Annex II-3

Guinea Pig Data for LLNA Potency Evaluation

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Chemical Name	Guinea Pig Maximization Test				Buehler Test				Most Prevalent GHS Potency Category
	i.d. Induction Conc. (%)	Sensiti-zation Incidence (%)	GHS Potency Category	Reference	Topical Induction Conc. (%)	Sensiti-zation Incidence (%)	GHS Potency Category	Reference	
Abietic acid	0.5	40	Cat 1B	(Basketter and Scholes 1992)	25	0	Unclassified	(Hausen et al. 1989)	Cat 1B
Abietic acid	4	55	Cat 1B	(Karlberg et al. 1980)	50	0	Unclassified	(Hausen et al. 1989)	
Abietic acid	4	40	Cat 1B	(Karlberg et al. 1980)	NA	NA	NA	NA	
Abietic acid	4	5	Unclassified	(Karlberg et al. 1980)	NA	NA	NA	NA	
AE F016382 00 TK71 A101	NA	NA	NA	NA	50	0	Unclassified	(Debruyne 2007)	Unclassified
Aluminum chloride	2	0	Unclassified	(Wahlberg and Boman 1985)	NA	NA	NA	NA	Unclassified
p-Aminobenzoic acid	1	33	Cat 1B	(Gad et al. 1986)	NA	NA	NA	NA	Cat 1B
p-Aminobenzoic acid	1	0	Unclassified	(Wahlberg and Boman 1985)	NA	NA	NA	NA	
3-Aminophenol	1	100	Cat 1A	(Basketter and Scholes 1992)	NA	NA	NA	NA	Cat 1A
Amylcinnamic aldehyde	5	22	Unclassified	(Wahlberg and Boman 1985)	30	100	Cat 1B	(Kimber et al. 2003)	Cat 1B
Aniline	1.5	10	Unclassified	(Wahlberg and Boman 1985)	NA	NA	NA	NA	Cat 1B
Aniline	0.5	90	Cat 1B	(Basketter and Scholes 1992)	NA	NA	NA	NA	
A SC600	NA	NA	NA	NA	100	0	Unclassified	(Debruyne 2007)	Unclassified
Atrazine	30	0	Unclassified	(ECPA 2006)	NA	NA	NA	NA	Unclassified
Benzalkonium chloride	1	0	Unclassified	(Gad et al. 1986)	NA	NA	NA	NA	Unclassified

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	i.d. Induction Conc. (%)	Sensiti-zation Incidence (%)	GHS Potency Category	Reference	Topical Induction Conc. (%)	Sensiti-zation Incidence (%)	GHS Potency Category	Reference	
Benzocaine	2	30	Cat 1B	(Wahlberg and Boman 1985)	50	20	Cat 1B	(Basketter et al. 1993)	Cat 1B
Benzocaine	25	60	Cat 1B	(Wahlberg and Boman 1985)	NA	NA	NA	NA	
Benzocaine	1	50	Cat 1B	(Basketter and Scholes 1992)	NA	NA	NA	NA	
Benzocaine	2	28	Unclassified	(Wahlberg and Boman 1985)	NA	NA	NA	NA	
Benzocaine	0.10	5	Unclassified	(Wahlberg and Boman 1985)	NA	NA	NA	NA	
Benzocaine	1	0	Unclassified	(Wahlberg and Boman 1985)	NA	NA	NA	NA	
Benzoic acid	10	0	Unclassified	(Gad et al. 1986)	20	0	Unclassified	(Gad et al. 1986)	Unclassified
Benzoquinone	0.005	100	Cat 1A	(Basketter and Scholes 1992)	NA	NA	NA	NA	Cat 1A
Benzoyl peroxide	NA	NA	NA	NA	10	42	Cat 1B	(Gad et al. 1986)	Cat 1B
Benzyl alcohol	2	< 30	Unclassified	(Wahlberg and Boman 1985)	NA	NA	NA	NA	Unclassified
Benzyl cinnamate	5	> 30	Cat 1B	(Wahlberg and Boman 1985)	NA	NA	NA	NA	Cat 1B
Benzyl salicylate	1	0	Unclassified	(Wahlberg and Boman 1985)	NA	NA	NA	NA	Unclassified
Butyl acrylate	6.4	70	Cat 1B	(Van Der Walle et al. 1982)	NA	NA	NA	NA	Cat 1B
Butyl glycidyl ether	10	50	Cat 1B	(Wahlberg and Boman 1985)	NA	NA	NA	NA	Cat 1B
Chloramine T	0.1	90	Cat 1A	(Basketter and Scholes 1992)	2.5	70	Cat 1A	(Kimber et al. 2003)	Cat 1A
4-Chloroaniline	0.30	50	Cat 1B	(Basketter and Scholes 1992)	NA	NA	NA	NA	Cat 1B

