

PST-Labo - chemical objects*

version 2.02

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`pst-labo` provides macros for a variety of devices used mainly for chemical applications. Since most of these devices have a standardised design `pst-labo` spares you the trouble of having to create them manually. Besides the usage of the package `pst-osci` this document also describes how to create “high-level” objects using the command `PSTricks`. All basic objects are included in the file `pst-laboObj.tex` and are loaded during the start of `pst-labo`. These objects can be used for personal extensions. Section 4 gives an overview of all objects.

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1 Parameter

Table 1 describes all parameters unique to `pst-labo`.

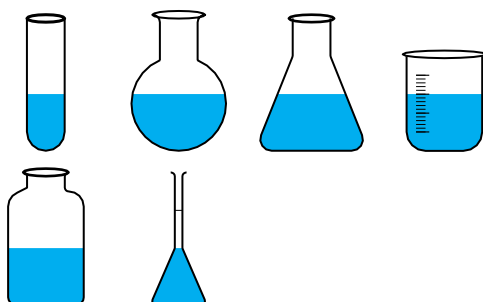
Table 1: Summary of all parameters available with `pst-labo`

<i>Name</i>	<i>values</i>	<i>default</i>	<i>comments</i>
glassType	tube ballon becher erlen flacon fioleJauge	tube	defines type of glass cylinder
bouchon	<code>hfalse truei</code>	false	Container is sealed with a plug.
pince	<code>hfalse truei</code>	false	wooden clamp
tubeDroit	<code>hfalse truei</code>	false	glass tube
tubeCoude	<code>hfalse truei</code>	false	glass tube with 90 degree twist
tubeCoudeU	<code>hfalse truei</code>	false	U-shaped glass tube
tubeCoudeUB	<code>hfalse truei</code>	false	extended version, only applies to glass contain- ers of type <code>ballon</code> and <code>erlen</code>
tubeRecourbe	<code>hfalse truei</code>	false	
tubeRecourbeCourt	<code>hfalse truei</code>	false	setup without Bunsen burner
tubePenche	<code>h-65...65i</code>	0	tilting angle
doubletube	<code>hfalse truei</code>	false	pour dégagement gazeux sans chauffage
etiquette	<code>hfalse truei</code>	false	
Numero	<code>hTexti</code>	{}	number for the option etiquette
tubeSeul	<code>hfalse truei</code>	false	wide/narrow <code>pspicture</code> box
becBunsen	<code>hfalse truei</code>	true	with/without Bunsen burner
barbotage	<code>hfalse truei</code>	false	attaches an additional glass tube to the original glass container
substance	<code>hMakroi</code>	<code>\relax</code>	<code>\pstBullesChampagne</code> , <code>\pstFilaments</code> , <code>\pstBilles</code> , <code>\pstBULLES</code> , <code>\pstClous</code> , <code>\pstCuivre</code>

<i>Name</i>	<i>values</i>	<i>default</i>	<i>comments</i>
solide	<code>hMakroi</code>	<code>\relax</code>	<code>\pstTournureCuivre,</code> <code>\pstClouFer,</code> <code>\pstGrenailleZinc</code> pour chauffage à reflux
refrigerantBouille	<code>hfalse truei</code>	false	setup for collecting gas
recuperationGaz	<code>hfalse truei</code>	false	
couleurReactifBurette	<code>hFarbei</code>	OrangePale	
niveauReactifBurette	20	<code>h0...25i</code>	restriction of 25mL
AspectMelange	<code>hStili</code>	DiffusionBleue	
CouleurDistillat	<code>hFarbei</code>	yellow	
phmetre	<code>hfalse truei</code>	false	display pH-meter
agitateurMagnetique	<code>hfalse truei</code>	true	
aspectLiquide1	<code>hStili</code>	cyan	defined as part of <code>\newpsstyle...</code>
aspectLiquide2	<code>hStili</code>	yellow	dito
aspectLiquide3	<code>hStili</code>	magenta	dito
niveauLiquide1	<code>h0...100i</code>	50	
niveauliquide2	<code>h0...100i</code>	0	< niveauLiquide1
niveauliquide3	<code>h0...100i</code>	0	< niveauLiquide2

1.1 glassType

`glassType` describes the type of glass container. A normal test tube is used by default.



