



# Encyclopedia of Engineering Geology

Living Edition

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## Chemical Weathering

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## Synonyms

Chemical action (<http://link.springer.com/search?facet-content-type=ReferenceWorkEntry&query=Chemical%20action>); Chemical alteration (<http://link.springer.com/search?facet-content-type=ReferenceWorkEntry&query=Chemical%20alteration>); Chemical decomposition (<http://link.springer.com/search?facet-content-type=ReferenceWorkEntry&query=Chemical%20decomposition>); Chemical process (<http://link.springer.com/search?facet-content-type=ReferenceWorkEntry&query=Chemical%20process>); Chemical reactions (<http://link.springer.com/search?facet-content-type=ReferenceWorkEntry&query=Chemical%20reactions>)

## Definition

Weathering of rocks caused by the chemical action of water containing atmospheric oxygen, carbon dioxide, and some organic acids in solution on the rock-forming minerals leading to an adjustment of the mineralogical composition with the

formation of new minerals, like hydrous phyllosilicates, iron oxides/hydroxides, soluble salts, and other alteration products, consisting in rocks decay by their chemical decomposition.

## Introduction

Chemical processes need water, being carried out more rapidly at higher temperature, so they are common in warm and wet climates. There are different types of chemical weathering processes, such as solution, hydration, hydrolysis, carbonation, oxidation, reduction, and chelation. Some of these reactions occur more easily when the water is slightly acidic. Weathering of rocks is a fundamental phenomenon for the formation of the soil,...

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