TEST REPORT

REPORT NUMBER: GZ11090437-1
ORIGINAL ISSUE DATE: September 15, 2011

EVALUATION CENTER

Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
Block E, No.7-2 Guang Dong Software Science Park,
Caipin Road, Guangzhou Science City, GETDD,
Guangzhou 510663

RENDERED TO
SHENZHEN RISEWELL INDUSTRY CO., LTD
4TH BUILDING, LONGWU INDUSTRIAL PREMISES, SHANGTANG,
LONGHUA, SHENZHEN,
CHINA

PRODUCT EVALUATED
DEBO® Chem-top Laminate

EVALUATION PROPERTY
Chemical resistance

Report of testing for DEBO® Chem-top Laminate testing in accordance with client's requirement.

1 Table of Contents

2 Introduction

Intertek has conducted testing for SHENZHEN RISEWELL INDUSTRY CO., LTD on DEBO® Chem-top Laminate, to evaluate product performance. Testing was conducted in accordance with specified test methods by client. Refer to "4 Testing and Evaluation Methods" for detail standard number, year and name. This test began on August 2, 2011 and was completed on September 14, 2011.

3 Test Samples

3.1. SAMPLE SELECTION

Samples were submitted to Intertek directly from manufacturer. Samples were received at the Evaluation Center on August 1, 2011.

3.2. SAMPLE AND ASSEMBLY DESCRIPTION

Submitted final sample is Chem-resistant Laminate, overall dimension (L x W x T): 100x100x6mm, detail photos refer to Appendix A.
Brand mark: DEBO

4 Testing and Evaluation Methods

4.1. CONDITIONING

The specimens were conditioned to a constant weight at a temperature of 23 ± 2°C and at a relative humidity of 50 ± 5%.

4.2. Chemical resistance

Drop several droplets of 54 types of specific chemical agent on the surface of the specimens, maintain for 16 hours, and clean the chemical from the specimen surface by running water, dry the specimen surface by wet cotton cloth, check any corrosion, deformation, discolor, bubbles or residual left on specimen surface.

5 Testing and Evaluation Results

5.1. RESULTS AND OBSERVATIONS

The test results are summarized in Table 1 below.

Table 1

Acids	**Concentration**	**Test Result**
Acetic Acid	AR	No visible change
Chromic Acid	60%	No visible change
Dichromate cleaning solution	—	Slightly visible discoloration
Formic Acid	90%	Visible corrosion
Glacial Acetic Acid	AR	No visible change
Hydrochloric Acid	10%	No visible change
Nitric Acid	20%	No visible change
Nitric Acid	70%	No visible change
Perchloric Acid	60%	Slightly visible discoloration
Phosphoric Acid	85%	No visible change
Sulphuric Acid	10%	No visible change
Sulphuric Acid	96%	Visible corrosion
Alkalia	**Concentration**	**Test Result**
Ammonium Hydroxide	28%	No visible change
Potassium Hydroxide	15%	No visible change
Sodium Carbonate Sat.	18%	No visible change
Sodium Hydroxide	40%	Slightly visible discoloration

Table 1 (continued)		
Sodium Sulphide	15%	No visible change
Solvents	**Concentration**	**Test Result**
Acetone	AR	No visible change
Amyl Acetate	CP	No visible change
Benzene	AR	Slightly visible residual stain
Carbon Tetrachloride	AR	No visible change
Chloroform	AR	No visible change
Cresol	CP	No visible change
Denatured Alcohol	AR	No visible change
Dioxane	AR	No visible change
Ethyl Acetate	AR	No visible change
Furfural	AR	No visible change
Methyl Ethyl Ketone	AR	No visible change
Methylene Chloride	AR	No visible change
Methylated spirits	—	No visible change
Naphtha	Technical pure	Slightly visible residual stain
Tetrahydrofuran	AR	No visible change
Toluene	AR	No visible change
Xylene	AR	No visible change
Other Reagents	**Concentration**	**Test Result**
Amyl Alcohol	AR	No visible change
Calcium Hypochlorite	10%	No visible change

