reference Type: Journal Article
Record Number: 37
Author: Mountain, B.W.; Williams-Jones, A.E.
Year: 1994
Title: Experimental simulations of fluid-rock interaction: the effect of surface area on the rate of alteration
Journal: Mineralogical Magazine
Volume: 58A
Pages: 631-632
Keywords: diorite, high pressure, high temperature, laboratory study, flow experiments, neutral, mid pH, surface areas
Notes: Proceedings of the 1994 V.M. Goldschmidt Conference, Edinburgh, Scotland

Reference Type: Journal Article
Record Number: 114
Author: Muir, I.J.; Nesbitt, H.W.
Year: 1991
Title: Effects of aqueous cations on the dissolution of labradorite feldspar
Journal: Geochimica et Cosmochimica Acta
Volume: 55
Pages: 3181-3189
Keywords: silicates, labradorite, feldspars, dissolution kinetics, leached layers, laboratory study, low temperature, low pressure, low pH, depth profiling, acidic

Reference Type: Conference Proceedings
Record Number: 425
Author: Murakami, T.; Ito, J.; Utsunomiya, S.; Kasama, T.
Year of Conference: 2002
Title: Biotite dissolution under an anoxic condition: implication for behavior during anoxic weathering
Conference Name: Denver Annual Meeting
Conference Location: Colorado Convention Center: C205l
Volume: 54-3
Date: October 28, 2002

Reference Type: Journal Article
Record Number: 442
Author: Murakami, t.; Ito, J.; Utsunomiya, S.; Kasama, T.; Kozai, N.; Ohnuki, T.
Year: 2004
Title: Anoxic dissolution processes of biotite: implications for Fe behaviour during Archean weathering
Journal: Earth and Planetary Science Letters
Volume: 224
Pages: 117-129
Keywords: silicates, micas, biotite, dissolution kinetics, low pressure, neutral, mid pH, batch experiments, laboratory study, reducing conditions, CO_2, low pH, acidic, oxidising conditions, high temperature, elevated temperature, weathering

Reference Type: Journal Article
Record Number: 138
Author: Murakami, T.; Kogure, T.; Kadohara, H.; Ohnuki, T.
Year: 1998
Title: Formation of secondary minerals and its effect on anorthite dissolution
Journal: American Mineralogist

Volume: 83
Pages: 1209-1219
Keywords: silicates, anorthite, feldspars, dissolution kinetics, elevated temperature, high temperature, low pH, acidic

Reference Type: Journal Article
Record Number: 66
Author: Murphy, S.F.; Brantley, S.L.; Blum, A.E.; White, A.F.; Dong, H.
Year: 1998
Title: Chemical weathering in a tropical watershed, Luquillo Mountains, Puerto Rico: II. Rate and mechanism of biotite weathering
Journal: Geochimica et Cosmochimica Acta
Volume: 62
Issue: 2
Pages: 227-243
Keywords: silicates, biotite, dissolution kinetics, field study, review study, low pressure, low temperature

Reference Type: Journal Article
Record Number: 62
Author: Murphy, W.M.; Helgeson, H.C.
Year: 1989
Title: Thermodynamic and kinetic constraints on reaction rates among minerals and aqueous solutions. IV. Retrieval of rate constants and activation parameters for the hydrolysis of pyroxene, wollastonite, olivine, andalusite, quartz and nepheline
Journal: American Journal of Science
Volume: 289
Pages: 17-101
Keywords: silicates, pyroxenes, wollastonite, olivine, andalusite, quartz, nepheline, review study, theoretical study, dissolution kinetics

Reference Type: Conference Proceedings
Record Number: 204
Author: Murphy, W.M.; Pabalan, R.T.; Prikryl, J.D.; Goulet, C.J.
Year of Conference: 1992
Title: Dissolution rate and solubility of analcime at 25°C
Editor: Kharaka, Y.K.; Maest, A.S.
Conference Name: 7th International Symposium on Water-Rock Interaction - WRI-7
Conference Location: Park City, Utah, USA, 13-18 July 1992
Publisher: A.A. Balkema
Volume: 1
Number of Volumes: 2
Pages: 107-110
Keywords: silicates, analcime, analcite, dissolution kinetics, low temperature, laboratory study, batch experiments, high pH, alkaline

Reference Type: Journal Article
Record Number: 25
Author: Nagano, T.; Nakashima, S.; Nakayama, S.; Senoo, M.
Year: 1994
Title: The use of colour to quantify the effects of pH and temperature on the crystallisation kinetics of goethite under highly alkaline conditions
Journal: Clays and Clay Minerals
Volume: 42
Issue: 2
Pages: 226-234

Keywords: colourimetry, oxides, hydroxides, goethite, high pH, crystalisation kinetics, laboratory study, elevated temperature, low pressure, alkaline

Reference Type: Journal Article
Record Number: 190
Author: Nagy, K.L.; Cygan, R.T.; Hanchar, J.M.; Sturchio, N.C.
Year: 1999
Title: Gibbsite growth kinetics on gibbsite, kaolinite, and muscovite substrates: Atomic force microscopy evidence for epitaxy and an assessment of reactive surface area
Journal: Geochimica et Cosmochimica Acta
Volume: 63
Issue: 16
Pages: 2337-2351
Keywords: hydroxides, gibbsite, precipitation kinetics, laboratory study, elevated temperatures, low pH, mixed flow experiments, acidic

Reference Type: Conference Proceedings
Record Number: 71
Author: Nagy, K.L.; Lasaga, A.C.
Year of Conference: 1990
Title: The effect of deviation from equilibrium on the kinetics of dissolution and precipitation of kaolinite and gibbsite
Conference Name: Geochemistry of the Earth's Surface and of Mineral Formation - 2nd International Symposium
Conference Location: Aix en Provence, France
Pages: 283-285
Keywords: clays, silicates, hydroxides, kaolinite, gibbsite, precipitation kinetics, dissolution kinetics, elevated temperature, low pressure, laboratory study, low pH, flow-through experiments, acidic

Reference Type: Journal Article
Record Number: 78
Author: Nagy, K.L.; Lasaga, A.C.
Year: 1992
Title: Dissolution and precipitation kinetics of gibbsite at 80 °C and pH 3: The dependance on solution saturation state
Journal: Geochimica ey Cosmochimica Acta
Volume: 56
Pages: 3093-3111
Keywords: hydroxides, gibbsite, low pH, elevated temperature, low pressure, dissolution kinetics, precipitation kinetics, mixed flow experiments, acidic

Reference Type: Book Section
Record Number: 75
Author: Nagy, K.L.; Steefel, C.I.; Blum, A.E.; Lasaga, A.C.
Year: 1990
Title: Dissolution and precipitation kinetics of kaolinite: initial results at 80 °C with application to porosity evolution in a sandstone
Editor: Meshri, I.D.; Ortoleva, P.J.
Book Title: Prediction of Reservoir Quality Through Chemical Modeling
Publisher: American Association of Petroleum Geologists
Volume: 49
Pages: 85-101
Keywords: silicates, clays, kaolinite, dissolution kinetics, precipitation kinetics, elevated temperature, mixed flow experiments, low pH, laboratory study, low pressure, acidic

Reference Type: Journal Article
Record Number: 445
Author: Nakayama, S.; Sakamoto, Y.; Yamaguchi, T.; Akai, M.; Tanaka, T.; Sato, T.; Iida, Y.
Year: 2004
Title: Dissolution or montmorillonite in compacted bentonite by highly alkaline aqueous solutions and diffusivity of hydroxide ions.
Journal: Applied Clay Science
Volume: 27
Pages: 53-65
Keywords: silicates, dissolution kinetics, laboratory study, high pH, high temperature, low pressure, alkaline, clays, montmorillonite, batch experiments, elevated temperature, smectite

Reference Type: Book Section
Record Number: 11
Author: Nancollas, G.H.; Amjad, Z.; Koutsoukos, P.
Year: 1979
Title: Calcium phosphates - speciation, solubility and kinetic considerations
Editor: Jenne, E.A.
Book Title: Chemical modelling in aqueous systems
Pages: 475-497
Keywords: phosphates, apatite, precipitation kinetics, laboratory study, low pressure, low temperature, mid pH, neutral

Reference Type: Thesis
Record Number: 343
Author: Naylor, J.A.
Year: 2000
Title: The dissolution kinetics of apophyllite under alkaline pH conditions
Academic Department: School of Biological Sciences
City: Nottingham
University: University of Nottingham
Thesis Type: MSc
Keywords: silicates, apophyllite, dissolution kinetics, laboratory study, low temperature, elevated temperature, mid pH, neutral, high pH, alkaline, low pressure, fluidised bed experiments

Reference Type: Journal Article
Record Number: 276
Author: Nesbitt, H.W.; Skinner, W.M.
Year: 2001
Title: Early development of Al, Ca, and Na compositional gradients in labradorite leached in pH 2 HCl solutions
Journal: Geochimica et Cosmochimica Acta
Volume: 65
Issue: 5
Pages: 715-727
Keywords: silicates, labradorite, feldspars, dissolution kinetics, depth profiling, laboratory study, low pH, low pressure, low temperature, XPS, X-ray photoelectron spectroscopy, acidic, leached layers, leaching, batch experiments

Reference Type: Journal Article
Record Number: 162
Author: Nickel, E.
Year: 1973
Title: Experimental dissolution of light and heavy minerals in comparison with weathering and intrastratal solution
Journal: Contributions to Sedimentology
Volume: 1

Pages: 1-68
Keywords: silicates, phosphates, garnets, oxides, albite, feldspars, muscovite, micas, quartz, apatite, almandine, disthene, epidote, hornblende, rutile, staurolite, tourmaline, zircon, dissolution kinetics, low pH, mid pH, neutral, high pH, low temperature, mixed flow experiments, acidic, alkaline, laboratory study

Reference Type: Journal Article
Record Number: 315
Author: Nikolakis, V.; Vlacho, D.G.; Tsapatsis, M.
Year: 1998
Title: Modeling of zeolite crystallization: the role of gel microstructure
Journal: Microporous and Mesoporous Materials
Volume: 21
Pages: 337-346
Keywords: silicates, zeolites, precipitation kinetics, crystallization kinetics, nucleation kinetics, gels, modelling study, amorphous, theoretical study

Reference Type: Journal Article
Record Number: 320
Author: Norton, F.H.
Year: 1937
Title: Accelerated weathering of feldspars
Journal: The American Mineralogist
Volume: 22
Pages: 1-14
Keywords: silicates, feldspars, orthoclase, anorthite, albite, plagioclase, dissolution kinetics, weathering, laboratory study, high temperature, high pressure, mid pH, neutral

Reference Type: Journal Article
Record Number: 144
Author: Nugent, M.A.; Brantley, S.L.; Pantano, C.G.; Maurice, P.A.
Year: 1998
Title: The influence of natural mineral coatings on feldspar weathering
Journal: Nature
Volume: 395
Pages: 588-591
Keywords: silicates, feldspars, dissolution kinetics, field study, laboratory study, surface coatings

