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FUNDERMAX GMBH
TEST REPORT

SCOPE OF WORK
SEFA 3-2010, 2.1 Analysis of Max Compact Interior Plus White and Black Plaques

REPORT NUMBER
103600635GRR-001a

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TEST REPORT FOR FUNDERMAX GMBH

Report No.: 103600635GRR-001a
Date: 25-September-2018
P.O.: 4500167024

SECTION 1

CLIENT INFORMATION

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SECTION 2

SUMMARY AND CONCLUSION

Date Received:	28-August-2018
Dates Tested:	12-September-2018 to 20-September-2018

DESCRIPTION OF SAMPLES

Part Description:	Max Compact Interior Plus Plaques
Material Submitted:	Four (4) Black Plaques & Four (4) White Plaques
Material Specification:	SEFA 3-2010 Section 2.1
Condition of Samples:	Production

WORK REQUESTED/APPLICABLE DOCUMENTS

SEFA 3-2010 Section 2.1

Intertek quote Qu-00893211

CONCLUSION

TEST	DISPOSITION
2.1 Chemical Resistance:	
Black Sample	*CONFORMING
White Sample	*CONFORMING

* Suitability for a given application is dependent upon the chemicals used in a given laboratory.

SAMPLE DISPOSITION

After testing completed, samples were rendered unusable and then disposed of.

SECTION 3

2.1 CHEMICAL/STAIN RESISTANCES:

Date Received:	28-August-2018
Dates Tested:	12-September-2018 to 20-September-2018
Location:	Intertek

DESCRIPTION OF SAMPLES:

Part Description:	Max Compact Interior Plus Plaques
Material Submitted:	Four (4) Black Plaques & Four (4) White Plaques
Material Specification:	SEFA 3-2010 Section 2.1
Condition of Samples:	Production

TEST PROCEDURE:

Test Method:	Per SEFA 3-2010 Section 2.1 The received sample to be tested for chemical resistance as described herein: Place panel on flat surface, clean with soap (Liqui-Nox at 5% concentration) and water and blot dry. Condition the panel for 48-hours at 73±3°F (23±2°C) and 50 ± 5% relative humidity. Test the panel for chemical resistance using forty-nine (49) different chemical reagents by the following methods.
Method A:	For volatile chemicals – A cotton ball, saturated with the test chemical, was placed in a one ounce bottle (10mm x 7mm test tube or similar container). The container was inverted on the test material surface for a period of 24 hours. Temperature of test: 23° +/- 2°C (73° +/- 4°F). This method was used for the organic solvents.
Method B:	For non-volatile chemicals – Five drops (1/4cc) of the test chemical were placed on the test material surface. The chemical was covered with a watch glass (25mm), convex side down for a period of 24 hours. Temperature of test: 23° +/- 2°C (73° +/- 4°F). This method was used for all chemicals listed below other than solvents. After 24-hours exposure, exposed areas were washed with water, then a detergent solution detergent (Liqui-Nox at 5% concentration) and finally with isopropyl alcohol. Materials were then rinsed with distilled water and dried with a cloth.

Rating Scale:	Level 0	**No effect**-No detectable change in the material surface.
	Level 1	**Excellen**t-Slight detectable change in color or gloss but no change in function or life of the surface.
	Level 2	**Good**-A clearly discernible change in color or gloss but no significant impairment of surface life or function.
	Level 3	**Fair-**Objectionable change in appearance due to discoloration or etch, possibly resulting in deterioration of function over an extended period of time.
Number of Samples:	Two (2) Panel Types	

ACCEPTANCE CRITERIA:

Per SEFA 3-2010 Section 2.1
Results will vary from manufacturer to manufacturer due to differences in composition and finish formulations and applications processes. Laboratory Grade work surface finishes shall result in no more than 4 Level 3 conditions. Individual test results for the specified 49 reagents will be verified with an established third party independent SEFA 3 test submittal form. Suitability for a given application is dependent upon the chemicals used in a given laboratory.

RESULTS:

Table 3: Max Compact Interior Plus Black Sample Chemical Spot Test Results

TEST NO.	CHEMICAL (% BY VOL.)	METHOD	RATING	COMMENTS
1	Acetate, Amyl	A	0	
2	Acetate, Ethyl	A	0	
3	Acetic Acid, 98%	B	0	
4	Acetone	A	0	
5	Acid Dichromate, 5%	B	0	
6	Alcohol, Butyl	A	0	
7	Alcohol, Ethyl	A	0	
8	Alcohol, Methyl	A	0	
9	Ammonium Hydroxide, 28%	B	0	
10	Benzene	A	0	
11	Carbon Tetrachloride	A	0	
12	Chloroform	A	1	Slight gloss change
13	Chromic Acid, 60%	B	1	Slight gloss change
14	Cresol	A	0	
15	Dichloroacetic Acid	A	0	
16	Dimethylformanide	A	0	