Table 1 (continued)		
Copper Sulphate	10%	No visible change
Ferric Chloride	10%	No visible change
Phenolphthalein	1%	No visible change
Potassium Permanganate	2%	Visible residual stain
Trichloroethylene	AR	No visible change
ANSI/NEMA Reagents	**Concentration**	**Test Result**
Acetone	AR	No visible change
Citric Acid	10%	No visible change
Distilled Water	—	No visible change
Ethanol	50%	No visible change
Fresh Coffee	—	No visible change
Household Ammonia	25%	No visible change
#2 Pencil	—	Visible residual stain
Stamp Pad Ink	—	No visible change
Shoe Polish	—	Visible residual stain
Tea Bag	—	No visible change
Vegetable Oil	—	Visible residual stain
Wax Crayon	—	Visible residual stain
Yellow Mustard	—	Visible residual stain

Note:
1. AR means analytical reagent, CP means chemically pure.
2. Refer to Appendix B for tested specimen photos.

5.1.1. Statement of Measurement Uncertainty

When determining the test result, measurement uncertainty has been considered.

6 Conclusion

Submitted samples were tested and test results were showed in section 4.

The conclusions of this test report may not be used as part of the requirements for Intertek product certification. Authority to Mark must be issued for a product to become certified.

INTERTEK

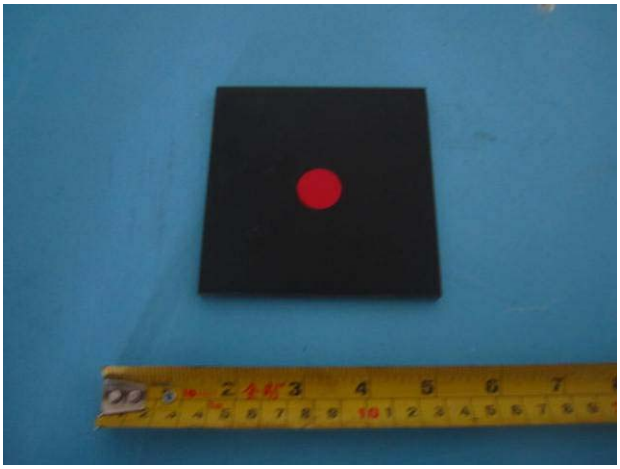
Reported by: Jones Zhong

Jones Zhong
Engineer, Building Products

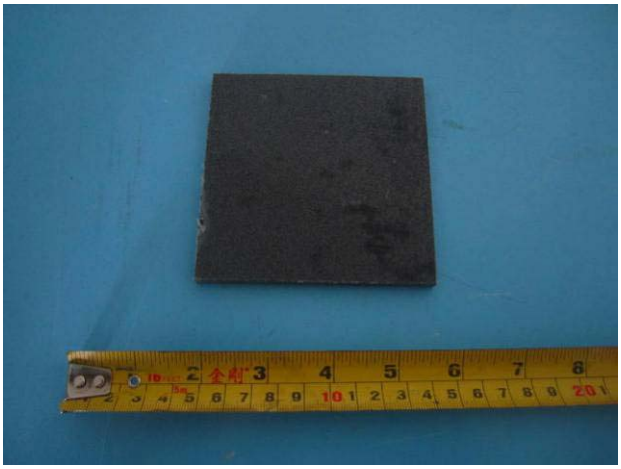
Reviewed by: Jeff Deng

Jeff Deng
Team Leader, Building Products

7 Appendix A - Product photos

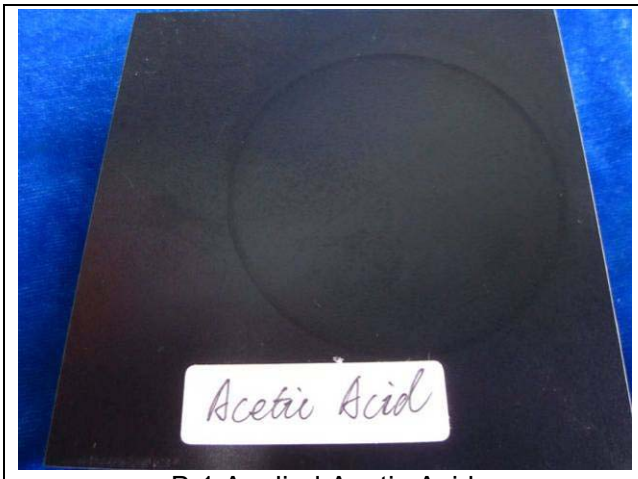


A.1 Front view (test surface)