Reference Type: Conference Proceedings
Record Number: 281
Author: Nugent, M.A.; Maurice, P.; Brantley, S.L.
Year of Conference: 1998
Title: The field dissolution rate of feldspar in a Pennsylvania (USA) spodsol as measured by atomic force microscopy
Editor: Arehart, G.B.; Hulston, J.R.
Conference Name: 9th International Symposium on Water-Rock Interaction (WRI-9)
Conference Location: Taupo, New Zealand, 30 March-3 April 1998
Publisher: A.A. Balkema, Rotterdam
Pages: 387-390
Keywords: dissolution kinetics, weathering, plagioclase, silicates, feldspars, albite, oligoclase, field study, AFM, atomic force microscopy, low pressure, low temperature, mid pH, neutral

Reference Type: Journal Article
Record Number: 271
Author: Oelkers, E.H.
Year: 2001

Title: An experimental study of forsterite dissolution rates as a function of temperature and aqueous Mg and Si concentrations
Journal: Chemical Geology
Volume: 175
Pages: 485-494
Keywords: silicates, forsterite, olivine, dissolution kinetics, laboratory study, low pH, low temperature, elevated temperature, mixed flow experiments, acidic, low pressure, activiation energy, reaction mechanisms

Reference Type: Journal Article
Record Number: 365
Author: Oelkers, E.H.
Year: 2001
Title: General kinetic description of multioxide silicate mineral and glass dissolution
Journal: Geochimica et Cosmochimica Acta
Volume: 65
Issue: 21
Pages: 3703-3719
Date: May 17, 2001
Keywords: oxides, glass, amorphous, hydroxides, basalt, quartz, hematite, enstatite, albite, mucovite, kaolinite, review study, theoretical study, reaction mechanisms, dissolution kinetics, leached layers, surface complexes, chemical affinity, near equilibrium, feldspars, pyroxenes, forsterite, anorthite, clays, silicates

Reference Type: Journal Article
Record Number: 367
Author: Oelkers, E.H.; Gislason, S.R.
Year: 2001
Title: The mechanism, rates and consequences of basaltic glass dissolution: I. An experimental study of the dissolution rates of basaltic glass as a function of aqueous Al, Si and oxalic acid concentration at 25C and pH = 3 and 11
Journal: Geochimica et Cosmochimica Acta
Volume: 65
Issue: 21
Pages: 3671-3681
Date: March 19, 2001
Keywords: glass, basalt, amorphous, dissolution kinetics, laboratory study, mixed flow experiments, low pH, low temperature, acidic, high pH, alkaline, low pressure, oxalic acid

Reference Type: Journal Article
Record Number: 387
Author: Oelkers, E.H.; Poitrasson, F.
Year: 2002
Title: An experimental study of the dissolution stoichiometry and rates of a natural monazite as a function of temperature from 50 to 23°C and pH from 1.5 to 10
Journal: Chemical Geology
Volume: 191
Issue: 1-3
Pages: 73-87
Keywords: phosphates, apatite, dissolution kinetics, laboratory study, high temperature, neutral, mid pH, elevated temperature, low pressure, high pressure, batch experiments, mixed flow experiments, activation energy, low pH, acidic, high pH, alkaline, monazite

Reference Type: Conference Proceedings
Record Number: 424
Author: Oelkers, E.H.; Pokrovsky, O.; Schott, J.
Year of Conference: 2002
Title: An experimental study of magnesite dissolution and preciptation rates

Conference Name: Denver Annual Meeting
Conference Location: Colorado Convention Center: A205
Volume: 135-1
Date: October 29, 2002

Reference Type: Journal Article
Record Number: 33
Author: Oelkers, E.H.; Schott, J.
Year: 1994
Title: Experimental study of kyanite dissolution rates as a finction of Al and Si concentration
Journal: Mineralogical Magazine
Volume: 58A
Pages: 659-660
Keywords: silicates, kyanite, dissolution kinetics, low pH, elevated temperature, elevated pressure, laboratory study, mixed flow experiments, acidic
Notes: Proceedings of the 1994 V.M. Goldschmidt Conference, Edinburgh, Scotland

Reference Type: Conference Proceedings
Record Number: 212
Author: Oelkers, E.H.; Schott, J.
Year of Conference: 1995
Title: The dependence of silicate dissolution rates on their structure and composition
Editor: Kharaka, Y.K.; Chudaev, O.V.
Conference Name: 8th International Symposium on Water-Rock Interaction - WRI-8
Conference Location: Vladivostok, Russia, 15-19 August 1995
Publisher: A.A. Balkema
Pages: 153-156
Keywords: review study, dissolution rates, silicates, feldspars, K-feldspar, albite, plagioclase, clays, kaolinite, kyanite, muscovite

Reference Type: Conference Proceedings
Record Number: 178
Author: Oelkers, E.H.; Schott, J.
Year of Conference: 1996
Title: An experimental study of enstatite dissolution as a function of solution composition and temperature
Conference Name: 1996 V.M. Goldschmidt Conference
Conference Location: Heidelberg, Germany, March 31 - April 4, 1996
Publisher: Cambridge Publications
Pages: 442
Series Title: Journal of Conference Abstracts
Keywords: silicates, pyroxenes, enstatite, dissolution kinetics, mixed flow experiments, low pH, low temperature, elevated temperature, high temperature, laboratory study, acidic

Reference Type: Journal Article
Record Number: 152
Author: Oelkers, E.H.; Schott, J.
Year: 1998
Title: Does organic acid adsorption affect alkali-feldspar dissolution rates?
Journal: Chemical Geology
Volume: 151
Pages: 235-245
Keywords: silicates, feldspars, dissolution kinetics, organic acids, low temperature, low pressure, low pH, mid pH, neutral, high pH, acidic, alkaline

Reference Type: Journal Article

Record Number: 160
Author: Oelkers, E.H.; Schott, J.
Year: 1999
Title: Experimental study of kyanite dissolution rates as a function of chemical affinity and solution composition
Journal: Geochimica et Cosmochimica Acta
Volume: 63
Issue: 6
Pages: 785-797
Keywords: silicates, kyanite, dissolution kinetics, mixed flow experiments, low pH, high temperature, acidic, laboratory study

Reference Type: Journal Article
Record Number: 275
Author: Oelkers, E.H.; Schott, J.
Year: 2001
Title: An experimental study of enstatite dissolution rates as a function of pH, temperature, and aqueous Mg and Si concentration, and the mechanism of pyroxene/pyroxenoid dissolution
Journal: Geochimica et Cosmochimica Acta
Volume: 65
Issue: 8
Pages: 1219-1231
Keywords: silicates, enstatite, dissolution kinetics, pyroxenes, mixed flow experiments, low pH, mid pH, neutral, high pH, low temperature, elevated temperature, high temperature, laboratory study, low pressure, acidic, alkaline, high pressure, activation energy, reaction mechanisms

Reference Type: Journal Article
Record Number: 375
Author: Oelkers, E.H.; Schott, J.; Devidal, J-L.
Year: 2001
Title: On the interpretation of closed system mineral dissolution experiments: Comment on "Mechanism of kaolinite dissolution at room temperature and pressure Part II: Kinetic study" by Huertas et al. (1999)
Journal: Geochimica et Cosmochimica Acta
Volume: 65
Issue: 23
Pages: 4429-4432
Date: March 26, 2001
Keywords: silicates, clays, kaolinite, dissolution kinetics, batch experiments, low pH, low temperature, acidic, low pressure, high pH, alkaline, laboratory study

Reference Type: Thesis
Record Number: 344
Author: Oldman, L.P.
Year: 1999
Title: Experimental determination of apophyllite dissolution kinetics and solubility
Academic Department: School of Biological Sciences
City: Nottingham
University: University of Nottingham
Thesis Type: MSc
Keywords: silicates, apophyllite, dissolution kinetics, laboratory study, low temperature, elevated temperature, low pH, acidic, mid pH, neutral, high pH, alkaline, low pressure, batch experiments, fluidised bed experiments

Reference Type: Journal Article
Record Number: 247
Author: Pablo, J. de; Casas, I.; Giménez, J.; Molera, M.; Rovira, M.; Duro, L.; Bruno, J.
Year: 1999

Title: The oxidative dissolution mechanism of uranium dioxide. I. The effect of temperature in hydrogen carbonate medium
Journal: Geochimica et Cosmochimica Acta
Volume: 63
Issue: 19/20
Pages: 3097-3103
Keywords: oxides, UO_2, uranium oxide, dissolution kinetics, oxidising conditions, low temperature, elevated temperature, flow through experiments, laboratory study, mid pH, neutral, high pH, alkaline

Reference Type: Journal Article
Record Number: 431
Author: Papadimitriou, S.; Kennedy, H.; Kattner, G.; Dieckmann, G.S.; Thomas, D.N.
Year: 2003
Title: Experimental evidence for carbonate precipitation and CO_2 degassing during sea ice formation.
Journal: Geochimica et Cosmochimica Acta
Volume: 68
Issue: 8
Pages: 1749-1761

Reference Type: Journal Article
Record Number: 100
Author: Pauwels, H.; Zuddas, P.; Michard, G.
Year: 1989
Title: Behavior of trace elements during feldspar dissolution in near-equilibrium conditions: Preliminary investigation
Journal: Chemical geology
Volume: 78
Pages: 255-267
Keywords: silicates, feldspars, sanidine, anorthite, labradorite, dissolution kinetics, laboratory study, batch experiments, high temperature

Reference Type: Journal Article
Record Number: 227
Author: Pérez, I.; Casas, I.; Martín, M.; Bruno, J.
Year: 2000
Title: The thermodynamics and kinetics of uranophane dissolution in bicarbonate test solutions
Journal: Geochimica et Cosmochimica Acta
Volume: 64
Issue: 4
Pages: 603-608
Keywords: uranophane, synthetic, dissolution kinetics, low temperature, batch experiments, mixed flow experiments, thermodynamics, BET surface areas, mid pH, neutral pH, elevated pH, silicates, laboratory study

Reference Type: Journal Article
Record Number: 19
Author: Petit, J.; Dran, J.; Schott, J.; Mea, G. Della
Year: 1987
Title: Effects of ion implantation on the dissolution of mineral Part II : Selective dissolution
Journal: Bull. Mineral.
Volume: 110
Pages: 25-42
Keywords: ion implantation, selective dissolution, dissolution mechanisms, amorphous, silicates, glass

Reference Type: Journal Article
Record Number: 17

Author: Petit, J.; Dran, J.; Schott, J.; Mea, G. Della
Year: 1989
Title: New evidence on the dissolution mechanism of crystalline silicates by MeV ion beam techniques
Journal: Chemical Geology
Volume: 76
Pages: 365-369
Keywords: silicates, reaction mechanisms, ion beam, surface hydration, dissolution kinetics

Reference Type: Conference Proceedings
Record Number: 421
Author: Pierce, E.M.; Serne, R.J.; Icenhower, J.P.; Martin, W.J.
Year of Conference: 2002
Title: Experimental determination of UO_2 (CR) - Dissolution kinetics at high bicarconate concentrations
Conference Name: Denver Annual Meeting
Conference Location: Colorado Convention Center: Exhibit Hall
Publisher: The Geological Society of America
Volume: 84-9
Date: October 28, 2002
Keywords: UO_2, oxides, dissolution kinetics, laboratory study, reducing conditions, elevated temparature, low pressure, neutral, mid pH, flow-through experiments

