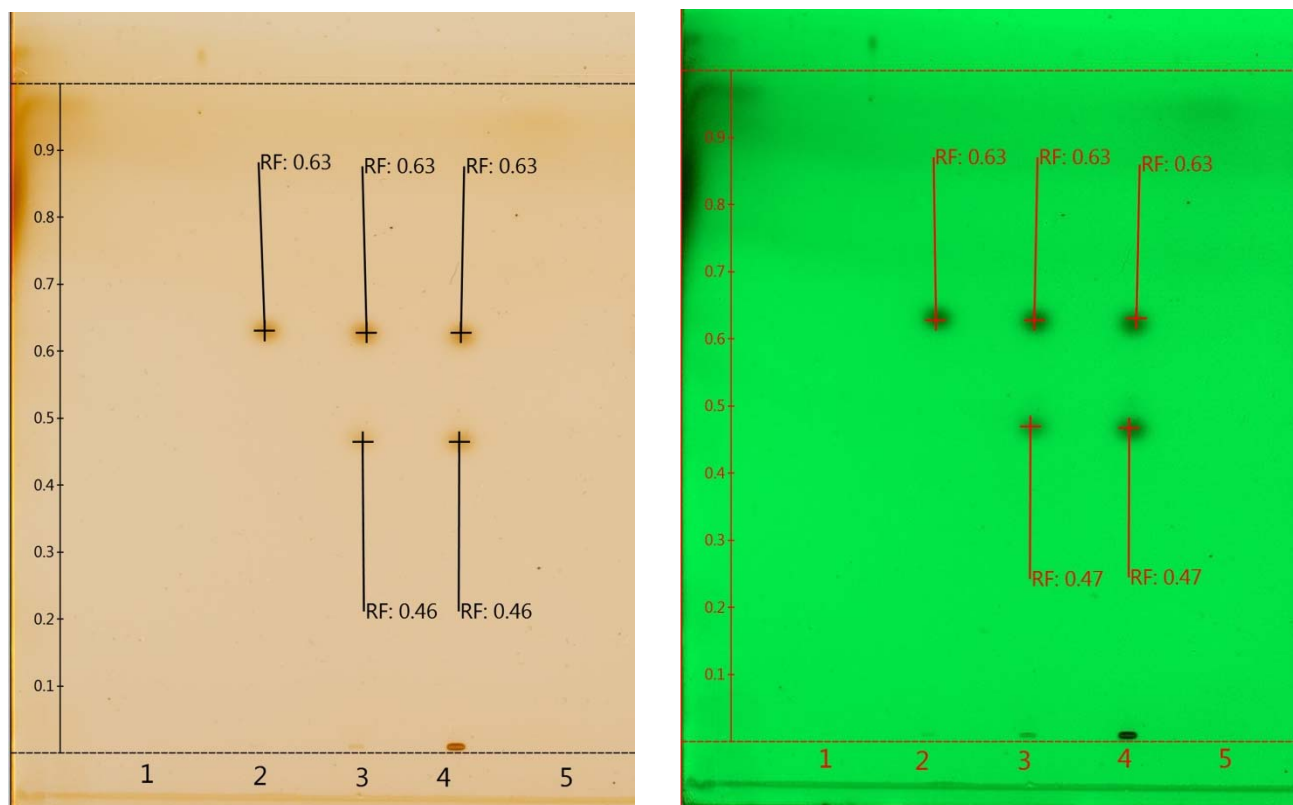




Metoprolol Oral Suspension – BP 2020

These chromatograms are provided for information only as an aid to analysts and are intended as guidance for the interpretation and application of BP monographs.

Typical chromatogram for in the Identification test for Metoprolol Oral Suspension by Thin Layer Chromatography as published in BP 2020.



TLC Plate visualised under white light (left) and UV 254 nm (right)

- 1 Blank
- 2 0.05 % w/v metoprolol tartrate standard
- 3 - 4 0.05 % w/v sample solutions
- 5 Blank

TLC plate : Merck TLC silica gel 60 F₂₅₄ plate (20 cm × 20 cm)
Plate preconditioning : N/A
Diluent : Methanol



British Pharmacopoeia

Mobile Phase : Methanol : ethyl acetate (20:80, v/v)

Two beakers, each containing 30 volumes of 18 M ammonia were placed in the bottom of the chromatographic tank.

