

SUPPLEMENTARY MATERIAL 1

TABLE S1. Summary of patch tests results for irritant potential in humans

Name of the ingredient	Concentration (%)	Vehicle	Occlusion [h]	Reading time points [h]	Application system	N	n	n (%)	References
Alpha-isomethylionone	1	Pet.	48	72, 96	N/A	986	5	0.51	Uter 2010
Amyl cinnamaldehyde	1	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the back with Scanpor tape	1503	1	0.07	Heisterberg 2011
Anise alcohol	1	Pet.	24, 48	72	N/A	2004	5	0.25	Schnuch 2007
	1	Pet.	48	72, 96	N/A	986	9	0.91	Uter 2010
	5	Pet.	48	48, 120	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	167	5	2.99	Larsen 1996
Balsam of Peru	25	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back	3082	46	1.49	Wentworth 2014
	25	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	3837	88	2.29	Davis 2008
	25	Pet.	48	48, 120	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	125	4	3.20	Larsen 1996
Benzalkonium chloride	25	Pet.	48	72, 96	N/A	36 919	1359	3.68	Uter 2010
	0.1	Aq.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back	2979	21	0.70	Wentworth 2014
	0.1	Aq.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	3838	62	1.62	Davis 2008
Benzalkonium chloride	0.1	Pet.	24, 48	72	Finn Chambers (8 mm) on Scanpor (19 departments), Leukotest, Hal, Curatest, Haye, Intradex Service BV, Alphen aan den Rijn	11 308	338	2.99	Schnuch 1998
	0.1	Pet.	48	48, 96	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	584	30	5.14	Lee 2012
Benzoic acid	5	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back	3077	25	0.81	Wentworth 2014
	5	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	1963	31	1.58	Davis 2008

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Name of the ingredient	Concentration (%)	Vehicle	Occlusion [h]	Reading time points [h]	Application system	N	n	n (%)	References
Benzyl alcohol	1	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the back with Scanpor tape	1508	1	0.07	Heisterberg 2011
	1	Pet.	48	72, 96	N/A	6 933	12	0.17	Dinkloh 2015
	1	Pet.	48	72, 96	N/A	23 257	123	0.53	Uter 2010
	1	Pet.	24, 48	72	Finn Chambers (8 mm) on Scanpor (19 departments)	11 373	62	0.55	Schnuch 1998
	1	Pet.	24, 48	72	N/A	2 166	12	0.55	Schnuch 2007
	1	Pet.	48	48, 120	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	167	6	3.59	Larsen 1996
Benzyl benzoate	1	Pet.	24, 48	72	N/A	2003	8	0.40	Schnuch 2007
Benzyl cinnamate	1	Pet.	48	72, 96	N/A	1062	14	1.32	Uter 2010
	5	Pet.	48	72, 96	N/A	2872	18	0.63	Uter 2010
Benzyl salicylate	1	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the back with Scanpor tape	1503	2	0.13	Heisterberg 2011
Bronopol	1	Pet.	24, 48	72	N/A	2041	7	0.34	Schnuch 2007
	1	Pet.	48	72, 96	N/A	3775	21	0.56	Uter 2010
	5	Pet.	48	48, 120	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	167	5	2.99	Larsen 1996
	2	Pet.	48	48, 120	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	167	5	2.99	Larsen 1996
	0.5	Pet.	48	48, 72, 96	Finn Chambers (8 mm) on Scanpor tape	8149	10	0.12	Frosch 1990
	0.25	Pet.	48	48, 96	Finn Chambers (8 mm) or IQ Chambers	6 956	12	0.17	Jong 2007
Bronopol	1.5	Pet.	48	72, 96	N/A	6792	19	0.28	Dinkloh 2015
	0.5	Pet.	24, 48	72	Finn Chambers (8 mm) on Scanpor (19 departments)	11 443	87	0.76	Schnuch 1998
	0.5	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back	2142	17	0.79	Wentworth 2014
	0.25	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	3841	42	1.09	Davis 2008