Reference Type: Journal Article
Record Number: 34
Author: Plettinck, S.; Chou, L.; Wollast, R.
Year: 1994
Title: Kinetics and mechanisms of dissolution of silica at room temperature and pressure
Journal: Mineralogical Magazine
Volume: 58A
Pages: 728-729
Keywords: silicates, silica, SiO_2, amorphous, dissolution kinetics, low temperature, low pressure, low pH, mid pH, batch experiments, laboratory study, acidic, alkaline
Notes: Proceedings of the 1994 V.M. Goldschmidt Conference, Edinburgh, Scotland

Reference Type: Book Section
Record Number: 120
Author: Plummer, L.N.; Parkhurst, D.L.; Wigley, T.M.L.
Year: 1979
Title: Critical review of the kinetics of calcite dissolution and precipitation
Book Title: Chemical Modelling in Aqueous Systems
Pages: 537-573
Keywords: carbonates, calcite, dissolution kinetics, precipitation kinetics, review study

Reference Type: Journal Article
Record Number: 128
Author: Plummer, L.N.; Wigley, T.M.L.
Year: 1976
Title: The dissolution of calcite in CO_2-saturated solutions at 25 °C and 1 atmosphere total pressure
Journal: Geochimica et Cosmochimica Acta
Volume: 40
Pages: 191-202
Keywords: carbonates, calcite, dissolution kinetics, CO_2, laboratory study, low temperature, low pressure, batch experiments

Reference Type: Journal Article
Record Number: 119

Author: Plummer, L.N.; Wigley, T.M.L.; Parkhurst, D.L.
Year: 1978
Title: The kinetics of calcite dissolution on CO_2-water systems at 5 °C to 60 °C and 0.0 to 1.0 atm CO_2
Journal: American Journal of Science
Volume: 278
Pages: 179-216
Keywords: carbonates, calcite, dissolution kinetics, laboratory study, low temperature, elevated temperature, low pressure, batch experiments, pH-stat experiments, low pH, mid pH, neutral, high pH, CO_2, acidic, alkaline

Reference Type: Journal Article
Record Number: 436
Author: Pokrovsky, O.; Schott, J.
Year: 2004
Title: Experimental study of brucite dissolution and precipitation in aqueous solutions: Surface speciation and chemical affinity control.
Journal: Geochimica et Cosmochimica Acta
Volume: 68
Issue: 1
Pages: 31-45

Reference Type: Journal Article
Record Number: 199
Author: Pokrovsky, O.S.; Schott, J.
Year: 1998
Title: Surface complexation modelling of the dissolution kinetics of Mg-bearing carbonate minerals
Journal: Mineralogical Magazine
Volume: 62A
Pages: 1198-1199
Keywords: carbonates, dolomite, magnesite, modelling study, low pH, mid pH, neutral, high pH, low temperature, low pressure, acidic, alkaline
Notes: Proceedings of the 1998 V.M. Goldschmidt Conference, Toulouse, France

Reference Type: Journal Article
Record Number: 296
Author: Pokrovsky, O.S.; Schott, J.
Year: 2000
Title: Kinetics and mechanism of forsterite dissolution at 25°C and pH from 1 to 12
Journal: Geochimica et Cosmochimica Acta
Volume: 64
Issue: 19
Pages: 3313-3325
Keywords: silicates, fosterite, olivine, dissolution kinetics, laboratory study, mixed flow experiments, low temperature, low pressure, low pH, reaction mechanisms, surface complexes, mid pH, neutral, high pH, acidic, alkaline

Reference Type: Journal Article
Record Number: 297
Author: Pokrovsky, O.S.; Schott, J.
Year: 2000
Title: Forsterite surface composition in aqueous solutions: A combined potentiometric, electrokinetic, and spectroscopic approach
Journal: Geochimica et Cosmochimica Acta
Volume: 64
Issue: 19
Pages: 3299-3312

Keywords: silicates, forsterite, olivine, dissolution mechanisms, laboratory study, surface chemistry, synthetic, leached layers, low pH, acidic, mid pH, neutral, high pH, alkaline, batch experiments, column experiments, XPS, zeta potential, surface titration, X-ray photoelectron spectroscopy, PZC, point of zero charge

Reference Type: Journal Article
Record Number: 456
Author: Pokrovsky, O.S.; Schott, J.; Castillo, A.
Year: 2005
Title: Kinetics of brucite dissolution at 25°C in the presence of organic and inorganic ligands and divalent metals
Journal: Geochimica et Cosmochimica Acta
Volume: 69
Issue: 4
Pages: 905-918
Keywords: laboratory study, low pressure, low temperature, low pH, acidic, mid pH, neutral, high pH, alkaline, mixed flow experiments, hydroxides, brucite, organics, organic acids, inhibition, ligands, fulvic acid, humic acid, ascorbate, citrate, oxalate, acetate, benzoate, phosphate, lactate, catechol, EDTA, salicylate, formate, glycine, xylose, oxine

Reference Type: Journal Article
Record Number: 183
Author: Pokrovsky, O.S.; Schott, J.; Thomas, F.; Mielczarski, J.
Year: 1998
Title: Surface speciation of Ca and Mg carbonate minerals in aqueous solutions: a combined potentiometric, electrokinetic, and DRIFT surface spectroscopy approach
Journal: Mineralogical Magazine
Volume: 62A
Pages: 1196-1197
Keywords: carbonates, calcite, dolomite, magnesite, surface speciation, dissolution kinetics, disolution mechanisms, laboratory study, low pH, mid pH, neutral, high pH, acidic, alkaline
Notes: Proceedings of the 1998 V.M. Goldschmidt Conference, Toulouse, France

Reference Type: Conference Proceedings
Record Number: 177
Author: Putnis, A.; Prieto, M.; Fernandez-Diaz, L.
Year of Conference: 1996
Title: What can crystal growth experiments tell us about natural mineral surfaces?
Conference Name: 1996 V.M. Goldschmidt Conference
Conference Location: Heidelberg, Germany, March 31 - April 4, 1996
Publisher: Cambridge Publications
Pages: 490
Series Title: Journal of Conference Abstracts
Keywords: review study, precipitation kinetics, carbonates

Reference Type: Conference Proceedings
Record Number: 210
Author: Ragnarsdottir, K.V.
Year of Conference: 1989
Title: Kinetics of dissolution of heulandite at 25°C
Editor: Miles, D.L.
Conference Name: 6th International Symposium on Water-Rock Interaction - WRI-6
Conference Location: Malvern, UK, 3-8 August 1989
Publisher: A.A. Balkema
Pages: 567-568
Keywords: silicates, heulandite, zeolites, dissolution kinetics, laboratory study, fluidised bed experiments, low temperature, low pressure, low pH, mid pH, neutral, high pH, acidic, alkaline

Reference Type: Journal Article
Record Number: 2
Author: Ragnarsdottir, K.V.
Year: 1993
Title: Dissolution kinetics of heulandite at pH 2-12 and 25°C
Journal: Geochimica et Cosmochimica Acta
Volume: 57
Pages: 2439-2449
Keywords: silicates, heulandite, zeolites, dissolution kinetics, laboratory study, low pH, mid pH, neutral, high pH, low pressure, low temperature, fluidised bed experiments, acidic, alkaline

Reference Type: Conference Proceedings
Record Number: 209
Author: Richards, H.G.; Savage, D.
Year of Conference: 1989
Title: Rate of plagioclase dissolution in the Camborne School of Mines experimental hot dry rock geothermal system, Rosemanowes, Cornwall
Editor: Miles, D.L.
Conference Name: 6th International Symposium on Water-Rock Interaction - WRI-6
Conference Location: Malvern, UK, 3-8 August 1989
Publisher: A.A. Balkema
Pages: 577-580
Keywords: silicates, feldspars, plagioclase, dissolution kinetics, neutral, mid pH, field study

Reference Type: Book Section
Record Number: 14
Author: Rickard, D.
Year: 1991
Title: Reaction kinetics in ore formation
Book Title: Source, Transport and Deposition of metals
City: Rotterdam
Publisher: Balkema
Pages: 3-6
Keywords: precipitation kinetics, sulphides

Reference Type: Journal Article
Record Number: 350
Author: Rickert, D.; Schluter, M.; Wallmann, K.
Year: 2002
Title: Dissolution kinetics of biogenic silica from the water column to the sediments
Journal: Geochimica et Cosmochimica Acta
Volume: 66
Issue: 3
Pages: 439-455
Date: June 28, 2001
Keywords: silicates, amorphous, silica, SiO_2, feldspar, dissolution kinetics, laboratory study, mid pH, neutral, FTIR, infra-red, low temperature, low pressure, biogenic, near equilibrium, activation energy

Reference Type: Journal Article
Record Number: 293
Author: Rimstidt, J.D.; Barnes, H.L.
Year: 1980
Title: The kinetics of silica-water reactions
Journal: Geochimica et Cosmochimica Acta

Volume: 44
Pages: 1683-1699
Keywords: silicates, amorphous, silica, SiO_2, quartz, cristobalite, dissolution kinetics, precipitation kinetics, review study, laboratory study, high temperature, high pressure, mid pH, neutral, batch experiments, activation energy

Reference Type: Conference Proceedings
Record Number: 176
Author: Rimstidt, J.D; Newcomb, W.D
Year of Conference: 1989
Title: A comparison of pyrite oxidation rates in batch, mixed flow, and plug flow reactors
Editor: Miles, D.L.
Conference Name: 6th International Symposium on Water-Rock Interaction - WRI-6
Conference Location: Malvern, UK, 3-8 August 1989
Publisher: A.A. Balkema
Keywords: sulphides, pyrite, oxidation kinetics, dissolution kinetics, batch experiments, mixed flow experiments, low temperature, low pressure, oxidising conditions, laboratory study

Reference Type: Journal Article
Record Number: 55
Author: Rimstidt, J.D.; Newcomb, W.D.
Year: 1993
Title: Measurement and analysis of rate data: The rate of reaction of ferric iron with pyrite
Journal: Geochimica et Cosmochimica Acta
Volume: 57
Pages: 1919-1934
Keywords: sulphides, pyrite, low temperature, low pressure, mixed flow experiments, batch experiments, laboratory study

Reference Type: Thesis
Record Number: 136
Author: Rochelle, C.A.
Year: 1990
Title: Fluid-rock interaction in the Miravalles geothermal field, Costa Rica. Mineralogical and experimental studies
Academic Department: Earth Sciences
City: Leeds
University: Leeds
Number of Pages: 344
Thesis Type: PhD
Keywords: silicates, epidote, prehnite, dissolution kinetics, laboratory study, batch experiments, mid pH, neutral, high temperature, high pressure