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	i.d. Induction Conc. (%)	Sensiti-zation Incidence (%)	GHS Potency Category	Reference	Topical Induction Conc. (%)	Sensiti-zation Incidence (%)	GHS Potency Category	Reference	
(Chloro)methyl-isothiazolinone	0.0001	100	Cat 1A	(Basketter et al. 2005)	0.05	100	Cat 1A	(Chan et al. 1983)	Cat 1A
(Chloro)methyl-isothiazolinone	1 ppm	100	Cat 1A	(Kimber et al. 2003)	0.05	30	Cat 1A	(Chan et al. 1983)	
(Chloro)methyl-isothiazolinone	NA	NA	NA	NA	0.05	0	Unclassified	(Chan et al. 1983)	
(Chloro)methyl-isothiazolinone	NA	NA	NA	NA	0.01	60	Cat 1A	(Chan et al. 1983)	
(Chloro)methyl-isothiazolinone	NA	NA	NA	NA	0.01	7	Unclassified	(Chan et al. 1983)	
(Chloro)methyl-isothiazolinone	NA	NA	NA	NA	0.005	13	Unclassified	(Chan et al. 1983)	
(Chloro)methyl-isothiazolinone	NA	NA	NA	NA	0.005	7	Unclassified	(Chan et al. 1983)	
(Chloro)methyl-isothiazolinone	NA	NA	NA	NA	0.005	0	Unclassified	(Chan et al. 1983)	
(Chloro)methyl-isothiazolinone	NA	NA	NA	NA	0.2	100	Cat 1A	(Chan et al. 1983)	
(Chloro)methyl-isothiazolinone	NA	NA	NA	NA	0.2	20	Cat 1A	(Chan et al. 1983)	
(Chloro)methyl-isothiazolinone	NA	NA	NA	NA	0.2	0	Unclassified	(Chan et al. 1983)	
(Chloro)methyl-isothiazolinone	NA	NA	NA	NA	0.1	80	Cat 1A	(Chan et al. 1983)	
(Chloro)methyl-isothiazolinone	NA	NA	NA	NA	0.1	20	Cat 1A	(Chan et al. 1983)	
(Chloro)methyl-isothiazolinone	NA	NA	NA	NA	0.1	0	Unclassified	(Chan et al. 1983)	

Chemical Name	Guinea Pig Maximization Test				Buehler Test				Most Prevalent GHS Potency Category
	i.d. Induction Conc. (%)	Sensiti-zation Incidence (%)	GHS Potency Category	Reference	Topical Induction Conc. (%)	Sensiti-zation Incidence (%)	GHS Potency Category	Reference	
Cinnamic aldehyde	5	100	Cat 1B	(Wahlberg and Boman 1985)	10	80	Cat 1A	(Basketter and Gerberick 1996)	Cat 1A
Cinnamic aldehyde	0.20	100	Cat 1A	(Basketter and Scholes 1992)	NA	NA	NA	NA	
Cinnamic aldehyde	2	80	Cat 1B	(Wahlberg and Boman 1985)	NA	NA	NA	NA	
Cinnamyl alcohol	5	0	Unclassified	(Wahlberg and Boman 1985)	30	50	Cat 1B	(Robinson et al. 1990)	Cat 1B
C.I. Reactive Red 231	1	~50	Cat 1B	(Haist et al. 2007)	NA	NA	NA	NA	Cat 1B
C.I. Reactive Red 231	1	~50	Cat 1B	(Haist et al. 2007)	NA	NA	NA	NA	
C.I. Reactive Red 231	1	0	Unclassified	(Haist et al. 2007)	NA	NA	NA	NA	
C.I. Reactive Yellow 174	5	11	Unclassified	(Haist et al. 2007)	NA	NA	NA	NA	Unclassified
Citral	0.2	50	Cat 1B	(Basketter and Scholes 1992)	NA	NA	NA	NA	Cat 1B
Cobalt (II) salts[1]	0.25	100	Cat 1A	(Basketter and Scholes 1992)	NA	NA	NA	NA	Cat 1A
D EC25	NA	NA	NA	NA	2.5	0	Unclassified	(Debruyne 2007)	Unclassified
D EW 15	NA	NA	NA	NA	100	0	Unclassified	(Debruyne 2007)	Unclassified
Dextran	1.00	0	Unclassified	(Basketter and Scholes 1992)	NA	NA	NA	NA	Unclassified
1,2 Dibromo-2,4-dicyanobutane	0.10	20	Unclassified	(Basketter et al. 2005)	5	5	Unclassified	(Basketter et al. 1999)	Unclassified

[1] Test substance was cobalt chloride.

