

**Certificate of analysis**

Report-No.: 115464612- 99002  
 Cust.-lot: Sample Xanto, XAN-HOP 02/2021  
 Xanthohumol

Test	Unit	Limit	Testresult
Identification (1H-NMR-spectroscopy), (outsourced), SOP 206010		Conform	Conform
Identification (13C-NMR-spectroscopy), (outsourced), SOP 206020		Conform	Conform
Water content, (micro determination, coulometric titration), Ph.Eur. 10.0., 2.5.32, SOP 304291: Mean value	%		0.2
Xanthohumol (HPLC), method 1 (% AU), SOP 400422	%	> = 98.00	99.87
Peakpurity, (HPLC), SOP 401367		Conform	Conform
Residual solvents, (headspace-GC), SOP 805765: Acetone Residual solvents	% %		0.44 0.44
Inorganic impurities, (ICP-MS), for reference substances, SOP 811701: Sodium Potassium Magnesium Calcium Aluminium Phosphorus Sulfur	% % % % % % %		< 0.1 < 0.1 < 0.1 < 0.1 < 0.1 < 0.1 < 1.0

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Test	Unit	Limit	Testresult
Content*, SOP 890000	%		99
Content, derived by chromatographic comparison against phyproof® reference substance. (2 stock solutions each, 6 injections), SOP 890003	%		97.11

1) Comparison performed vs. phyproof® Reference Substance xanthohumol, article 89292, batch 14778, with assigned absolute purity of 99,01 %.

\*The absolute content is calculated considering the chromatographic purity, and if available, the content of water, residual solvents and inorganic impurities according to the following formula:  
Content = (100% - water content (%) - residual solvents (%) - inorganic impurities (%)) x chromatographic purity (%) / 100.

Time of analysis: February/March 2021.

Vestenbergsreuth, 8.03.21

  
Dr. Michael Schwarz  
Head of Reference Substances