

**Table S1.** Content of volatile compounds (mean %, n=3) obtained of VOO packed in different containers during 21 months of storage. R.T.: retention time.

CAS number	R.T (min)	Volatile compounds	t0			t1			t2			t3			t4			t5			t6		
			OC	OP	C	OC	OP	C															
<b>Aldehydes</b>																							
590-86-3	3.5	3-Methylbutanal	1.5	1.3	0.8	0.2	1.6	1.1	0.9	1.8	1.4	0.9	0.4	0.5	0.4	1.5	1.7	1.5	1.5	1.6	1.7		
18318-83-7	6.6	(E)-2-Hexenal	30.9	18.7	28.6	31.5	18.5	28.5	27.7	13.7	20.1	26.2	5.3	15.0	19.4	2.5	13.1	19.1	1.4	7.0	16.2		
66-25-1	6.7	Hexanal	n.d.	16.1	n.d.	n.d.	18.6	6.6	n.d.	18.7	12.2	n.d.											
18829-55-5	11.8	(E)-2-Heptenal	n.d.	2.8	n.d.	n.d.	2.1	0.3	n.d.	2.8	1.1	0.2											
124-19-6	22.3	Nonanal	0.8	0.9	0.8	0.9	0.8	0.6	0.9	1.1	0.8	1.0	0.8	1.2	1.1	0.7	0.8	1.1	0.6	0.7	1.6		
		TOTAL	33.2	20.8	30.3	32.6	20.9	30.2	29.5	16.7	22.2	28.0	25.4	16.7	20.9	25.4	22.4	21.7	25.1	22.5	19.7		
<b>Alcohols</b>																							
75-65-0	1.9	2-Methyl-2-propanol	n.d.	10.9	2.4	2.2	14.9	6.0	3.5	13.7	7.7	3.7											
123-51-3	4.4	3-Methyl-1-butanol	n.d.	1.6	n.d.	n.d.	2.1	0.9	n.d.	1.0	0.8	n.d.											
1576-95-0	5.6	(Z)-2-Penten-1-ol	3.5	4.5	3.8	3.5	3.4	2.8	3.4	3.1	3.0	3.9	2.4	3.3	2.7	1.9	2.9	2.8	1.5	2.1	3.3		
928-97-2	9.3	(E)-3-Hexen-1-ol	21.5	28.6	24.5	23.4	27.0	23.4	24.5	29.4	26.3	23.4	20.3	26.2	23.7	12.3	15.5	18.3	9.3	11.3	17.3		
928-95-0	9.8	(E)-2-Hexen-1-ol	0.7	1.0	0.9	0.9	1.1	0.9	0.9	1.1	1.0	1.0	1.1	1.4	1.1	0.7	1.1	1.2	0.7	0.8	1.1		
111-27-3	10.0	1-Hexanol	5.8	5.9	5.6	5.9	6.0	5.1	5.7	6.0	6.0	4.3	5.8	7.2	3.1	3.8	7.3	2.6	3.2	6.9			
21129-27-1	14.9	4-Methyl-1-(1-methylethyl) cyclohexanol	n.d.	3.9	3.5	0.1																	
		TOTAL	31.5	40.0	34.9	33.6	37.4	32.1	34.5	39.6	36.3	34.2	40.6	39.1	37.0	35.0	30.1	33.2	32.6	29.4	32.3		
<b>Hydrocarbons</b>																							
589-53-7	5.2	4-Methylheptane	n.d.	1.7	1.2	n.d.	2.0	1.9	n.d.														
589-43-5	7.4	2,4-Dimethylhexane	n.d.	0.2	n.d.	n.d.	0.2	0.1	0.1	1.9	1.9	n.d.											
19549-87-2	8.3	2,4-Dimethyl-1-heptene	n.d.	0.1	n.d.	n.d.	2.7	2.2	0.7														
2384-85-2	13.3	3-Decyne	n.d.	1.7	2.0	n.d.	1.5	1.2	n.d.	2.2	1.9	n.d.											
14676-29-0	14.7	3-Ethyl-2-methylheptane	n.d.	0.8	1.1	0.8																	
111-65-9	16.4	Octane	5.2	5.9	5.9	5.5	5.5	5.7	5.6	6.4	5.9	5.8	4.4	6.6	5.8	2.6	4.7	6.0	1.8	3.2	5.9		
15869-93-9	17.2	3,5-Dimethyloctane	n.d.	3.1	2.8	2.7																	
5881-17-4	17.8	3-Ethyloctane	n.d.	0.2	n.d.	n.d.	1.8	2.0	0.3	2.8	1.8	0.3											
2216-32-2	19.6	4-Ethylheptane	n.d.	0.8	1.2	1.0																	
3856-25-5	34.8	Copaene	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	n.d.	n.d.	n.d.		
502-61-4	40.3	$\alpha$ -Farnesene	0.2	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.		
		TOTAL	5.6	6.4	6.2	5.8	5.9	6.0	5.8	6.6	6.1	6.1	6.7	8.8	6.1	8.0	9.2	6.6	18.2	18.0	11.5		
<b>Ether</b>																							

