



SOLUÇÕES EM POLÍMEROS

Technical Report

AFK2788/25

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Date samples were received by Afinko: 03/06/2025	
Date the work was developed: 04/06/2025 to 16/09/2025	

SUMMARY

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1 SAMPLE(S) IDENTIFICATION

Sample sent by the client was identified by Afinko according to Table 1. Figure 1 show an image of the sample as received.

Table 1 – Sample(s) Identification

Afinko's Identification	Client's Identification
AFK253877	Smart Print Bio Vitality (Shade A2)

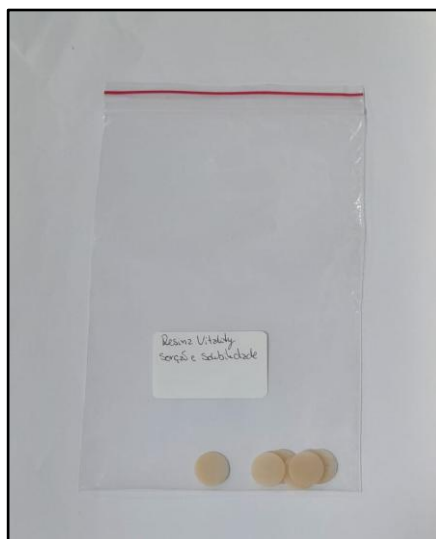


Figure 1 – Image of Sample AFK253877.

2 OBJECTIVES

To perform Sorption and Solubility on 01 (one) sample to characterize it.

3 METHODS

3.1 Water Sorption and Solubility

Table 2 shows the test conditions.

Table 2 - Conditions of the Water Sorption and Solubility Test.

Lab Temperature: (23 ± 2)°C	Number of Specimens: 05
Initial Drying Temperature: 37°C	Initial Drying Time: 22 hours
Desiccator Time: 2h	
Immersion Liquid Temperature: 37°C	Immersion Time: 7 days
Date: 06/08/2025 to 09/09/2025	
Equipment(s):	Stove Solidsteel, model SSDc 64L Analytical Balance Bel engineering, model M214Ai
Standard Test Method:	ABNT NBR ISO 4049: 2017 – “Odontologia — Materiais restauradores poliméricos” ABNT NBR ISO 10477: 2022 – “Odontologia — Materiais à base de polímero para coroa e veneer”

The calculations of the of Sorption and Solubility is performed according to the following equations:

$$\text{Sorption} = \frac{m_2 - m_3}{V} \times 100$$

$$\text{Solubility} = \frac{m_1 - m_3}{V} \times 100$$

m₁: Mass of the conditioned sample, in µg, before immersion in water.

m₂: Sample mass, in µg, after immersion in water for 7 days.

m₃: Mass of the reconditioned sample, in µg.

V: Sample volume, in m³.

4 RESULTS

4.1 Water Sorption and Solubility

Table 3 shows the test results.

Table 3 - Water Sorption and Solubility Test Results.

Sample	Sp.	m ₁ (g)	m ₂ (g)	m ₃ (g)	V (mm ³)	Sorption (µg/mm ³)	Solubility (µg/mm ³)
AFK253877	1	0,36164	0,36723	0,36267	230,47	19,79	-4,47
	2	0,33890	0,34435	0,33991	209,99	21,14	-4,81
	3	0,38115	0,38711	0,38227	258,63	18,71	-4,33
	4	0,32584	0,32820	0,32675	215,42	6,73	-4,22
	5	0,32924	0,33214	0,33016	211,63	9,36	-4,35
Average:						15,15	-4,44
Standard deviation:						6,61	0,23

5 CONCLUSIONS

In Table 4 is presented a summary of the results obtained in this work.

Table 4 – Summary of Results.

Test	AFK253877
Sorption (µg/mm ³)	15,15
Solubility (µg/mm ³)	-4,44

São Carlos, September 16, 2025.



Kenji Nishiyama Bueno Rosa
Researcher



Marcio Kobayashi, PhD
Technical Director



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Final observations

- Results presented in this report refer exclusively to the analyzed samples, at the exact conditions the tests were performed and therefore, they must not be extended to any lot, even if similar to the ones analyzed. Additional images were inserted at completion.
- The laboratory is not responsible in case of misinterpretation of data nor eventual improper use of the document.
- The reproduction of this document must be done in full.
- Samples are maintained at Afinko for two months or for the period specified by the budget/contract.
- Afinko considers the result obtained through the tests as a comparative value to the classification referenced in the technical standards, when applied. Measurement uncertainty will only be expressed in the Technical Report upon customer's request.

-- End of report --