Chemical Name	Guinea Pig Maximization Test				Buehler Test				Most Prevalent GHS Potency Category
	i.d. Induction Conc. (%)	Sensiti-zation Incidence (%)	GHS Potency Category	Reference	Topical Induction Conc. (%)	Sensiti-zation Incidence (%)	GHS Potency Category	Reference	
Diethyl phthalate	5	< 30	Unclassified	(Wahlberg and Boman 1985)	NA	NA	NA	NA	Unclassified
Dihydrocoumarin	20	100	Cat 1B	(Wahlberg and Boman 1985)	NA	NA	NA	NA	Cat 1B
1,4-Dihydroquinone	2	100	Cat 1B	(Basketter and Scholes 1992)	NA	NA	NA	NA	Cat 1B
1,4-Dihydroquinone	2	70	Cat 1B	(Goodwin et al. 1981)	NA	NA	NA	NA	
1,4-Dihydroquinone	5.5	50	Cat 1B	(Van Der Walle et al. 1982)	NA	NA	NA	NA	NA
5,5-Dimethyl-3-methylenedihydro-2(3H)-furanone	NR	NR	Unclassified	(Basketter et al. 1999)	NA	NA	NA	NA	Unclassified
Dimethyl sulfoxide	100	0	Unclassified	(Gad et al. 1986)	NA	NA	NA	NA	Unclassified
2,4-Dinitrochlorobenzene	0.10	100	Cat 1A	(Wahlberg and Boman 1985)	0.05	100	Cat 1A	(Buehler 1985)	Cat 1A
2,4-Dinitrochlorobenzene	0.02	100	Cat 1A	(Goodwin et al. 1981)	0.05	30	Cat 1A	(Buehler 1985)	
2,4-Dinitrochlorobenzene	0.05	100	Cat 1A	(Basketter and Scholes 1992)	0.05	0	Unclassified	(Buehler 1985)	
2,4-Dinitrochlorobenzene	0.10	75	Cat 1A	(Wahlberg and Boman 1985)	0.025	60	Cat 1A	(Buehler 1985)	
2,4-Dinitrochlorobenzene	0.5	90	Cat 1A	(Kimber et al. 1991)	0.01	40	Cat 1A	(Buehler 1985)	
2,4-Dinitrochlorobenzene	NA	NA	NA	NA	0.1	100	Cat 1A	(Buehler 1985)	
2,4-Dinitrochlorobenzene	NA	NA	NA	NA	0.3	100	Cat 1A	(Buehler 1985)	
2,4-Dinitrochlorobenzene	NA	NA	NA	NA	0.3	50	Cat 1B	(Buehler 1985)	

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	i.d. Induction Conc. (%)	Sensiti-zation Incidence (%)	GHS Potency Category	Reference	Topical Induction Conc. (%)	Sensiti-zation Incidence (%)	GHS Potency Category	Reference	
Dinocap EC	NA	NA	NA	NA	5	55	Cat 1B	(ECPA 2006)	Cat 1B
Ethyl acrylate	5	0	Unclassified	(Wahlberg and Boman 1985)	NA	NA	NA	NA	Unclassified
Ethylenediamine	0.3	90	Cat 1A	(Goodwin et al. 1981)	1	80	Cat 1A	(Basketter and Gerberick 1996)	Cat 1A
Ethylenediamine	0.50	70	Cat 1A	(Gad et al. 1986)	0.5	50	Cat 1B	(Gad et al. 1986)	
Ethylenediamine	0.50	60	Cat 1A	(Wahlberg and Boman 1985)	NA	NA	NA	NA	NA
Ethylene glycol dimethacrylate	5	0	Unclassified	(Wahlberg and Boman 1985)	NA	NA	NA	NA	Unclassified
Eugenol	0.05	60	Cat 1A	(Basketter and Scholes 1992)	100	11	Unclassified	(Basketter and Gerberick 1996)	Cat 1A
Eugenol	0.05	67	Cat 1A	(Kimber et al. 1991)	75	0	Unclassified	(Basketter and Gerberick 1996)	
Eugenol	5.00	50	Cat 1B	(Wahlberg and Boman 1985)	NA	NA	NA	NA	
EXP 10810 A	0.1	100	Cat 1A	(Debruyne 2007)	50	10	Unclassified	(Debruyne 2007)	Cat 1A
EXP 11120 A	NA	NA	NA	NA	100	0	Unclassified	(Debruyne 2007)	Unclassified
FAR01042-00	NA	NA	NA	NA	100	0	Unclassified	(Debruyne 2007)	Unclassified
FAR01060-00	NA	NA	NA	NA	100	0	Unclassified	(Debruyne 2007)	Unclassified
Fatty acid glutamate	NR	NR	Unclassified	(TNO 2006)	NA	NA	NA	NA	Unclassified