TEST NO.	CHEMICAL (% BY VOL.)	METHOD	RATING	COMMENTS
17	Dioxane	A	0	
18	Ethyl Ether	A	0	
19	Formaldehyde, 37%	A	0	
20	Formic Acid, 90%	B	2	Gloss change
21	Furfural	A	0	
22	Gasoline	A	0	
23	Hydrochloric Acid, 37%	B	1	Slight gloss change
24	Hydrofluoric Acid, 48%	B	2	Gloss change
25	Hydrogen Peroxide, 30%	B	0	
26	Iodine, Tincture of	B	1	Slight gloss change
27	Methyl Ethyl Ketone	A	1	Slight gloss change
28	Methylene Chloride	A	0	
29	Monochlorobenzene	A	0	
30	Naphthalene	A	0	
31	Nitric Acid, 20%	B	3	Surface swelling
32	Nitric Acid, 30%	B	3	Surface swelling
33	Nitric Acid, 70%	B	3	Surface swelling
34	Phenol, 90%	A	1	Slight gloss change
35	Phosphoric Acid, 85%	B	1	Slight gloss change
36	Silver Nitrate, Saturated	B	1	Slight gloss change
37	Sodium Hydroxide, 10%	B	1	Slight gloss change
38	Sodium Hydroxide, 20%	B	1	Slight gloss change
39	Sodium Hydroxide, 40%	B	1	Slight gloss change
40	Sodium Hydroxide, Flake	B	1	Slight gloss change
41	Sodium Sulfide, Saturated	B	0	
42	Sulfuric Acid, 33%	B	1	Slight gloss change
43	Sulfuric Acid 77%	B	2	Gloss change
44	Sulfuric Acid, 96%	B	2	Gloss change, color change
45	Sulfuric Acid, (77%) and Nitric Acid (70%), equal parts	B	2	Gloss change
46	Toluene	A	0	
47	Trichloroethylene	A	0	
48	Xylene	A	0	
49	Zinc Chloride, Saturated	B	0	

Table 4: Max Compact Interior Plus Black Sample Summary Results Table:

TOTALS			
ITEMS	REQUIREMENT	NO. REAGENT WITH 3 RATINGS	DISPOSITION
Volatile Subtotal:	-	0	---
Non-volatile Subtotal:	-	3	---
Grand Totals:	No More than Four Level 3 Conditions	3	*Conforming

* Suitability for a given application is dependent upon the chemicals used in a given laboratory.

Table 5: Max Compact Interior Plus White Sample Chemical Spot Test Results

TEST NO.	CHEMICAL (% BY VOL.)	METHOD	RATING	COMMENTS
1	Acetate, Amyl	A	0	
2	Acetate, Ethyl	A	0	
3	Acetic Acid, 98%	B	0	
4	Acetone	A	0	
5	Acid Dichromate, 5%	B	1	Slight color change
6	Alcohol, Butyl	A	0	
7	Alcohol, Ethyl	A	0	
8	Alcohol, Methyl	A	0	
9	Ammonium Hydroxide, 28%	B	0	
10	Benzene	A	0	
11	Carbon Tetrachloride	A	0	
12	Chloroform	A	0	
13	Chromic Acid, 60%	B	2	Staining
14	Cresol	A	0	
15	Dichloroacetic Acid	A	0	
16	Dimethylformanide	A	0	
17	Dioxane	A	0	
18	Ethyl Ether	A	0	
19	Formaldehyde, 37%	A	0	
20	Formic Acid, 90%	B	1	Slight gloss change
21	Furfural	A	2	Staining
22	Gasoline	A	0	
23	Hydrochloric Acid, 37%	B	1	Slight gloss change
24	Hydrofluoric Acid, 48%	B	1	Slight gloss change
25	Hydrogen Peroxide, 30%	B	0	
26	Iodine, Tincture of	B	2	Staining
27	Methyl Ethyl Ketone	A	0	
28	Methylene Chloride	A	0	
29	Monochlorobenzene	A	0	
30	Naphthalene	A	0	
31	Nitric Acid, 20%	B	3	Surface swelling
32	Nitric Acid, 30%	B	3	Surface swelling
33	Nitric Acid, 70%	B	3	Surface swelling
34	Phenol, 90%	A	0	
35	Phosphoric Acid, 85%	B	1	Slight gloss change
36	Silver Nitrate, Saturated	B	2	Staining, color change
37	Sodium Hydroxide, 10%	B	2	Staining, color change

TEST NO.	CHEMICAL (% BY VOL.)	METHOD	RATING	COMMENTS
38	Sodium Hydroxide, 20%	B	0	
39	Sodium Hydroxide, 40%	B	0	
40	Sodium Hydroxide, Flake	B	0	
41	Sodium Sulfide, Saturated	B	0	
42	Sulfuric Acid, 33%	B	1	Slight gloss change
43	Sulfuric Acid 77%	B	0	
44	Sulfuric Acid, 96%	B	1	Slight gloss change
45	Sulfuric Acid, (77%) and Nitric Acid (70%), equal parts	B	2	Color change
46	Toluene	A	0	
47	Trichloroethylene	A	0	
48	Xylene	A	0	
49	Zinc Chloride, Saturated	B	0	