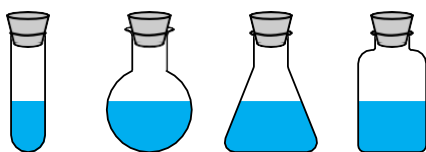
```

1 \psset{unit=0.5cm}
2 \pstTubeEssais
3 \pstTubeEssais[glassType=ballon]
4 \pstTubeEssais[glassType=erlen]
5 \pstTubeEssais[glassType=becher]
6 \pstTubeEssais[glassType=flacon]
7 \pstTubeEssais[glassType=fioleJauge]

```

1.2 bouchon

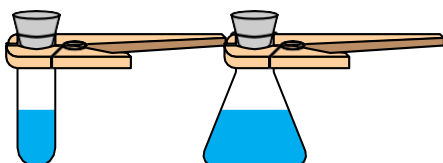
The option `bouchon` seals the respective glass container with a plug.



```
1 \psset{unit=0.45cm}
2 \psset{bouchon=true}
3 \pstTubeEssais[glassType=tube]
4 \pstTubeEssais[glassType=ballon]
5 \pstTubeEssais[glassType=erlen]
6 \pstTubeEssais[glassType=flacon]
```

1.3 pince

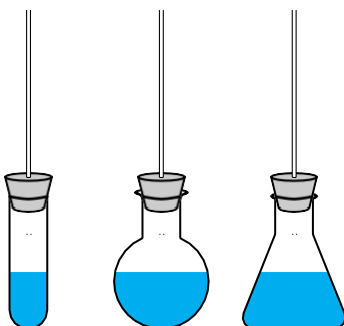
The option `pince` attaches a wooden test tub clamp to the glass container.



```
1 \psset{unit=0.5cm}
2 \psset{bouchon=true,pince=true}
3 \pstTubeEssais[glassType=tube]\hspace{1cm}
4 \pstTubeEssais[glassType=erlen]
```

1.4 tubeDroit

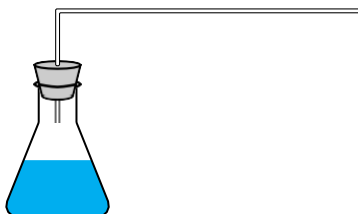
The option `tubeDroit` inserts a narrow glass tube into the glass container. Since this combination is only useful in combination with the option `bouchon=true` it is set to this value by default internally. It is to be noted that there is no vertical spacing of the narrow glass tube inserted by default, so the user has to take care of this manually, f.ex. using `\rule{0pt}{4cm}`.



```
1 \psset{unit=0.5cm}
2 \psset{tubeDroit=true}
3 \rule{0pt}{4cm}%
4 \pstTubeEssais
5 \pstTubeEssais[glassType=ballon]
6 \pstTubeEssais[glassType=erlen]
```

1.5 tubeCoude

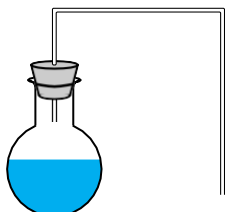
The option `tubeCoude` is basically identical to the previous one, except for the fact that a right-angled glass tube is drawn. Therefore the extra space needed in the vertical direction is less.



```
1 \psset{unit=0.5cm}
2 \psset{tubeCoude=true}
3 \rule{0pt}{2.5cm}%
4 \pstTubeEssais[glassType=erlen]
```

1.6 tubeCoudeU

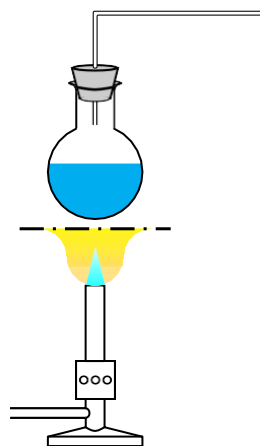
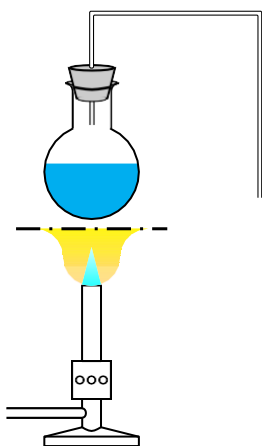
The option `tubeCoude` is basically identical to the previous one, except for the fact that a U-shaped glass tube is drawn. Therefore there is less space needed in the vertical direction.



```
1 \psset{unit=0.5cm}
2 \psset{tubeCoudeU=true}
3 \rule{0pt}{2.5cm} %
4 \pstTubeEssais[glassType=ballon]
```

1.7 tubeCoudeUB

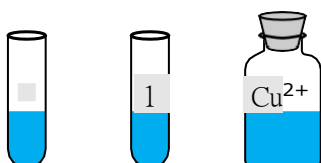
The option `tubeCoudeUB` is an extension of the U-shaped glass tube which is only useful if extending the tube to the bottom makes sense, as shown for instance in the macro `\pstChauffageBallon`.



```
1 \psset{unit=0.5cm,glassType=ballon}
2 \pstChauffageBallon[tubeCoudeU] \pstChauffageBallon[tubeCoudeUB]
```

1.8 etiquette and Numero

The option `etiquette` is a switch displaying labels defined using the option `Numero`.



```
1 \psset{unit=0.5cm}
2 \pstTubeEssais[etiquette]
3 \pstTubeEssais[etiquette,Numero=1]
4 \pstTubeEssais[glassType=flacon,bouchon,%
5 etiquette,Numero={\small Cu$^{2+}$}]
```

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