Reference Type: Journal Article
Record Number: 134
Author: Rochelle, C.A.; Bateman, K.; MacGregor, R.; Pearce, J.M.; Savage, D.; Wetton, P.D.
Year: 1994
Title: Migration of cement pore fluids from a radioactive waste repository: experimental studies of chlorite dissolution rates
Journal: Mineralogical Magazine
Volume: 58A
Pages: 779-780
Keywords: silicates, chlorite, dissolution kinetics, laboratory study, mixed flow experiments, low temperature, elevated temperature, low pressure, mid pH, neutral, high pH, alkaline
Notes: Proceedings of the 1994 V.M. Goldschmidt Conference, Edinburgh, Scotland

Reference Type: Journal Article
Record Number: 49
Author: Rochelle, C.A.; Bateman, K.; MacGregor, R.; Pearce, J.M.; Savage, D.; Wetton, P.D.
Year: 1995
Title: Experimental determination of chlorite dissolution rates
Journal: Materials Research Society Symposium Proceedings
Volume: 353
Pages: 149-156
Keywords: silicates, chlorite, dissolution kinetics, low temperature, elevated temperature, low pressure, mixed flow experiments, laboratory study, mid pH, neutral, high pH, alkaline

Reference Type: Journal Article
Record Number: 435
Author: Rogers, J.R.; Bennett, P.C.
Year: 2004
Title: Mineral stimulation of subsurface microorganisms: release of limiting nutrients from silicates.
Journal: Chemical Geology
Volume: 203
Pages: 91-108

Reference Type: Conference Proceedings
Record Number: 301
Author: Ronghua, Z.; Shumin, H.; Xuetong, Z.
Year of Conference: 2000
Title: Kinetics of mineral dissolution in near-critical and supercritical water (extended abstract)
Conference Name: Joint Sixth International Symposium on Hydrothermal Reactions & Fourth International Conference on Solvo-Thermal Reactions
Conference Location: Kochi, Japan
Keywords: dissolution kinetics, supercritical water, high temperature, high pressure, elevated temperature, low temperature, albite, magnetite, laboratory study, neutral, mid pH, silicates, feldspars, oxides

Reference Type: Journal Article
Record Number: 10
Author: Rose, N.M.
Year: 1991
Title: Dissolution rates of prehnite, epidote and albite
Journal: Geochimica et Cosmochimica Acta
Volume: 55
Pages: 3273-3286
Keywords: silicates, prehenite, epidote, albite, feldspars, dissolution kinetics, low temperature, elevated temperature, low pH, mid pH, neutral, high pH, laboratory study, batch experiments, acidic, alkaline

Reference Type: Journal Article
Record Number: 382
Author: Rosenberg, D.R.; Maurice, P.A.
Year: 2003
Title: Siderphore adsorption to and dissolution of kaolinite at pH 3 to 7 and 22°C
Journal: Geochimica et Cosmochimica Acta
Volume: 67
Issue: 2
Pages: 223-229
Date: July 31, 2002
Keywords: silicates, clays, dissolution kinetics, batch experiments, low pH, low temperature, acidic, microbes, low pressure, siderophores, laboratory study, mid pH, neutral, oxidising conditions

Reference Type: Journal Article
Record Number: 225
Author: Rosso, J.J.; Rimstidt, J.D.
Year: 2000
Title: A high resolution study of forsterite dissolution rates
Journal: Geochimica et Cosmochimica Acta
Volume: 64
Issue: 5
Pages: 797-811
Keywords: silicates, forsterite, olivine, low pH, low temperature, laboratory study, mixed flow experiments, dissolution kinetics, acidic

Reference Type: Journal Article
Record Number: 428
Author: Sak, P.B.; Fisher, D.M.; Gardner, T.W.; Murphy, K.; Brantley, S.L.
Year: 2004
Title: Rates of weathering rind formation on Costa Rican basalt
Journal: Geochimica et Cosmochimica Acta
Volume: 68
Issue: 7
Pages: 1453-1472

Reference Type: Journal Article
Record Number: 299
Author: Samson, S.D.; Eggleston, C.M.
Year: 2000
Title: The depletion and regeneration of dissolution-active sites at the mineral-water interface: II. regeneration of active sites on a-Fe_2O_3 at pH 3 and pH 6
Journal: Geochimica et Cosmochimica Acta
Volume: 64
Issue: 21
Pages: 3675-3683
Keywords: oxides, Fe_2O_3, dissolution kinetics, laboratory study, low pH, acidic, mid pH, neutral, mixed flow experiments, low temperature, low pressure, surface chemistry, hematite

Reference Type: Book Section
Record Number: 409
Author: Samson, S.D.; Eggleston, C.M.
Year: 2002
Title: Non steady-state dissolution of goethite and hematite in response to pH jumps: the role of adsorbed Fe (III)
Editor: Hellmann, R.; Wood, S.A.
Book Title: Water-Rock Interactions, Ore Deposits, and Environmental Geochemistry: Atribute to David A. Crerar
Publisher: The Geochemical Society, Special Publication No. 7, 2002
Keywords: goethite, hematite, oxides, hydroxides, dissolution kinetics, laboratory study, synthetic, mixed flow experiments, pH-stat experiments, low temperature, low pressure, acidic, low pH

Reference Type: Journal Article
Record Number: 454
Author: Samson, S.D.; Nagy, K.L.; III, W.B. Cotton
Year: 2005
Title: Transient and quasi-steady-state dissolution of biotite at 22-25°C in high pH, sodium, nitrate, and aluminate solutions
Journal: Geochimica et Cosmochimica Acta

Volume: 69
Issue: 2
Pages: 399-413
Keywords: dissolution kinetics, laboratory study, mixed flow experiments, low pressure, low temperature, high pH, alkaline, silicates, micas, biotite

Reference Type: Journal Article
Record Number: 46
Author: Sasaki, K.; Tsunekawa, M.; Ohtsuka, T.; Konno, H.
Year: 1997
Title: Reply to the Comment by G.W. Luther on 'Confirmation of a sulphur-rich layer on pyrite after oxidative dissolution by Fe(III) ions around pH 2'
Journal: Geochimica et Cosmochimica Acta
Volume: 61
Issue: 15
Pages: 3273-3274
Keywords: sulphides, pyrite, dissolution kinetics, surface layer, oxidation kinetics, oxidising conditions

Reference Type: Journal Article
Record Number: 133
Author: Savage, D.; Bateman, K.; Hill, P.; Hughes, C.; Milodowski, A.; Pearce, J.; Rae, E.; Rochelle, C.
Year: 1992
Title: Rate and mechanism of the reaction of silicates with cement pore fluids
Journal: Applied Clay Science
Volume: 7
Pages: 33-45
Keywords: silicates, albite, feldspars, quartz, dissolution kinetics, laboratory study, high pH, elevated temperature, low pressure, high pressure, alkaline

Reference Type: Journal Article
Record Number: 1
Author: Savage, D.; Cave, M.; Haigh, D.; Milodowski, A.; Young, M.E.
Year: 1993
Title: The reaction kinetics of laumontite under hydrothermal conditions
Journal: Eur.J. Mineral.
Volume: 5
Pages: 523-535
Keywords: silicates, zeolites, laumontite, dissolution kinetics, high temperature, high pressure, laboratory study, mid pH, neutral, batch experiments, flow experiments, high pH, alkaline

Reference Type: Journal Article
Record Number: 458
Author: Savage, D.; Noy, D.; Mihara, M.
Year: 2002
Title: Modelling the interaction of bentonite with hyperalkaline fluids
Journal: Applied Geochemistry
Volume: 17
Pages: 207-223
Keywords: modelling study, review study, dissolution kinetics, low pressure, low temperature, elevated temperature, high pH, alkaline, carbonates, silicates, clays, CSH, calcium silicate hydrates, cement minerals, micas, zeolites, calcite, smectite, chalcedony, montmorillonite, SiO_2, analcite, analcime, quartz, saponite, celadonite, gyrolite, laumontite, leucite, tobermorite, muscovite, bentonite

Reference Type: Conference Proceedings
Record Number: 161

Author: Savage, D.; Rochelle, C.; Mihara, M.; Moore, Y.; Milodowski, A.; Bateman, K.; Bailey, D.
Year of Conference: 1999
Title: Dissolution of analcite under conditions of alkaline pH
Conference Name: Ninth Annual V.M. Goldschmidt Conference
Conference Location: Cambridge, Massachusetts, 22-27 August 1999
Keywords: silicates, analcite, analcime, leucite, dissolution kinetics, ion exchange, high pH, alkaline, low pressure, low temperature, elevated temperature, batch experiments, fluidised bed experiments

Reference Type: Conference Proceedings
Record Number: 262
Author: Savage, D.; Rochelle, C.; Moore, Y.; Noy, D.; Milodowski, A.; Bateman, K.; Bailey, D.; Mihara, M.
Year of Conference: 2001
Title: Experimental and modelling studies to assess cement-bentonite interaction
Editor: Cidu, R.
Conference Name: 10th International Symposium on Water-Rock Interaction (WRI-10)
Conference Location: Villasimius, Italy, 10-15 July 2001
Publisher: A.A. Balkema, Rotterdam
Volume: 2
Number of Volumes: 2
Pages: 1379-1382
Keywords: silicates, analcite, analcime, dissolution kinetics, laboratory study, high pH, alkaline, elevated temperature, low pressure, modelling study

Reference Type: Journal Article
Record Number: 310
Author: Scheckel, K.G.; Scheinost, A.C.; Ford, R.G.; Sparks, D.L.
Year: 2000
Title: Stability of layered Ni hydroxide surface precipitates - A dissolution kinetics study
Journal: Geochimica et Cosmochimica Acta
Volume: 64
Issue: 16
Pages: 2727-2735
Keywords: hydroxides, dissolution kinetics, laboratory study, neutral, mid pH, low temperature, low pressure, $Ni(OH)_2$

Reference Type: Conference Proceedings
Record Number: 13
Author: Schott, J.; Lasaga, A.C.
Year of Conference: 1988
Title: Kinetic Geochemistry (Chapter 7 Conference proceedings)
Editor: Geochemistry, European Association for
Conference Name: International Congress of Geochemistry and Cosmochemistry
Conference Location: Paris, France
Pages: 75-84
Keywords: silicates, sulphides, clays, chrystobalite, quartz, carbonates, chalcopyrite, albite, feldspars, kaolinite, dissolution kinetics

Reference Type: Journal Article
Record Number: 317
Author: Schott, J.; Oelkers, E.H.
Year: 1995
Title: Dissolution and crystallization rates of silicate minerals as a function of chemical affinity
Journal: Pure and Applied Chemistry
Volume: 67
Issue: 6
Pages: 903-910

Abstract: dissolution kinetics, silicates, chemical affinity, albite, K-feldspar, anorthite, feldspars, kaolinite, clays, precipitation kinetics, review study, theoretical study, surface complexes, kyanite

Reference Type: Conference Proceedings
Record Number: 420
Author: Schott, J.; Pokrovsky, O.
Year of Conference: 2002
Title: New insights on silicate weathering mechanisms from the study of leached layers - the case of wollastonite
Conference Name: Geochemistry of Crustal Fluids
Conference Location: Seefeld in Tirol, Austria
Pages: 37-38
Date: 14-19 December 2002

