

Dry cleaning products analysed and tested at the Cultural Heritage Agency of the Netherlands (RCE)

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This table lists a range of cleaning products that may be used by paintings conservators. Except for the PVA sponges all products were tested dry. The products were obtained from the suppliers mentioned. The chemical content of the products was analysed. The residues on or in the surface of an oil paint layer were investigated. The handling and cleaning power of the products were assessed based on tests performed on unvarnished aged oil paint layers. Special attention should be given to the remarks in the red rectangles; these concern specific remarks or concerns regarding the use of the products.

Part of this table will be published in an article in preparation by Maude Daudin, Madeleine Bisschoff, Henk van Keulen, Marjolein Groot Wassink, Suzan de Groot, Ineke Joosten, Maarten van Bommel and Klaas Jan van den Berg

Disclaimer:

All information in this table, from literature and our own experiments, were gathered with the best of the authors' knowledge. RCE nor the contributors to this table will be held responsible for any faults or problems that might arise from the use of this information.

RCE intends to keep this table updated regularly and to spread practical knowledge through workshops led by Ms. Maude Daudin.

We welcome your feedback on this table.

For more information about this RCE project please contact the project leader Klaas Jan van den Berg; k.van.den.berg@cultureelerfgoed.nl.

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cleaning product (year of purchase)	composition according to supplier / manufacturer	composition analysed by: (py)-GCMS; (M)aterial, (E)xtractable FTIR SEM/EDS	residues on paint surface material (microscopy)	properties and handling remarks	cleaning results
manufacturer supplier			organic compounds (GCMS)		potential hazards intact paint layer → → → abrasion intact paint layer → → → polishing
Smoke Sponge (2006) Conservation by Design Limited	 vulcanised natural rubber mild soap (60 mg/kg)	isoprene rubber (M) sulphur compound (E) chalk	few particles (0-5 per cm ²) no compounds detected	Rubbery texture; excellent contact with paint layer; sponge surface oxidizes and becomes hard and unusable.	very efficient local & general dirt removal, even result. abrasion 1 polishing 4
Akapad weich (2006) Art. No 4101 Akachemie Deffner&Johann	 special filled vulcanised latex	styrene butadiene rubber (SBR) (M) vulcanized castor oil (M) antioxidant NG-2246 (E)	many particles (> 50 per cm ²), difficult to remove no compounds detected	Rubbery texture; self consuming material; soft; orange colouration on gloves after use.	very efficient local & general dirt removal, even result. abrasion 1 polishing 1
Akapad white (2006) Art. No 4151 Akachemie Deffner&Johann	 special filled vulcanised latex	styrene butadiene rubber (SBR) (M) vulcanized castor oil (M) antioxidant NG-2246 (E)	many particles (> 50 per cm ²), difficult to remove no compounds detected	Rubbery texture; self consuming material; more compact than Akapad Weich.	very efficient local & general dirt removal, even result. abrasion 1 polishing 1
BIC, Galet (2009) BIC local store	 synthetic rubber	facis (vulcanised vegetable oil) (M) chalk solvent extraction not performed SEM/EDS analysis not performed	many particles (> 50 per cm ²), difficult to remove not analysed	Rubbery texture; self consuming material; inadequate for paint surfaces	efficient local dirt removal, uneven result abrasion 8 polishing 7
draft clean powder DCP3 (2004) Conservation by Design Limited Archival Aids	 Soy bean oil fiber particles (90%) talcum powder (10%) neutral PH Sulphur present	sulphur vulcanized vegetable oil (M) talcum solvent extraction not performed	many particles (> 50 per cm ²), difficult to remove not analysed	Rubbery texture; use with cotton pad or brush to avoid uneven cleaning and polishing.	rather efficient general dirt removal, uneven result abrasion 1 polishing 3
Gomme crêpe (2009) Stouls	 natural filtered latex	isoprene rubber (M) solvent extraction not performed	few particles (< 0-10 per cm ²) not analysed	Rigid; unflexible material too hard to be used on paint surfaces.	not efficient dirt removal, uneven result abrasion 8 polishing 8
Magic rub (2006) Sanford	 no information	poly vinyl chloride (PVC) (M) di-isooctyl isophthalate (DIOIP) (E) methyl-ethylhexyl phthalate (MEHP) (E) diethyleneglycol-dibenzate (E) chalk	several particles (10-50 per cm ²) plasticizers	Rubbery texture; self consuming material.	very efficient local dirt removal, uneven result. abrasion 5 polishing 4
Edding R10 (2006) Edding local stationer	 plastic (PVC) eraser	poly vinyl chloride (PVC) (M) di-isooctyl phthalate (DIOIP) (E)	several particles (10-50 per cm ²) plasticizer to be expected not analysed	Rigid; difficult to handle; too hard to be used on paint surfaces.	very efficient local dirt removal, uneven result. abrasion 5 polishing 5
Pentel ZF11 (2009) Pentel Stouls	 no information	poly vinyl chloride (PVC) (M) phthalates (DIOIP) (DMP) (MEHP) (E) butoxytriglycol, dioctylazolate (DOZ) (E) chalk SEM/EDS analysis not performed	few particles (0-10 per cm ²) plasticizers to be expected not analysed	Relatively hard material; more flexible than the magic rub.	very efficient local dirt removal, uneven result. abrasion 5 polishing 4
Staedler Mars plastic (2011) Staedler local stationer	 phthalate and latex free	poly vinyl chloride (PVC) (M) plasticizer: mixture of long chain alkane, phenyl carbonates (E) FTIR analysis not performed SEM/EDS analysis not performed	several particles (10-50 per cm ²)- observation from workshops only plasticizers to be expected not analysed	Relatively hard material; comparable to the Pentel ZF11.	very efficient local dirt removal, uneven result. only tested during workshops
Groom/stick (2004) molecular trap Picrator Enterprises Ltd. Conservation Resources	 natural rubber	isoprene rubber (M) chalk	film of groom/stick (microscopy). no compounds detected	Very sticky, mouldable; picks up dirt. Rolled around wooden stick for convenient use.	rather efficient local dirt removal, uneven result abrasion 1 polishing 1
Absorene (2009) Paper and book cleaner Absorene Company Inc Absorene Company Inc	 no information	white spirit (M) starch (M) solvent extraction not performed SEM/EDS analysis not performed	film of absorene (microscopy). not analysed	Quite sticky, mouldable Use fresh only. To be rolled with hands or pressed down on the surface for convenient use.	rather efficient local & general dirt removal, uneven result. abrasion 1 polishing 1
Kneedgum (2009) Pelikan GE 20 Pelikan local stationer	 no information	styrene butadiene rubber (SBR) (M) isoprene rubber (M) chalk SEM/EDS analysis not performed	several particles (10-50 per cm ²) not analysed	Quite sticky, less flexible than Quantore, even after warming by hands.	efficient local dirt removal, uneven result abrasion 1 polishing 4
Kneedgum (2009) Quantore Art.No. 964575 Quantore local stationer	 no information	polybutadiene (M) chalk SEM/EDS analysis not performed	several particles (10-50 per cm ²) film of kneedgum (microscopy). not analysed	Less sticky than Pelikan, more flexible than Pelikan.	very efficient local dirt removal, uneven result abrasion 7 polishing 1