Table 6: Max Compact Interior Plus White Sample Summary Results Table:

TOTALS			
ITEMS	REQUIREMENT	NO. REAGENT WITH 3 RATINGS	DISPOSITION
Volatile Subtotal:	-	0	---
Non-volatile Subtotal:	-	3	---
Grand Totals:	No More than Four Level 3 Conditions	3	*Conforming

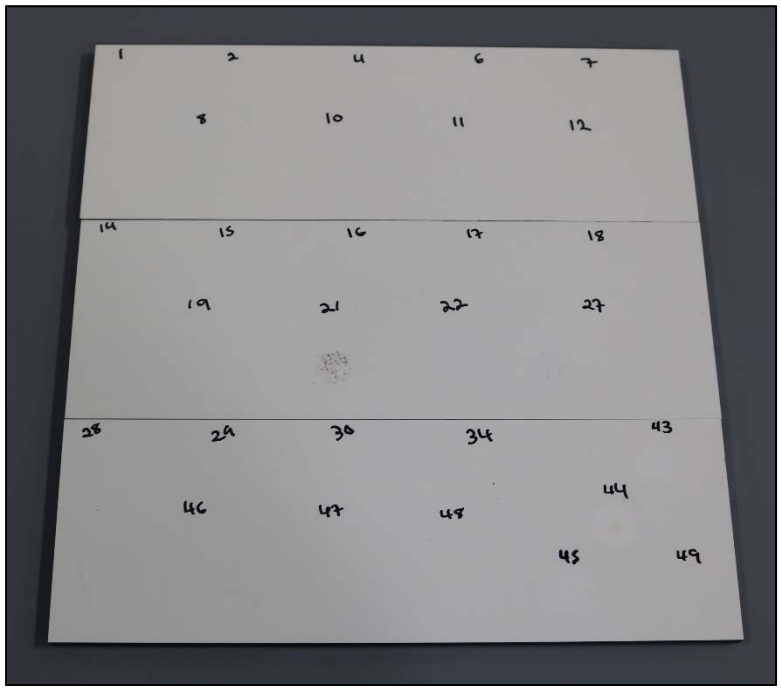
* Suitability for a given application is dependent upon the chemicals used in a given laboratory.

PHOTOGRAPHS:

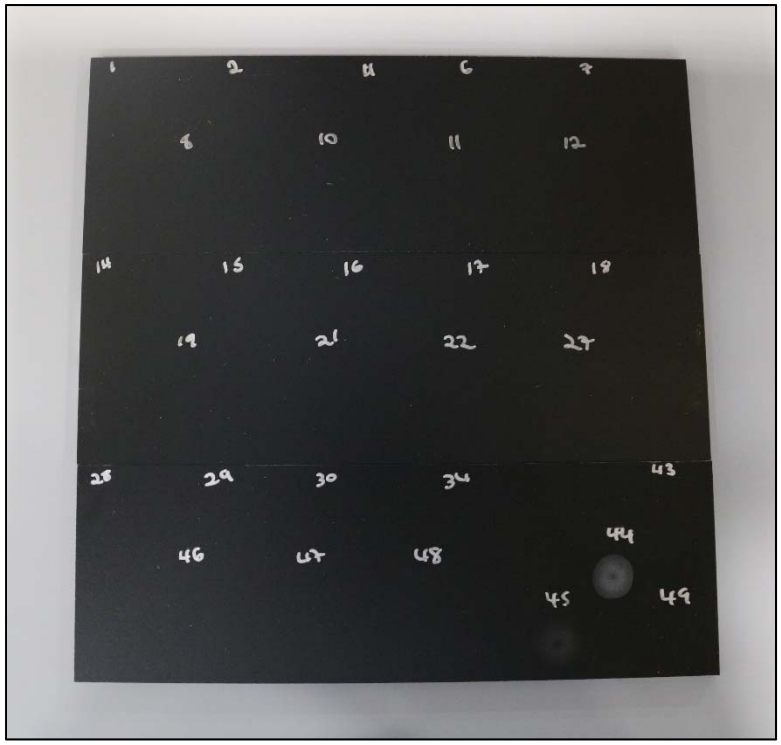
Chemical Spot Test "As Received" Test Panels