Reference Type: Journal Article
Record Number: 158
Author: Schulz, M.S.; White, A.F.
Year: 1999
Title: Chemical weathering in a tropical watershed, Luquillo Mountains, Puerto Rico III: Quartz dissolution rates
Journal: Geochimica et Cosmochimica Acta
Volume: 63
Issue: 3/4
Pages: 337-350
Keywords: silicates, quartz, dissolution kinetics, field study, low temperature, mid pH, neutral

Reference Type: Journal Article
Record Number: 292
Author: Schwartzentruber, J.; Fürst, W.; Renon, H.
Year: 1987
Title: Dissolution of quartz into dilute alkaline solutions at 90°C: A kinetic study
Journal: Geochimica et Cosmochimica Acta
Volume: 51
Pages: 1867-1874
Keywords: silicates, quartz, dissolution kinetics, laboratory study, high pH, alkaline, elevated temperature, low pressure, batch experiments, reaction mechanism, activation energy, surface complexes

Reference Type: Conference Proceedings
Record Number: 208
Author: Schweda, P.
Year of Conference: 1989
Title: Kinetics of alkali feldspar dissolution at low temperature
Editor: Miles, D.L.
Conference Name: 6th International Symposium on Water-Rock Interaction - WRI-6
Conference Location: Malvern, UK, 3-8 August 1989
Publisher: A. A. Balkema
Pages: 609-612
Keywords: silicates, sanidine, microcline, feldspars, laboratory study, low temperature, low pressure, low pH, mid pH, neutral, high pH, acidic, alkaline

Reference Type: Journal Article
Record Number: 35
Author: Schweda, P.; Kalinowski, B.
Year: 1994
Title: Dissolution rates and alteration of muscovite, phlogopite and biotite at pH 1 to 4, room temperature
Journal: Mineralogical Magazine

Volume: 58A
Pages: 817-818
Keywords: micas, silicates, muscovite, phlogopite, biotite, low temperature, low pressure, low pH, laboratory study, dissolution kinetics, batch experiments, acidic
Notes: Proceedings of the 1994 V.M. Goldschmidt Conference, Edinburgh, Scotland

Reference Type: Journal Article
Record Number: 148
Author: Seimbille, F.; Zuddas, P.; Michard, G.
Year: 1998
Title: Granite-hydrothermal interaction: a simultaneous estimation of the mineral dissolution rate based on the isotopic doping technique
Journal: Earth and Planetary Science Letters
Volume: 157
Pages: 183-191
Keywords: silicates, micas, K-feldspar, biotite, plagioclase, feldspars, dissolution kinetics, isotopes

Reference Type: Conference Proceedings
Record Number: 171
Author: Shiraki, R.; Brantley, S.L.
Year of Conference: 1992
Title: Precipitation kinetics of calcite at elevated temperatures
Editor: Kharaka, Y.K.; Maest, A.S.
Conference Name: 7th International Symposium on Water-Rock Interaction - WRI-7
Conference Location: Park City, Utah, USA, 13-18 July 1992
Publisher: A.A. Balkema
Volume: 1
Number of Volumes: 2
Pages: 111-114
Keywords: carbonates, calcite, precipitation kinetics, laboratory study, elevated temperature, elevated pressure, mid pH, neutral, batch experiments

Reference Type: Journal Article
Record Number: 52
Author: Sidhu, P.S.; Gilkes, R.J.; Cornell, R.M.; Posner, A.M.; Quirk, J.P
Year: 1981
Title: Dissolution of iron oxides and oxyhydroxides in hydrochloric and perchloric acids
Journal: Clays and Clay Minerals
Volume: 29
Issue: 4
Pages: 269-276
Keywords: oxides, hydroxides, Fe oxide, dissolution kinetics, magnetite, maghematite, hematite, goethite, lepidocrocite, akaganeite, low pH, low temperature, low pressure, laboratory study, acidic

Reference Type: Journal Article
Record Number: 126
Author: Sjöberg, E.L.; Rickard, D.
Year: 1983
Title: The influence of experimental design on the rate of calcite dissolution
Journal: Geochimica et Cosmochimica Acta
Volume: 47
Pages: 2281-2285
Keywords: carbonates, calcite, dissolution kinetics, laboratory study, rotating disc experiments, low temperature, low pressure, low pH, mid pH, neutral, high pH, acidic, alkaline

Reference Type: Journal Article
Record Number: 124
Author: Sjöberg, E.L.; Rickard, D.T.
Year: 1984
Title: Temperature dependance of calcite dissolution kinetics between 1 and 62 °C at pH 2.7 to 8.4 in aqueous solutions
Journal: Geochimica et Cosmpchimica Acta
Volume: 48
Pages: 485-493
Keywords: carbonates, calcite, dissolution kinetics, laboratory study, low temperature, elevated temperature, low pressure, low pH, mid pH, neutral, rotating disc experiments, acidic

Reference Type: Conference Proceedings
Record Number: 207
Author: Sjöberg, L.
Year of Conference: 1989
Title: Kinetics and non-stoichiometry of labradorite dissolution
Editor: Miles, D.L.
Conference Name: 6th International Symposium on Water-Rock Interaction - WRI-6
Conference Location: Malvern, UK, 3-8 August 1989
Publisher: A.A. Balkema
Pages: 639-642
Keywords: silicates, labradorite, feldspars, dissolution kinetics, laboratory study, low temperature, elevated temperature, low pH, mid pH, neutral, high pH, acidic, alkaline

Reference Type: Journal Article
Record Number: 449
Author: Skidmore, M.; Sharp, M.; Tranter, M.
Year: 2004
Title: Kinetic isotopic fractionation during carbonate dissolution in laboratory experiments: implications for detection of microbial CO_2 signatures using delta^{13}C-DIC.
Journal: Geochimica et Cosmochimica Acta
Volume: 68
Issue: 21
Pages: 4309-4317
Keywords: carbonates, dissolution kinetics, laboratory study, batch experiments, low temperature, weathering, isotopes, CO_2, low pressure

Reference Type: Journal Article
Record Number: 38
Author: Small, J.S.; Manning, D.A.C.
Year: 1994
Title: On-line monitoring of clay precipitation in sandstone porespace under flow conditions
Journal: Mineralogical Magazine
Volume: 58A
Pages: 852-853
Keywords: silicates, clays, precipitation kinetics, sandstone, flow experiments, laboratory study, elevated temperature, elevated pressure
Notes: Proceedings of the 1994 V.M. Goldschmidt Conference, Edinburgh, Scotland

Reference Type: Journal Article
Record Number: 325
Author: Soler, J.M.; Lasaga, A.C.
Year: 1998
Title: An advection-dispersion-reaction model of bauxite formation
Journal: Journal of Hydrology

Volume: 209
Pages: 311-330
Keywords: modelling study, review study, dissolution kinetics, silicates, albite, microcline, quartz, phlogopite, gibbsite, kaolinite, paragonite, muscovite, plagioclase, micas, clays, feldspars, low pH, acidic, mid pH, neutral, high pH, alkaline, precipitation kinetics, bauxite, oxides, weathering

Reference Type: Journal Article
Record Number: 125
Author: Sonderegger, J.L.; Brower, K.R.; LeFebre, V.G.
Year: 1976
Title: A preliminary investigation of strontianite dissolution kinetics
Journal: American Jourval of Science
Volume: 276
Pages: 997-1022
Keywords: carbonates, strontianite, dissolution kinetics, laboratory study, batch experiments, low temperature, elevated temperature, low pH, mid pH, neutral, acidic

Reference Type: Journal Article
Record Number: 324
Author: Steefel, C.I.; Lichtner, P.C.
Year: 1998
Title: Multicomponent reactive transport in discrete fractures II: Infiltration of hyperalkaline groundwater at Maqarin, Jordan, a natural analogue site
Journal: Journal of Hydrology
Volume: 209
Pages: 200-224
Keywords: modelling study, review study, dissolution kinetics, precipitation kinetics, carbonates, silicates, micas, cement minerals, sulphates, calcite, muscovite, kaolinite, chalcedony, sepiolite, clays, CSH, calcium silicate hydrates, brucite, ettringite, hillebrandite, hydrogarnet, hydrogrossular, foshagite, tobermorite, portlandite, tricarboaluminate, hydrotalcite, gypsum, Friedel's salt, low temperature, low pressure, high pH, alkaline, hydroxides

Reference Type: Journal Article
Record Number: 427
Author: Stephens, J.C.; Hering, J.G.
Year: 2004
Title: Factors affecting the dissolution kinetics of volcanic ash soils: dependencies on pH, CO_2, and oxalate
Journal: Applied Geochemistry
Volume: 19
Pages: 1217-1232

Reference Type: Journal Article
Record Number: 272
Author: Stewart, B.W.; Capo, R.C.; Chadwick, O.A.
Year: 2001
Title: Effects of rainfall on weathering rate, base cation provenance, and Sr isotope composition of Hawaiian soils
Journal: Geochimica et Cosmochimica Acta
Volume: 65
Issue: 7
Pages: 1087-1099
Keywords: field study, isotopes, basalt, lava, dissolution kinetics, weathering, low temperature, low pressure, environmental conditions, lowland, upland

Reference Type: Journal Article

Record Number: 101
Author: Stoessell, R.K.; Pittman, E.D.
Year: 1990
Title: Secondary porosity revisited: The chemistry of feldspar dissolution by carboxylic acids and anions
Journal: American Association of Petroleum Geologists Bulletin
Volume: 74
Issue: 12
Pages: 1795-1805
Keywords: silicates, feldspars, dissolution kinetics, organic acids, elevated temperature, high pressure, laboratory study, acetate, oxalate, propionate, malonate, acetic acid, oxalic acid, microcline, organics

Reference Type: Conference Proceedings
Record Number: 448
Author: Sugita, H.; Matsunaga, I.; Yamaguchi, T.; Tao, H.
Year of Conference: 2001
Title: Measurement of quartz dissolution rates with a flow-through type autoclave reactor
Editor: Cidu, R.
Conference Name: Tenth International Symposium onWater-Rock Interaction, 2001
Conference Location: Italy
Publisher: A.A. Balkema
Volume: 1
Keywords: silicates, quartz, dissolution kinetics, laboratory study, mid pH, neutral, high temperature, high pressure, precipitation kinetics, activation energy, flow-through experiments, column experiments

Reference Type: Journal Article
Record Number: 53
Author: Sulzberger, B.; Suter, D.; Siffert, C.; Banwart, S.; Stumm, W.
Year: 1989
Title: Dissolution of Fe(III) (hydr)oxides in natural waters; Laboratory assessment on the kinetics controlled by surface coordination
Journal: Marine Chemistry
Volume: 28
Pages: 127-144
Keywords: oxides, hydroxides, Fe oxide, dissolution kinetics, hematite, low pH, organics, acetate, citrate, oxalate, ascorbate, acidic, laboratory study

Reference Type: Journal Article
Record Number: 157
Author: Sutheimer, S.H.; Maurice, P.A.; Zhou, Q.
Year: 1999
Title: Dissolution of well and poorly crystallized kaolinites: Al speciation and effects of surface characteristics
Journal: American Mineralogist
Volume: 84
Pages: 620-628
Keywords: silicates, clays, kaolinite, dissolution kinetics, batch experiments, low pH, low temperature, acidic, laboratory study

