

Attached to test report №8497 28/10/2021

Client: FIN. OPERA. S.r.l.

Via Ennio, 14 20137 Milano (MI)

Objective: Evaluation of Data Presented in R.d.P. 8497.2021

At the request of the client, an assessment of the data presented in test report No. 8497 dated October 28, 2021 in accordance with the standards specified by the ISO 3632-1 / 2011 "Spices - Saffron (*Crocus Sativus* L.) - Part 1: Specification" is limited to parameters. Reference is made to Table 2 "Chemical characteristics of saffron threads, cut threads and powder forms" in clause 6 "Test methods" of the aforementioned Standard. The reference values for the specified parameters are shown in Table 1 of this report.

Table 1 - Reference values given in Table 2, Clause 6 of ISO 3632-1 / 2011 for the specified parameters.

Parameters	Specific Categories as a Function of the Parameters		
	Category I	Category II	Category III
Degree of Taste (eg. picrocrocin) $A^{1\%}_{1\text{ cm}} \lambda 257\text{nm} / \text{S.S.}$	Saffron threads or powder min. 70	Saffron threads or powder min. 55	Saffron threads or powder min. 40
Degree of Aroma (eg. Safranal) $A^{1\%}_{1\text{ cm}} \lambda 330\text{nm} / \text{S.S.}$	Saffron threads or powder min. 20 max. 50	Saffron threads or powder min. 20 max. 50	Saffron threads or powder min. 20 max. 50
Degree of Color (eg. Crocin) $A^{1\%}_{1\text{ cm}} \lambda 440\text{nm} / \text{S.S.}$	Saffron threads or powder min. 200	Saffron threads or powder min. 170	Saffron threads or powder min. 120

These parameters were aimed at characterizing the product for three compounds that determine the organoleptic properties of the spice (picrocrocin for taste, safranal for flavor and crocin for color) compared to the used extract tested at specific UV / visible wavelengths (see. table 1) with a decrease in product characteristics from I to III.

As indicated in test report n. **8497.2021** on a sample of saffron threads n. **13057.2021** with the inscription: "**Saffron threads - Lot 152154W**", the results presented in Table 2 were obtained. The same table indicates the corresponding category for each parameter according to the specifications given in table 1.

Table 2 - Data obtained, test sample and applicable categories

Parameters	Measured values and applicable categories		
	Measured values	Measurement error (k=2) ^{Note 1}	Applicable categories
Degree of Taste (eg. picrocrocin) $A^{1\%}_{1\text{ cm}} \lambda 257\text{nm} / \text{S.S.}$	102	±7	Category I
Degree of Aroma (eg. Safranal) $A^{1\%}_{1\text{ cm}} \lambda 330\text{nm} / \text{S.S.}$	37	±2	Category I, II и III
Degree of Color (eg. Crocin) $A^{1\%}_{1\text{ cm}} \lambda 440\text{nm} / \text{S.S.}$	275	±18	Category I

Note 1: ISO 3632-1 / 2011 and ISO 3632-2 / 2010 do not provide explicit guidance on the interpretation of measurement uncertainty. The ISO 3632-1 / 2011 standard states: "If necessary, additional analysis can be carried out if sufficient sample remains." Therefore, if deemed necessary, additional in-depth tests can be carried out.

Based on the values of the measurements carried out and limited by the parameters defined for the test sample, the following is assigned: **CATEGORY I**

The above considerations and data presented are only for the tested sample. Cassano Magnago, 28 October 2021

A.R.C. Analisi e Ricerche Chimiche S.r.l.

Dot. ~~Zeno~~ Marco Sedin