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	i.d. Induction Conc. (%)	Sensiti-zation Incidence (%)	GHS Potency Category	Reference	Topical Induction Conc. (%)	Sensiti-zation Incidence (%)	GHS Potency Category	Reference	
Fatty alcohol #1	5	0	Unclassified	(TNO 2006)	NA	NA	NA	NA	Unclassified
Fatty alcohol #2	5	0	Unclassified	(TNO 2006)	NA	NA	NA	NA	Unclassified
F & Fo WG 50 + 25	NA	NA	NA	NA	30	0	Unclassified	(Debruyne 2007)	Unclassified
F & Fo WG 50 + 25	NA	NA	NA	NA	15	0	Unclassified	(Debruyne 2007)	
F & Fo WG 50 + 25	NA	NA	NA	NA	5	0	Unclassified	(Debruyne 2007)	
Formaldehyde	0.25	100	Cat 1A	(Kimber et al. 1991)	5	30	Cat 1B	(Gad et al. 1986)	Cat 1B
Formaldehyde	0.1	89.5	Cat 1A	(Wahlberg and Boman 1985)	2.0	30	Cat 1B	(Basketter and Gerberick 1996)	
Formaldehyde	1	0	Unclassified	(Wahlberg and Boman 1985)	7.5	60	Cat 1A	(Buehler 1985)	
Formaldehyde	0.50	90	Cat 1A	(Basketter and Scholes 1992)	7.5	8	Unclassified	(Buehler 1985)	
Formaldehyde	1	10	Unclassified	(Wahlberg and Boman 1985)	5	30	Cat 1B	(Buehler 1985)	
Formaldehyde	1	50	Cat 1B	(Wahlberg and Boman 1985)	1.9	25	Cat 1B	(Buehler 1985)	
Formaldehyde	NA	NA	NA	NA	3.8	45	Cat 1B	(Buehler 1985)	
Formaldehyde	NA	NA	NA	NA	0.9	0	Unclassified	(Buehler 1985)	
Formaldehyde	NA	NA	NA	NA	7.5	42	Cat 1B	(Buehler 1985)	
Formaldehyde	NA	NA	NA	NA	7.5	17	Cat 1B	(Buehler 1985)	
Fumaric acid	5	0	Unclassified	(EFfCI 2006)	NA	NA	NA	NA	Unclassified
Fx + Me EW 69	NA	NA	NA	NA	100	0	Unclassified	(Debruyne 2007)	Unclassified

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	i.d. Induction Conc. (%)	Sensiti-zation Incidence (%)	GHS Potency Category	Reference	Topical Induction Conc. (%)	Sensiti-zation Incidence (%)	GHS Potency Category	Reference	
Geraniol	5	> 30	Cat 1B	(Wahlberg and Boman 1985)	NA	NA	NA	NA	Cat 1B
Glutaraldehyde	NA	NA	NA	NA	5	23	Cat 1B	(Gad et al. 1986)	Cat 1B
Glycerol	100	0	Unclassified	(Gad et al. 1986)	100	0	Unclassified	(Gad et al. 1986)	Unclassified
Glyceryl thioglycollate	NR	NR	Unclassified	(TNO 2006)	NA	NA	NA	NA	Unclassified
Hexyl cinnamic aldehyde	0.50	60	Cat 1A	(Basketter et al. 2005)	50	60	Cat 1B	(Basketter and Gerberick 1996)	Cat 1A
Hexyl cinnamic aldehyde	NA	NA	NA	NA	20	70	Cat 1A	(Basketter and Gerberick 1996)	
4-Hydroxybenzoic acid	1	40	Cat 1B	(Goodwin et al. 1981)	NA	NA	NA	NA	Cat 1B
4-Hydroxybenzoic acid	1	20	Unclassified	(Basketter and Scholes 1992)	NA	NA	NA	NA	
Hydroxycitronellal	0.5	60	Cat 1A	(Basketter and Scholes 1992)	30	25	Cat 1B	(Buehler 1985)	Cat 1B
Hydroxycitronellal	5	30	Cat 1B	(Wahlberg and Boman 1985)	30	13	Unclassified	(Buehler 1985)	
Hydroxycitronellal	5	27	Unclassified	(Wahlberg and Boman 1985)	50	20	Cat 1B	(Buehler 1985)	
Hydroxycitronellal	20	27	Unclassified	(Gad et al. 1986)	20	0	Unclassified	(Gad et al. 1986)	
2-Hydroxyethyl acrylate	0.25	70	Cat 1A	(Scholes et al. 1992)	NA	NA	NA	NA	Cat 1A
2-Hydroxypropyl methacrylate	1	0	Unclassified	(Basketter and Scholes 1992)	NA	NA	NA	NA	Unclassified
Imidazolidinyl urea	2.5	80	Cat 1B	(Basketter and Scholes 1992)	NA	NA	NA	NA	Cat 1B

