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IKW Quality Assessment

Recommendation:

Compatibility of Shoe Uppers
with Care Products (update 2022)

German Cosmetic, Toiletry, Perfumery
and Detergent Association (IKW)



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Finishing agents based on aqueous formulations are increasingly used in leather and shoe production, often with a view to creating optical effects. This means that the colours of shoe uppers and finishing agents are intentionally quite different from each other. Darker finishing agents are frequently applied to naturally light leathers.

Such finishing agents are not usually smear and water resistant. For environmental reasons, many shoe creams are based mainly on solvent-free, water-based formulations. As a result, customer complaints regarding the use of aqueous emulsion creams in shoe care are increasing. Finishing agents can often be wiped off shoes with just a wet cloth. The use of dark finishing agents on light leathers causes light spots and does irreparable damage to shoes.

In modern commercial grade care sprays, such as waterproofing sprays, solvents are either alcohol or mineral spirits. However, not all shoe uppers are compatible with these substances. In many cases, uppers are degraded or become swollen, which may cause irreparable damage to the shoes.

This IKW recommendation is intended to provide the shoe trade with an instrument for the quality assessment of the compatibility of shoe uppers with care products. The recommendation can also be used in other fields, such as for leathers intended for furniture and bags.

This recommendation replaces the previous version of 2015 [1]. Standard care products nos. 2 and 3 no longer contain impregnating agents, as such agents do not have any relevant influence on the solvent compatibility of shoe uppers. Furthermore, standard care product no. 4 was defined with regard to solvent compatibility.

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1. Care Products – Rub-Fastness

Method

Rub-fastness to care products is tested using the rub-fastness tester of the Association of Swiss Leather Chemists and Technologists (“VESLIC-Reibechtheitsprüfer”), based on ISO 11640 (Leather – Tests for colour fastness – Colour fastness to cycles of to-and-fro rubbing).

Test Specimen

All relevant shoe uppers.

A quantity of 0.1 grammes of IKW standard care product no. 1 (see **Annex**) is spread evenly on a piece of white wool felt. Twenty cycles are performed in the rub-fastness tester with a load of 1000 grammes; then one half of the specimen is polished with a cotton cloth.

Assessment

The assessment is based exclusively on the test specimen, not the piece of wool felt. A test specimen is deemed rub-fast if it shows no visible changes to the surface. A test specimen is also considered rub-fast if changes to the surface (e.g., in the shine) are visible, but it can be returned to its original state with the help of the IKW standard care product no. 1 (tube). In the event of complaints, the damage caused must be described (changes to colour, shine, structure).

For materials not compatible with care products, subsequent testing must examine whether the observed changes would also have occurred without the application of the care product, or with exposure to water alone.

Subsequent testing is carried out as described above, but 1.) with dry felt and 2.) with moistened felt, in accordance with ISO 11640. In each case, 50 rubbing cycles are performed. Results are assessed as described above.

Explanation

The test result "Not compatible with care products" means that the tested upper material is not suitable for conventional shoe care using commercially available care products (shoe creams). Consequently, it can be assumed that a material that is "not rub-fast" will be subject to increased complaints.

2. Compatibility with Solvents

Method (run-off test)

The shoe to be tested is positioned facing upwards at an angle of 45-60°. Using a commercial grade disposable pipette (2 to 3 millilitres), approximately 1 millilitre each of IKW standard care products nos. 2, 3 and 4 is dripped onto different places. Excess quantities of the care product run off the shoe. The surface is examined after complete drying.

Assessment

There is compatibility with solvents if there are no lasting visible changes to the surface after drying. A test specimen is also compatible with solvents if changes to the surface are visible but can be removed (e.g., by polishing).

Explanation

The test result "Not compatible with solvents" means that the tested upper material is not suitable for conventional shoe care with commercially available care sprays (e. g. waterproofing sprays). Consequently, it can be assumed that a material that is not compatible with solvents will be subject to increased complaints.

Bibliography:

- [1] The German Cosmetic, Toiletry, Perfumery and Detergent Association (IKW), SOFW-Journal, 142, 2016, (3), 56 - 57.

Annex

Definitions of IKW standard care products:

IKW Standard Care Product No. 1

- 10% emulsifier-containing ester wax (e.g. Licowax KLE, Clariant AG)
- 0 - 0.5% acrylic copolymer (e.g. Carbopol EZ 2, Noveon)
- 0.2 - 0.3% preservatives
- Remainder – 100% water
- *Emulsion to be possibly neutralised to pH 7 [e.g., with triethanolamine]*

Acrylic copolymer must be added in such quantities that the viscosity of the cream is between 30,000 and 50,000 mPas (Brookfield DV II +/-spindle 4/10 rpm).

IKW Standard Care Product No. 2

- 2% (w/w) ethyl acetate
- 5% (w/w) butyl acetate
- 93% (w/w) isopropyl alcohol

IKW Standard Care Product No. 3

- 2% (w/w) ethyl acetate
- 5% (w/w) butyl acetate
- 93% (w/w) mineral spirits (80/110)

IKW Standard Care Product No. 4

- 2% (w/w) ethyl acetate
- 5% (w/w) butyl acetate
- 46.5% (w/w) isopropyl alcohol
- 46.5% (w/w) mineral spirits (80/110)

Note: Standard care product no. 4 corresponds to a 1:1 mixture of standard care products nos. 2 and 3 (based on mass fraction: 50% (w/w) of standard care product no. 2 + 50% (w/w) of standard care product no. 3).

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