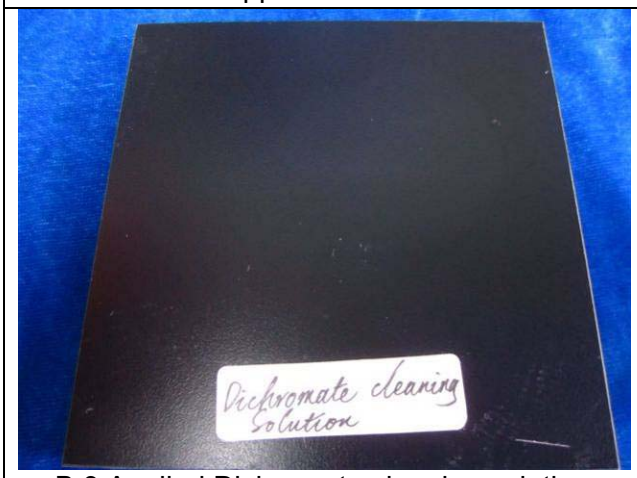
A.2 Back view

8 Appendix B – Tested specimen photos

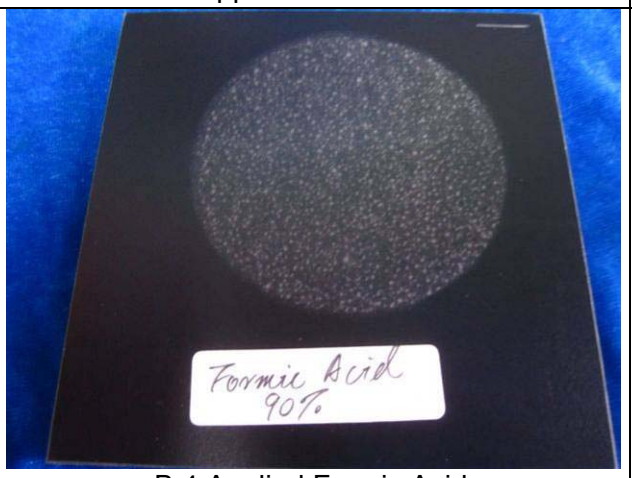


B.1 Applied Acetic Acid

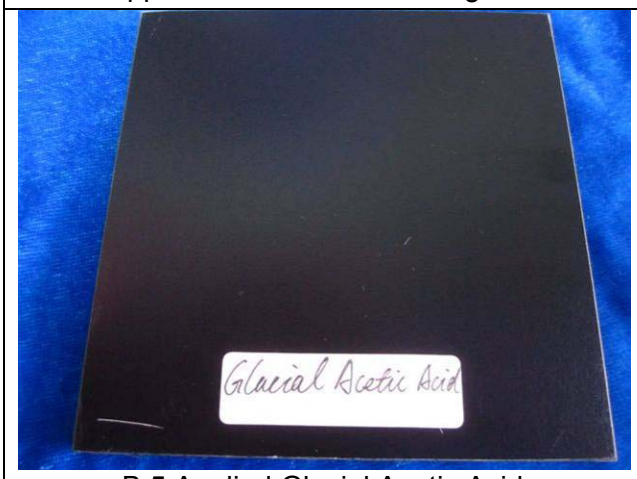
B.2 Applied Chromic Acid



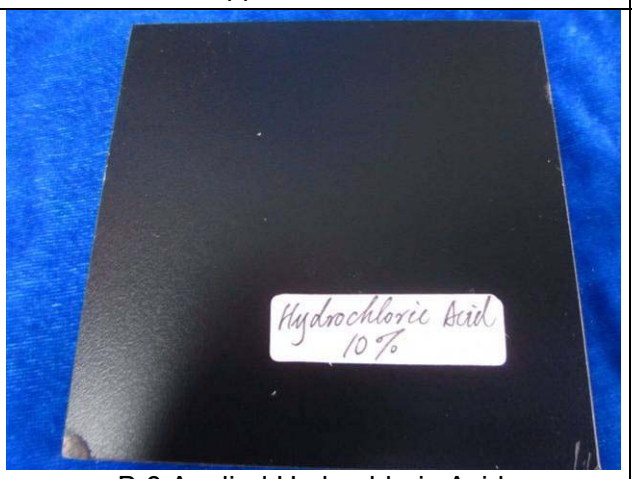
B.3 Applied Dichromate cleaning solution