erasers

mouldable materials

cleaning product (year of purchase)		composition according to supplier / manufacturer	composition analysed by: (py)-GCMS; (M)aterial, (E)xtractable FTR SEM/EDS	residues on paint surface material (microscopy)	properties and handling remarks	cleaning results
manufacturer	supplier			organic compounds (GCMS)		potential hazards intact paint layer → ¹⁰ abrasion intact paint layer → ¹⁰ polishing
Make up sponge (2008) QVS triangle		no information	polyurethane ether (tdi) (M) solvent extraction not performed SEM/EDS analysis not performed	few particles (0-10 per cm ²) chemically stable material; organic compounds not to be expected not analysed	Very soft and flexible texture, becomes less compact after rinsing with water.	very efficient local & general dirt removal, even result. abrasion 0 polishing 1
Make up sponge (2008) QVS rectangle		no information	styrene butadiene rubber (SBR) (M) Butylated Hydroxy Toluene (BHT) (E) diethyldithiocarbamate (M) mercaptobenzothiazole (M) solvent extraction not performed	few particles (0-10 per cm ²) not analysed	Very soft and flexible texture, slightly more compact than the other make-up sponges tested.	very efficient local & general dirt removal, even result. abrasion 0 polishing 1
Make up (2006) präzisionsschwammchen Ebelin triangle		no information	styrene butadiene rubber (SBR) (M) isoprene rubber (M) Butylated Hydroxy Toluene (BHT) (E) diethyldithiocarbamate (M) solvent extraction not performed	few particles (0-10 per cm ²) not analysed	not tested	not tested
Make up sponge (2009) HEMA triangle		no information	styrene butadiene rubber (SBR) (M) Butylated Hydroxy Toluene (BHT) (E) diethyldithiocarbamate (M) mercaptobenzothiazole (M) SEM/EDS analysis not performed	few particles (0-10 per cm ²) BHT	Very soft and flexible texture, comparable with the majority of the make-up sponges tested.	very efficient local & general dirt removal, even result. abrasion 0 polishing 1
Make up sponge (2010) HEMA rectangle		no information	styrene butadiene rubber (SBR) (M) Butylated Hydroxy Toluene (BHT) (E) diethyldithiocarbamate (M) mercaptobenzothiazole (M) SEM/EDS analysis not performed	not tested BHT	not tested	not tested
Make up sponge (2009) etos triangle		no information	isoprene rubber (M) Butylated Hydroxy Toluene (BHT) (E) diethyldithiocarbamate (M) mercaptobenzothiazole (M) SEM/EDS analysis not performed	few particles (0-10 per cm ²) minor amount of BHT	Extremely soft and flexible texture; perfect contact with paint surface.	very efficient local & general dirt removal, even result. abrasion 0 polishing 1
Make up sponge (2009) etos rectangle		no information	styrene butadiene rubber (SBR) (M) isoprene rubber (M) Butylated Hydroxy Toluene (BHT) (E) SEM/EDS analysis not performed	not tested minor amount of BHT	not tested	not tested
Make up sponge (2010) Q20120		no information	polyurethane ether (tdi) (M) polyethyleneglycol (PEG) (E) long chain alcohols (E) benzoflex 2-45 (E) SEM/EDS analysis not performed	not tested long chain alcohols, benzoflex	not tested	not tested
Make up sponge (2010) make up for ever HD -sponge		no information	polyurethane ester (mdi, sebacic acid) (M) linuvin 232 (E) tributyl phosphate (TBP) (E) SEM/EDS analysis not performed	few particles (0-10 per cm ²) - observation from workshops only linuvin, TBP	flexible and soft texture, perfect contact with paint surface. From all sponges tested the HD- sponge is the least compact / dense	very efficient local & general dirt removal, even result. only tested during workshops
Make up sponge (2011) studio 35 cosmetic wedges		vitamin E	polyurethane ether (tdi) (M) solvent extraction not performed SEM/EDS analysis not performed	few particles (0-10 per cm ²) - observation from workshop only not analysed	flexible and soft texture, perfect contact with paint surface. comparable with the majority of the make-up sponges tested	very efficient local & general dirt removal, even result. only tested during workshops
