

Your contact at PhytoLab:
 Reference Substances
 Tel.: +49 9163 88-395
 ref-substances@phytolab.de
 https://phyproof.phytolab.com

Certificate of analysis

Article:	89723 Lutein
Material batch:	1000951
Sample-ID:	293876
End of analysis:	10/2025
Expiry date:	10/2026

Test	Unit	Specified value	Testresult
Appearance, SOP 100005		powder	conform
Color, SOP 100006		light orange – red-brown	conform
Identity test (UV spectrum from HPLC-DAD analysis) according to specification, SOP 204311		conform	conform
Identity test (1H-NMR-spectroscopy), (outsourced), SOP 206010		conform	conform
Identity test (13C-NMR-spectroscopy), (outsourced), SOP 206020		conform	conform
Identity test (HPLC-HR/MS), SOP 204125		conform	conform
Identity test (IR-spectroscopy), Ph. Eur. 2.2.24, Absorption Spectrophotometry, Infrared (01/2021:20224) and USP chapter 197, Spectroscopic Identification Tests (Official as of 01-Sep-2021), SOP 206000		conform	conform
Lutein (HPLC), method 2, (% AU), SOP 400631	%	≥ 90.00	93.48
Peakpurity, (HPLC), SOP 401367		conform	conform

Certificate of analysis

Article: 89723 Lutein
Material batch: 1000951

Test	Unit	Specified value	Testresult
------	------	-----------------	------------

Due to its relative instability we recommended to use the reference substance lutein for qualitative purposes only, not for quantitative analysis. The substance is sensitive to light, heat and oxidation.

Vestenbergsgreuth, 06/Oct/2025

Laura Schnell

QC Reference Substances

This is a computer print and valid without signature. A signed certificate of analysis can be taken on request.

Certificate of analysis

Article: 89723 Lutein
Material batch: 1000951

Further information:

Shelf life/stability: The stated expiry date applies when the reference substance is stored in the original unopened container within the specified temperature range. PhytoLab does not guarantee the stability of the reference substance once the vial has been opened.

Long-term storage and handling: The reference standard should be stored in the original unopened vial, protected against light and humidity in an airtight container, within the temperature range given on the label and accompanying data sheet. If stored below room temperature, the vial should be warmed up to room temperature in a desiccator before it is opened in order to avoid condensation of humidity. The user assumes responsibility for deciding how previously opened reference standard vials should be used and the user must ensure that the contents of opened vials are still suitable for their intended use.

Exact weight: the exact weight of each vial is given on the label of the inner vial to two decimal places. This information may be used to produce stock solutions of a known concentration without having to weigh in the reference substance again. If used for this purpose, the content of the vial must be quantitatively transferred to a volumetric flask and filled up to the required level. Please note that PhytoLab is unable to guarantee the stability of the reference standard in solution.

Intended use: this reference standard is solely intended for laboratory analytical purposes, research & development, and scientific teaching and training purposes. It may not be used for any other purpose and particularly not for use in, or the production of, food, animal feed, human or veterinary drugs, cosmetics, medicinal products or diagnostic agents, including in-vitro diagnostic agents. PhytoLab is unable to guarantee the suitability of this reference standard for any particular application other than its qualitative and quantitative use in chromatography and identification testing.

Further information about this reference standard can be found on the accompanying data sheet or in our webshop. Spectral and chromatographic data, and a description of the applied chromatographic method, are provided in the attachments to this COA. A detailed explanation of all data given on the COA can be found in the guide that is available from the download area in our webshop, where you can also download all of the safety data sheets.