4747-07-3	7.7	1-Methoxyhexane	1.4	1.1	1.0	1.0	1.5	1.1	1.1	1.8	1.4	1.2	1.2	1.4	1.2	1.1	1.5	1.6	0.9	1.1	1.4
70220-06-3	7.9	(Z)-1-Methoxyhex-3-ene	1.7	1.6	1.6	1.5	2.0	1.4	1.6	1.8	2.1	1.7	1.3	1.6	1.3	1.5	2.4	2.2	1.4	2.0	2.0
		TOTAL	3.1	2.7	2.6	2.5	3.5	2.5	2.7	3.6	3.4	2.9	2.5	3.0	2.6	2.6	4.0	3.8	2.4	3.1	3.4
		<b>Esters</b>																			
3681-71-8	17.1	(Z)-3-Hexen-1-ol, acetate	17.4	20.4	18.0	17.9	20.8	19.5	17.0	23.6	22.4	18.6	17.7	22.8	24.0	17.4	21.4	25.2	10.4	15.9	22.7
142-92-7	17.5	Acetic acid, hexyl ester	3.2	3.6	3.3	3.0	3.3	3.6	3.1	3.7	4.0	3.8	2.9	4.0	3.6	2.2	3.0	3.6	2.2	2.1	3.5
123-86-4	20.0	Butyl-acetate	1.0	1.1	1.0	0.7	3.1	2.5	3.1	2.7	2.6	3.6	2.1	2.9	2.4	1.6	2.6	2.5	1.3	1.9	3.0
		TOTAL	21.7	25.0	22.2	21.6	27.2	25.5	23.3	30.0	29.0	25.9	22.8	29.7	30.0	21.3	27.1	31.3	13.8	19.9	29.2
		<b>Carboxylic acids</b>																			
64-19-7	2.3	Acetic acid	n.d.	5.6	4.2	n.d.	7.0	5.3	0.4												
		TOTAL	n.d.	5.6	4.2	n.d.	7.0	5.3	0.4												
		<b>Ketones</b>																			
110-93-0	16.0	6-Methyl-5-hepten-2-one	2.2	2.3	1.7	1.7	2.3	1.7	1.9	1.6	1.3	1.3	0.9	1.2	1.6	1.0	1.4	1.6	0.4	0.8	1.6
689-67-8	38.0	Geranylacetone	2.6	2.8	2.1	2.1	2.7	2.0	2.3	2.0	1.5	1.6	1.1	1.5	1.9	1.1	1.7	1.9	0.5	1.0	1.9
		TOTAL	4.9	5.1	3.8	3.8	5.0	3.7	4.2	3.6	2.8	2.8	2.0	2.7	3.4	2.1	3.1	3.5	0.9	1.8	3.4

OC: opaque crystal; OP: opaque plastic; and C: metallic can. t0-t6: samples during the storage time. n.d.: not detected.