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Name of the ingredient	Concentration (%)	Vehicle	Occlusion [h]	Reading time points [h]	Application system	N	n	n (%)	References
Butylphenyl methylpropional	10	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the back with Scanpor tape	1503	1	0.07	Heisterberg 2011
	10	Pet.	24, 48	72	N/A	2 004	3	0.15	Schnuch 2007
	10	Pet.	48	72, 96	N/A	1003	10	1.00	Uter 2010
Butylphenyl methylpropional	5	Pet.	48	48, 120	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	167	2	1.20	Larsen 1996
	1	Pet.	24, 48	72	N/A	2063	14	0.68	Schnuch 2007
Cinnamyl alcohol	1	Pet.	48	72, 96	N/A	5650	46	0.81	Uter 2010
	5	Lanolin	48	48, 120	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	167	4	2.40	Larsen 1996
Citral	2	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the back with Scanpor tape	1502	3	0.20	Heisterberg 2011
	2	Pet.	24, 48	72	N/A	2021	11	0.54	Schnuch 2007
Citronellol	2	Pet.	48	72, 96	N/A	137	2	1.46	Dinkloh 2015
	1	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the back with Scanpor tape	1503	4	0.27	Heisterberg 2011
	1	Pet.	24, 48	72	N/A	2003	6	0.30	Schnuch 2007
Colophony	1	Pet.	48	72, 96	N/A	137	2	1.46	Dinkloh 2015
	20	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper aspect of the back	3076	21	0.68	Wentworth 2014
Coumarin	20	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	3842	35	0.91	Davis 2008
	20	Pet.	48	72, 96	N/A	37 011	444	1.20	Uter 2010
	5	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the back with Scanpor tape	1503	2	0.13	Heisterberg 2011
	5	Pet.	24, 48	72	N/A	2020	6	0.30	Schnuch 2007
	5	Pet.	48	72, 96	N/A	137	1	0.73	Dinkloh 2015
	5	Pet.	48	48, 120	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	167	5	2.99	Larsen 1996

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Name of the ingredient	Concentration (%)	Vehicle	Occlusion [h]	Reading time points [h]	Application system	N	n	n (%)	References	
Diazolidinyl urea	2	Pet.	48	48, 96	Finn Chambers (8 mm) or IQ Chambers	6 958	3	0.04	Jong 2007	
	2	Pet.	48	72, 96	N/A	6 979	5	0.07	Dinkloh 2015	
	1	Aq.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	3 840	12	0.31	Davis 2008	
	1	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back	3 091	9	0.29	Wentworth 2014	
	1	Aq.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back	3 086	9	0.29	Wentworth 2014	
	1	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	3 842	19	0.49	Davis 2008	
	2	Pet.	24, 48	72	Finn Chambers (8 mm) on Scanpor (19 departments)	7 812	47	0.60	Schnuch 1998	
	2	Aq.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	4 11	1	0.24	Davis 2008	
	1	Aq.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	3 428	14	0.41	Davis 2008	
	2	Aq.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back	3 085	12	0.39	Wentworth 2014	
DMDM Hydantoin	1	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	3 757	19	0.49	Davis 2008	
	1	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back	3 087	15	0.49	Wentworth 2014	
	2	Pet.	24, 48	72	Finn Chambers (8 mm) on Scanpor (19 departments), Leukotest, Hal, Curatest, Haye, Intradex Service BV, Alphen aan den Rijn	1 374	14	1.02	Schnuch 1998	
	1	Pet.	24, 48	72	N/A	2 065	11	0.53	Schnuch 2007	
	5	Pet.	48	48, 120	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	1 67	6	3.59	Larsen 1996	
	1	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the back with Scanpor tape	1 503	2	0.13	Heisterberg 2011	
	1	Pet.	24, 48	72	N/A	1 658	29	1.75	Schnuch 2007	
	1	Pet.	48	72, 96	N/A	1 947	37	1.90	Uter 2010	
	Eugenol	1	Pet.	24, 48	72	N/A	2 065	11	0.53	Schnuch 2007
		5	Pet.	48	48, 120	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	1 67	6	3.59	Larsen 1996
Evernia Furfuracea Extract	1	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the back with Scanpor tape	1 503	2	0.13	Heisterberg 2011	
	1	Pet.	24, 48	72	N/A	1 658	29	1.75	Schnuch 2007	
	1	Pet.	48	72, 96	N/A	1 947	37	1.90	Uter 2010	