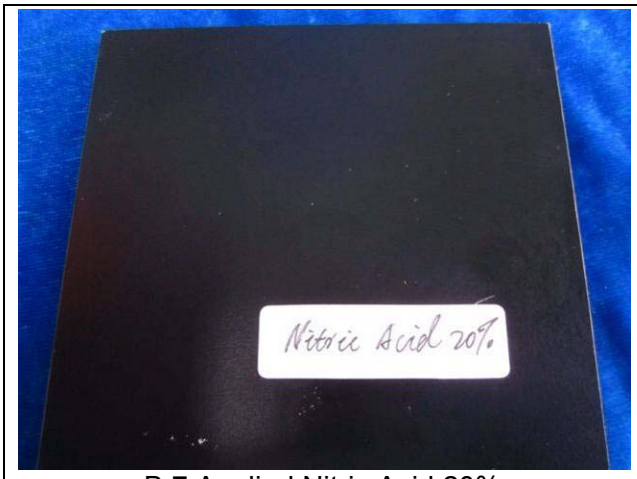
B.4 Applied Formic Acid



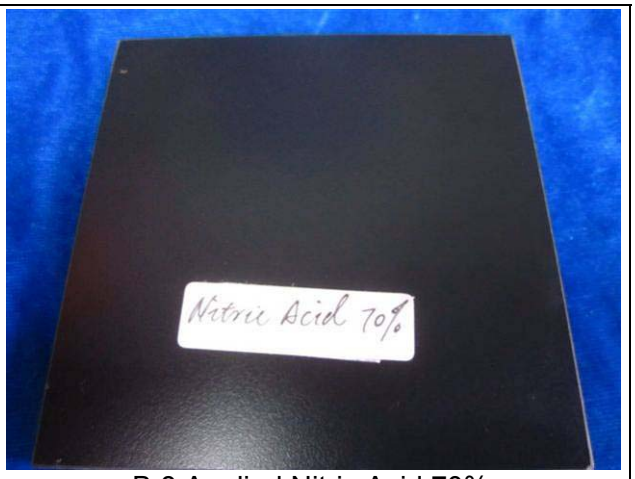
B.5 Applied Glacial Acetic Acid



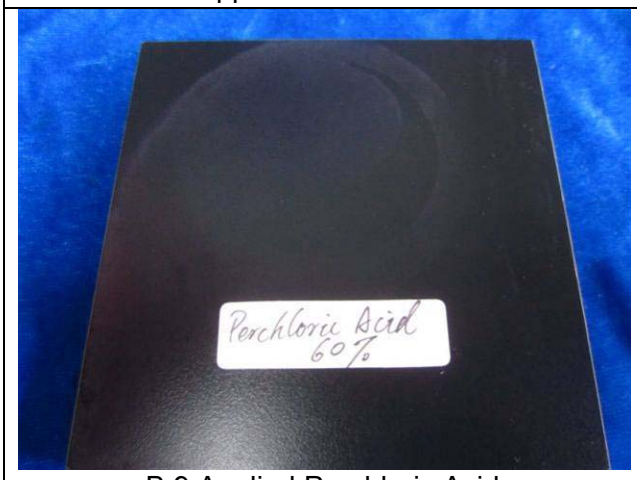
B.6 Applied Hydrochloric Acid



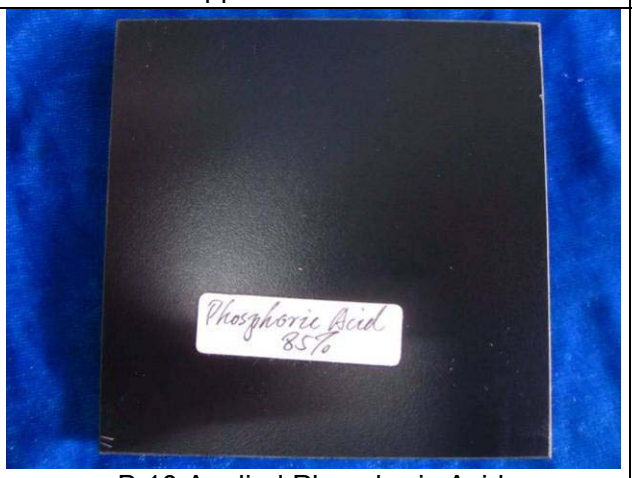
B.7 Applied Nitric Acid 20%