Representative Chemical Spot Test Volatile Chemical Set-up

Representative Chemical Spot Test Non-volatile Chemical Set-up

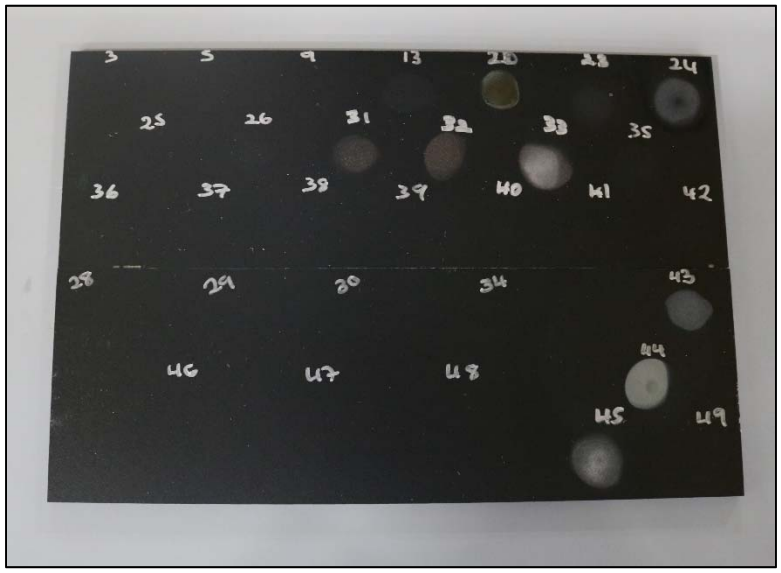


Chemical Spot Test Volatile after Exposure, White Sample



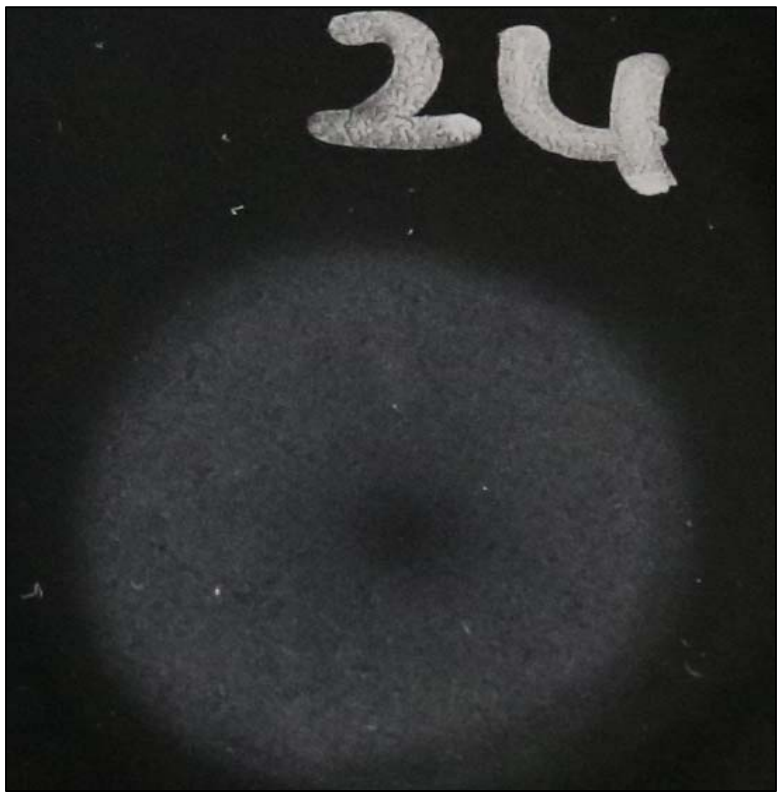
Chemical Spot Test Volatile after Exposure, Black Sample

Chemical Spot Test Non-volatile after Exposure, White Sample



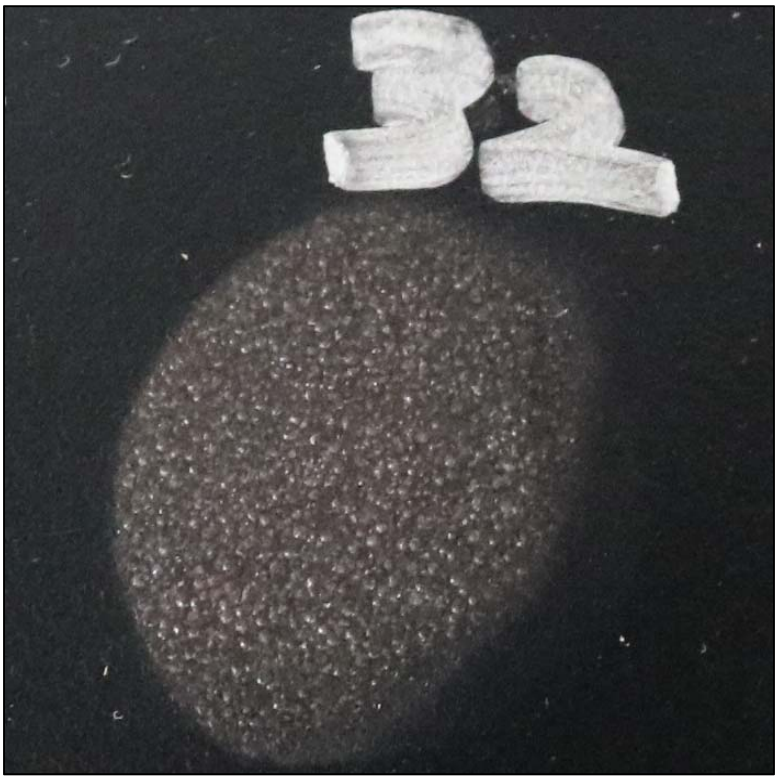
Chemical Spot Test Non-volatile after Exposure, Black Sample

Chemical Spot Test #20, Formic Acid (90%), Rating 2, Gloss change (Staining occurred by residual flow form chemical spot test #26, tincture of iodine, during rinsing.)

