

Supporting Information

Evaluation of deep eutectic systems as an alternative to solvents in Paintings Conservation

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Number of pages: 17

Number of tables: 15

Number of figures: 0

Density and Viscosity

The dynamic viscosities and densities of NADEs measured at 20-60 °C, as well their standard deviation is presented in table S1 and table S2, respectively.

Table S1. Experimental viscosities (mPa.s) data of the studied NADESs as function of temperature (°C)

T (°C)	<i>Dynamic Viscosity ± SD (mPa.s)</i>					
	Men+Thy (2:1)	Men+Thy (4:1)	Men+Lau (4:1)	Men+Bor (7:2)	Men+Lau+Dec (2:1:1)	Men+Lau+Dec (4:1:1)
20	68.94 ± 0.16	79.69 ± 0.18	42.50 ± 0.62	150.69 ± 0.33	23.24 ± 0.04	30.11 ± 0.07
30	29.77 ± 0.05	33.34 ± 0.01	22.22 ± 0.03	56.22 ± 0.16	14.53 ± 0.01	17.36 ± 0.03
40	15.16 ± 0.02	16.47 ± 0.05	12.87 ± 0.04	25.22 ± 0.09	9.66 ± 0.01	10.83 ± 0.04
50	8.64 ± 0.01	9.15 ± 0.04	8.03 ± 0.03	12.94 ± 0.06	6.71 ± 0.05	7.15 ± 0.06
60	5.42 ± 0.04	5.60 ± 0.01	5.36 ± 0.03	7.44 ± 0.04	4.88 ± 0.05	5.00 ± 0.05

Table S2. Experimental densities (g/cm³) data of the studied NADESs as function of temperature (°C).

T (°C)	<i>Density ± SD (g/cm³)</i>					
	Men+Thy (2:1)	Men+Thy (4:1)	Men+Lau (4:1)	Men+Bor (7:2)	Men+Lau+Dec (2:1:1)	Men+Lau+Dec (4:1:1)
20	0.9236 ± 0.0006	0.9137 ± 0.0004	0.8973 ± 0.0007	0.9132 ± 0.0003	0.8976 ± 0.0006	0.8981 ± 0.0006
30	0.9162 ± 0.0007	0.9063 ± 0.0004	0.8901 ± 0.0006	0.9059 ± 0.0009	0.8902 ± 0.0007	0.8907 ± 0.0007
40	0.9088 ± 0.0005	0.8990 ± 0.0003	0.8828 ± 0.0006	0.8986 ± 0.0002	0.8831 ± 0.0005	0.8836 ± 0.0005
50	0.9013 ± 0.0002	0.8915 ± 0.0003	0.8755 ± 0.0006	0.8911 ± 0.0003	0.8758 ± 0.0004	0.8763 ± 0.0004
60	0.8937 ± 0.0001	0.8839 ± 0.0002	0.8681 ± 0.0006	0.8836 ± 0.0004	0.8684 ± 0.0003	0.8689 ± 0.0004

Calculation the characterization parameters of DESs

Estimation of critical and thermodynamic properties

The detailed procedure for the calculation of the characterization parameters of DESs such as critical properties, acentric factors, densities, surface tensions and heat capacities are presented in this Supporting Information.

First of all, we should calculate critical properties of DESs. For each DES, the critical properties of the HBD and HBA are calculated separately by the method of Valderrama and Rojas ¹, which is a group contribution method based on the Modified Lydersen-Joback-Reid Method ², as follows:

$$\begin{aligned}T_b (\text{K}) &= 198.2 + \sum n \Delta T_b \\T_c (\text{K}) &= \frac{T_b}{0.5703 + 1.0121 \sum n \Delta T_c - (\sum n \Delta T_c)^2} \\P_c (\text{bar}) &= \frac{M_w}{(0.2573 + \sum n \Delta P_c)^2} \\V_c (\text{cm}^3/\text{mol}) &= 6.75 + \sum n \Delta V_c \\ \omega &= \frac{(T_b - 43)(T_c - 43)}{(T_c - T_b)(0.7 T_c - 43)} \log\left(\frac{P_c}{1.01325}\right) - \frac{(T_c - 43)}{(T_c - T_b)} \log\left(\frac{P_c}{1.01325}\right) + \log\left(\frac{P_c}{1.01325}\right) - 1\end{aligned} \tag{S1}$$

where T_b , T_c , P_c , V_c and ω are the normal boiling temperature, critical temperature, critical pressure, critical volume, and acentric factor, respectively. n is the number of occurrences of each group. The values of ΔT_b , ΔT_c , ΔP_c and ΔV_c for each group are presented in Table S3.