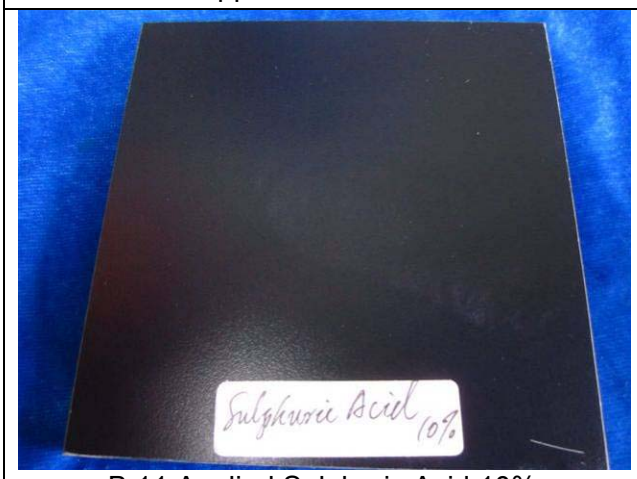
B.8 Applied Nitric Acid 70%



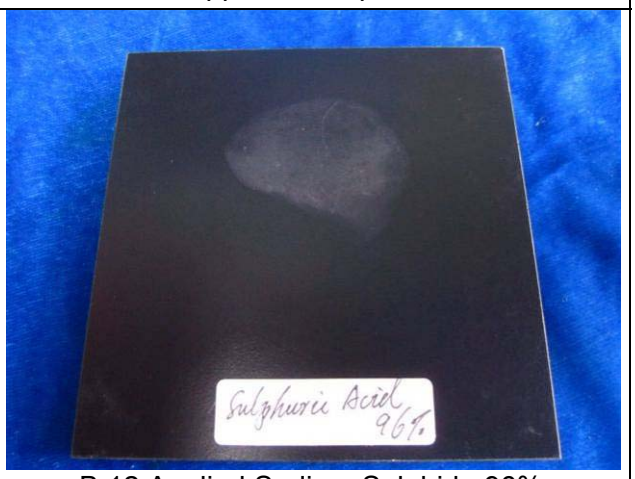
B.9 Applied Perchloric Acid



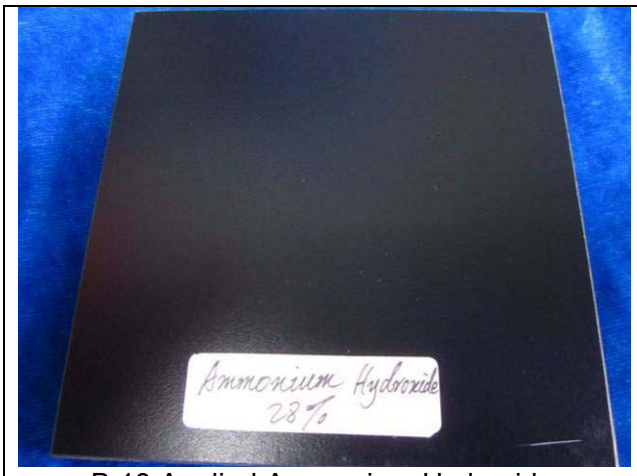
B.10 Applied Phosphoric Acid



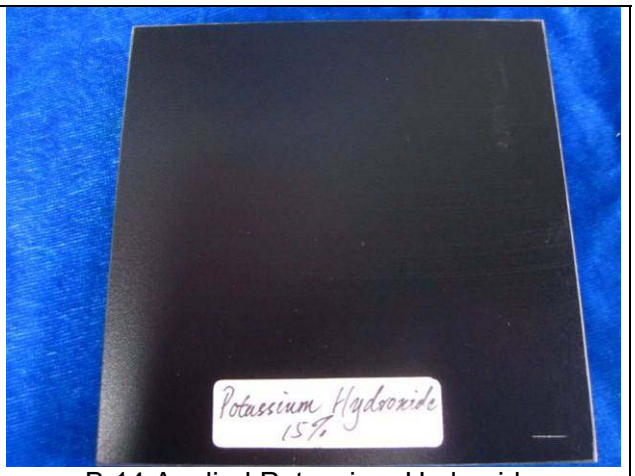
B.11 Applied Sulphuric Acid 10%



