

**01/2008:40000** **Acebutolol hydrochloride.** 1148900. [34381-68-5].  
See *Acebutolol hydrochloride* (0871).

## 4. REAGENTS

*Additional information for reagents that can only be fully identified by a trademark or whose availability is limited may be found in the KNOWLEDGE database on the EDQM website. This information is given only to make it easier to obtain such reagents and this does not suggest in any way that the mentioned suppliers are especially recommended or certified by the European Pharmacopoeia Commission or the Council of Europe. It is therefore acceptable to use reagents from another source provided that they comply with the standards of the Pharmacopoeia.*

**01/2008:40100**

### 4.1. REAGENTS, STANDARD SOLUTIONS, BUFFER SOLUTIONS

Where the name of substance or a solution is followed by the letter R (the whole in *italics*), this indicates a reagent included in the following list. The specifications given for reagents do not necessarily guarantee their quality for use in medicines.

Within the description of each reagent there is a seven-figure reference code in *italics* (for example, 1002501). This number, which will remain unchanged for a given reagent during subsequent revisions of the list, is used for identification purposes by the Secretariat, and users of the Pharmacopoeia may also find it useful, for example in the management of reagent stocks. The description may also include a CAS number (Chemical Abstract Service Registry Number) recognisable by its typical format, for example 9002-93-1.

Some of the reagents included in the list are toxic and are to be handled in conformity with good quality control laboratory practice.

Reagents in aqueous solution are prepared using *water R*. Where a reagent solution is described using an expression such as “hydrochloric acid (10 g/l HCl)”, the solution is prepared by an appropriate dilution with *water R* of a more concentrated reagent solution specified in this chapter. Reagent solutions used in the limit tests for barium, calcium and sulphates are prepared using *distilled water R*. Where the name of the solvent is not stated, an aqueous solution is intended.

The reagents and reagent solutions are to be stored in well-closed containers. The labelling should comply with the relevant national legislation and international agreements.

**01/2008:40101**

#### 4.1.1. REAGENTS

**Acacia.** 1000100.

See *Acacia* (0307).

**Acacia solution.** 1000101.

Dissolve 100 g of *acacia R* in 1000 ml of *water R*. Stir with a mechanical stirrer for 2 h. Centrifuge at about 2000 g for 30 min to obtain a clear solution.

**Storage:** in polyethylene containers of about 250 ml capacity at 0 °C to –20 °C.

**Acetal.** C<sub>6</sub>H<sub>14</sub>O<sub>2</sub>. (*M<sub>r</sub>* 118.2). 1112300. [105-57-7].  
Acetaldehyde diethyl acetal. 1,1-Diethoxyethane.

A clear, colourless, volatile liquid, miscible with water and with alcohol.

*d*<sub>20</sub><sup>20</sup>: about 0.824.

*n*<sub>D</sub><sup>20</sup>: about 1.382.

bp: about 103 °C.

**Acetaldehyde.** C<sub>2</sub>H<sub>4</sub>O. (*M<sub>r</sub>* 44.1). 1000200. [75-07-0].  
Ethanal.

A clear, colourless flammable liquid, miscible with water and with alcohol.

*d*<sub>20</sub><sup>20</sup>: about 0.788.

*n*<sub>D</sub><sup>20</sup>: about 1.332.

bp: about 21 °C.

**Acetaldehyde ammonia trimer trihydrate.**

C<sub>6</sub>H<sub>15</sub>N<sub>3</sub>·3H<sub>2</sub>O. (*M<sub>r</sub>* 183.3). 1133500. [58052-80-5].  
2,4,6-Trimethylhexahydro-1,3,5-triazine trihydrate.

mp: 95 °C to 97 °C.

**Acetic acid, anhydrous.** C<sub>2</sub>H<sub>4</sub>O<sub>2</sub>. (*M<sub>r</sub>* 60.1). 1000300.  
[64-19-7].

**Content:** minimum 99.6 per cent *m/m* of C<sub>2</sub>H<sub>4</sub>O<sub>2</sub>.

A colourless liquid or white or almost white, shining, fern-like crystals, miscible with or very soluble in water, in alcohol, in glycerol (85 per cent), and in most fatty and essential oils.

*d*<sub>20</sub><sup>20</sup>: 1.052 to 1.053.

bp: 117 °C to 119 °C.

A 100 g/l solution is strongly acid (2.2.4).

A 5 g/l solution neutralised with *dilute ammonia R2* gives reaction (b) of acetates (2.3.1).

**Freezing point** (2.2.18): minimum 15.8 °C.

**Water** (2.5.12): maximum 0.4 per cent. If the water content is more than 0.4 per cent it may be adjusted by adding the calculated amount of *acetic anhydride R*.

**Storage:** protected from light.

**Acetic acid, glacial.** C<sub>2</sub>H<sub>4</sub>O<sub>2</sub>. (*M<sub>r</sub>* 60.1). 1000400. [64-19-7].  
See *Acetic acid, glacial* (0590).

**Acetic acid.** 1000401.

**Content:** 290 g/l to 310 g/l of C<sub>2</sub>H<sub>4</sub>O<sub>2</sub> (*M<sub>r</sub>* 60.1).

Dilute 30 g of *glacial acetic acid R* to 100 ml with *water R*.

**Acetic acid, dilute.** 1000402.

**Content:** 115 g/l to 125 g/l of C<sub>2</sub>H<sub>4</sub>O<sub>2</sub> (*M<sub>r</sub>* 60.1).

Dilute 12 g of *glacial acetic acid R* to 100 ml with *water R*.

**Acetic anhydride.** C<sub>4</sub>H<sub>6</sub>O<sub>3</sub>. (*M<sub>r</sub>* 102.1). 1000500. [108-24-7].  
**Content:** minimum 97.0 per cent *m/m* of C<sub>4</sub>H<sub>6</sub>O<sub>3</sub>.

A clear, colourless liquid.

bp: 136 °C to 142 °C.

**Assay.** Dissolve 2.00 g in 50.0 ml of 1 M sodium hydroxide in a ground-glass-stoppered flask and boil under a reflux condenser for 1 h. Titrate with 1 M hydrochloric acid, using 0.5 ml of *phenolphthalein solution R* as indicator. Calculate the number of millilitres of 1 M sodium hydroxide required for 1 g (*n*<sub>1</sub>). Dissolve 2.00 g in 20 ml of *cyclohexane R* in a ground-glass-stoppered flask, cool in ice and add a cold mixture of 10 ml of *aniline R* and 20 ml of *cyclohexane R*. Boil the mixture under a reflux condenser for 1 h, add 50.0 ml of 1 M sodium hydroxide and shake vigorously. Titrate with