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	i.d. Induction Conc. (%)	Sensiti-zation Incidence (%)	GHS Potency Category	Reference	Topical Induction Conc. (%)	Sensiti-zation Incidence (%)	GHS Potency Category	Reference	
Isoeugenol	0.15	100	Cat 1A	(Basketter and Scholes 1992)	NA	NA	NA	NA	Cat 1A
Isoeugenol	1	100	Cat 1A	(Wahlberg and Boman 1985)	NA	NA	NA	NA	
Isopropanol	NR	NR	Unclassified	(Basketter et al. 1999)	NA	NA	NA	NA	Unclassified
d-Limonene	5	> 30	Cat 1B	(Wahlberg and Boman 1985)	NA	NA	NA	NA	Cat 1B
Linoleic acid	5	20	Unclassified	(EFfCI 2006)	NA	NA	NA	NA	Unclassified
Linolenic acid	5	10	Unclassified	(EFfCI 2006)	NA	NA	NA	NA	Unclassified
Maleic acid	0.5	0	Unclassified	(EFfCI 2006)	NA	NA	NA	NA	Unclassified
2-Mercaptobenzothiazole	0.4	80	Cat 1A	(Basketter and Scholes 1992)	75	55	Cat 1B	(Basketter et al. 1994; Basketter and Gerberick 1996)	Cat 1A
2-Mercaptobenzothiazole	0.4	60	Cat 1A	(Goodwin et al. 1981)	NA	NA	NA	NA	
2-Mercaptobenzothiazole	1	40	Cat 1B	(Magnusson and Kligman 1969)	NA	NA	NA	NA	
Mercuric (II) chloride	0.10	32	Cat 1A	(Wahlberg and Boman 1985)	NA	NA	NA	NA	Cat 1A
4-Methylaminophenol sulfate	0.5	90	Cat 1A	(Basketter and Scholes 1992)	NA	NA	NA	NA	Cat 1A
alpha-Methyl cinnamic aldehyde	5	90	Cat 1B	(Wahlberg and Boman 1985)	NA	NA	NA	NA	Cat 1B
Methyl dodecanesulfonate	0.5	100	Cat 1A	(Basketter and Scholes 1992)	NA	NA	NA	NA	Cat 1A

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Methyl methacrylate	5	30	Cat 1B	(Gad et al. 1986)	5	25	Cat 1B	(Gad et al. 1986)	Cat 1B
Methyl methacrylate	5	15.4	Unclassified	(Wahlberg and Boman 1985)	NA	NA	NA	NA	
Methyl methacrylate	5	0	Unclassified	(Wahlberg and Boman 1985)	NA	NA	NA	NA	
Methyl methacrylate	0.15	0	Unclassified	(Wahlberg and Boman 1985)	NA	NA	NA	NA	
Methyl methacrylate	0.001	0	Unclassified	(Wahlberg and Boman 1985)	NA	NA	NA	NA	
Methyl methacrylate	5	76.9	Cat 1B	(Wahlberg and Boman 1985)	NA	NA	NA	NA	
Methyl methacrylate	5	20	Unclassified	(Wahlberg and Boman 1985)	NA	NA	NA	NA	
Methyl 2-nonynoate	5	>30	Cat 1B	(Wahlberg and Boman 1985)	NA	NA	NA	NA	Cat 1B
Methyl 2-octynoate	5	>30	Cat 1B	(Wahlberg and Boman 1985)	NA	NA	NA	NA	Cat 1B
Methyl salicylate	2.5	0	Unclassified	(Basketter and Scholes 1992)	NA	NA	NA	NA	Unclassified
Methyl salicylate	5	<30	Unclassified	(Wahlberg and Boman 1985)	NA	NA	NA	NA	
NAVY 14 08 723	5	100	Cat 1B	(Haist et al. 2007)	NA	NA	NA	NA	Cat 1B
NAVY 14 08 723	5	95	Cat 1B	(Haist et al. 2007)	NA	NA	NA	NA	
NAVY 14 08 723	5	80	Cat 1B	(Haist et al. 2007)	NA	NA	NA	NA	
Neomycin sulfate	2	30	Cat 1B	(Wahlberg and Boman 1985)	NA	NA	NA	NA	Cat 1B

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Nickel (II) salts	0.25	30	Cat 1B	(Wahlberg and Boman 1985)	0.1	0	Unclassified	(Gad et al. 1986)	Cat 1B
Nickel (II) salts[2]	1	53.3	Cat 1B	(Wahlberg and Boman 1985)	NA	NA	NA	NA	
Nickel (II) salts[3]	0.25	0	Unclassified	(Goodwin et al. 1981)	NA	NA	NA	NA	
Nickel (II) salts[4]	0.1	35	Cat 1A	(Wahlberg and Boman 1985)	NA	NA	NA	NA	
Nickel (II) salts	0.25	30	Cat 1B	(Basketter and Scholes 1992)	NA	NA	NA	NA	
Nickel (II) salts[5]	0.25	10	Unclassified	(Goodwin et al. 1981)	NA	NA	NA	NA	
Nickel (II) salts[6]	1	55	Cat 1B	(Wahlberg and Boman 1985)	NA	NA	NA	NA	
Nickel (II) salts[7]	2	50	Cat 1B	(Wahlberg and Boman 1985)	NA	NA	NA	NA	
Nickel (II) salts	5	55	Cat 1B	(Gad et al. 1986)	NA	NA	NA	NA	
Octinol	0.25	0	Unclassified	(EFfCI 2006)	NA	NA	NA	NA	Unclassified
Oleic acid	5	20	Unclassified	(EFfCI 2006)	NA	NA	NA	NA	Unclassified
Oxalic Acid	NR	NR	Unclassified	(Montelius et al. 1994)	NA	NA	NA	NA	Unclassified
Oxazolone	NA	NA	NA	NA	1	100	Cat 1A	(Basketter and Gerberick 1996)	Cat 1A

[2] Test substance was nickel chloride.
[3] Test substance was nickel chloride.
[4] Test substance was nickel sulfate.
[5] Test substance was nickel sulfate.
[6] Test substance was nickel sulfate.
[7] Test substance was nickel sulfate.