Mobile Phase volume : 100 mL

Band application : 3 mm band size with a spotting volume of 5 μ L

Chamber saturation time : Minimum 60 minutes at room temperature

Development : 150 mm

Development time : 45 minutes

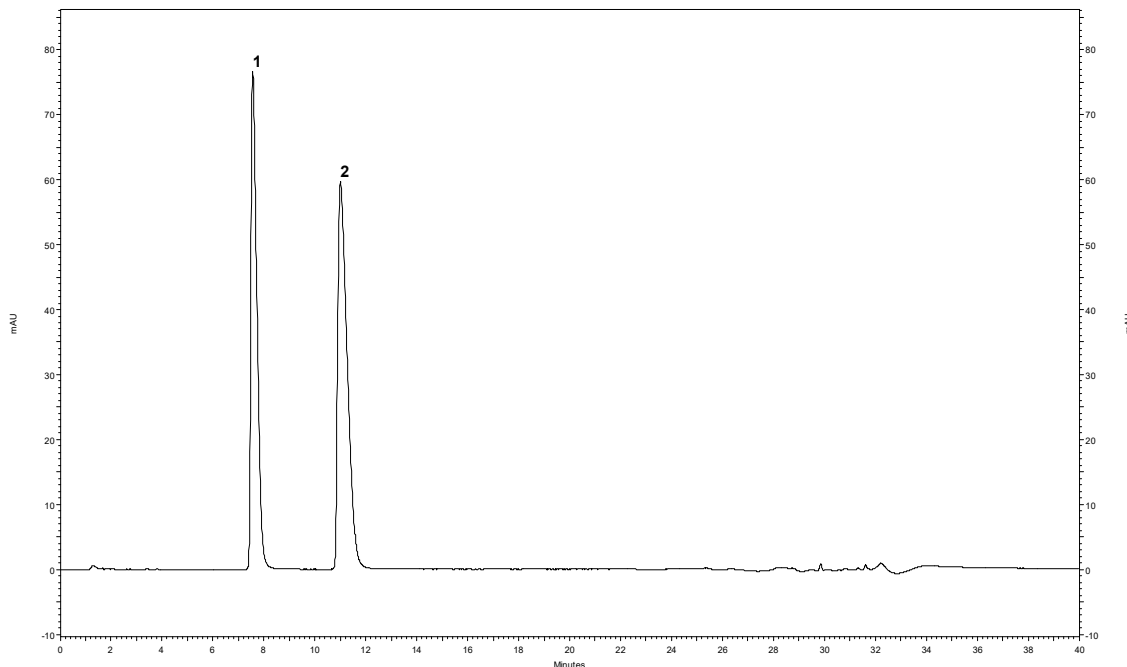
Drying time : 3 hours in air

Derivatisation : Plate exposed to iodine vapour overnight

Visualisation : Derivatised plate was visualised under both white light and UV light (254 nm).



Typical chromatogram for Solution (4) in the Related Substances test for Metoprolol Oral Suspension as published in BP 2019.



Peak ID - 1: Impurity A; 2: Metoprolol

Column : Waters Symmetry C18 (150 mm x 4.6 mm, 5 µm)

Method Ref. : Related Substances from Metoprolol Oral Suspension monograph from BP 2020

Buffer : 0.39 % w/v ammonium acetate

Mobile Phase A : Triethylamine : Orthophosphoric acid : glacial acetic acid :
acetonitrile : buffer (2: 3: 10: 146: 810, v/v/v/v/v)

Mobile Phase B : Acetonitrile

Diluent : Mobile Phase A

Gradient :

Time (minutes)	Mobile Phase A (% v/v)	Mobile Phase B (% v/v)	Comment
0 – 20	100	0	isocratic
20 – 30	100 – 25	0 – 75	linear gradient
30 – 31	25 – 100	75 – 0	linear gradient
31 – 40	100	0	re-equilibration

Flow rate : 1.0 mL/min

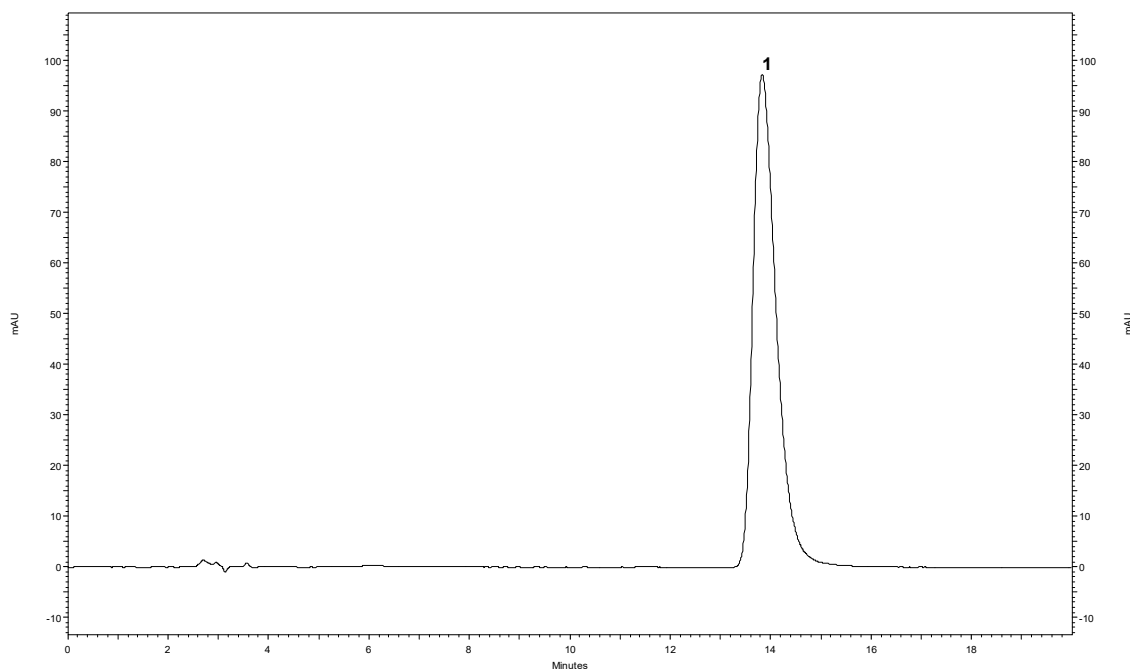
Column Temp : 25 °C

Injection Vol : 20 µL

Detection : 280 nm



Typical chromatogram for Solution (2) in the Assay test for Metoprolol Oral Suspension as published in BP 2020.



Peak ID: 1: Metoprolol

Column : Waters, μ Bondapak, C18 (250 mm x 4.6 mm, 10 μ m)
Method Ref. : Assay for the Metoprolol Oral Suspension monograph from BP 2020
Buffer : A mixture of 0.204 % w/v of sodium pentane sulfonate, 0.0174 % w/v of anhydrous sodium acetate and 0.12 % v/v of glacial acetic acid in water.
Mobile Phase : Methanol : buffer (40:60, v/v)
Diluent : Mobile Phase
Flow rate : 1.0 mL/min
Column Temp : 25 °C
Injection Vol : 20 μ L
Detection : 223 nm