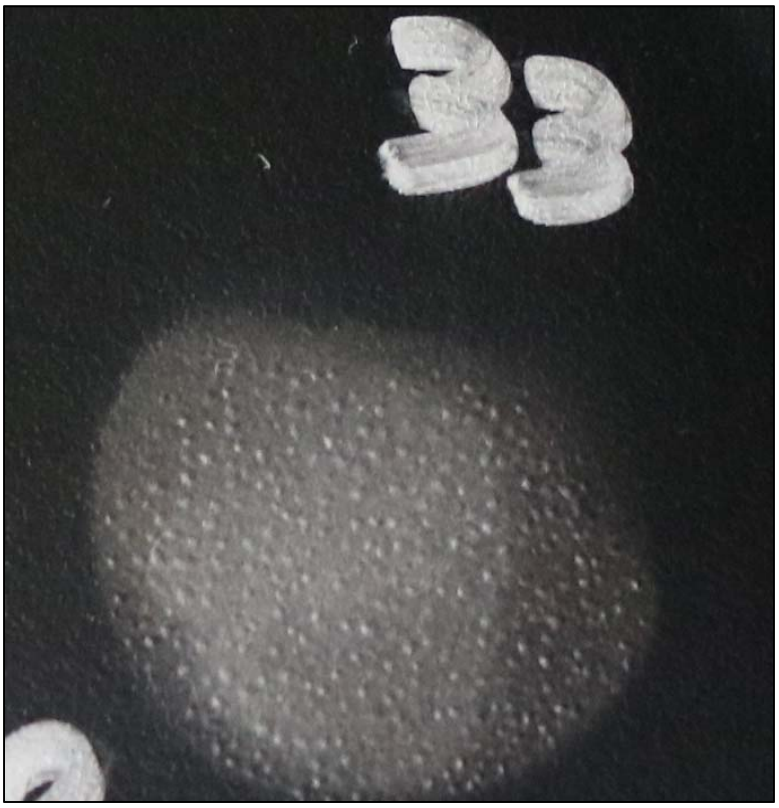


Chemical spot test #24, Hydrofluoric Acid (48%), Rating 2, Gloss change

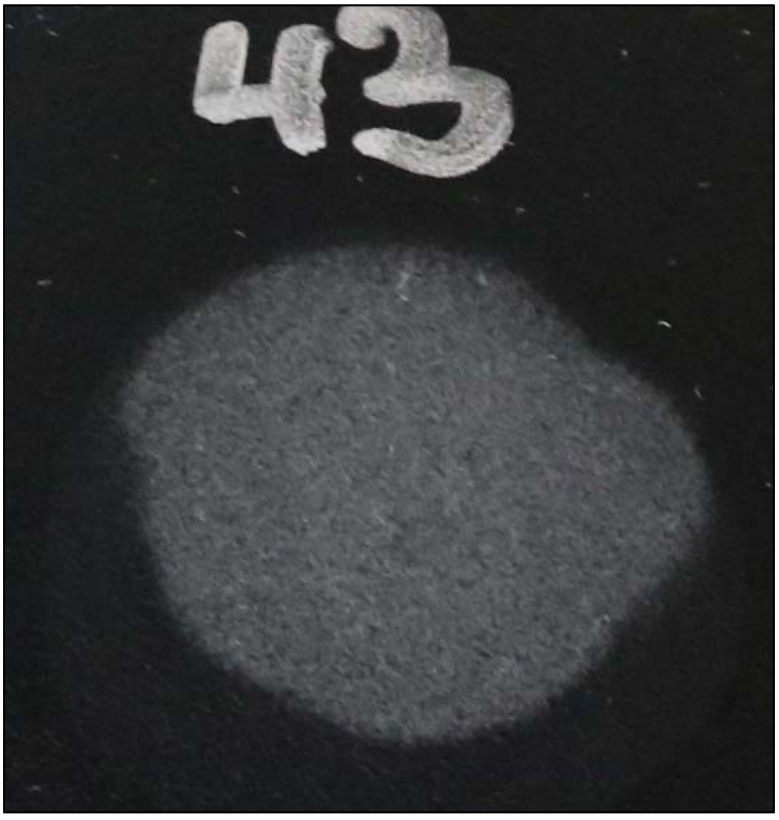
Chemical spot test #31, Nitric Acid (20%), Rating 3, Surface swelling



