





# PHARMASSURE

## Pharmaceutical Products Proficiency Testing Scheme

### **Instructions for Handling Sample 1C – Other basic titration, 1F – Melting point, 2A – HPLC, 2E – Residual Solvents, 6D – LOD, 6E – FTIR, 6F – Karl Fischer, 8A – Low Level Conductivity**

Round Number: 70

Version 1

Issue Date: August 2019

to settle and then filter an amount of the clear liquid into an HPLC vial through a 0.45µm syringe filter.

#### **Standard solution preparation:**

Stock Standard 100 µg/mL

Weigh out 0.005g of reference standard into a weighing boat. Rinse into a 50mL amber volumetric flask with 0.01M NaOH and fill to final volume.

Dilute the stock solution with mobile phase in amber volumetric flasks to make three calibration standards: 10µg/mL, 20µg/mL and 30µg/mL.

#### **Chromatographic system:**

Mode: LC

Detector: UV 290nm

Column: 4.6mm x 250mm; 4µm packing C18RP (100% aqueous stable) or similar

Column temperature: ambient

Flow rate: 1.5 mL/min

Injection volume: 20µL

#### **Analysis:**

Analyse the three calibration solutions and compare with the test solution using the chromatographic system described above.

Calculate the percentage % (w/v) of the amount of folic acid in each tablet based on the label claim of 400µg per tablet. E.g. if the test solution produces a peak equal to 400 µg, please report 100% (w/v). Report along with the retention time of the main peak.

#### **Sample 2E – Residual solvents**

Material supplied: 1 x 1mL spiking solution  
1 x 2g Residual Solvents sample

Dissolve 0.200g of the Residual Solvents sample in dimethylformamide (DMF) and transfer to a headspace vial. Add 0.100ml of the spiking solution to the vial, using a syringe with a needle diameter of 0.8 mm or smaller and a minimum 70 mm length, and dilute to 20.0ml with DMF.

Analyse the sample solution by your routine headspace chromatography method, quantify the residual solvents present in the sample and report the results on PORTAL in the format specified in the Pharmassure scheme description for sample 2E Residual Solvents.

**Note:** The concentration range given in the Pharmassure scheme description should be used as a guide. Occasionally, the detected concentration of parameters in a test material may exceed the maximum concentration limit stated in the scheme description.



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**Sample 6D LOD** Range: 0 – 10% (w/w)

Material supplied: 1 x 5g of test material

Determine on 1.000 g by drying in an oven at 105°C to constant weight.

#### **Sample 6E FTIR**

Material supplied: 1 x 0.25g Sample A  
1 x 0.25g Paracetamol (Acetaminophen) reference standard  
1 x 0.25g Bupivacaine Hydrochloride reference standard

Report the identity of Sample A in comparison to the reference standards provided, include the wavenumbers for the key peak(s), in the IR spectrum between approximately 1800 and 1600 cm<sup>-1</sup> for sample A in the comments section in PORTAL.

The identity of sample A should be recorded as either, Paracetamol, Bupivacaine Hydrochloride or unknown.

#### **Example method of analysis**

Examine solids dispersed in a suitable liquid (mull) or in a solid (halide disc), as appropriate. If prescribed in the monograph, make a film of a molten mass between 2 plates transparent to infrared radiation.

##### **A. Mull**

Triturate a small quantity of the substance to be examined with the minimum quantity of *liquid paraffin R* or other suitable liquid; 5-10 mg of the substance to be examined is usually sufficient to make an adequate mull using one drop of *liquid paraffin R*. Compress the mull between 2 plates transparent to infrared radiation.

##### **B. Disc**

Triturate 1-2 mg of the substance to be examined with 300-400 mg, unless otherwise specified, of finely powdered and dried *potassium bromide R* or *potassium chloride R*. These quantities are usually sufficient to give a disc of 10-15 mm diameter and a spectrum of suitable intensity. If the substance is a hydrochloride, it is recommended to use *potassium chloride R*. Carefully grind the mixture, spread it uniformly in a suitable die, and submit it to a pressure of about 800 MPa (8 t·cm<sup>-2</sup>). For substances that are unstable under normal atmospheric conditions or are hygroscopic, the disc is pressed in vacuo. Several factors may cause the formation of faulty discs, such as insufficient or excessive grinding, humidity or other impurities in the dispersion medium or an insufficient reduction of particle size. A disc is rejected if visual examination shows lack of uniform transparency or when transmittance at about 2000 cm<sup>-1</sup> (5 μm) in the absence of a specific absorption band is less than 60 per cent without compensation, unless otherwise prescribed.



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Prepare the substance to be examined and the reference substance by the same procedure and record the spectra between 4000-650 cm<sup>-1</sup> (2.5-15.4 μm) under the same operational conditions. The transmission minima (absorption maxima) in the spectrum obtained with the substance to be examined correspond in position and relative size to those in the spectrum obtained with the reference standards.

When the spectra recorded in the solid state show differences in the positions of the transmission minima (absorption maxima), treat the substance to be examined and the reference substance in the same manner so that they crystallise or are produced in the same form, or proceed as prescribed in the monograph, then record the spectra.

**Sample 6F – Karl Fischer**                      Range: 1 – 10%(w/w)

Material supplied:                                1 x 3g of test material

Determine moisture of 0.25 g of test material, using methanol (analytical reagent grade of commerce, CAS number 67-56-1) as the solvent.

#### **Sample 8A – Conductivity in solutions**

**Material supplied:**                            1 x 100ml of solution for conductivity

#### **Instruction:**

After calibrating the apparatus with a certified reference material solution, rinse the conductivity cell several times with *distilled water R* and at least twice with the aqueous solution to be examined. Carry out successive measurements as described in the monograph at 25°C.

- All results should be submitted using PORTAL
- Please go to <https://www.lgcpt.com/portal>
- Login using your Lab ID, username and password.
- A PORTAL user guide can be downloaded from the help section.

If you need any help at all please do not hesitate to contact our support team using the details below or your local LGC representative.

Tel: +44(0)161 762 2500

Email: [pharmassure@LGCGroup.com](mailto:pharmassure@LGCGroup.com)