Status: Effectivity information can only be shown for content published to the website.

> Update information can only be shown for content published to the website.

Diclofenac Prolonged-release Tablets

General Notices

Prolonged-release Diclofenac Tablets

Details for the public consultation of this monograph are as follows:

EAG/Panel/Working Party	Medicinal Chemicals 2
Contact Details	helen.corns@mhra.gov.uk rachael.feltham@mhra.gov.uk sophie.cherrington@mhra.gov.uk bpcom@mhra.gov.uk
Deadline for Comment	30th September 2026
Target Publication Date (subject to change)	BP 2028
Notes	Revised monograph If limits are too restrictive, please provide batch/stability data to demonstrate that an increase is required. **Identification B** new test added. **Related substances** quantitative limits introduced & limits revised **Assay** amendments made.

Diclofenac Prolonged-release Tablets from different manufacturers, whilst complying with the requirements of the monograph, are not interchangeable unless otherwise justified and authorised.

Action and use

Cyclo-oxygenase inhibitor; analgesic; anti-inflammatory.

DEFINITION

Diclofenac Prolonged-release Tablets contain Diclofenac Sodium. They are formulated so that the active substance is released over a period of several hours.

PRODUCTION

A suitable dissolution test is carried out to demonstrate the appropriate release of diclofenac sodium. The dissolution profile reflects the *in vivo* performance which in turn is compatible with the dosage

schedule recommended by the manufacturer.

The tablets comply with the requirements stated under Tablets and with the following requirements.

Content of diclofenac sodium, $C_{14}H_{10}Cl_2NNaO_2$

95.0 to 105.0% of the stated amount.

IDENTIFICATION

A. Remove the coating from 10 tablets and powder the cores. To a quantity of the powdered tablet cores containing 0.15 g of Diclofenac Sodium, add 0.5 mL of *glacial acetic acid* and 15 mL of *methanol* and mix with the aid of ultrasound. Shake gently for 1 minute, filter and collect the filtrate in 15 mL of *water*. Filter the precipitate under reduced pressure (Whatman GF/C filter paper is suitable), wash with four 5-mL quantities of *water* and dry at 105° for 2 to 3 hours. The *infrared absorption spectrum* of the dried precipitate, Appendix II A, is concordant with the *reference spectrum* of diclofenac *(RS 096)*.
B. Yields the reactions characteristic of *sodium salts*, Appendix VI.

TESTS

Related substances

Carry out the method for *liquid chromatography*, Appendix III D, using the following solutions.

(1) Shake a quantity of the powdered tablets containing 50 mg of Diclofenac Sodium with 70 mL of the mobile phase, add sufficient of the mobile phase to produce 100 mL, mix, centrifuge an aliquot and filter the supernatant liquid through a 0.45-µm filter.
(2) Dilute 1 volume of solution (1) to 100 volumes with the mobile phase and dilute 1 volume of this solution to 5 volumes with the mobile phase.
(3) Dissolve the contents of a vial of *diclofenac for system suitability EPCRS* in 1 mL of the mobile phase.

CHROMATOGRAPHIC CONDITIONS

(a) Use a stainless steel column (25 cm × 4.6 mm) packed with *end-capped octadecylsilyl silica gel for chromatography* (5 µm) (YMC Pack-pro C18 is suitable).
(b) Use isocratic elution and the mobile phase described below.
(c) Use a flow rate of 1 mL per minute.
(d) Use an ambient column temperature.
(e) Use a detection wavelength of 254 nm.
(f) Inject 20 µL of each solution.
(g) Allow the chromatography to proceed for 1.6 times the retention time of diclofenac.

MOBILE PHASE

34 volumes of a solution containing 0.05% w/v of *orthophosphoric acid* and 0.08% w/v of *sodium dihydrogen orthophosphate*, previously adjusted to pH 2.5 with *orthophosphoric acid*, and 66 volumes of *methanol*.

SYSTEM SUITABILITY

The test is not valid unless, in the chromatogram obtained with solution (3), the *resolution* between the peaks corresponding to impurity F and diclofenac is at least 4.0.

CALCULATION OF IMPURITIES

For each impurity, use the concentration of diclofenac sodium in solution (2).

For the reporting threshold, use the concentration of diclofenac sodium in solution (2).

For peak identification, use solution (3).

Diclofenac retention time: about 25 minutes.

Relative retention: impurity A, about 0.4; impurity F, about 0.8.

Correction factors: impurity A, multiply by 0.7; impurity F, multiply by 0.3.

LIMITS

— unspecified impurities: for each impurity, not more than 0.2%;

— total unspecified impurities: not more than 0.5%;

— reporting threshold: 0.1%.

ASSAY

Weigh and powder 20 tablets. Carry out the method for *liquid chromatography*, Appendix III D, using the following solutions.

(1) To a quantity of the powdered tablets containing 0.5 g of Diclofenac Sodium add 800 mL of *methanol* and mix with the aid of ultrasound. Dilute the resulting solution with the mobile phase to produce a solution containing 0.005% w/v of Diclofenac Sodium.
(2) 0.005% w/v of *diclofenac sodium BPCRS* in the mobile phase.

CHROMATOGRAPHIC CONDITIONS

(a) Use a stainless steel column (25 cm × 4.6 mm) packed with *end-capped octylsilyl silica gel for chromatography* (5 µm) (Zorbax C8 is suitable).
(b) Use isocratic elution and the mobile phase described below.
(c) Use a flow rate of 1 mL per minute.
(d) Use an ambient column temperature.
(e) Use a detection wavelength of 254 nm.
(f) Inject 20 µL of each solution.

MOBILE PHASE

20 volumes of a solution containing 0.05% w/v of *orthophosphoric acid* and 0.08% w/v of *sodium dihydrogen orthophosphate*, previously adjusted to pH 2.5 with *orthophosphoric acid*, and 80 volumes of *methanol*.

When the chromatograms are recorded under the prescribed conditions, the retention time of diclofenac is about 5 minutes.

DETERMINATION OF CONTENT

Calculate the content of $C_{14}H_{10}Cl_2NNaO_2$ in the tablets using the declared content of $C_{14}H_{10}Cl_2NNaO_2$ in *diclofenac sodium BPCRS*.

STORAGE

Diclofenac Prolonged-release Tablets should be protected from moisture.

IMPURITIES

The impurities limited by the requirements of this monograph include those listed under Diclofenac Sodium.