Table S3. The values of M_i , ΔT_b , ΔT_c , ΔP_c and ΔV_c for decomposed functional group by the method by Valderrama and Rojas ¹.

		ΔT_c	ΔP_c	ΔT_b
Without Rings				
-CH3		0.0275	0.3031	23.58
-CH2 -		0.0159	0.2165	22.88
>CH-		0.0002	0.114	21.74
>C<	[>C-]'	-0.0206	0.0539	18.25
=CH ₂		0.017	0.2493	18.18
=CH-		0.0182	0.1866	24.96
=C<		-0.0003	0.0832	24.14
=C=		-0.0029	0.0934	26.15
=CH		0.0078	0.1429	
≡C-	-COO-	0.0078	0.1429	
-OH		0.0723	0.1343	92.88
-O-	[-O]'	0.0051	0.13	22.42
>C=O		0.0247	0.2341	94.97
-CHO		0.0294	0.3128	72.24
-COOH		0.0853	0.4537	169.06
-COO-		0.0377	0.4139	81.1
-HCOO-		0.036	0.4752	
=O		0.0273	0.2042	-10.5
(any_other)				
-NH ₂		0.0364	0.1692	73.23
-NH ₃		0.0364	0.1692	73.23
-NH-		0.0119	0.0322	50.17
>N-		-0.0028	0.0304	11.74
=N-		0.0172	0.1541	74.6
-CN		0.0506	0.3697	125.66
NO ₂		0.0448	0.4529	152.54
-F		0.0228	0.2912	-0.03
-Cl		0.0188	0.3738	38.13
-Br		0.0124	0.5799	66.86

-I		0.0148	0.9174	93.84
-P		-0.0084	0.1776	34.86
-B		0.0352	0.0348	-24.56
-S-		0.0006	0.6901	117.52
O=S=O		-0.0563	-0.0606	147.24
(phenols)				
>C=O		0.0343	0.2751	94.97
-NH-		0.0244	0.0724	52.82
>N-	[>N <] ⁺	0.0063	0.0538	68.16
=N-	[>N=] ⁺	-0.0011	0.0559	57.55

Then by calculating the critical properties of the HBD and HBA, separately for each DES, the Lee–Kesler mixing rules, as recommended by Knapp et al. ³, are used to calculate the critical properties of the DES:

$$\begin{aligned}
 MW_{DES} &= \sum_i x_i MW_i \\
 T_{C,DES} &= \frac{1}{V_{C,DES}^{0.25}} \sum_i \sum_j x_i x_j V_{cij}^{0.25} T_{cij} \\
 V_{C,DES} &= \sum_i \sum_j x_i x_j V_{cij} \\
 \omega_{DES} &= \sum_i x_i \omega_i \\
 T_{cij} &= \sqrt{T_{ci} T_{cj}} \\
 V_{cij} &= \frac{1}{8} (V_{ci}^{1/3} + V_{cj}^{1/3})^3 \\
 P_{C,DES} &= 0.2905 - 0.085 \omega_{DES} \frac{RT_{C,DES}}{V_{C,DES}}
 \end{aligned} \tag{S2}$$

where $T_{C,DES}$, $V_{C,DES}$, ω_{DES} and $P_{C,DES}$ are the DES critical temperature, critical volume, acentric factor, and critical pressure, respectively.

Then after calculation of critical properties and acentric factors of DES, Equation S3 is used to calculate densities of DESs ⁴.

$$\rho = -1.13 \times 10^{-6} T_c^2 + 2.566 \times 10^{-3} T_c + 0.2376 \omega^{0.2211} - 4.67 \times 10^{-4} V_c - 4.64 \times 10^{-4} T \quad (\text{S3})$$

Where T_c , V_c and ω are the critical temperature in kelvins, critical volume in cm^3/mol and acentric factor of desired DES, respectively. ρ is desired density in g/cm^3 .

