



Durasein

Technical Bulletin: Chemical Resistance

Background

This document includes stain and chemical resistance testing results of Durasein brand solid surface in accordance with CSA B45.5-17/IAPMO Z124-2017. Six (6) 15" by 15" panels of solid surface material were submitted. The panels were prepared in accordance with section 5.11.1(b). Two drops of each reagent were placed on the surface. One drop was covered with a watch glass while the other was left uncovered and exposed to ambient laboratory conditions for 16 hours. At the end of the exposure, samples were first cleaned and then evaluated for defects and were rated 1 - 5.

Class rating

- 1: Removable by washing with water and a cheesecloth for 20 cycles.
- 2: Removable by washing with naphtha and a cheesecloth for 20 cycles.
- 3: Removable with 20 cycles of wet rubbing with abrasive powder.
- 4: Removable with 40 additional cycles of wet rubbing with abrasive powder.
- 5: Not removable using previous methods.

CLASS 1	CLASS 2	CLASS 3	CLASS 4	CLASS 5
AG Eosin Blue 5%	Bite Registration Base	Acetic Acid 10%	AG Gentian Violet	Acid Drain Cleaner
Ammonia 10%	Copalite Varnish	Acetic Acid 90%	Chlorobenzene	Aqua Regia Cleaner
Ammonium Hydroxide 28%	Lipstick	Acetic Acid 98%	Chloroform 100%	Ball Point Pen
Ammonium Hydroxide 5%	Washable inks	Acetone	Formic Acid 90%	*Caulk IRM
Amyl Alcohol	Wine (all varieties)	Acrodine Orange	Gentian Violet	*Chromic Trioxide Acid
Aromatic Ammonia	-	Amyl Acetate	Methyl Red 1%	**Cresol
Betadine Solution	-	Benzene	Methylene Chloride Based Products	*Crystal Violet
Bleach (Household Type)	-	Dimethyl methylene Blue	Sodium Hydroxide Solution 5%	Eugenol
Blood	-	Dimethyl Formamide	-	Furfural
Butyl Alcohol	-	Dioxide	-	*Giemsa
Calcium Thiocyanate 78%	-	Ethyl Acetate	-	*Hydrofluoric Acid 48%
Carbon Disulfide	-	Ferric Chloride	-	*Nail Polish
Carbon Tetrachloride	-	Formic Acid 50%	-	°Nitric Acid 25%
Cigarette (Nicotine)	-	Glacial Acetic Acid	-	°Nitric Acid 30%
Citric Acid 10%	-	Hair Dyes	-	°Nitric Acid 70%
Coffee	-	Iodine 1%	-	*Perchloric Acid
Cooking Oils	-	Methyl Ethyl Ketone	-	Phenol 40%

CLASS 1	CLASS 2	CLASS 3	CLASS 4	CLASS 5
Cottonseed Oil	-	Methyl Orange 1%	-	**Phenol 85%
Dishwashing Liquids/Powders	-	Nail Polish Remover	-	*Phosphoric Acid 75%
Dry Bond Dental Adhesive	-	Pencil Lead	-	*Phosphoric Acid 90%
Ethyl Alcohol (Ethanol)	-	Phenophthalein 1%	-	*Shoe Polish
Ethyl Ether	-	Potassium Permanganate 2%	-	*Sodium Hydroxide Flake
Eucalyptol	-	Silver Nitrate 10%	-	*Sodium Hydroxide Solution 10%
Fisher Formaldehyde 40%	-	Tea	-	*Sodium Hydroxide Solution 25%
Food Coloring	-	Tetrahydrofuran	-	*Sodium Hydroxide Solution 40%
Formaldehyde	-	Tincture of Iodine	-	Sulphuric Acid 25%
Gasoline	-	Tincture of Merthiolate	-	Sulphuric Acid 33%
Household Soaps	-	Toluene	-	*Sulphuric Acid 60%
Hydrochloric Acid 20%	-	-	-	*Sulphuric Acid 77%
Hydrochloric Acid 30%	-	-	-	Sulphuric Acid 96%
Hydrochloric Acid 37%	-	-	-	*Tetramethyl Rhodamine Isothiocyanate
Hydrogen Peroxide	-	-	-	**Trichloroacetic Acid 10%
Kerosene	-	-	-	**Trichloroacetic Acid 50%
Ketchup	-	-	-	*Trypan Blue
Lemon Juice	-	-	-	*Wright's Stain
Lye 1%	-	-	-	-
Lysol Brand Cleaner	-	-	-	-
Mercurochrome 2%	-	-	-	-
Methonal	-	-	-	-
Mineral Oil	-	-	-	-
Monsel's Solution	-	-	-	-
Mustard	-	-	-	-

CLASS 1	CLASS 2	CLASS 3	CLASS 4	CLASS 5
Napthalene (Naptha)	-	-	-	-
N-Hexane	-	-	-	-
Olive Oil	-	-	-	-
Phosphorus Pentoxide	-	-	-	-
Photographic Film Developer	-	-	-	-
Picric Acid	-	-	-	-
Procaine	-	-	-	-
Safranin	-	-	-	-
Salt (Sodium Chloride)	-	-	-	-
Silica Dental Cement (liquid)	-	-	-	-
Soapless Detergents	-	-	-	-
Sodium Bisulphate	-	-	-	-
Sodium Hypochlorite 5%	-	-	-	-
Sodium Sulphate	-	-	-	-
Soy Sauce	-	-	-	-
Sugar (Sucrose)	-	-	-	-
Tannic Acid	-	-	-	-
Thymol in Alcohol	-	-	-	-
Tincture of Mercurochrome	-	-	-	-
Tomato Sauce	-	-	-	-
Trichloroethane	-	-	-	-
Trisodium Phosphate 30%	-	-	-	-
Urea 6%	-	-	-	-
Uric Acid	-	-	-	-
Urine	-	-	-	-

CLASS 1	CLASS 2	CLASS 3	CLASS 4	CLASS 5
Vinegar	-	-	-	-
Xylene	-	-	-	-
Zephiran Chloride	-	-	-	-
Zinc Chloride	-	-	-	-
Zinc Oxide Ointment	-	-	-	-

Summary

Although our surfaces are resilient to most staining you should always remove chemicals quickly to avoid damage to surfaces.

If stains persist after cleaning, remember you can renew all of our surfaces with light sanding followed by professional fabrication finishing techniques.

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Some of the more aggressive reagents caused notable surface swelling in addition to the rated stain and surface texture changes.

In accordance with section 5.11.3 the thickness of material removed to eliminate a stain must not exceed 0.005 in.

The only reagents failing that criteria were Nitric Acid 70%, Nitric Acid 30%, and Nitric Acid 25%. All the other reagents passed the stain requirements of the standard. Furthermore, all reagents met the criteria of 5.4.2 and no cracks, chipped areas or blisters were observed. The documented swelling was not a fault described in the standard. As it was removable using the 400-grit sandpaper, it was considered to be equivalent to a texture change for the purposes of evaluation.

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Covered & uncovered reagents that required sanding (0.005" or less) after testing to remove stain and swelling.