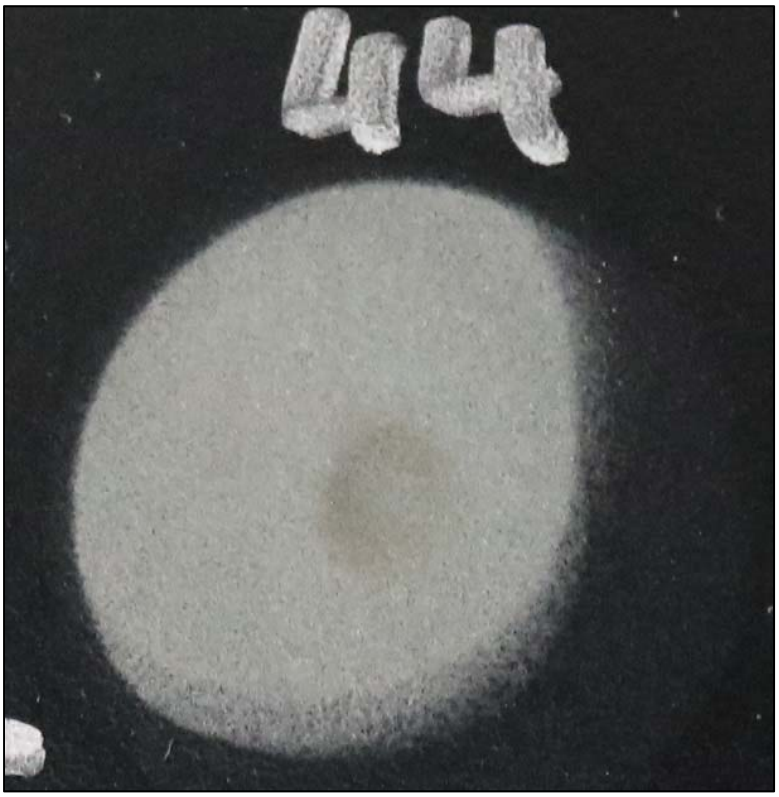
Chemical spot test #32, Nitric Acid (30%), Rating 3, Surface swelling



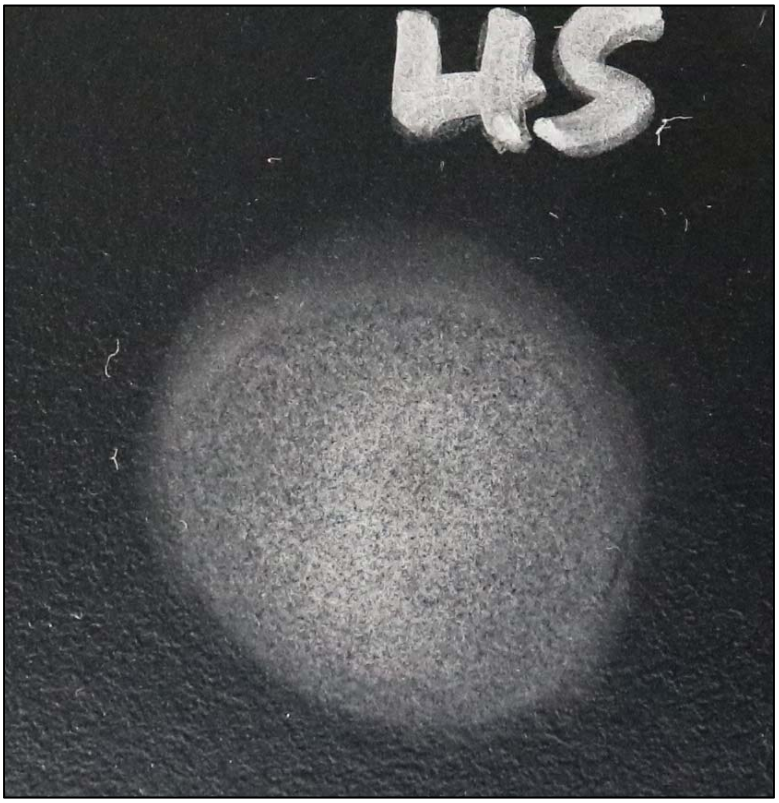
Chemical spot test #33, Nitric Acid (70%), Rating 3, Surface swelling