At the next step by knowing densities, Equation S4 is used to calculate surface tensions of DESs ⁵.

$$\sigma = 393.4 \ln(\rho) - 5.3 \times 10^{-5} \omega^{P_c} - 3.72 \times 10^{-2} T_c \ln(\rho^2 \left[V_c - \frac{50.3}{\omega^2} \right]) + \frac{1.132 M_w \sqrt{T}}{P_c \ln\left(\frac{V_c \rho}{\sqrt{T_c}}\right)} + 108.9 \quad (\text{S4})$$

where P_c , T_c , V_c are the critical pressure in bars, critical temperature in kelvins, and critical volume cm^3/mol , respectively. σ and ρ are the surface tension and density at the desired temperature in mN/m and g/cm^3 .

Finally, Equation S5 is applied for calculation of heat capacities of DESs ⁶.

$$C_p = 3.8 \times 10^{-4} \frac{M_w^3}{P_c^6} + 6.3 \times 10^{-5} M_w^{2\omega} - \frac{24577.4}{M_w} - 94.9 + 132.27 T^{1/4} \quad (\text{S5})$$

where, M_w , P_c , ω are the molecular weight in g/mol , critical pressure in MPa , and acentric factor of the DES, respectively. C_p is the heat capacity in $\text{J}/\text{mol.k}$.

Binary mixture: aA:bB

Ex1: Menthol: Lauric acid (4:1)

According to the molecular structure, the contribution of each constituent of both hydrogen bonding acceptor (HBA) and hydrogen bonding donor (HBD) is carried out.

Table S4.1. Menthol groups contribution.

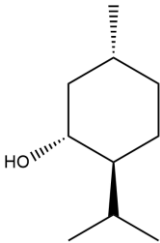
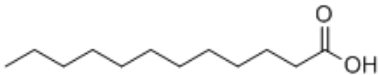
Menthol (HBD)	Groups	n	ΔT_{bM}	ΔT_M	ΔP_M	ΔV_M
	-CH ₃	3	23.58	0.0275	0.3031	66.81
	>CH-	1	21.74	0.0002	0.114	45.7
	-OH	1	92.88	0.0723	0.1343	30.4
	-CH ₂ - (ring)	3	27.15	0.0116	0.1982	51.64
	>CH- (ring)	3	21.78	0.0081	0.1773	30.56
	Σ			332.15	0.2141	2.2841

Table S4.2. Lauric acid groups contribution.

Lauric acid (HBA)	Groups	n	ΔT_{bM}	ΔT_M	ΔP_M	ΔV_M
	-CH ₃	1	23.58	0.0275	0.3031	66.81
	-CH ₂ -	10	27.15	0.0116	0.1982	51.64
	- COOH	1	169.06	0.0853	0.4537	88.6
	Σ			332.15	0.2141	2.2841

The results determined above in tables S4.1 and S4.2 are then used to calculate the critical parameters shown in equations S1:

Table S5. Critical properties of menthol and lauric acid.

Compound	Mw (g/mol)	T _b (K)	T _c (K)	P _c (bar)	V _c (cm ³ /mol)	ω
Menthol	156.27	530.35	715.58	24.20	529.88	0.700
Lauric acid	200.32	619.64	803.15	19.82	733.26	0.883

Through the individual properties of each compound, the critical and the thermodynamic properties of the mixture are then calculated, using equations S2.

Table S6. Critical and thermodynamic properties of the mixture Menthol + lauric acid (4:1), at 298K.

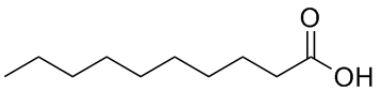
Mixture	Mw (g/mol)	T _{cm} (K)	P _{cm} (bar)	V _{cm} (cm ³ /mol)	ω _m	ρ (g/ml)	C _p (J/K.mol)	σ (mN/m)
Men + Lau (4:1)	165.08	732.64	24.41	568.80	0.736	1.0915	314.05	28.39

Ternary mixture: aA:bB:cC

Ex2: Menthol + Lauric acid + Decanoic acid (4:1:1)

In these cases, first, is determined the critical properties of the two compounds **B** (lauric acid) and **C** (decanoic acid) as a binary mixture, thus, using the values from the table S3, table S4.1 and the equations S1-S2. The Molecular weight of decanoic acid is 172.26 g/mol.

Table S7. Calculation of parameters ΔT_{bM} , ΔT_M , ΔP_M and ΔV_M of Decanoic acid.

Decanoic acid	Groups	n	ΔT_{bM}	ΔT_M	ΔP_M	ΔV_M
	-CH ₃	1	23.58	0.0275	0.3031	66.81
	-CH ₂ -	8	27.15	0.0116	0.1982	51.64
	-COOH	1	169.06	0.0853	0.4537	88.6
	Σ		375.68	0.240	2.4888	612.29

By the combination Lau + Dec (1:1) you get:

Table S8. Critical properties of the mixture Lauric acid + Decanoic acid (1:1), at 298,15K.

