

EXAMEN : BACCALAUREAT GENERAL	
EPREUVE : Evaluation spécifique de langue section européenne	
PHYSIQUE-CHIMIE en langue ANGLAISE	Sujet N°9

Organic Chemistry and Modern Life

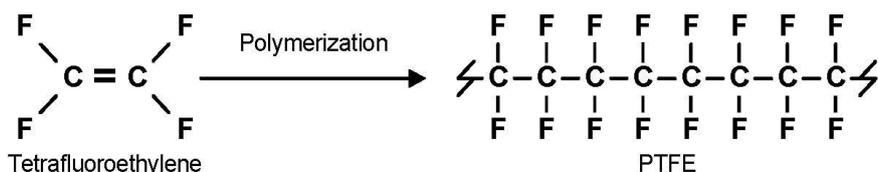
The role played by organic chemistry in modern existence is summed up in a famous advertising slogan used by E.I. du Pont de Nemours and Company: " Better Living Through Chemistry". The advertising campaign made its debut in 1938, just as du Pont introduced a revolutionary product of organic chemistry : nylon. Created by a brilliant young chemist named Wallace Carothers (1896-1937), nylon is an example of a polymer (discussed below) that started a revolution in plastics.

What would the world be like without the fruits of organic chemistry ? First, it would be necessary to take away all the various forms of rubber, vitamins, cloth, and paper made from organically based compounds. Aspirins and all types of other drugs, preservatives that keep food from spoiling, perfumes and toiletries, dyes and flavorings. Synthetic fibers (such as nylon), used in everything from toothbrushes to parachutes, would be out of the picture if it were not for the enormous progress made by organic chemistry.

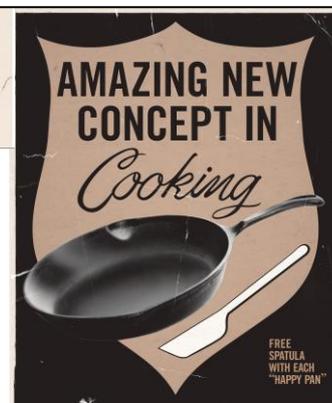
Then there is the vast array of petrochemicals that power modern civilization. Best-known among these is gasoline, but there is also coal, still one of the most significant fuels used in electrical power plants, as well as natural gas and various other forms of oil used either directly or indirectly in providing heat, light and electric power to homes.

Teflon (PTFE) : a exemple of polymer

(watch video2)



NOTHING STICKS TO
"HAPPY PAN"
A cast iron skillet sealed with DuPont TEFLON®



QUESTIONS

1. Present and comment on this document.
2. Watch video1 and explain how can we get polymers from crude oil ? Give some examples and applications of polymers.
3. Which monomer is used to synthesize Teflon (video1) ? What is the repeating unit for Teflon ? Which physical and chemical characteristics of Teflon explain its use to cover frying pans ?
4. What are the advantages and drawbacks in using polymers (video2) ?
5. According to you, what (and why) is the most important breakthrough in organic chemistry's history ?