Chemical spot test #43, Sulfuric Acid (77%), Rating 2, Gloss change



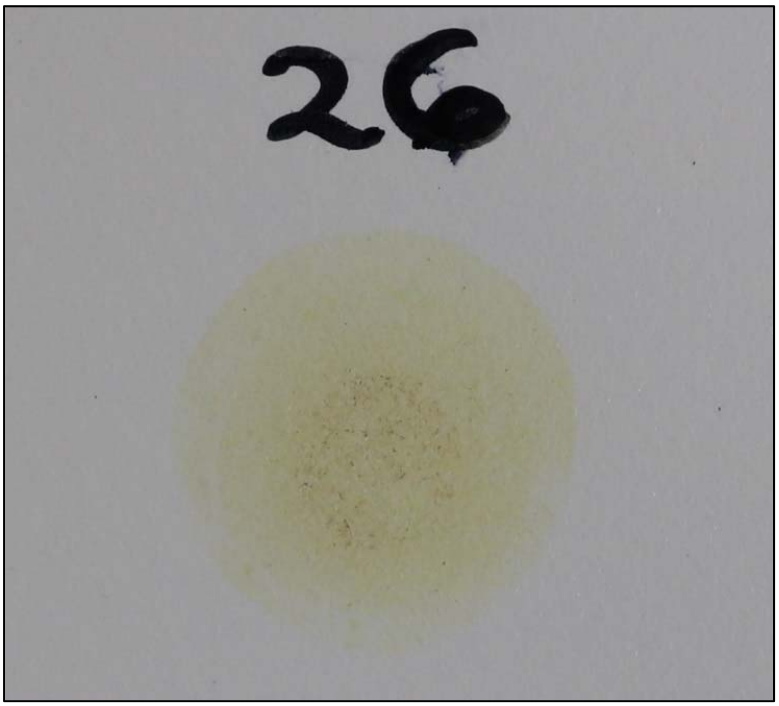
Chemical spot test #44, Sulfuric Acid (96%), Rating 2, Gloss change, color change



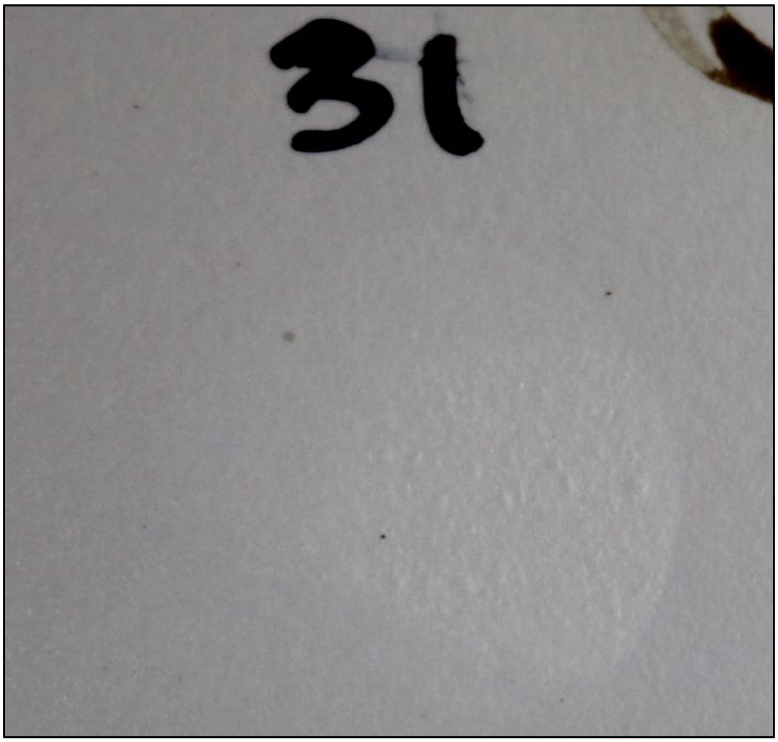
Chemical spot test #45, Sulfuric Acid (77%) and Nitric Acid (70%), equal parts, Rating 2, Gloss change

Chemical spot test #13, Chromic Acid (60%), Rating 2, Staining

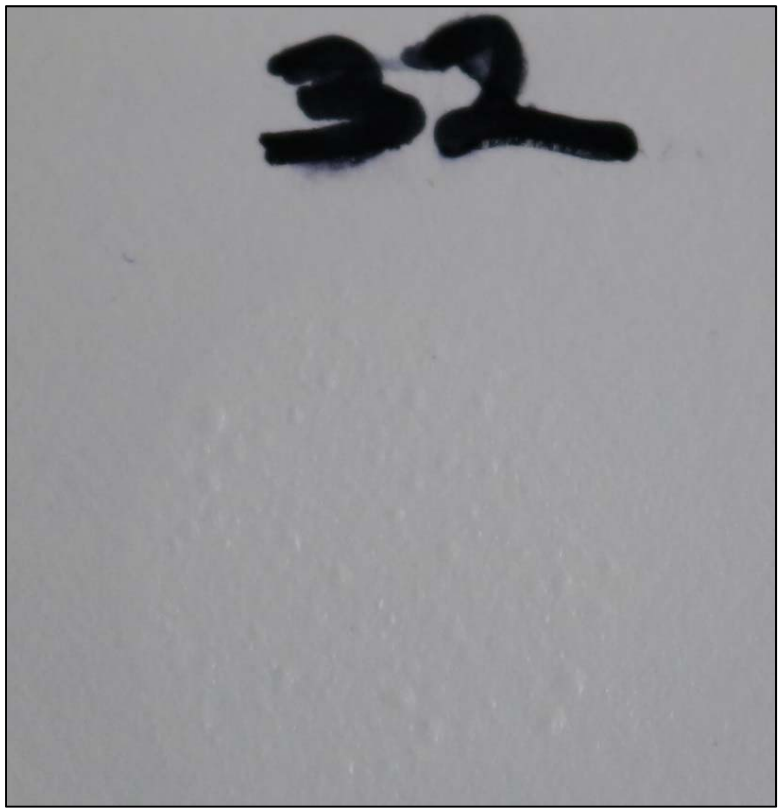
Chemical spot test #21, Furfural, Rating 2, Staining



