Supplementary data

Table A Samples analyzed.

Archaoel. site	Sample	Identification number	Description
Herculaneum	H1	77168/1888	Small, egg-shaped jug, with one handle. Ricci's typology 1/117.
	H2	76994/1716	Small, egg-shaped jug, with one handle.
	H3	77260/1979	Small jug with two handles, decorated by wheel.
	H4	77756/2459	Small, egg-shaped jug, decorated by barbotine technique, imitating slivers of pine cones.
	H5	78189/2892	Small, egg-shaped jug, with one handle, decorated by wheel. Ricci's typology 1/117.
	H6	78196/2899	Cup with foot, decorated by wheel.
	H7	78261/2964	Small, egg-shaped jug, with one handle, decorated by wheel. Ricci's typology 1/117.
	H8	77005/1727	Small, egg-shaped jug, with one handle. Ricci's typology 1/117.
	H9	77006(1728)	Small, egg-shaped jug, with one handle.
	H10	77075/1795	Small cup, with two handles. Ricci's typology 2/223.
	H11	75920/643	Small cup, with two handles. Ricci's typology 2/223.
	H12	75564/288	-
Pompeii	P1	10411B	Small, egg-shaped jug, with one handle. Ricci's typology 1/31.
	P2	43666	Small, egg-shaped jug, with one handle. Ricci's typology 1/24.
	P3	43896	Small, egg-shaped jug, with one handle, decorated with depressions. Ricci's typology 1/31.
	P4	43870	Small, egg-shaped jug.
	P5	6297	Small, egg-shaped jug, with one handle, decorated with depressions. Ricci's typology 1/31.
	P6	19482	Small, egg-shaped jug, with one handle. Ricci's typology 1/117.
	P7	14257	Small, globular-shaped glass, decorated with slivers of pine cones. Ricci's typology 1/371.
	P8	19485	Small, egg-shaped jug, with one handle. Ricci's typology 1/117.
	P9	4105A	Small, egg-shaped jug, with one handle, decorated with slivers of pine cones. Ricci's typology 1/23.
	P10	17056	Cup, with two handles, decorated with large and isolated waterleaves. Ricci's typology 2/134.
	P11	12013	Small, egg-shaped jug, with one handle. Ricci's typology 1/111.
	P12	10610	Small, egg-shaped jug, with one handle, decorated with depressions. Ricci's typology 1/31.
	P13	17057	Small, egg-shaped jug, with one handle, decorated with slivers of pine cones. Ricci's typology 1/23.
	P14	15001	Small, egg-shaped jug, with one handle. Ricci's typology 1/111.
	P15	4105B	Small, egg-shaped jug, with one handle, decorated with slivers of pine cones. Ricci's typology 1/23.
	P16	43727	Small, egg-shaped jug, with one handle, decorated with slivers of pine cones. Ricci's typology 1/23.
	P17	43771	-
	P18	9961	Small cup, with two handles.
	P19	9966	Small cup, with two handles.
	P20	15377	Small, egg-shaped jug, with one handle. Ricci's typology 1/23.
	P21	15671	Carinated cup. Ricci's typology 2/248.
	P22	13046	Small, neckband jug, with one handle. Ricci's typology 1/122.
	P23	43679	Small cup, with one handle.
	P24	43725	Small, egg-shaped jug, with one handle. Ricci's typology 1/23.
	P25	1363	Small cup, with one handle.
	P26	19621	-
	P27	12290A	-
	P28	9964	Carinated cup, with two handles. Ricci's typology 2/290.

P29	-	-
P30	43895	Small, egg-shaped jug, with one handle. Ricci's typology 1/111.
P31	43742	Small cup.
P32	15553	Egg-shaped glass. Ricci's typology 1/13.
P33	17058	Small jug, with one handle. Ricci's typology 1/23.
P34	16595	-
P35	14934	Small, egg-shaped jug, with one handle, decorated by barbotine technique representing a caricature of a human face. Ricci's typology 1/111.
P36	17700	Little jug, decorated with depressions.

Table B a) Standards used for element calibrations; b) Mean of 5 microanalyses on two reference standards (Augite and Orthoclase) with the relative standard deviation (σ) and the certified value from Micro-Analysis Consultants Ltd. (U.K.).

a)

Element	Standard	Type
Si	Wollastonite	natural compound
Ti	Titanite	natural compound
Al	Corundum	synthetic compound
Fe	Almandine	natural compound
Mn	Mn	natural compound
Mg	Periclase	synthetic compound
Ca	Wollastonite	natural compound
Na	Albite	natural compound
K	Orthoclase	natural compound

b)

		Mean	σ	Certified value
Augite	SiO_2	46,3	0,28	45,93
	TiO_2	2,4	0,10	2,29
	Al_2O_3	8,8	0,09	9,02
	Cr_2O_3	n.d.	—	0,08
	FeO	7,2	0,16	7,42
	MnO	0,1	0,06	0,07
	MgO	12,1	0,12	11,88
	CaO	21,8	0,17	21,62
	Na_2O	0,9	0,04	0,79
	K_2O	n.d.	—	0,01
	Tot	99,4		99,11
Orthoclase	SiO_2	64,1	0,11	64,30
	Al_2O_3	20,0	0,12	9,90
	CaO	0,2	0,04	0,24
	Na_2O	3,9	0,04	3,70
	K_2O	11,4	0,11	11,40
	Tot	99,5		99,54

n. d. = not detected

Table C Operating conditions and data acquisition parameters used for LA-ICP-MS analysis.

ICP-MS	RF power	1400 W
	Coolant (plasma)	Ar: 13 l min^{-1}
Gas flows	Auxiliary	Ar: 0.7 l min^{-1}
	Sample transport	He: ≈ 0.5 l min^{-1} (in the ablation cell), Ar (make up gas flow): ≈ 0.7 l min^{-1}
Laser	Wavelength	213 nm (Nd:YAG)
	Pulse width (FWHM)	3 ns
	Energy distribution	Homogenized, flat beam, aperture imaged
	Energy density (fluence) on sample surface	2.5-4.0 J cm^{-2}
	Focus	Fixed at surface
	Repetition rate	5 Hz
	Crater diameter	≈ 32 μm
	Line scan speed	20 μm/s
Analysis protocol	Scanning mode	Peak jumping, 1 point per peak, 10 ms dwell time
	Acquisition mode	Time resolved analysis
	Analysis duration	120 s (≈ 60 s background, 30 s signal, 30 s washout)
	Elements' isotopes used for PCA	^{24}Mg, ^{27}Al, ^{29}Si, ^{39}K, ^{44}Ca, ^{47}Ti, ^{52}Cr, ^{57}Fe, ^{85}Rb, ^{88}Sr

Table D Detection limits in LA-ICPMS for the elements used to classify archaeological samples calculated using the 3σ criterion and for an actual laser beam equal to 55 μm.

Si	38 mg
Al	1 mg
Ca	4 mg
Fe	1 mg
Mg	17 μg
K	97 μg
Ti	38 μg
Cr	29 μg
Rb	6 μg
Sr	1 μg