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Name of the ingredient	Concentration (%)	Vehicle	Occlusion [h]	Reading time points [h]	Application system	N	n	n (%)	References
Evernia Prunastri Extract	1	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the back with Scanpor tape	1503	1	0.07	Heisterberg 2011
	1	Pet.	24, 48	72	N/A	2 063	18	0.87	Schnuch 2007
	5	Pet.	48	48, 120	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	167	6	3.59	Larsen 1996
Farnesol	5	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the back with Scanpor tape	1502	2	0.13	Heisterberg 2011
	5	Pet.	24, 48	72	N/A	4238	38	0.90	Schnuch 2007
Formaldehyde	5	Pet.	48	72, 96	N/A	137	3	2.19	Dinkloh 2015
	1	Aq.	48	48, 96	Finn Chambers (8 mm) or IQ Chambers	6 948	12	0.17	Jong 2007
	1	Aq.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back	3 093	12	0.39	Wentworth 2014
	8	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back	3 092	22	0.71	Wentworth 2014
Fragrance mix I	8	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	3 844	54	1.40	Davis 2008
	8	Pet.	48	72, 96	N/A	36 961	862	2.33	Uter 2010
Fragrance mix II	8	Pet.	48	48, 120	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	167	12	7.19	Larsen 1996
	8	Pet.	48	48, 72, 96	Finn Chambers (8 mm) on Scanpor tape	1 699	123	7.24	Frosch 2005
	14	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back	2 713	19	0.70	Wentworth 2014
	2.8	Pet.	48	48, 72, 96	Finn Chambers (8 mm) on Scanpor tape	1 701	31	1.82	Frosch 2005
	14	Pet.	48	72, 96	N/A	35 738	986	2.76	Uter 2010
	14	Pet.	48	48, 72, 96	Finn Chambers (8 mm) on Scanpor tape	1 701	128	7.52	Frosch 2005
Geraniol	28	Pet.	48	48, 72, 96	Finn Chambers (8 mm) on Scanpor tape	1 701	180	10.58	Frosch 2005
	1	Pet.	24, 48	72	N/A	2 063	18	0.87	Schnuch 2007
	5	Pet.	48	48, 120	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	167	7	4.19	Larsen 1996

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Name of the ingredient	Concentration (%)	Vehicle	Occlusion [h]	Reading time points [h]	Application system	N	n	n (%)	References
Hexyl cinnamal	10	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the back with Scanpor tape	1503	1	0.07	Heisterberg 2011
	10	Pet.	48	72, 96	N/A	137	1	0.73	Dinkloh 2015
Hydroxyisohexyl 3-cyclohexene carboxaldehyde (Lyril)	5	Pet.	24, 48	72	N/A	21 325	149	0.70	Schnuch 2007
	1	Pet.	24, 48	72	N/A	2063	9	0.44	Schnuch 2007
Hydroxycitronellal	1	Pet.	48	72, 96	N/A	405	2	0.49	Dinkloh 2015
	4	Pet.	48	48, 120	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	167	5	2.99	Larsen 1996
Hydroperoxides of Limonene	7	Pet.	48	48, 120	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	167	7	4.19	Larsen 1996
	0.1	Pet.	48, 96, 120	48, 96, 120	IQ Ultimate chambers, applied on the patient's upper back	3639	11	0.30	Deza 2016
Hydroperoxides of Linalool	0.2	Pet.	48	48, 96, 120	IQ Ultimate chambers, applied on the patient's upper back	3639	30	0.80	Deza 2016
	0.3	Pet.	48	72, 168	Van der Bend square chambers, patch tests were attached to the back with Fixomull stretch	821	7	0.85	Dittmar 2018
Hydroperoxides of Linalool	0.3	Pet.	48	48, 96, 120	IQ Ultimate chambers, applied on the patient's upper back	3639	55	1.50	Deza 2016
	0.25	Pet.	48	48, 96, 120	IQ Ultimate chambers, applied on the patient's upper back	3639	9	0.20	Deza 2016
Hydroperoxides of Linalool	0.5	Pet.	48	48, 96, 120	IQ Ultimate chambers, applied on the patient's upper back	3639	42	1.20	Deza 2016
	1	Pet.	48	48, 96, 120	IQ Ultimate chambers, applied on the patient's upper back	3639	70	1.90	Deza 2016
Hydroperoxides of Linalool	1	Pet.	48	72, 168	Van der Bend square chambers, patch tests were attached to the back with Fixomull stretch	821	16	1.95	Dittmar 2018