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	i.d. Induction Conc. (%)	Sensiti-zation Incidence (%)	GHS Potency Category	Reference	Topical Induction Conc. (%)	Sensiti-zation Incidence (%)	GHS Potency Category	Reference	
Oxyfluorfen EC	5	26	Unclassified	(ECPA 2006)	NA	NA	NA	NA	Unclassified
Penicillin G	0.3	74	Cat 1A	(Wahlberg and Boman 1985)	NA	NA	NA	NA	Cat 1A
Penicillin G	1	100	Cat 1A	(Basketter and Scholes 1992)	NA	NA	NA	NA	
Penicillin G	3	100	Cat 1B	(Wahlberg and Boman 1985)	NA	NA	NA	NA	
Penicillin G	25	100	Cat 1B	(Wahlberg and Boman 1985)	NA	NA	NA	NA	
Pentaerythritol triacrylate	0.05	87	Cat 1A	(Nethercott 1978)	NA	NA	NA	NA	Cat 1A
Pentaerythritol triacrylate	0.1875	53	Cat 1B	(Wahlberg and Boman 1985)	NA	NA	NA	NA	
Pentaerythritol triacrylate	0.375	100	Cat 1A	(Wahlberg and Boman 1985)	NA	NA	NA	NA	
Pentaerythritol triacrylate	1	67	Cat 1A	(Wahlberg and Boman 1985)	NA	NA	NA	NA	
4-Phenylenediamine	0.25	100	Cat 1A	(Basketter and Scholes 1992)	2	100	Cat 1A	(Buehler 1985)	Cat 1A
4-Phenylenediamine	1	100	Cat 1A	(Kimber et al. 1991)	10	90	Cat 1A	(Basketter and Gerberick 1996)	
4-Phenylenediamine	10	80	Cat 1B	(Wahlberg and Boman 1985)	NA	NA	NA	NA	
Phthalic anhydride	0.10	90	Cat 1A	(Basketter and Scholes 1992)	20	78	Cat 1A	(Gad et al. 1986)	Cat 1A
Phthalic anhydride	NA	NA	NA	NA	25	30	Cat 1B	(Kimber et al. 2003)	

Chemical Name	Guinea Pig Maximization Test				Buehler Test				Most Prevalent GHS Potency Category
	i.d. Induction Conc. (%)	Sensiti-zation Incidence (%)	GHS Potency Category	Reference	Topical Induction Conc. (%)	Sensiti-zation Incidence (%)	GHS Potency Category	Reference	
Potassium dichromate	0.05	90	Cat 1A	(Basketter and Scholes 1992)	10	20	Cat 1B	(Kimber et al. 2003)	Cat 1A
Potassium dichromate	0.25	100	Cat 1A	(Wahlberg and Boman 1985)	NA	NA	NA	NA	
Potassium dichromate	0.5	90	Cat 1A	(Kimber et al. 1991)	NA	NA	NA	NA	
Potassium dichromate	1	75	Cat 1A	(Gad et al. 1986)	NA	NA	NA	NA	
Produkt P-4G	5	90	Cat 1B	(Haist et al. 2007)	NA	NA	NA	NA	Cat 1B
Propylene glycol	100	0	Unclassified	(Wahlberg and Boman 1985)	NA	NA	NA	NA	Unclassified
Propyl gallate	0.35	100	Cat 1A	(Basketter and Scholes 1992)	NA	NA	NA	NA	Cat 1A
Propylparaben	0.5	0	Unclassified	(Basketter and Scholes 1992)	NA	NA	NA	NA	Unclassified
Quinoxyfen/cyproconazole	NA	NA	NA	NA	10	47	Cat 1B	(ECPA 2007b)	Cat 1B
Quinoxyfen SC	NA	NA	NA	NA	10	0	Unclassified	(ECPA 2006)	Unclassified
Salicylic acid	10	0	Unclassified	(Gad et al. 1986)	NA	NA	NA	NA	Unclassified
Sodium lauryl sulfate	1	0	Unclassified	(Wahlberg and Boman 1985)	0.1	0	Unclassified	(Gad et al. 1986)	Unclassified
Squalene	5	20	Unclassified	(EFfCI 2006)	NA	NA	NA	NA	Unclassified
Streptomycin	10	72	Cat 1B	(Wahlberg and Boman 1985)	NA	NA	NA	NA	Cat 1B
Succinic acid	0.5	0	Unclassified	(EFfCI 2006)	NA	NA	NA	NA	Unclassified
Sulfanilamide	NR	10	Unclassified	(Basketter et al. 1994)	NA	NA	NA	NA	Unclassified
Sulfanilic acid	0.1	90	Cat 1A	(Gad et al. 1986)	NA	NA	NA	NA	Cat 1A

