

## Re: Na + H2O2 (50%) -> H2?

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Date: 19 Jul 2004 06:14:33 -0700

jedcheck@yahoo.com (Jed Checketts) wrote in message  
news:<e98177f2.0407182105.3de29d1e@posting.google.com>...  
> [dave.harper@gmail.com](mailto:dave.harper@gmail.com) (David Harper) wrote in message  
news:<364fd697.0407172343.7b5a87c1@posting.google.com>...  
>> ZHEN <[zhenf@hotmail.com](mailto:zhenf@hotmail.com)> wrote in message news:<40F9E740.496A99C4@hotmail.com>...  
>>> Hi, everyone knows:  
>>> Can i use 50% H2O2 to get H2 at room teperature?  
>>>  
>>>  $H_2O_2 + H_2O + Na \rightarrow H_2 + NaOH + H_2O_2$   
>>>  
>> Before you do that, get all your affairs in order.  
>>  
>> Ignoring the H2O2 part, you know what happens when you put sodium in  
>> water, right? It's extremely exothermic and can be dangerous.  
>>  
>> Additionally, H2O2 throws off it's extra O relatively easy, so you  
>> might end up having the Na + H2O reaction, PLUS extra O2 given off by  
>> the H2O2. If you have any free H2 in the area near a hot reaction with  
>> O2 floating around also, you'll end up with an additional reaction  
>> that fuels the space shuttle's main engines:  $(2H_2 + O_2) \rightarrow LOTS\ AHEAT +$   
>>  $2H_2O$   
>>  
>> If you want H2, go to a local gas supplier and rent a full 200+ ft<sup>3</sup>  
>> tank for 50\$.  
>>  
>> The compressed hydrogen route is very expensive. 200 cubic feet of  
>> hydrogen is just slightly over 1 pound of hydrogen. To spend \$50.00  
>> for this pound is silly when 11 pounds of sodium hydride (at around  
>> \$.75 per pound) would produce the same amount of hydrogen. A bottle  
>> of compressed hydrogen is also quite bulky and has an initial cost of  
>> more than \$100.00 (not including the expensive pressure regulator) It  
>> is also very hard to pick up. Most people just try rolling the heavy  
>> metal bottles along the ground slowly.

(SNIP)

Yes, and when he creates 200 ft<sup>3</sup> of hydrogen, how do you think he'll store it? In a big balloon? Unless he plans on only using small

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portions at a time and using it immediately, a compressed cylinder affords small volume and no potentially dangerous processing (and hardware to capture the gas) needed. And if he doesn't need 200 ft<sup>3</sup>, he can just get a smaller cylinder for less.

On a side note, I don't know where you got that 100\$ estimate from. Sure, maybe if you buy it instead of rent it. 50\$ is a very conservative over-estimate. One place quoted me 27\$ + 10\$ for the regulator, but I ended up opting for helium instead (60\$ per 200 ft<sup>3</sup> cylinder) due to additional safety.