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Name of the ingredient	Concentration (%)	Vehicle	Occlusion [h]	Reading time points [h]	Application system	N	n	n (%)	References
Imidazolidinyl urea	2	Pet.	48	48, 96	Finn Chambers (8 mm) or IQ Chambers	6 956	4	0.06	Jong 2007
	2	Pet.	48	72, 96	N/A	6981	5	0.07	Dinkloh 2015
	2	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back	3091	9	0.29	Wentworth 2014
	2	Aq.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back	3069	12	0.39	Wentworth 2014
	2	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	3819	19	0.50	Davis 2008
	2	Aq.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	3843	19	0.49	Davis 2008
Iodopropnyl butylcarbamate	2	Pet.	24, 48	72	Finn Chambers (8 mm) on Scanpor (19 departments), Leukotest, Hal, Curatest, Haye, Intradex Service BV, Alphen aan den Rijn	11 452	59	0.52	Schnuch 1998
	0.2	Pet.	48	72, 96	N/A	6974	21	0.30	Dinkloh 2015
Isoeugenol	0.2	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back	118	1	0.85	Wentworth 2014
	1	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the back with Scanpor tape	1502	2	0.13	Heisterberg 2011
	1	Pet.	48	72, 96	N/A	405	1	0.25	Dinkloh 2015
	1	Pet.	24, 48	72	N/A	2063	17	0.82	Schnuch 2007
Limonene	4	Pet.	48	48, 120	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	167	6	3.59	Larsen 1996
	2	Pet.	24, 48	72	N/A	2396	6	0.25	Schnuch 2007
Linalool	2	Pet.	48	72, 96	N/A	1241	8	0.64	Uter 2010
	10	Pet.	24, 48	72	N/A	2401	12	0.50	Schnuch 2007
	10	Pet.	48	72, 96	N/A	985	8	0.81	Uter 2010

Name of the ingredient	Concentration (%)	Vehicle	Occlusion [h]	Reading time points [h]	Application system	N	n	n (%)	References
Methylchloroisothiazolone/ Methylisothiazolinone	0.01	Aq.	48	48, 96	Finn Chambers (8 mm) or IQ Chambers	6 940	9	0.13	Jong 2007
	0.01	Aq.	48	72, 96	N/A	6797	13	0.19	Dinkloh 2015
	0.01	Aq.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back	3091	9	0.29	Wentworth 2014
Methylisothiazolinone	0.01	Aq.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	3740	19	0.51	Davis 2008
	0.05	Aq.	48	72, 96	N/A	4089	10	0.24	Dinkloh 2015
	16	Pet.	48	48, 96	Finn Chambers (8 mm) or IQ Chambers	6957	25	0.36	Jong 2007
Paraben Mix	16	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	3841	27	0.70	Davis 2008
	1	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	2700	5	0.18	Davis 2008
Phenoxyethanol	1	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	3832	38	0.99	Davis 2008
p-Phenylenediamine	1	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	6 957	1	0.01	Jong 2007
Quaternium 15	1	Pet.	48	72, 96	N/A	6981	5	0.07	Dinkloh 2015
	1	Pet.	24, 48	72	Finn Chambers (8 mm) on Scanpor (19 departments), Leukotest, Hal, Curatest, Haye, Intradex Service BV, Alphen aan den Rijn	11 017	45	0.41	Schnuch 1998
	1	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back	3091	15	0.49	Wentworth 2014
Sandalwood Oil	1	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	3841	27	0.70	Davis 2008
	10	Pet.	48	48, 120	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	167	3	1.80	Larsen 1996
Sorbic acid	2	Pet.	48	72, 96	N/A	6978	9	0.13	Dinkloh 2015
	2	Pet.	48	48, 72, 96, 168	Finn Chambers (8 mm), applied on the upper back	3084	15	0.49	Wentworth 2014
	2	Pet.	24, 48	72	Finn Chambers (8 mm) on Scanpor (19 departments), Leukotest, Hal, Curatest, Haye, Intradex Service BV, Alphen aan den Rijn	11 473	93	0.81	Schnuch 1998

Name of the ingredient	Concentration (%)	Vehicle	Occlusion [h]	Reading time points [h]	Application system	N	n (%)	References
Turpentine	10	Pet.	48	72, 96	N/A	37 163	357	0.96 Ulter 2010
Ylang ylang oil	10	Pet.	48	48, 120	Finn Chambers (8 mm), applied on the upper back with Scanpor tape	167	8	4.79 Larsen 1996

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