Chemical Name	Guinea Pig Maximization Test				Buehler Test				Most Prevalent GHS Potency Category
	i.d. Induction Conc. (%)	Sensiti-zation Incidence (%)	GHS Potency Category	Reference	Topical Induction Conc. (%)	Sensiti-zation Incidence (%)	GHS Potency Category	Reference	
Sulfanilic acid	0.5	80	Cat 1A	(Basketter and Scholes 1992)	NA	NA	NA	NA	NA
Tartaric acid	NR	NR	Unclassified	(Basketter et al. 1999)	NA	NA	NA	NA	Unclassified
Tetrachlorosalicylanilide	5	72	Cat 1B	(Wahlberg and Boman 1985)	1	80	Cat 1A	(Buehler 1985)	Cat 1A
Thioglycerol	1	45	Cat 1B	(Gad et al. 1986)	14	60	Cat 1A	(Buehler 1985)	Cat 1A
Toluene 2,4-diisocyanate	1	100	Cat 1A	(Gad et al. 1986)	10	95	Cat 1A	(Basketter and Gerberick 1996)	Cat 1A
Trifluralin EC	NA	NA	NA	NA	5	10	Unclassified	(ECPA 2007a)	Unclassified
Trimellitic anhydride	0.10	50	Cat 1A	(Basketter and Scholes 1992)	25	70	Cat 1B	(Kimber et al. 2003)	Cat 1A
Tween 80[8]	5	0	Unclassified	(Gad et al. 1986)	0.1	0	Unclassified	(Gad et al. 1986)	Unclassified
Undec-10-enal	5	<30	Unclassified	(Wahlberg and Boman 1985)	NA	NA	NA	NA	Unclassified
Undecylenic acid	1	40	Cat 1B	(EFfCI 2006)	NA	NA	NA	NA	Cat 1B
Vanillin	50	60	Cat 1B	(Gad et al. 1986)	2.5	40	Cat 1B	(Kimber et al. 2003)	Cat 1B
Vanillin	5	> 30	Cat 1B	(Basketter and Gerberick 1996)	NA	NA	NA	NA	

[8] Closed patch test results are from Landsteiner Draize test, not Buehler test.

Chemical Name	Guinea Pig Maximization Test				Buehler Test				Most Prevalent GHS Potency Category
	i.d. Induction Conc. (%)	Sensiti-zation Incidence (%)	GHS Potency Category	Reference	Topical Induction Conc. (%)	Sensiti-zation Incidence (%)	GHS Potency Category	Reference	
YELLOW E-JD 3442	5	10	Unclassified	(Haist et al. 2007)	NA	NA	NA	NA	Unclassified
YELLOW E-JD 3442	5	10	Unclassified	(Haist et al. 2007)	NA	NA	NA	NA	
YELLOW E-JD 3442	5	90	Cat 1B	(Haist et al. 2007)	NA	NA	NA	NA	

Abbreviations: Cat = subcategory of the GHS classification for skin sensitizers; Conc. = concentration; EFfCI = European Federation for Cosmetic Ingredients; ECPA = European Crop Protection Association; GHS = Globally Harmonized System of Classification and Labelling of Chemicals (UN 2009); i.d. = intradermal; NA = not available; NR = not reported.

References

Basketter DA, Andersen KE, Carola C, Van Loveren H, Boman A, Kimber I, et al. 2005. Evaluation of the skin sensitizing potency of chemicals by using the existing methods and considerations of relevance for elicitation. Contact Dermatitis 52(1): 39-43.

Basketter DA, Gerberick GF. 1996. An interlaboratory evaluation of the Buehler test for the identification and classification of skin sensitizers. Contact Dermatitis 35(3): 146-151.

Basketter DA, Lea LJ, Cooper K, Stocks J, Dickens A, Pate I, et al. 1999. Threshold for classification as a skin sensitizer in the local lymph node assay: a statistical evaluation. Food Chem Toxicol 37(12): 1167-1174.

Basketter DA, Scholes EW. 1992. Comparison of the local lymph node assay with the guinea-pig maximization test for the detection of a range of contact allergens. Food Chem Toxicol 30(1): 65-69.

Basketter DA, Scholes EW, Kimber I. 1994. The performance of the local lymph node assay with chemicals identified as contact allergens in the human maximization test. Food Chem Toxicol 32(6): 543-547.

Basketter DA, Selbie E, Scholes EW, Lees D, Kimber I, Botham PA. 1993. Results with OECD recommended positive control sensitizers in the maximization, Buehler and local lymph node assays. Food Chem Toxicol 31(1): 63-67.