Mixture	Mw (g/mol)	T_{cm} (K)	P_{cm} (bar)	V_{cm} (cm ³ /mol)	ω_m
Lau + Dec (1:1)	186.29	781.14	21.04	675.34	0.844

The mixture B+C can now be called **D**, and the molar fraction **d** given by the sum of b+c. The final calculations involve only aA:dD, then we can apply the same mixture rules.

Since we already have the information of critical properties of menthol (table S4.1) and D (table S8), using the equations S2-S5, we determine the critical and thermodynamic properties of the mixture.

Table S9. Critical and thermodynamic properties of the mixture Menthol: Lauric acid + Decanoic acid (4:1:1), at 298,15K.

Mixture	Mw (g/mol)	T _{cm} (K)	P _{cm} (bar)	V _{cm} (cm ³ /mol)	ω _m	ρ (g/ml)	C _p (J/K.mol)	σ (mN/m)
Men +Lau +Dec (4:1:1)	166.28	737.09	24.10	577.06	0.748	1.0924	370.42	50.09

HSP parameters

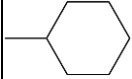
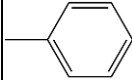
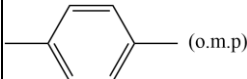
Hansen solubility parameters (δ_d , δ_p and δ_h) are calculated applying the contribution groups of Hoftyzer-Van Krevelen's method ⁷ to the following equations:

$$\delta_d = \frac{\sum F_{di}}{V} \quad \delta_p = \frac{\sqrt{\sum F_{pi}^2}}{V} \quad \delta_h = \frac{\sqrt{\sum E_{hi}}}{V} \quad (S6)$$

Where F_{di} and F_{pi} correspond to the dispersion and polar components per group to the molar attraction constant, F , proposed by Small ⁸, and E_{hi} the hydrogen bonding energy per structural group. V is the molar volume of the molecule. The F_{di} , F_{pi} and E_{hi} values are listed in table S10.

Table S10. Values of solubility parameter of each group contribution used Hoftyzer and Van Krevelen's method adapted from reference ⁷.

Structural Group	F _{di} (J ^{1/2} .cm ^{3/2} .mol ⁻¹)	F _{pi} (J ^{1/2} .cm ^{3/2} .mol ⁻¹)	E _{hi} (J ^{1/2} .cm ^{3/2} .mol ⁻¹)
-CH ₃	420	0	0
-CH ₂ -	270	0	0
>CH-	80	0	0
>C<	-70	0	0

=CH ₂	400	0	0
=CH-	200	0	0
=C<	70	0	0
	1620	0	0
	1430	110	0
	1270	110	0
-F	220	-	-
-Cl	450	550	400
-Br	550	-	-
-CN	430	1100	2500
-OH (alcohol)	210	500	20000
-O-	100	400	3000
-COH	470	800	4500
-CO-	290	770	2000
-COOH	530	420	10000
-COO-	390	490	7000
HCOO-	530	-	-
-NH ₂	280	-	8400
>NH-	160	210	3100
-N<	20	800	5000
-NO ₂	500	1070	1500
-S-	440	-	-
=PO ₄ -	740	1890	13000

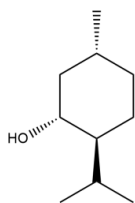
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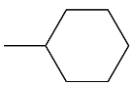
Binary mixture

The mixture Menthol + Lauric acid (4:1) can be used as a theoretical example of the calculations. The first step is the calculation of each of individual component of the DES:

Table S11. HSP group contributions of Menthol

Menthol



Groups	n	<i>F_{di}</i>	<i>F_{pi}²</i>	<i>E_{hi}</i>
-CH ₃	3x	420	0	0
>CH-	1x	80	0	0
	1x	1620	0	0
-OH	1x	210	250000	20000
		3170	250000	20000

$$V = \frac{Mw}{\rho} = \frac{156.27g/mol}{0.89g/cm^3} = 175,58 \text{ cm}^3/mol$$

$$\delta_d = \frac{\sum F_{di}}{V} = \frac{3170}{175.58} = 18.05 \text{ J}^{1/2} \text{ cm}^{-3/2}$$

$$\delta_p = \frac{\sqrt{\sum F_{pi}^2}}{V} = \frac{\sqrt{250000}}{175.58} = 2.85 \text{ J}^{1/2} \text{ cm}^{-3/2}$$