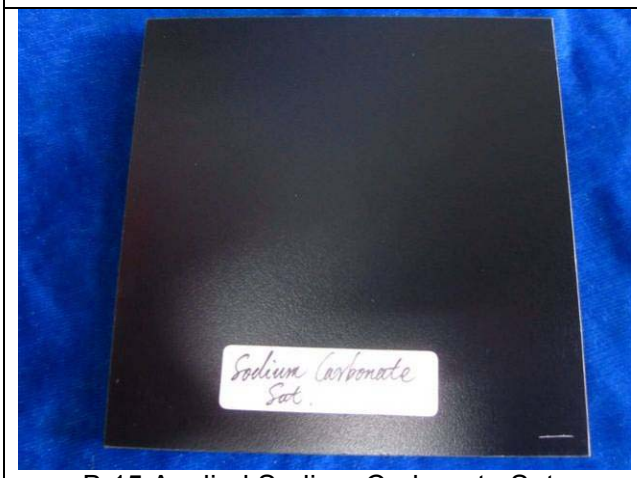
B.12 Applied Sodium Sulphide 96%



B.13 Applied Ammonium Hydroxide

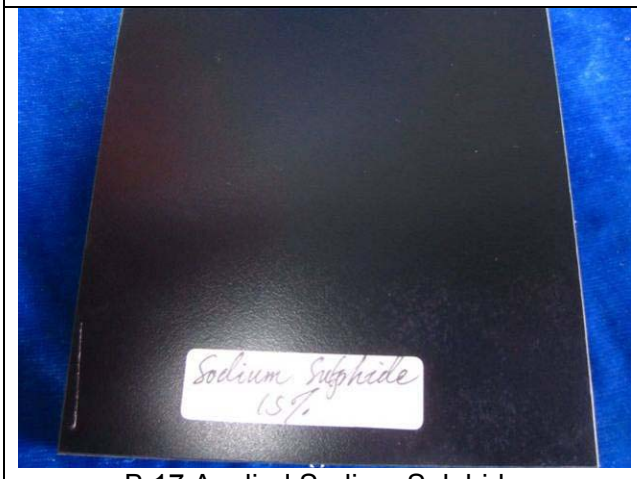


B.14 Applied Potassium Hydroxide

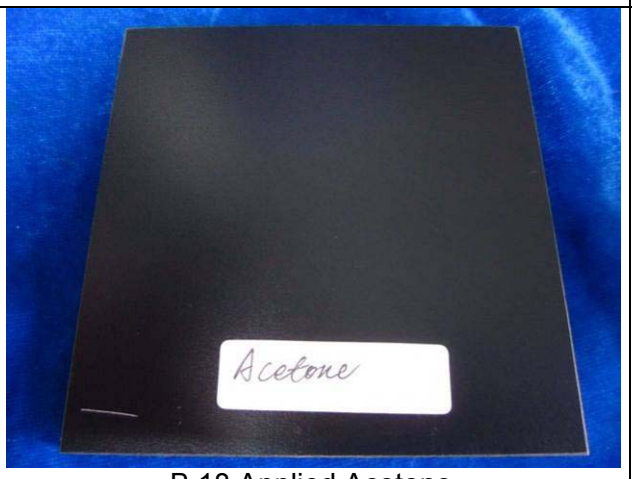


B.15 Applied Sodium Carbonate Sat.

