Getting hydrogen from hydrogen bottle in CEEC II E014

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Tags: AE H2 Gas Gasbottle High Pressure
Category: Protocol
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Goal

Getting a ballon filled with hydrogen

Prerequisites and preparation

Two ballons attached to a cut off 10 mL syringe

Hydrogen gas bottle connected to tubing in gas bottle room in E014

It is between 8:00 and 18:00, otherwise no hydrogen can be collected

Introduction by Alex or person responsitble for safety (Jens or Jacob)

Septum

Metal cannula in safety protection!!

Safety

Be aware of the dangers of hydrogen

Be aware of the dangers of gas bottles

No fire

No sharp devices near the ballon

When handling hydrogen do not do anything else at that moment

When carriying hydrogen were PPE (labcoat + goggles)

When carriying hydrogen carry nothing else

Close line immediatly when not used

Close bottle when not used anymore

Steps

Step number	Step description	Pictures

0. Safety	**Always follow at least all safety precautions stated above and in the protocol**	
1. Open gas bottle	Check that H2 valve in E005 is closed Open gas bottle using main vlave of the bottle in the gas bottle cabinet in E014 (approx. 1 full turn is enough)	
2. Open valve in E005	Do not adjust flow and pressure of valve unless you spoke with Alex or somebody taken care of safety in CEEC II (Jens or Jacob) Check that tubing is layed into the fumehood and that no heat sources / possible spark generation devices are in the fumehood Open valve	
3. Flushing tubing	When valve is open always stay in the lab. In case of emergency first close the valve than evacuate Flush tubing with hydrogen for 1 to 2 min	
4. Flush ballon	Press air out of ballon Put ballon with syringe opening on the hydrogen line collect small amount of hydrogen and disconnect from line Empty ballon repeat in total 3 x not needed when not pure hydrogen is sufficient - but still make sure you do not accidatially make oxyhydrogen	
5. Collecting hydrogen	Put ballon with syringe opening on the hydrogen line Wait until sufficient amount of hydrogen is collected Do not fill ballon too full - make sure that the filling level is so low, that the ballon will not pop When filled remove ballon from line	
6. Closing hydrogen ballon	Use cannula still in safety protection add cannula to syringe to which the ballon is attached remove protection from cannula immedaitly put cannula in a septum to avoid hydrogen streaming out and to protect tip of cannula	

7. Close hydrogen valve	With ballon in your hand: close valve asap	
8. Carrying hydrogen ballon	Not good method to carry hydrogen around, but best we can do at the moment Do not carry anything else Keep ballon on arm length from you Be careful of other people / devices / things passing by	
9. Using hydrogen	Remove septum from cannula Add hydrogen to desired flask Make sure no heating sources are close by Make sure hydrogen does not react with anything stongly inside the fumehood / where you are using the ballon - even if the ballon is attached to something else When using hydrogen no ther reaction should run in that fumehood.	
10. Close hydrogen bottle	Very improtant to be done once you are finished - do asap Close main valve on the bottle - do not overtighten it	

Linked resources

Equipment - EPR, CEEC I lab K002

Protocol - EPR measurement on EPR, CEEC I lab K002

Unique eLabID: 20250509-7d09eb0e7e8cd86a18bd4022534ad0aa433358f4
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