

Fig 1: Mean (\pm standard errors; n=12) TS of Exp and commercial VPS impression materials at four different time points.



Fig 2: ATR-FTIR spectra of Formulation 1; different concentrations of vinyl-terminated poly(dimethylsiloxane) with a fixed amount of poly(methylhydrosiloxane; scans=4).



Fig 3: ATR-FTIR spectra of Formulation 2; different concentrations of vinyl-terminated poly(dimethylsiloxane) with a fixed amount of TFDMSOS (scans=4).



Fig 4: ATR-FTIR analysis of Formulation 2 and liquid TFDMSOS showing the consumption of Si-H at 2135 cm⁻¹ and 890 cm⁻¹ (scans=4).



Fig 5: ATR-FTIR spectra of Formulation 3; different concentrations of Rhodasurf CET-2; non-ionic surfactant (ethoxylatedcetyl-oleyl alcohol), with a fixed amount of TFDMSOS (scans=4).



Fig 6: Comparison of ATR-FTIR spectra of the Formulation 1, 2, 3 and commercial VPS impression materials (scans=4).



Fig 7: Addition polymerisation reaction between novel cross-linking agent (TFDMSOS) and vinyl-terminated poly(dimethylsiloxane) pre-polymer.

Components			Catalyst paste (Weight %)				
components	Exp-l	Exp-II	Exp-III	Exp-IV	Exp-V	Exp-I and II	Exp-III, IV and V
Vinyl-terminated poly(dimethylsiloxane), Mw 62700	39.90	39.90	37.95	37.46	36.98	40.72	39.51
Poly(methylhydrosiloxane), ~Mw 2270	1.10	0.77	0.74	0.73	0.72	-	-
TFDMSOS, Mw 328.73	-	0.33	0.32	0.31	0.31	-	-
Platinum catalyst (0.05 M)	-	-	-	-	-	0.06	1.27
Rhodasurf CET-2 (Ethoxylatedcetyl-oleyl alcohol) (surfactant)	-	-	2.00	2.50	3.00	-	-
Palladium (<1µm)	-	-	-	-	-	0.23	0.22
Aerosil R 812 S (filler)	9.00	9.00	9.00	9.00	9.00	9.00	9.00
Total	50%	50%	50%	50%	50%	50%	50%

 Table 1: Formulations of novel Exp (Exp-I, II, III, IV and V) VPS impression materials.

different time points after setting. Similar superscript letters indicate no significant difference between materials at each time point (p > 0.05).									
Test Time after setting		I		Materia	ls				

Table 2: Average Tear Strength (N/mm) (\pm SD): Exp and commercial VPS impression materials at

after setting	Waterials							
	Aq M	Elt M	Extr M	Exp-l	Exp-II	Exp-III	Exp-IV	Exp-V
Immodiately	0.61	0.53	0.39	0.72	1.29	1.83	2.10	2.56
inineulately	(0.09) ^{a,b}	(0.07) ^{a,c}	(0.07) ^c	(0.07) ^b	(0.10)	(0.21)	(0.26)	(0.26)
24 brs	0.61	0.51	0.37	0.75	1.20	1.73	2.11	2.43
24 1115	(0.08) ^{a,b}	(0.12) ^{a,c}	(0.05) ^c	(0.19) ^b	(0.11)	(0.20)	(0.39)	(0.24)
72 hrs	0.70	0.57	0.53	0.71	1.18	1.56	1.82	2.34
721115	(0.12) ^{a,b}	(0.83) ^{a,b,c}	(0.11) ^c	(0.08) ^b	(0.15)	(0.30)	(0.29)	(0.31)
168 hrs (1	0.89	0.60	0.51	0.71	1.21	1.65	1.95	2.20
week)	(0.11)	(0.12) ^{a,b}	(0.05)ª	(0.07) ^b	(0.21)	(0.24)	(0.33)	(0.18)