Reference Type: Journal Article
Record Number: 129
Author: Svensson, U.; Dreybrodt, W.
Year: 1992
Title: Dissolution kinetics of natural calcite minerals in CO_2-water systems approaching calcite equilibrium
Journal: Chemical geology
Volume: 100
Pages: 129-145

Keywords: carbonates, dissolution kinetics, near equilibrium, laboratory study, batch experiments, low pressure, low temperature, CO_2

Reference Type: Conference Proceedings
Record Number: 203
Author: Swoboda-Colberg, N.G.; Drever, J.I.
Year of Conference: 1992
Title: Mineral dissolution rates: A comparison of laboratory and field studies
Editor: Kharaka, Y.K.; Maest, A.S.
Conference Name: 7th International Symposium on Water-Rock Interaction - WRI-7
Conference Location: Park City, Utah, USA, 13-18 July 1992
Publisher: A.A. Balkema
Volume: 1
Number of Volumes: 2
Pages: 115-118
Abstract: dissolution kinetics, laboratory study, field study, laboratory versus field study, low pH, low temperature, fluidised bed experiments, acidic

Reference Type: Journal Article
Record Number: 321
Author: Swoboda-Colberg, N.G.; Drever, J.I.
Year: 1993
Title: Mineral dissolution rates in plot-scale field and laboratory experiments
Journal: Chemical Geology
Volume: 105
Pages: 51-69
Keywords: dissolution kinetics, laboratory study, field study, laboratory versus field study, low pH, acidic, low temperature, low pressure, fluidised bed experiments, soil, silicates, feldspars, plagioclase, K-feldspar, micas, chlorite, muscovite, biotite, horneblende, weathering

Reference Type: Journal Article
Record Number: 416
Author: Tai, C.Y.; Hsu, H.
Year: 2001
Title: Crystal growth kinetics of calcite and its comparison with readily soluble salts
Journal: Power Tecnology
Volume: 121
Pages: 60-67
Date: 2001
Keywords: carbonates, calcite, precipitation kinetics, crystallisation kinetics, laboratory study, mid pH, neutral, low temperature, low pressure, mixed flow experiments, fluidised bed experiments, pH-stat experiments, high pH, alkaline

Reference Type: Conference Proceedings
Record Number: 170
Author: Talman, S.J.; Gunter, W.D.
Year of Conference: 1992
Title: Rates of dolomite dissolution in CO_2 and HCl bearing solutions from 100-200°C
Editor: Kharaka, Y.K.; Maest, A.S.
Conference Name: 7th International Symposium on Water-Rock Interaction - WRI-7
Conference Location: Park City, Utah, USA, 13-18 July 1992
Publisher: A.A. Balkema
Volume: 1
Number of Volumes: 2
Pages: 119-122

Keywords: dolomite, carbonates, dissolution kinetics, laboratory study, high temperatures, elevated pressures, low pH, mixed flow experiments, acidic, CO_2

Reference Type: Conference Proceedings
Record Number: 117
Author: Talman, S.J.; Wiwchar, B.; Gunter, W.D.; Scarfe, C.M.
Year of Conference: 1989
Title: Dissolution kinetics of calcite in CO_2-H_2O systems at 210 °C
Editor: Miles, D.L.
Conference Name: Water-Rock Interaction 6
Conference Location: Malvern, U.K.
Publisher: Balkema
Pages: 673-674
Keywords: carbonates, dissolution kinetics, elevated temperature, elevated pressure, CO_2, low pH, acidic, calcite, laboratory study

Reference Type: Book Section
Record Number: 121
Author: Talman, S.J.; Wiwchar, B.; Gunter, W.D.; Scarfe, C.M.
Year: 1990
Title: Dissolution kinetics of calcite in the H_2O-CO_2 system along the steam saturation curve to 210 °C
Editor: Spencer, R.J.; Chou, I.-M.
Book Title: Fluid-Mineral Interactions: A tribute to H.P. Eugster
Publisher: Geochemical Scoiety
Volume: Special Publication No. 2
Pages: 41-55
Keywords: carbonates, dissolution kinetics, laboratory study, high temperature, high pressure, CO_2, batch experiments, low pH, acidic

Reference Type: Journal Article
Record Number: 252
Author: Taylor, A.S.; Blum, J.D.; Lasaga, A.C.
Year: 2000
Title: The dependance of labradorite dissolution and Sr isotope release rates on solution saturation state
Journal: Geochimica et Cosmochimica Acta
Volume: 64
Issue: 14
Pages: 23889-2400
Keywords: silicates, feldspars, labradorite, dissolution kinetics, column experiments, laboratory study, low temperature, low pressure, low pH, acidic, isotopes

Reference Type: Journal Article
Record Number: 308
Author: Taylor, A.S.; Blum, J.D.; Lasaga, A.C.; MacInnis, I.N.
Year: 2000
Title: Kinetics of dissolution and Sr release during biotite and phlogopite weathering
Journal: Geochimica et Cosmochimica Acta
Volume: 64
Issue: 7
Pages: 1191-1208
Keywords: silicates, micas, biotite, phlogopite, dissolution kinetics, weathering, isotopes, laboratory study, low temperature, low pressure, low pH, acidic, column experiments

Reference Type: Journal Article
Record Number: 264

Author: Techer, I.; Advocat, T.; Lancelot, J.; Liotard, J.-M.
Year: 2001
Title: Dissolution kinetics of basaltic glasses: control by solution chemistry and protective effect of the alteration film
Journal: Chemical Geology
Volume: 176
Pages: 235-263
Keywords: dissolution kinetics, basalt, glass, amorphous, laboratory study, elevated temperature, low pressure, mid pH, neutral, batch experiments, flow experiments, surface layers, amorphous, armouring, chemical affinity, synthetic, alkaline, high pH, activation energy, surface coatings

Reference Type: Journal Article
Record Number: 433
Author: Teng, H.H.
Year: 2004
Title: Controls by saturation state on etch pit formation during calcite dissolution.
Journal: 68
Volume: 2
Pages: 253-262

Reference Type: Journal Article
Record Number: 189
Author: Teng, H.H.; Dove, P.M.; DeYoreo, J.J.
Year: 1999
Title: Reversed calcite morphologies induced by microscopic growth kinetics: Insight into biomineralization
Journal: Geochimica et Cosmochimica Acta
Volume: 63
Issue: 17
Pages: 2507-2512
Keywords: calcite, carbonates, precipitation kinetics, laboratory study, low temperature, neutral, mid pH, high pH, alkaline

Reference Type: Journal Article
Record Number: 369
Author: Teng, H.H.; Fenter, P.; Cheng, L.; Sturchio, N.C.
Year: 2001
Title: Resolving orthoclase dissolution processes with atomic force microscopy and X-ray reflectivity
Journal: Geochimica et Cosmochimica Acta
Volume: 65
Issue: 20
Pages: 3459-3474
Date: April 17, 2001
Keywords: feldspars, silicates, orthoclase, dissolution kinetics, AFM, atomic force microscopy, X-ray reflectivity, low pH, acidic, mid pH, neutral, high pH, alkaline, low temperature, low pressure, K-feldspar, flow-through experiments, surface coatings, laboratory study

Reference Type: Journal Article
Record Number: 143
Author: Thomas, J.E.; Jones, C.F.; Skinner, W.M.; Smart, R. St.C.
Year: 1998
Title: The role of surface sulphur species in the inhibition of pyrrhotite dissolution in acid conditions
Journal: Geochimica et Cosmochimica Acta
Volume: 62
Issue: 9
Pages: 1555-1565
Keywords: pyrrhotite, sulphides, dissolution kinetics, low pH, low temperature, elevated temperature, acidic

Reference Type: Journal Article
Record Number: 285
Author: Thomas, J.E.; Skinner, W.M.; Smart, R.S.C.
Year: 2001
Title: A mechanism to explain sudden changes in rates and products for pyrrhotite dissolution in acid solution
Journal: Geochimica et Cosmochimica Acta
Volume: 65
Issue: 1
Pages: 1-12
Keywords: pyrrhotite, sulphides, dissolution kinetics, low temperature, low pressure, low pH, acidic, synthetic, surface charge, reaction mechanisms, reducing conditions, XPS, X-ray photoelectron spectroscopy, elevated temperature

Reference Type: Journal Article
Record Number: 401
Author: Thomas, J.E.; Skinner, W.M.; Smart, R.S.C.
Year: 2003
Title: A comparison of the dissolution behavior of troilite with other iron(II) sulfides; implications of structure
Journal: Geochimica et Cosmochimica Acta
Volume: 67
Issue: 5
Pages: 831-843
Date: August 19, 2002
Keywords: sulphides, triolite, dissolution kinetics, low pressure, laboratory study, elevated temperature, XPS, X-ray photoelectron spectroscopy, oxidising conditions, reducing conditions, acidic, low pH, FeS

Reference Type: Conference Proceedings
Record Number: 169
Author: Trotignon, L.; Turpault, M.-P.
Year of Conference: 1992
Title: The dissolution kinetics of biotite in dilute HNO_3 at 24°C
Editor: Kharaka, Y.K.; Maest, A.S.
Conference Name: 7th International Symposium on Water-Rock Interaction - WRI-7
Conference Location: Park City, Utah, USA, 13-18 July 1992
Publisher: A.A. Balkema
Volume: 1
Number of Volumes: 2
Pages: 123-125
Keywords: silicates, micas, biotite, dissolution kinetics, low temperature, low pH, laboratory study, batch experiments, acidic

Reference Type: Conference Proceedings
Record Number: 211
Author: Tsuchiya, N.; Nakatsuka, K.
Year of Conference: 1995
Title: Kinetics and modeling of perthite dissolution in a hydrothermal acid solution
Editor: Kharaka, Y.K.; Chudaev, O.V.
Conference Name: 8th International Symposium on Water-Rock Interaction - WRI-8
Conference Location: Vladivostok, Russia, 15-19 August 1995
Publisher: A.A. Balkema
Pages: 161-164
Keywords: silicates, perthite, feldspars, dissolution kinetics, laboratory study, high temperature, high pressure, low pH, acidic

Reference Type: Journal Article
Record Number: 198
Author: Turpault, M.-P.; Bonnaud, P.
Year: 1998
Title: Dissolution rate of fluor-apatite crystals inserted in acid soils of a forested catchment (Vosges Mountains, NE France)
Journal: Mineralogical Magazine
Volume: 62A
Pages: 1557-1558
Keywords: phosphates, apatite, dissolution kinetics, field study, low temperature, neutral, mid pH
Notes: Proceedings of the 1998 V.M. Goldschmidt Conference, Toulouse, France

Reference Type: Journal Article
Record Number: 239
Author: Turpault, M.-P.; Trotignon, L.
Year: 1994
Title: The dissolution of biotite single crystals in dilute HNO_3 at 24°C: Evidence of an anisotropic corrosion process of micas in acidic solutions
Journal: Geochimica et Cosmochimica Acta
Volume: 58
Issue: 13
Pages: 2761-2775
Keywords: silicates, biotite, micas, low temperature, low pressure, low pH, dissolution kinetics, surface areas, laboratory study, acidic

Reference Type: Book Section
Record Number: 413
Author: Ullman, W.J.; Welch, S.A.
Year: 2002
Title: Organic ligands and feldspar dissolution
Editor: Hellmann, R.; Wood, S.A.
Book Title: Water-Rock Interactions, Ore Deposits, and Envionmental Geochemistry: A Tribute to David A. Crear
Publisher: The Geochemical Society, Special Publication No. 7, 2002
Pages: 3-35
Keywords: low temperature, low pressure, low pH, mid pH, high pH, acidic, neutral, alkaline, review study, silicates, feldspars, reaction mechanisms, ligands, surface complexes, organics, organic acids, albite, K-feldspar, oligoclase, anorthite, microcline, labradorite, bytownite, elevated temperature, high temperature, high pressure

Reference Type: Journal Article
Record Number: 155
Author: Valsami-Jones, E.; Ragnarsdottir, K.V.; Putnis, A.; Bosbach, D.; Kemp, A.J.; Cressey, G.
Year: 1998
Title: The dissolution of apatite in the presence of aqueous metal cations at pH 2-7
Journal: Chemical Geology
Volume: 151
Pages: 215-233
Keywords: phosphates, apatite, dissolution kinetics, precipitation kinetics, low pH, mid pH, neutral, low temperature, batch experiments, acidic, laboratory study

Reference Type: Journal Article
Record Number: 23
Author: Velbel, M.A.
Year: 1993
Title: Temperature dependence of silicate weathering in nature : How strong a negative feedback on long-term accumulation of atmospheric CO_2 and global greenhouse warming?

