

Rheological and textural characterization of acrylic polymers water dispersions for cosmetic use.

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Name	Commercial name	Active polymer	% active polymer	Form	Pre-neutralization
A1	Carbopol® Ultrez 10	<i>Carbomer</i>	100	powder	no
A2	Cosmedia® SP	<i>Sodium polyacrylate</i>	100	powder	yes
A3	Carbopol® ETD 2020	<i>Acrylates/C10-30 alkyl acrylates crosspolymer</i>	100	powder	no
B1	Aristoflex® Silk	<i>Sodium acryloyldimethyltaurate</i>	100	powder	yes
B2	Aristoflex® AVC	<i>Ammonium acryloyldimethyltaurate/VP copolymer</i>	100	powder	yes
B3	Aristoflex® HMB	<i>Ammonium acryloyldimethyltaurate/Beneth-25 methacrylate crosspolymer</i>	100	powder	yes
C1	Cosmedia® ACE	<i>Sodium polyacrylate</i>	55	liquid	yes
C2	Simulgel™ EG	<i>Sodium acrylate/sodium acryloyldimethyltaurate copolymer</i>	40	liquid	yes
C3	Sepilife™ Nude	<i>Sodium acrylate/sodium acryloyldimethyltaurate copolymer</i>	37.5	liquid	yes

Table S1: Raw materials' technical information reported in the suppliers' data sheets.

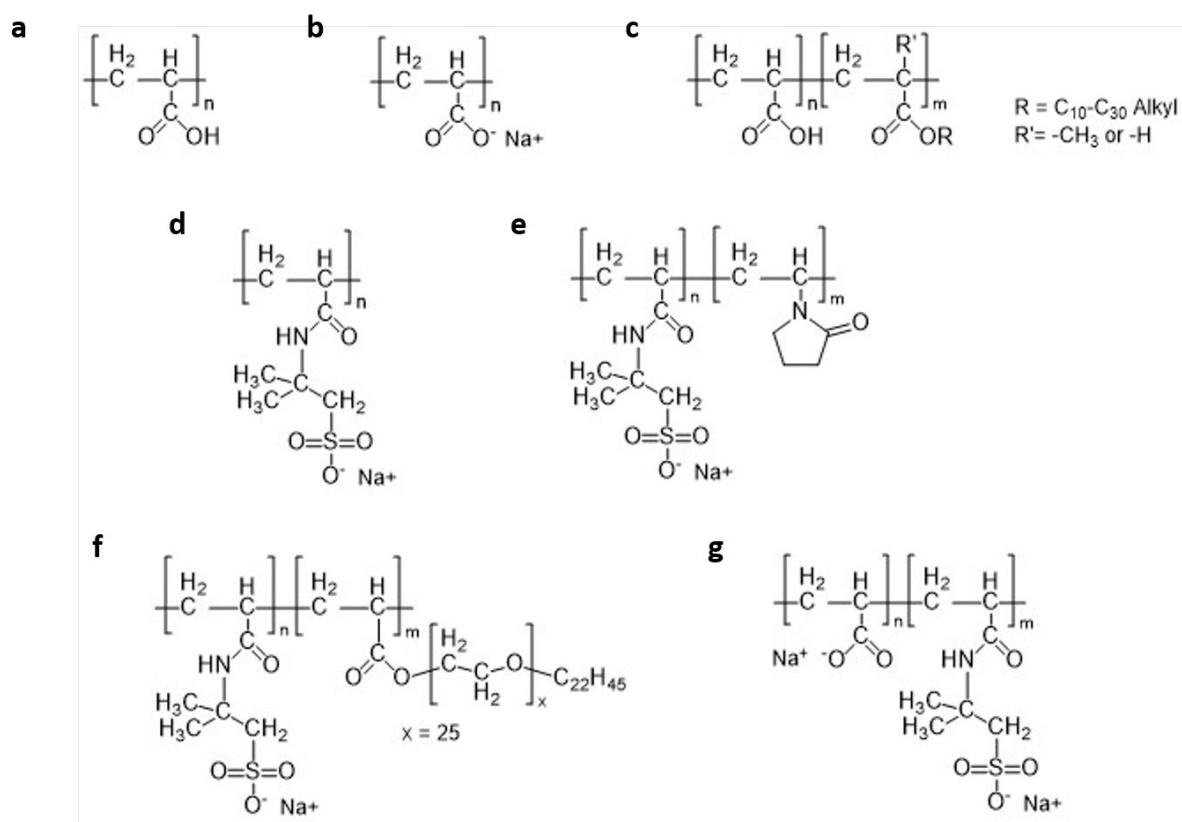


Figure S1: Chemical structures of the polymers contained in the raw materials used in this study: *Carbomer* contained in A1 (**a**); *Sodium polyacrylate* contained in A2 and C1 (**b**); *Acrylates/C10-30 alkyl acrylate crosspolymer* contained in A3 (**c**); *Sodium acryloyldimethyltaurate* contained in B1 (**d**); *Ammonium acryloyldimethyltaurate/VP copolymer* contained in B2 (**e**); *Ammonium acryloyldimethyltaurate/Beheneth-25 methacrylate crosspolymer* contained in B3 (**f**); *Sodium acrylate/sodium acryloyldimethyltaurate copolymer* contained in C2 and C3 (**g**).

Textural parameters	B1	B2	B3
Firmness (N)	0.24	0.53	0.62
Adhesiveness (N.mm)	1.09	1.98	1.38
Stringiness (mm)	9.73	5.28	4.11

Table S2: Textural parameters measured for the hydrogels prepared with B1, B2 and B3.

Variables	FIRMNESS	CONSISTENCY	COHESIVENESS	ADHESIVENESS	STRINGINESS
$\eta_{0.01\text{ s-1}}$	0.979	0.977	0.657	0.515	-0.738
$\eta_{0.1\text{ s-1}}$	0.980	0.977	0.674	0.541	-0.728
$\gamma_{G'=G''}$	0.521	0.590	-0.092	-0.262	-0.774
$G^*_{10\text{ Hz}}$	0.661	0.593	0.946	0.959	-0.279
$G^*_{0.5\text{ Hz}}$	0.707	0.640	0.964	0.958	-0.330
$G^*_{0.01\text{ Hz}}$	0.745	0.679	0.972	0.948	-0.371
$\tan\delta_{10\text{ Hz}}$	-0.372	-0.344	-0.352	-0.337	0.811
$\tan\delta_{0.5\text{ Hz}}$	-0.602	-0.586	-0.486	-0.381	0.818
$\tan\delta_{0.01\text{ Hz}}$	-0.589	-0.580	-0.438	-0.325	0.763

Table S3: Pearson's correlation coefficients between rheological and textural values of the analysed hydrogels. Values in bold are significant as p-value < 0.05.