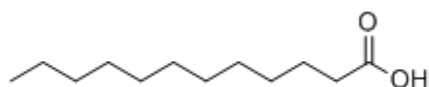
$$\delta_h = \sqrt{\frac{\sum E_{hi}}{V}} = \sqrt{\frac{20000}{175.58}} = 10.65 \text{ J}^{1/2} \text{ cm}^{-3/2}$$

$$\delta_t = \sqrt{\delta_d^2 + \delta_p^2 + \delta_h^2} = \sqrt{18.05^2 + 2.85^2 + 10.65^2} = 21.2 \text{ J}^{1/2} \text{ cm}^{-3/2}$$

Lauric acid

Table S12 HSP group contributions of Lauric acid

Groups	n	<i>F_{di}</i>	<i>F_{pi}²</i>	<i>E_{hi}</i>
-CH ₃	1x	420	0	0



-CH2-	10x	270	0	0
-COOH	1x	530	176400	10000
		3650	176400	10000

$$V = \frac{Mw}{\rho} = \frac{200.32g/mol}{0.88g/cm^3} = 227.64 \text{ cm}^3/mol$$

$$\delta_d = \frac{\sum F_{di}}{V} = \frac{3650}{227.64} = 16.03 \text{ J}^{1/2} \text{ cm}^{-3/2}$$

$$\delta_p = \frac{\sqrt{\sum F_{pi}^2}}{V} = \frac{\sqrt{176400}}{227.64} = 1.85 \text{ J}^{1/2} \text{ cm}^{-3/2}$$

$$\delta_h = \sqrt{\frac{\sum E_{hi}}{V}} = \sqrt{\frac{20000}{227.64}} = 6.63 \text{ J}^{1/2} \text{ cm}^{-3/2}$$

$$\delta_t = \sqrt{\delta_d^2 + \delta_p^2 + \delta_h^2} = \sqrt{16.03^2 + 1.85^2 + 6.63^2} = 17.4 \text{ J}^{1/2} \text{ cm}^{-3/2}$$

The second step is the calculation of the volume molar of the constituents in the mixture, using equation S7^{9,10}:

$$\varphi_i = \frac{x_i V_i}{\sum_j x_j V_j} \quad (\text{S7})$$

Where x_i , x_j , V_i and V_j are the molar fraction and volume molar of component i and j, respectively. Considering menthol and lauric acid as the compound 1 and 2, respectively, then we have:

$$\varphi_1 = \frac{0.8 \times 175.58}{(0.8 \times 175.58 + 0.2 \times 227.63)} = 0.755$$

$$\varphi_2 = \frac{0.2 \times 227.63}{(0.8 \times 175.58 + 0.2 \times 227.63)} = 0.245$$

finally, the solubility parameters of the mixture are calculated using equations S8^[11]:

(S8)

$$\delta_d^M = \delta_{d1}^{s1}\varphi_1 + \delta_{d2}^{s2}\varphi_2 = 18.05 \times 0.755 + 16.03 \times 0.245 = 17.56 \text{ J}^{1/2}\text{cm}^{-3/2}$$

$$\delta_p^M = \delta_{p1}^{s1}\varphi_1 + \delta_{p2}^{s2}\varphi_2 = 2.85 \times 0.755 + 1.85 \times 0.245 = 2.60 \text{ J}^{1/2}\text{cm}^{-3/2}$$

$$\delta_h^M = \delta_{h1}^{s1}\varphi_1 + \delta_{h2}^{s2}\varphi_2 = 10.65 \times 0.755 + 6.63 \times 0.245 = 9.68 \text{ J}^{1/2}\text{cm}^{-3/2}$$

$$\delta_t = \sqrt{(\delta_d^M)^2 + (\delta_p^M)^2 + (\delta_h^M)^2} = \sqrt{17.56^2 + 2.60^2 + 9.68^2} = 20.22 \text{ J}^{1/2}\text{cm}^{-3/2}$$

The Hansen solubility parameters of some typical solvents and NADESs components are presented in table S13 and S14, respectively. The mixtures of isooctane:isopropanol at different proportions and NADES systems are listed in table S15.

Table S13. Calculated values of Hansen solubility parameters of common solvents.