Journal: Geology
Volume: 21
Pages: 1059-1062
Keywords: silicates, feldspars, field study, weathering, CO_2, dissolution kinetics

Reference Type: Conference Proceedings
Record Number: 215
Author: Velbel, M.A.
Year of Conference: 1996
Title: Some effects of clay minerals on the kinetics of silicate-mineral weathering
Editor: Bottrell, S.H.
Conference Name: Fourth International Symposium on the Geochemistry of the Earth's Surface
Conference Location: Ilkley, Yorkshire, UK
Pages: 520-523
Keywords: review study, dissolution kinetics, armoring, silicates

Reference Type: Journal Article
Record Number: 182
Author: Ventura, M.; Mondragon, D.; Carazo, C.; Casas, I.; Pablo, J. de; Domenech, C.; Ayora, C.
Year: 1998
Title: Dissolution kinetics of high-FeO olivine rock under anoxic conditions
Journal: Mineralogical Magazine
Volume: 62A
Pages: 1587-1588
Keywords: olivine, dissolution kinetics, low temperature, low pressure, low pH, flow experiments, laboratory study, acidic
Notes: Proceedings of the 1998 V.M. Goldschmidt Conference, Toulouse, France

Reference Type: Journal Article
Record Number: 127
Author: Walter, L.M.; Morse, J.W.
Year: 1985
Title: The dissolution kinetics of shallow marine carbonates in seawater: A laboratory study
Journal: Geochimica et Cosmochimica Acta
Volume: 49
Pages: 1503-1513
Keywords: carbonates, calcite, aragonite, dissolution kinetics, laboratory study, pH-stat experiments, seawater

Reference Type: Journal Article
Record Number: 200
Author: Walther, J.V.
Year: 1996
Title: Relation between rates of aluminosilicate mineral dissolution, pH, temperature, and surface charge
Journal: American Journal of Science
Volume: 296
Pages: 693-728
Keywords: dissolution kinetics, review study, low temperature, elevated temperature, low pressure, low pH, mid pH, neutral, high pH, surface charge, corundum, quartz, kaolinite, albite, acidic, silicates, oxides, feldspars, clays, alkaline

Reference Type: Journal Article
Record Number: 149
Author: Weidler, P.G.; Hug, S.J.; Wetche, T.P.; Hiemstra, T.
Year: 1998
Title: Determination of growth rates of (100) and (110) faces of synthetic goethite by scanning force microscopy

Journal: Geochimica et Cosmochimica Acta
Volume: 62
Issue: 21/22
Pages: 3407-3412
Keywords: oxides, hydroxides, Fe oxide, laboratory study, synthetic, goethite, precipitation kinetics, AFM, atomic force microscopy

Reference Type: Journal Article
Record Number: 408
Author: Weisener, C.G.; Smart, R.S.C.; Gerson, A.R.
Year: 2003
Title: Kinetics and mechanisms of the leaching of low Fe sphalerite
Journal: Geochimica et Cosmochimica Acta
Volume: 67
Issue: 5
Pages: 823-830
Date: September 30, 2002
Keywords: sphalerite, sulphides, dissolution kinetics, laboratory study, low pH, acidic, low temperature, elevated temperature, activation energy, batch experiments, low pressure, oxidising conditions

Reference Type: Journal Article
Record Number: 164
Author: Welch, S.A.; Barker, W.W.; Banfield, J.F.
Year: 1999
Title: Microbial extracellular polysaccharides and plagioclase dissolution
Journal: Geochimica et Cosmochimica Acta
Volume: 63
Issue: 9
Pages: 1405-1419
Keywords: silicates, plagioclase, bytownite, feldspars, dissolution kinetics, batch experiments, organics, low pH, mid pH, neutral, low temperature, low pressure, acidic, microbes, bacteria, laboratory study

Reference Type: Conference Proceedings
Record Number: 202
Author: Welch, S.A.; Ullman, W.J.
Year of Conference: 1992
Title: Dissolution of feldspars in oxalic acid solutions
Editor: Kharaka, Y.K.; Maest, A.S.
Conference Name: 7th International Symposium on Water-Rock Interaction - WRI-7
Conference Location: Park City, Utah, USA, 13-18 July 1992
Publisher: A.A. Balkema
Volume: 1
Number of Volumes: 2
Pages: 127-130
Keywords: silicates, feldspars, plagioclase, quartz, dissolution kinetics, organics, oxalic acid, oxalate, laboratory study, fluidised bed experiments, low pH, mid pH, neutral, high pH, acidic, alkaline

Reference Type: Journal Article
Record Number: 109
Author: Welch, S.A.; Ullman, W.J.
Year: 1996
Title: Feldspar dissolution in acidic and organic solutions: Compositional and pH dependence of dissolution rate
Journal: Geochimica et Cosmochimica Acta
Volume: 60
Issue: 16
Pages: 2939-2948

Keywords: silicates, albite, labradorite, bytownite, plagioclase, feldspars, dissolution kinetics, laboratory study, organic acids, oxalate, oxalic acid, fluidised bed experiments, low temperature, low pressure, low pH, mid pH, neutral, high pH, organics, acidic, alkaline

Reference Type: Journal Article
Record Number: 245
Author: Welch, S.A.; Ullman, W.J.
Year: 1999
Title: The effect of microbial glucose metabolism on bytownite feldspar dissolution rates between 5° and 35°C
Journal: Geochimica et Cosmochimica Acta
Volume: 63
Issue: 19/20
Pages: 3247-3259
Keywords: silicates, feldspars, bytownite, dissolution kinetics, low temperature, low pressure, batch experiments, microbes, bacteria, surface areas, laboratory study

Reference Type: Journal Article
Record Number: 319
Author: Welch, S.A.; Ullman, W.J.
Year: 2000
Title: The temperature dependence of bytownite feldspar dissolution in neutral aqueous solutions of inorganic and organic ligands at low temperature (5-35°C)
Journal: Chemical Geology
Volume: 167
Pages: 337-354
Keywords: silicates, bytownite, plagioclase, feldspars, dissolution kinetics, laboratory study, batch experiments, low temperature, low pressure, neutral, mid pH, ligands, organics, acetate, oxalate, gluconate, activation energy, elevated temperature, organic acids

Reference Type: Conference Proceedings
Record Number: 423
Author: Wellman, D.M.; Icenhower, J.P.; Geiszler, K.N.
Year of Conference: 2002
Title: Dependence of Na-autunite dissolution kinetics on pH
Conference Name: Denver Annaul Meeting
Conference Location: Colorado Convention Center: Exhibit Hall
Volume: 84-3
Date: October 28, 2002
Keywords: autunite, UO_2, oxides, phosphates, dissolution kinetics, laboratory study, synthetic, flow-through experiments, elevated temperature, low pressure, neutral, alkaline, low pH, acidic, mid pH, high pH

Reference Type: Journal Article
Record Number: 386
Author: White, A.F.
Year: 2002
Title: Determining mineral weathering rates based on solid and solute weathering gradients and velocities: application to biotite weathering in saprolites
Journal: Chemical Geology
Volume: 190
Issue: 1-4
Pages: 69-89
Date: 30 October 2002
Keywords: field study, weathering, dissolution kinetics, low temperature, low pressure, soil, silicates, micas, biotite, mid pH, neutral

Reference Type: Journal Article
Record Number: 240
Author: White, A.F.; Blum, A.E.; Bullen, T.D.; Vivit, D.V.; Schulz, M.; Fitzpatrick, J.
Year: 1999
Title: The effect of temperature on experimental and natural chemical weathering rates of granitoid rocks
Journal: Geochimica et Cosmochimica Acta
Volume: 63
Issue: 19/20
Pages: 3277-3291
Keywords: granite, dissloution kinetics, low temperature, low pressure, laboratory study, dissolution kinetics, flow-through experiments, column experiments, low pH, mid pH, neutral, acidic

Reference Type: Book Section
Record Number: 414
Author: White, A.F.; Blum, A.E.; Schulz, M.S.; Huntington, T.G.; Peters, N.E.; Stonestrom, D.A.
Year: 2002
Title: Chemical weathering of the Panola Granite: Solute and regolith elemental fluxes and the weathering rate of biotite
Editor: Hellmann, R.; Wood, S.A.
Book Title: Water-Rock Interactions, Ore Deposits, and Envionmental Geochemistry: A Tribute to David A. Crear
Publisher: The Geochemical Society, Special Publication No. 7, 2002
Pages: 37-59
Keywords: weathering, silicates, micas, review study, biotite, neutral, mid-pH, low pressure, low temperature, dissolution kinetics, field study, soil, granite

Reference Type: Journal Article
Record Number: 277
Author: White, A.F.; Bullen, T.D.; Schulz, M.S.; Blum, A.E.; Huntington, T.G.; Peters, N.E.
Year: 2001
Title: Differential rates of feldspar weathering in granitic regoliths
Journal: Geochimica et Cosmochimica Acta
Volume: 65
Issue: 6
Pages: 847-869
Keywords: dissolution kinetics, weathering, granite, feldspars, plagioclase, K-feldspar, field study, low pressure, low temperature, mid pH, neutral

Reference Type: Conference Proceedings
Record Number: 280
Author: White, A.F.; Stonestrom, D.A.
Year of Conference: 1998
Title: Comparisons of short-term and long-term chemical weathering rates in granitoid regoliths
Editor: Arehart, G.B.; Hulston, J.R.
Conference Name: 9th International Symposium on Water-Rock Interaction (WRI-9)
Conference Location: Taupo, New Zealand, 30 March-3 April 1998
Publisher: A.A. Balkema, Rotterdam
Pages: 399-402
Keywords: dissolution kinetics, weathering, granite, field study, low pressure, low temperature, mid pH, neutral