Softt tools (2011)		no information	isoprene rubber (M) styrene butadiene rubber (SBR) (M) solvent extraction not performed SEM/EDS analysis not performed	few particles (0-10 per cm ²) - observation from workshop only not analysed	flexible and very soft texture, very precise handling, good contact with the paint layer in impasted areas	very efficient local dirt removal, even result, may be considered for general removal only tested during workshops
micro fibre cloth (2006) HandyClean, yellow		polyester (80%), polyamide (20%) Advise: use with some water	polyethylene terephthalate (PET) (M) (polyester) - Nylon 6 (polyamide) (M) solvent extraction not performed SEM/EDS analysis not performed	few particles (0-10 per cm ²) chemically stable material; organic compounds not to be expected not analysed	Woven cloth, produces threads when cut.	rather efficient general dirt removal, uneven result. abrasion 0 polishing 3
micro fibre cloth (2006) HandyClean, blue		polyester (80%), polyamide (20%) Advise: use with some water	polyethylene terephthalate (PET) (M) (polyester) - Nylon 6 (polyamide) (M) solvent extraction not performed SEM/EDS analysis not performed	few particles (0-10 per cm ²) chemically stable material; organic compounds not to be expected not analysed	Woven cloth, produces threads when cut.	rather efficient general dirt removal, uneven result. abrasion 0 polishing 4
microfibre cloth (2008) Vileda, blue		no information	polyethylene terephthalate (PET) (M) (polyester) - Nylon 6 (polyamide) (M) solvent extraction not performed SEM/EDS analysis not performed	not tested chemically stable material; organic compounds not to be expected not analysed	Non-woven material. not tested	not tested
Baibo powerpad (2006)		melamine fibres Advise: use with some water	melamine formaldehyde resin (M) (foamed) solvent extraction not performed SEM/EDS analysis not performed	many particles (> 50 per cm ²), difficult to remove chemically stable material; chemical compounds not to be expected not analysed	Flexible open texture. Tested dry.	rather efficient local dirt removal, uneven result. abrasion 6 polishing 0
absorbing sponge (2006) Handyclean		no information	polyvinylalcohol (PVA) based polymer (M) contains starch solvent extraction not performed SEM/EDS analysis not performed	few particles (0-10 per cm ²) chemically stable material; chemical compounds not to be expected water not analysed	Smooth even texture. Sponge is used moisturized.	very efficient local & general dirt removal, even result abrasion 0 polishing 0
Blitzfix (2006)		no information	polyvinylalcohol (PVA) based polymer (M) contains starch solvent extraction not performed SEM/EDS analysis not performed	few particles (0-10 per cm ²) chemically stable material; chemical compounds not to be expected water not analysed	Smooth even texture. Sponge is used moisturized.	very efficient local & general dirt removal, even result abrasion 0 polishing 0

products to be used dry or moist

products to be used moist

new

cleaning product (year of purchase) manufacturer supplier	composition according to supplier / manufacturer	composition analysed by: (py)-GCMS; (M)aterial, (E)xtractable FTIR SEM/EDS	residues on paint surface material (microscopy) organic compounds (GCMS)	properties and handling remarks	cleaning results potential hazards intact paint layer → ¹⁰ abrasion intact paint layer → ¹⁵ polishing	
Tek Nek electro-static dissipative roller teknec.com		elastomer rubber roller+ engineered adhesive pad	not tested	not tested not analysed	Hand roller, applicable to flat surfaces only tested during workshops	superficial but efficient, promising but to be tested further Only tested during workshops