

p 20

in a  
perfect world

in the  
real world

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H<sub>2</sub>O, CO<sub>2</sub>



major comb. products

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VOC  
particulates

complete  
combustion

**incomplete  
combustion  
poor engine performance**

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CO

complete  
combustion

**incomplete  
combustion  
poor engine performance**

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NO<sub>x</sub>  
NO, NO<sub>2</sub>

pure O<sub>2</sub>

p 13: 78% N<sub>2</sub>, 21% O<sub>2</sub>

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SO<sub>x</sub>  
SO<sub>2</sub>, SO<sub>3</sub>

pure C<sub>x</sub>H<sub>y</sub>

gasoline is a mixture

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Pb

gasoline stable  
when squished

gasoline not stable  
when squished