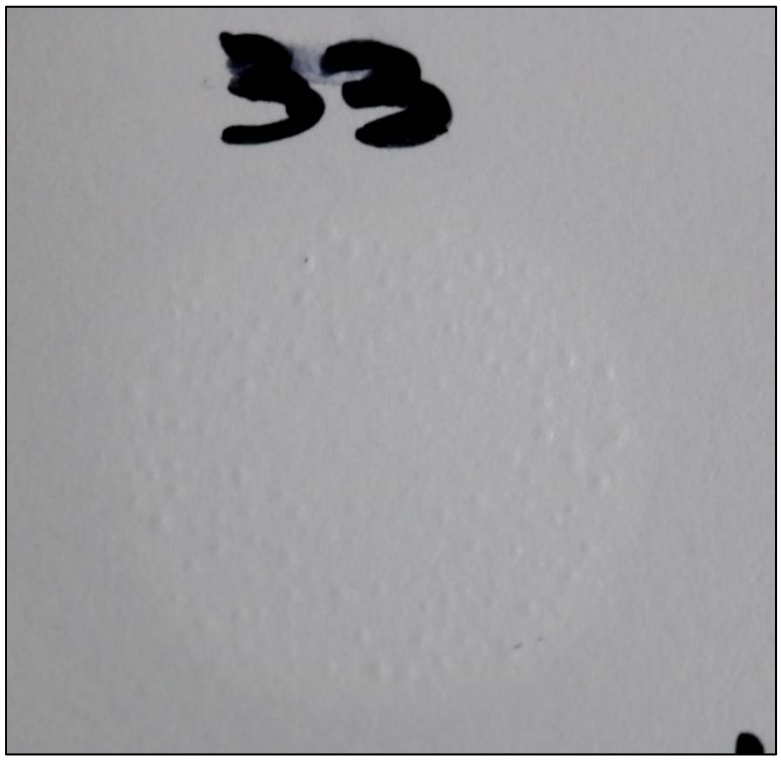
Chemical spot test #26, Iodine, Rating 2, Staining



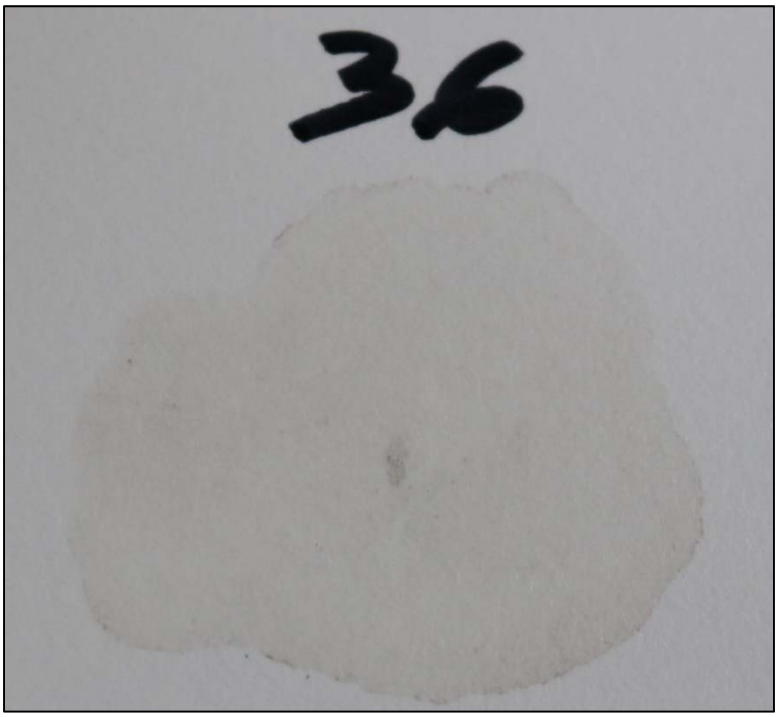
Chemical spot test #31, Nitric Acid (20%), Rating 3, Surface swelling



Chemical spot test #32, Nitric Acid (30%), Rating 3, Surface swelling



Chemical spot test #33, Nitric Acid (70%), Rating 3, Surface swelling



Chemical spot test #36, Silver Nitrate, Saturated, Rating 2, Staining, color change

Chemical spot test #37, Sodium Hydroxide (10%), Rating 2, Staining, color change

Chemical spot test #45, Sulfuric Acid (77%) and Nitric Acid (70%), equal parts, Rating 2, Color change