

# Reactivity of AN-FO with pyrite containing weathering products

Dept. of the Interior, Bureau of Mines - Electrochemical characterization of the interaction between ammonium nitrate and reactive ground

Carbonate and hydrous sulfate precipitation (no SR <sub>2</sub> per mole mineral)	
$2\text{HCO}_3^- + \text{Ca}^{2+} = \text{CaCO}_3 + \text{CO}_2 + \text{H}_2\text{O}$	(71)
$4\text{HCO}_3^- + \text{Ca}^{2+} + \text{Mg}^{2+} = \text{CaMg}(\text{CO}_3)_2 + 2\text{CO}_2 + 2\text{H}_2\text{O}$	(72)
$\text{Ca}_3(\text{PO}_4)_2 + \text{H}^+ = 3\text{Ca}^{2+} + 3\text{PO}_4^{3-} + \text{H}_2\text{O}$	(73)
Reverse weathering (RW) - aluminosilicate diagenesis	
$\text{Mg}^{2+} + \frac{1}{2}\text{Al}_2\text{Si}_2\text{O}_5(\text{OH})_2 + 2\text{HCO}_3^- + \frac{1}{2}\text{SiO}_2 = \frac{1}{2}\text{Mg}_3\text{Al}_2\text{Si}_2\text{O}_{10}(\text{OH})_2 + 2\text{CO}_2 + \frac{1}{2}\text{H}_2\text{O}$	(74)
$\text{K}^+ + \frac{1}{4}\text{Na}_{20}\text{Al}_{20}\text{Si}_{15}\text{O}_{105}(\text{OH})_2 + \frac{1}{4}\text{Al}_2\text{Si}_2\text{O}_5(\text{OH})_2 + \frac{1}{2}\text{HCO}_3^- = \frac{1}{4}\text{K}_{40}\text{Al}_{40}\text{Si}_{40}\text{O}_{200}(\text{OH})_2 + \frac{1}{2}\text{Na}^+ + \frac{1}{2}\text{CO}_2 + \text{SiO}_2 + \frac{1}{4}\text{H}_2\text{O}$	(75)
Sulfate reduction/carbonate precipitation (per mole S)	
$\frac{1}{2}\text{Fe}_2\text{O}_3 + \text{SO}_4^{2-} + \frac{1}{2}\text{CH}_2\text{O} + \text{Ca}^{2+} = \frac{1}{2}\text{FeS}_2 + \frac{1}{2}\text{CO}_2 + \frac{1}{2}\text{H}_2\text{O} + \text{CaCO}_3$	(76)
Simple organic matter fixation/oxic oxidation	
$\text{CO}_2 + \text{H}_2\text{O} = \text{O}_2 + \text{CH}_2\text{O}$	(77)
Pyrite oxidation	
$\frac{1}{2}\text{O}_2 + \frac{1}{2}\text{FeS}_2 + \text{H}_2\text{O} = \frac{1}{2}\text{Fe}_2\text{O}_3 + 2\text{H}^+ + \text{SO}_4^{2-}$	(78)

Description: -

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Sanskrit literature

Chemical reactions.

Pyrites.

Nitrates.

Ammonium compounds. Reactivity of AN-FO with pyrite containing weathering products

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Eighteenth century -- reel 2502, no. 28.

Report of investigations (United States. Bureau of Mines) -- 8373.

Report of investigations - Bureau of Mines ; 8373 Reactivity of AN-

FO with pyrite containing weathering products

Notes: Includes bibliographical references.

This edition was published in 1979



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Tags: #A #mechanistic #study #into #the #reactions #of #ammonium #nitrate #with #pyrite

## Aerobic bacterial pyrite oxidation and acid rock drainage during the Great Oxidation Event

Acid drainage can result from a variety of natural sources and anthropogenic activities; therefore, acid mine drainage is too narrow a descriptor for many situations. Figure 2-6: The Global Sulphur Cycle Stumm and Morgan, 1996.

## Browse subject: Mine explosions

The hydrolysis of feldspar to clay is illustrated in Figure 5. In addition to temperature fluctuation, as governed by external climate and seasonal conditions, sulphide oxidation can result in generation of heat, which may have an effect on transport and modification of mine discharges internal to the mine waste environment. In the Ottawa area heaving problems have been encountered only in rock formations with much higher pyrite contents, although a systematic sampling program has not been carried out.

## Role of pyrite in formation of hydroxyl radicals in coal: possible implications for human health

Photochemical reactions are of importance with respect to reduction of iron, which may lead to iron rerelease as well as the concomitant release of sorbed metals. When it cannot be avoided, give consideration to a structural floor system.

## CBD

Borm PJA, Tran L: From quartz hazard to quartz risk: the coal mines revisited.

## 5.2 Chemical Weathering

Thus well drained environments experience more continuous weathering.

**Browse subject: Mine explosions**

Common in regions with high daily temperature fluctuations such as deserts.

**NIOSH TIC**

Welch KD, Davis TZ, van Eden ME, Aust SD: Deleterious iron-mediated oxidation of biomolecules.

## Related Books

- [Zakon franciszkanek Najświętszego Sakramentu w Polsce w latach 1871-1939](#)
- [When the heart sings - Moscow mirage](#)
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