

Supplementary Information

Table S1. Linearity (determination coefficient (r^2), LOD, LOQ, Precision (R.D.S) and Recovery parameters of the proposed SPME method for a 50 ng g⁻¹ spike.

Investigated VOCs	LOD (ng g ⁻¹)	LOQ (ng g ⁻¹)	Recovery % (R.S.D.)	Determination Coefficient (r^2)
2-Ethylhexanol	0.99	2.97	95 (4.5)	0.9970
Ethylbenzene	1.26	3.78	90 (4.6)	0.9988
<i>p</i> -Xylene	1.17	3.51	85 (3.4)	0.9998
<i>m</i> -Xylene	1.26	3.77	82 (3.7)	0.9989
<i>o</i> -Xylene	0.91	2.73	87 (5.2)	0.9978
Styrene	0.95	2.84	93 (4.3)	0.9984
Triacetin	1.22	3.66	95 (4.8)	0.9978

Table S2. Global migration values of cling-film for retail use (Reg. UE 10/2011).

Cling-film	Composition-Material	Global migration (mg/dm ² ± Standard Deviation)
PE200	PE based film	7.36 ± 1.45
812	PVC based film	8.56 ± 1.30
818	PVC based film	9.27 ± 1.20

Table S3. General features, fat, a_w , protein content and pH values of the Italian PDO cheeses.

	Taleggio	Quartiolo	Provolone	Casera
Presence of cheese rind	Yes	Yes	Yes	Yes
Thickness of cheese rind(mm)	1 mm	1 mm	2 mm	2 mm
Ripening time (months)	1	1	3	3
Shape/weight whole cheese	Rectangular 2 kg	Rectangular 1.8 kg	Round 12 kg	Round 7 kg
Protein (%)	19.7	19.9	23.8	27.1
Fat (%)	27.5	28.2	26.9	33.8
Fat (%)–dry weight	52.2	51.1	47.9	49.4
a_w	0.961	0.975	0.967	0.945
pH	5.27	4.5	5.19	5.1

Table S4. Selected reaction monitoring (SIM) parameters of the studied compounds migrated from cling-films to cheeses.

Compound	CAS Number	Qualifier Ions	Quantifier Ion
		m/z	m/z
2-Ethylhexanol	[104-76-7]	41, 57, 112	57
Ethylbenzene	[100-41-4]	77, 91, 106	91
<i>p</i> -Xylene	[106-42-3]	77, 91, 106	91
<i>m</i> -Xylene	[108-38-3]	77, 91, 106	91
<i>o</i> -Xylene	[95-47-6]	77, 91, 106	91
Styrene	[100-42-5]	51, 78, 104	104
Triacetin	[102-76-1]	43, 103, 145	43

Table S6. VOCs profile by HS-SPME-GC/MS from “mandrino” of cling-films roll for retail use.

Rt ^a	Volatile Compounds ^b	Mandrino of Cling-Films for Retail Use ^c		
		812 PVC Based	818 PVC Based	PE 200PE Based
<i>Hydrocarbons</i>				
1.63	Heptane	0.12	nd	nd
5.17	Decane	nd	0.24	1.34
16.18	Styrene	0.44	1.25	0.88
total		0.56	1.49	2.22
<i>Esters</i>				
2.77	Acetic acid ethyl ester	0.56	0.77	0.23
<i>Terpenes</i>				
5.49	α -Pinene	27.50	4.36	155.20
12.73	β -Myrcene	150.44	123.12	145.51
13.85	D-Limonene	1122.23	1235.13	1221.01
22.57	Citronellol	12.44	90.76	84.98
total		1312.61	1453.36	1606.50

^a Retention time; ^b Volatile compounds: mass spectra tentatively identified using NIST 05 and Wiley 275 libraries; ^c Amount of volatile compounds expressed as $\mu\text{g IS equivalents g}^{-1}$ of mandrino samples; nd = not detected.