

EXAMEN : Baccalauréat général - Série S-SVT ou S-SI	Session 2013
ÉPREUVE : Evaluation spécifique de Langue en section européenne	
<b>PHYSIQUE-CHIMIE en langue ANGLAISE</b>	
Thème : « Chimie et environnement »	<b>Sujet n°3</b>

## Chemical Reactions

### Acid Rain



Acid rain describes any form of precipitation with high levels of nitric and sulfuric acids. It can also occur in the form of snow, fog, and tiny bits of dry material that settle on Earth.

Rotting vegetation and erupting volcanoes release some chemicals that can cause acid rain, but most acid rain falls because of human activity. The biggest reason is the burning of fossil fuels by coal-burning power plants, factories, and automobiles.

When humans burn fossil fuels, sulfur dioxide ( $\text{SO}_2$ ) and nitrogen oxides ( $\text{NO}_x$ ) are released into the atmosphere. These chemical gases react with water, oxygen, and other substances to form mild solutions of sulfuric and nitric acid. Winds may spread these acidic solutions across the atmosphere and over hundreds of miles. When acid rain reaches Earth, it flows on the surface in flowing water, enters water systems, and seeps into the soil.

Acid rain has many ecological effects, but none is greater than its impact on lakes, streams, wetlands, and other aquatic environments. [...]

Acid rain also damages forests, especially those in higher places. It deprives the soil of essential nutrients and releases aluminum in the soil, which makes it hard for trees to absorb water. Tree leaves and needles are also harmed by acids.

The effects of acid rain, combined with other environmental stressors, leave trees and plants less able to withstand cold temperatures, insects, and disease. The pollutants may also inhibit trees' ability to reproduce.

From : <http://environment.nationalgeographic.com/environment/global-warming/acid-rain-overview/>

#### Questions :

- 1.a) Present and comment on this document.
- 1.b) Do not forget to focus on at least one physics and/or chemistry topic such as, for example the different types of acids and the pH of a solution.
2. According to you, how can people help prevent acid rain?