Reference Type: Journal Article
Record Number: 139
Author: White, A.F.; Yee, A.
Year: 1985
Title: Aqueous oxidation-reduction kinetics associated with coupled electron-cation transfer from iron-containing silicates at 25°C

Journal: Geochimica et Cosmochimica Acta
Volume: 49
Pages: 1263-1275
Keywords: silicates, micas, biotite, hornblende, low pH, mid pH, neutral, low temperature, acidic

Reference Type: Journal Article
Record Number: 72
Author: Wieland, E.; Stumm, W.
Year: 1992
Title: Dissolution kinetics of kaolinite in acidic aqueous solutions at 25 °C
Journal: Geochimica et Cosmochimica Acta
Volume: 56
Pages: 3339-3355
Keywords: silicates, clays, kaolinite, dissolution kinetics, low temperature, low pressure, laboratory study, batch experiments, low pH, mid pH, neutral, acidic

Reference Type: Journal Article
Record Number: 295
Author: Wieland, E.; Wehrli, B.; Stumm, W.
Year: 1988
Title: The coordination chemistry of weathering: III. A generalization on the dissolution rates of minerals
Journal: Geochimica et Cosmochimica Acta
Volume: 52
Pages: 1969-1981
Keywords: review study, dissolution kinetics, silicates, feldspars, surface complexes, reaction mechanisms, weathering, activation energy, micas, clays, oxides, quartz, pyroxenes, olivines, muscovite, kaolinite, albite, zircon, augite, enstatite, albite, bayerite, forsterite, K-feldspar, diopside, anorthite, point of zero charge, PZC, Al_2O_3, BeO_2

Reference Type: Journal Article
Record Number: 142
Author: Wilkin, R.T.; Barnes, H.L.
Year: 1996
Title: Kinetics of analcime dissolution and precipitation at 175°C and pH 8
Journal: Geological Society of America
Volume: 28
Pages: PA 33
Keywords: silicates, analcime, analcite, dissolution kinetics, precipitation kinetics, high temperature, mid pH, neutral

Reference Type: Conference Proceedings
Record Number: 140
Author: Wilkin, R.T.; Barnes, H.L.
Year of Conference: 1997
Title: Temperature- and free energy-dependance of zeolite precipitation and dissolution rates
Conference Name: 7th Annual V.M. Goldschmidt Conference
Pages: 219
Date: 1997
Keywords: silicates, zeolites, dissolution kinetics, precipitation kinetics, analcime, analcite, clinoptilolite, elevated temperature, high temperature, high pH, alkaline

Reference Type: Journal Article
Record Number: 141
Author: Wilkin, R.T.; Barnes, H.L.
Year: 1998

Title: Kinetics of the clinoptilolite to analcime reaction
Journal: Geological Society of America
Volume: 30
Date: 1998
Keywords: silicates, zeolites, analcime, analcite, clinoptilolite, dissolution kinetics, precipitation kinetics, high temperature, elevated pressure, high pressure, high pH, alkaline

Reference Type: Journal Article
Record Number: 63
Author: Wogelius, R.A.; Walther, J.V.
Year: 1991
Title: Olivine dissolution at 25°C: effects of pH, CO_2 and organic acids
Journal: Geochimica et Cosmochimica Acta
Volume: 55
Pages: 943-954
Keywords: silicates, olivine, dissolution kinetics, laboratory study, low temperature, low pressure, low pH, mid pH, neutral, high pH, acidic, alkaline, organic acids, batch experiments, fluidised bed experiments, CO_2

Reference Type: Journal Article
Record Number: 64
Author: Wogelius, R.A.; Walther, J.V.
Year: 1992
Title: Olivine dissolution kinetics at near-surface conditions
Journal: Chemical Geology
Volume: 97
Pages: 101-112
Keywords: silicates, olivine, dissolution kinetics, laboratory study, fluidised bed experiments, batch experiments, low pH, mid pH, neutral, high pH, low temperature, low pressure, acidic, alkaline

Reference Type: Journal Article
Record Number: 451
Author: Wolff-Boenisch, D.; Gislason, S. R.; Oelkers, E.H.
Year: 2004
Title: The effect of fluoride on the dissolution rate of glasses at pH 4 and 25°C
Journal: Geochimica et Cosmochimica Acta
Volume: 68
Issue: 22
Pages: 4571-4582
Keywords: glass, basalt, amorphous, dissolution kinetics, laboratory study, mixed flow experiments, low pH, low temperature, acidic, low pressure, rhyolite, lava, dacite

Reference Type: Journal Article
Record Number: 450
Author: Wolff-Boenisch, D.; Gislason, S.R.; Oelkers, E.H.; Putnis, C.V.
Year: 2004
Title: The dissolution rates of natural glasses as a function of their composition at pH 4 and 10.6, and temperatures from 25 to 74°C
Journal: Geochimica et Cosmochimica Acta
Volume: 68
Issue: 23
Pages: 4843-4858
Keywords: glass, basalt, amorphous, dissolution kinetics, laboratory study, mixed flow experiments, low pH, low temperature, acidic, high pH, alkaline, low pressure, elevated temperature, rhyolite, lava

Reference Type: Journal Article

Record Number: 111
Author: Wollast, R.
Year: 1967
Title: Kinetics of the alteration of K-feldspar in buffered solutions at low temperature
Journal: Geochimica et Cosmochimica Acta
Volume: 31
Pages: 635-648
Keywords: silicates, feldspars, K-feldspar, dissolution kinetics, laboratory study, batch experiments, low temperature, low pressure, low pH, mid pH, neutral, high pH, acidic, alkaline

Reference Type: Book Section
Record Number: 118
Author: Wollast, R.
Year: 1990
Title: Rate and mechanism of dissolution of carbonates in the system $CaCO_3$-$MgCO_3$
Editor: Stumm
Book Title: Aquatic chemical kinetics, reaction rates of processes in natural waters
Publisher: John Wiley and Sons
Keywords: carbonates, calcite, aragonite, magnesite, dissolution kinetics, review study

Reference Type: Journal Article
Record Number: 79
Author: Wood, B.J.; Walther, J.V.
Year: 1983
Title: Rates of hydrothermal reactions
Journal: Science
Volume: 222
Pages: 413-415
Keywords: dissolution kinetics, review study, low temperature, high temperature, elevated temperatures, quartz, sanidine, microcline, adularia, albite, plagioclase, feldspars, phlogopite, muscovite, micas, silicates

Reference Type: Journal Article
Record Number: 39
Author: Xiao, Y.; Lasaga, A.C.
Year: 1994
Title: Ab initio quantum mechanical studies of the kinetics and mechanisms of silicate dissolution: $H^+(H_3O^+)$ catalysis
Journal: Geochimica et Cosmochimica Acta
Volume: 58
Issue: 24
Pages: 5379-5400
Keywords: silicate minerals, dissolution kinetics, theoretical study, reaction mechanisms

Reference Type: Journal Article
Record Number: 73
Author: Xie, Z.; Walther, V.
Year: 1992
Title: Incongruent dissolution and surface area of kaolinite
Journal: Geochimica et Cosmochimica Acta
Volume: 56
Pages: 3357-3363
Keywords: silicates, clays, kaolinite, dissolution kinetics, low temperature, surface areas, review study, low pH, mid pH, neutral, high pH, acidic, alkaline

Reference Type: Conference Proceedings

Record Number: 222
Author: Yanagisawa, K.; Ioku, K.; Yamasaki, N.
Year of Conference: 1994
Title: Solubility measurement and single crystal growth of calcite under hydrothermal conditions
Conference Name: The First International Conference on Solvo-Thermal Reactions (ICSTR-1)
Conference Location: Takamatsu, Japan
Keywords: carbonates, calcite, precipitation kinetics, batch experiments, high temperatures, high pressures, laboratory study

Reference Type: Conference Proceedings
Record Number: 221
Author: Yanagisawa, K.; Kageyama, K.; Matsushita, I.; Feng, Q.; Yamasaki, N.
Year of Conference: 1996
Title: Single crystal growth of calcite in carboxylate solutions under hydrothermal conditions - Influence of growth conditions and solvents on growth rate and quality of grown crystals
Conference Name: The Second International Conference on Solvothermal reactions (ICSTR-2)
Conference Location: Takamatsu, kagawa, Japan
Keywords: carbonates, calcite, precipitation kinetics, high pressure, high temperature, laboratory study, batch experiments

Reference Type: Journal Article
Record Number: 41
Author: Yanagisawa, N.; Fujimoto, K.; Nakashima, S.; Kurata, Y.; Sanada, N.
Year: 1997
Title: Micro FT-IR study of the hydration-layer during dissolution of silica glass
Journal: Geochimica et Cosmochimica Acta
Volume: 61
Issue: 6
Pages: 1165-1170
Keywords: silicates, silica, glass, amorphous, dissolution kinetics, high temperature, high pressure, FTIR, laboratory study, mid pH, neutral, surface hydration, surface layers

Reference Type: Journal Article
Record Number: 394
Author: Yokoyama, T.; Banfield, J.B.
Year: 2002
Title: Direct determinations of the rates of rhyolite dissolution and clay formation over 52,000 years and comparison with laboratory measurements
Journal: Geochimica et Cosmochimica Acta
Volume: 66
Issue: 15
Pages: 2665-2681
Date: February 15, 2002
Keywords: rhyolite, weathering, dissolution kinetics, laboratory versus field study, laboratory study, flow-through experiments, low temperature, elevated temperature, low pressure, mid pH, neutral, glass, amorphous, clays, precipitation kinetics

Reference Type: Journal Article
Record Number: 434
Author: Yunmei, Y.; Yongxuan, Z.; William-Jones, A.E.; Zhenmin, G.; Dexian, L.
Year: 2004
Title: A kinetic study of the oxidation of arsenopyrite in acidic solutions: implications for the environment
Journal: Applied Geochemistry
Volume: 19
Pages: 435-444

Reference Type: Journal Article
Record Number: 60
Author: Zhang, H.; Bloom, P.R.; Nater, E.A.
Year: 1993
Title: Change in surface area and dissolution rates during hornblende dissolution at pH 4.0
Journal: Geochimica et Cosmochimica Acta
Volume: 57
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Keywords: silicates, hornblende, dissolution kinetics, low pH, acetate, laboratory study, low temperature, low pressure, surface areas

Reference Type: Conference Proceedings
Record Number: 446
Author: Zhang, R.; Shumin, H.; Zhang, Z.
Year of Conference: 2000
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Pages: 39
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Author: Zinder, B.; Furrer, G.; Stumm, W.
Year: 1986
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Reference Type: Conference Proceedings
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Year of Conference: 1998
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Conference Name: 9th International Symposium on Water-Rock Interaction (WRI-9)
Conference Location: Taupo, New Zealand, 30 March-3 April 1998
Publisher: A.A. Balkema, Rotterdam
Pages: 955-958
Keywords: calcite, carbonates, precipitation kinetics, low temperature, low pressure, laboratory study, seawater