Clarity and turbidity of liquids	GPM.1.2.1.0007.15 Supersedes Rus.Ph. X monograph Supersedes Rus.Ph. XI, ver.1 monograph Supersedes Rus.Ph. XII, part 1, GPM 42-0051-07

Determine clarity and turbidity of liquids by comparing test liquid with a solvent or reference standards visually or using instrumental techniques.

Perform visual determination in similar transparent colorless and neutral glass tubes about 15 mm in inner diameter with a ground stopper. Take equal volumes of reference standard and test liquid for comparison (5 or 10 mL). Perform test illuminating with a 40W ground glass electric bulb placed above the sample reviewing the solutions perpendicularly to vertical axis of tubes against black background 5 min after the reference standard preparation.

Test liquid is considered transparent if its transparency does not differ from that of water or solvent used to prepare test liquid or if its opalescence (turbidity) does not exceed the opalescence (turbidity) of reference standard I when reviewing under the above mentioned conditions.

Reference substances are suspensions of hydrazine sulphate and hexamethylenetetramine.

Hydrazine sulphate solution preparation. Place 0.50 g of hydrazine sulphate into a 50 mL volumetric flask, dissolve in 40 mL of water, dilute to volume with water and mix. Keep the solution for 4 – 6 h.

Preparation of hexamethylenetetramine solution. Dissolve 3.00 g of hexamethylenetetramine in 30.0 mL of water.

Preparation of stock reference standard. Add 25.0 mL of hexamethylenetetramine to 25.0 mL of hydrazine sulphate, mix and allow to stand for 24 h.

Stock reference standard is stable for 2 months when stored in glassware without surface defects (the suspension should not adhere to the glass) with a ground stopper.

Preparation of basic reference standard. Place 15.0 mL of stock reference standard into a 1 mL volumetric flask, dilute to volume with water and mix.

Shelf life of basic reference standard is 24 h.

Preparation of reference standards. Place measured amount of basic reference standard specified in the table below into 100 mL volumetric flask, dilute to volume with water and mix.

Table 1 - Composition of reference standards

	Reference standards			
	I	**II**	**III**	**IV**
Basic reference standard, mL	5.0	10.0	30.0	50.0
Water, mL	95.0	90.0	70.0	50.0

Note. Before use, mix and shake stock, basic and reference standards for 3 min.

Reference standards I, II, III and IV should be freshly prepared.

Spectrophotometers or special instruments like turbidimeters, nephelometers or equivalent can be used to evaluate clarity and turbidity of liquids if it is specified in the pharmacopoeial monograph. In this case pharmacopoeial monograph should contain necessary testing conditions.