Solvents	HSP _{calc}				HSP ¹¹		
	δ_d (MPa ^{1/2})	δ_p (MPa ^{1/2})	δ_h (MPa ^{1/2})	δ_t (MPa ^{1/2})	δ_d (MPa ^{1/2})	δ_p (MPa ^{1/2})	δ_h (MPa ^{1/2})
Water	-	-	-	-	15.5	16.0	42.30
Methanol	15.6	12.4	22.2	29.8	15.1	12.3	22.3
Ethanol	15.4	8.6	18.5	25.6	15.8	8.8	19.4
Isopropanol	14.8	6.5	16.2	22.9	15.8	6.1	16.4
Acetone	15.3	10.4	5.2	19.2	15.5	10.4	7.0
Toluene	17.4	1.0	0.0	15.9	18.0	1.4	2.0
Xylene	17.1	0.9	0.0	17.1	17.6	1.0	3.1
Iso-octane	14.4	0.0	0.0	14.1	14.0	0.0	0.0

Table S14. The calculated values of Hansen solubility parameters of DES constituents.

Compounds	HSP _{calc}				HSP ¹¹		
	δ_d (MPa ^{1/2})	δ_p (MPa ^{1/2})	δ_h (MPa ^{1/2})	δ_t (MPa ^{1/2})	δ_d (MPa ^{1/2})	δ_p (MPa ^{1/2})	δ_h (MPa ^{1/2})
Menthol (Men)	18.1	2.8	10.7	21.17	16.6	4.7	10.6
Lauric acid (Lau)	16.0	1.8	6.6	17.45	-	-	-
Myristic acid (Myr)	15.8	1.6	6.1	17.04	-	-	-
Decanoic acid (Dec)	16.1	2.2	7.2	17.79	-	-	-
Malic acid (Mal)	19.5	9.3	21.9	30.7	-	-	-
Thymol (Thy)	19.0	3.3	11.3	22.4	19.0	4.5	10.8
Borneol (Bor)	20.3	3.4	11.6	23.6	-	-	-
Lactic acid (Lac)	16.6	8.7	20.0	27.5	17.0	8.3	28.4
Betaine (Bet)	16.6	8.0	10.1	21.0	-	-	-

Table 15: Values corresponding to Hansen parameters and the total iso-octane: isopropanol (in different ratios) and NADES solubility.

Mixtures/DES	HSP _{calc}			
	δ_d (MPa ^{1/2})	δ_p (MPa ^{1/2})	δ_h (MPa ^{1/2})	δ_t (MPa ^{1/2})
Iso-octane: Isopropanol (9:1)	14.40	0.32	0.79	14.42
Iso-octane: Isopropanol (8:2)	14.42	0.68	1.67	14.53

Iso-octane: Isopropanol (7:3)	14.44	1.08	2.67	14.73
Iso-octane: Isopropanol (6:4)	14.47	1.54	3.81	15.04
Iso-octane: Isopropanol (5:5)	14.50	2.07	5.11	15.52
Iso-octane: Isopropanol (4:6)	14.54	2.68	6.62	16.20
Iso-octane: Isopropanol (3:7)	14.59	3.39	8.39	17.16
Iso-octane: Isopropanol (2:8)	14.64	4.24	10.49	18.50
Iso-octane: Isopropanol (1:9)	14.70	5.27	13.04	20.34
Men + Lau (2:1)	17.3	2.5	9.1	19.7
Men + Lau (4:1)	17.6	2.6	9.7	20.2
Men + Dec (2:1)	17.4	2.6	9.4	19.9
Men + Dec (7:2)	17.6	2.7	9.8	20.3
Men + Dec (1:3)	16.6	2.3	8.0	18.6
Men + Mal (8:1)	18.1	3.2	11.3	21.6
Men + Thy (1:1)	18.0	3.0	11.0	21.3
Men + Thy (2:1)	18.0	3.0	10.9	21.3
Men + Thy (4:1)	18.0	2.9	10.8	21.2
Men + Bor (7:2)	18.5	2.9	10.9	21.6
Thy + Bor (1:1)	19.1	3.3	11.4	22.5
Lac + Bet + Dec (2:1:0.25)	16.5	7.5	14.4	23.1
Lac + Bet + Dec (2:1:0.35)	16.5	7.2	14.0	22.8

Lac + Bet + Dec (5:1:0.1)	16.6	8.3	17.3	25.3
Men + Lau + Dec (2:1:1)	17.0	2.4	8.6	19.2
Men + Lau + Dec (4:1:1)	17.3	2.5	9.3	19.8

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