

EXAMEN : baccalauréat Général – Série S –SVT ou S-SI	SESSION 2014
EPREUVE : Evaluation spécifique de Langue en section européenne	
PHYSIQUE – CHIMIE en langue ANGLAISE	
THEME : REACTIONS CHIMIQUES	Sujet n°07

Chemistry in your cupboard ! : HARPIC

Like many products, Harpic® is a brand, rather than a single product. The brand covers a range of products associated with cleaning and killing germs in and around the lavatory bowl. This article will concentrate on the 'core' product, Harpic limescale remover.



Figure 1: Harpic limescale remover

What is limescale?

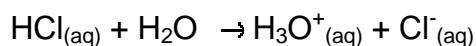
Limescale is a hard, whitish, chalky deposit found inside kettles and also around taps, sinks and toilet bowls. It is formed when dissolved salts present in hard water come out of solution as the water evaporates. A major component is calcium carbonate.

Calcium carbonate is virtually insoluble in water but 'dissolves' readily in acids. Strictly it is reacting with them rather than simply dissolving.

Harpic contains hydrochloric acid which dissolves limescale, calcium carbonate (CaCO₃), as shown.



Hydrochloric acid is a strong acid which means that it dissociates completely into ions:



Adapted from the Royal Society of Chemistry <http://www.rsc.org>

Questions :

1. Present and comment on this document.
2. Focus on at least one chemistry topic and give an example describing the acid-base reactions engaged.
3. Do you know any other kind of chemical reaction instead of acid-base ones?