Buehler EV. 1985. A rationale for the selection of occlusion to induce and elicit delayed contact hypersensitivity in the guinea pig. A prospective test. Curr Probl Dermatol 14: 39-58.

Chan PK, Baldwin RC, Parsons RD. 1983. Kathon biocide: manifestation of delayed contact dermatitis in guinea pigs is dependent on the concentration for induction and challenge. J Invest Dermatol 81(5): 409-411.

Debruyne E. 2007. Bayer Crop Science data submission to NICEATM.

ECPA. 2006. Oxyfluorfen EC, Atrazine SC, Quinoxyfen/Cyproconazole SC, Dinocap EC, Quinoxyfen SC and Trifluralin EC: Local Lymph Node Assay in CBA/J Mice. Report by Dow Chemical Company.

ECPA. 2007a. Murine Local Lymph Node Assay: Summary Report. Trifluralin Emulsion Concentrate. Project No. 58H0513/062137. Report by BASF.

ECPA. 2007b. Oxyfluorfen Emulsion Concentrate, Quinoxyfen/Cyproconazole Suspension Concentrate, Dinocap Emulsion Concentrate, and Trifluralin Emulsion Concentrate: Local Lymph Node Assay (LLNA) in Mice. Study No. 20234. Study sponsor: CropLife International/ECPA; report by DuPont.

EFfCI. 2006. Comparative Experimental Study on the Skin Sensitising Potential of Selected Unsaturated Chemicals as Asssessed by the Murine Local Lymph Node Assay (LLNA) and the Guinea Pig Maximisation Test (GPMT). European Federation for Cosmetic Ingredients.

Gad SC, Dunn BJ, Dobbs DW. 1986. Development and validation of an alternative dermal sensitization test: the mouse ear swelling test (MEST). Toxicol Appl Pharmacol 84(1): 93-114.

Goodwin BFJ, Crevel RWR, Johnson AW. 1981. A comparison of three guinea-pig sensitization procedures for the detection of 19 reported human contact sensitizers. Contact Dermatitis 7(5): 248-258.

Haist I, Brummer D, Albrecht A. 2007. Untersuchung von Textilfarbstoffen im Local Lymph Node Assay (LLNA). Forschung Projekt 1877. Dortmund/Berlin/Dresden.

Hausen BM, Jensen S, Mohnert J. 1989. Contact allergy to colophony. (IV). The sensitizing potency of commercial products: an investigation of French and American modified colophony derivatives. Contact Dermatitis 20(2): 133-143.

Karlberg AT, Boman A, Wahlberg JE. 1980. Allergenic potential of abietic acid, colophony and pine resin-HA. Clinical and experimental studies. Contact Dermatitis 6(7): 481-487.

Kimber I, Basketter DA, Butler M, Gamer A, Garrigue JL, Gerberick GF, et al. 2003. Classification of contact allergens according to potency: proposals. Food Chem Toxicol 41(12): 1799-1809.

Kimber I, Hilton J, Botham PA, Basketter DA, Scholes EW, Miller K, et al. 1991. The murine local lymph node assay: results of an inter-laboratory trial. Toxicol Lett 55(2): 203-213.

Magnusson B, Kligman AM. 1969. The identification of contact allergens by animal assay. The guinea pig maximization test. J Invest Dermatol 52(3): 268-276.

Montelius J, Wahlkvist H, Boman A, Fernström P, Gråbergs L, Wahlberg JE. 1994. Experience with the murine local lymph node assay: inability to discriminate between allergens and irritants. Acta Derm Venereol 74(1): 22-27.

Nethercott JR. 1978. Skin problems associated with multifunctional acrylic monomers in ultraviolet curing inks. Br J Dermatol 98(5): 541-552.

Robinson MK, Nusair TL, Fletcher ER, Ritz HL. 1990. A review of the Buehler guinea pig skin sensitization test and its use in a risk assessment process for human skin sensitization. Toxicology 61(2): 91-107.

Scholes EW, Basketter DA, Sarll AE, Kimber I, Evans CD, Miller K, et al. 1992. The local lymph node assay: results of a final inter-laboratory validation under field conditions. J Appl Toxicol 12(3): 217-222.

TNO. 2006. Limitations of the local lymph node assay (LLNA) as preferred test for skin sensitization: concerns about false positive and false negative test results. V 7217. Zeist, The Netherlands:CESIO (European Committee of Organic Surfactants and their Intermediates).

UN. 2009. Globally Harmonized System for Classification and Labelling of Chemicals. 3rd rev. ed. New York:United Nations. Available: http://www.unece.org/trans/danger/publi/ghs/ghs_rev03/03files_e.html [accessed 21 October 2010].

Van Der Walle HB, Klecak G, Geleick H, Bensink T. 1982. Sensitizing potential of 14 mono (meth) acrylates in the guinea pig. Contact Dermatitis 8(4): 223-235.

Wahlberg JE, Boman A. 1985. Guinea pig maximization test. Curr Probl Dermatol 14: 59-106.