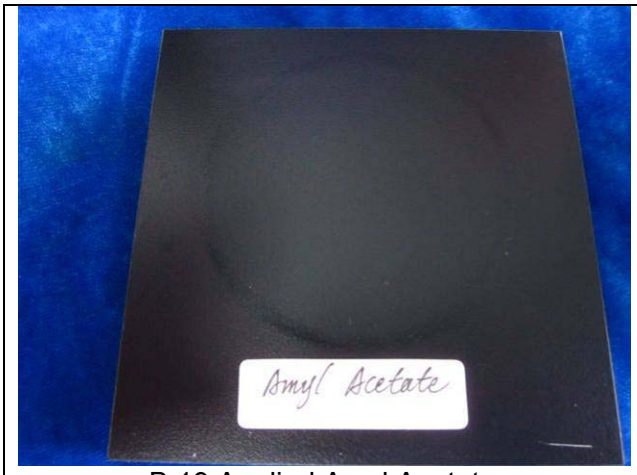
B.16 Applied Sodium Hydroxide



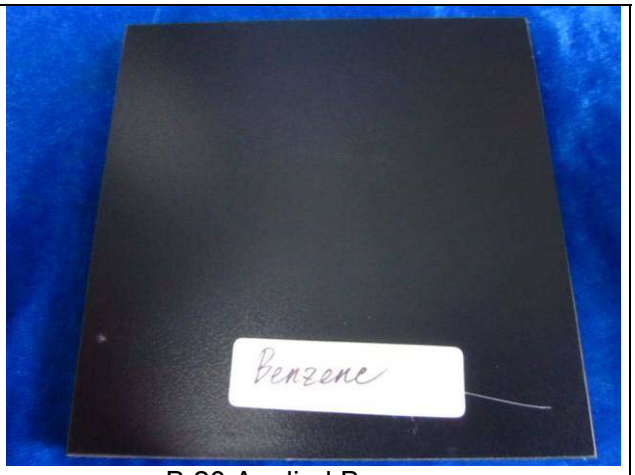
B.17 Applied Sodium Sulphide



B.18 Applied Acetone

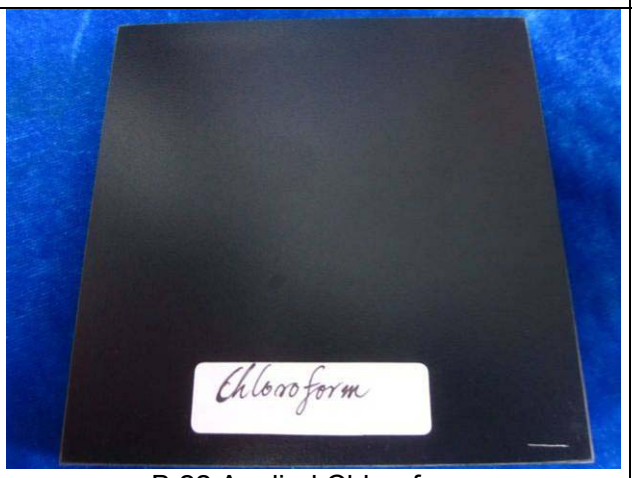


B.19 Applied Amyl Acetate



B.20 Applied Benzene

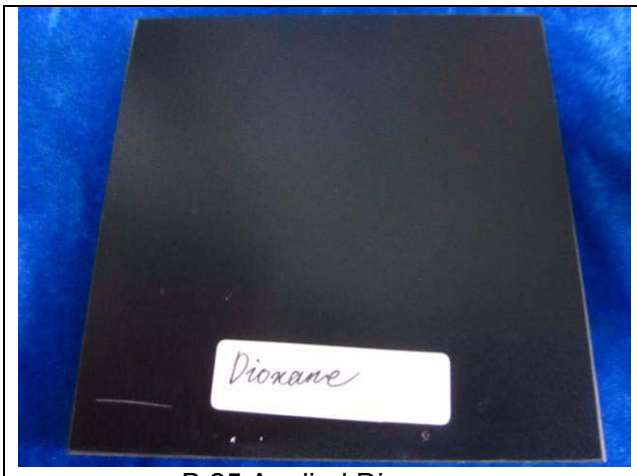
B.21 Applied Carbon Tetrachloride



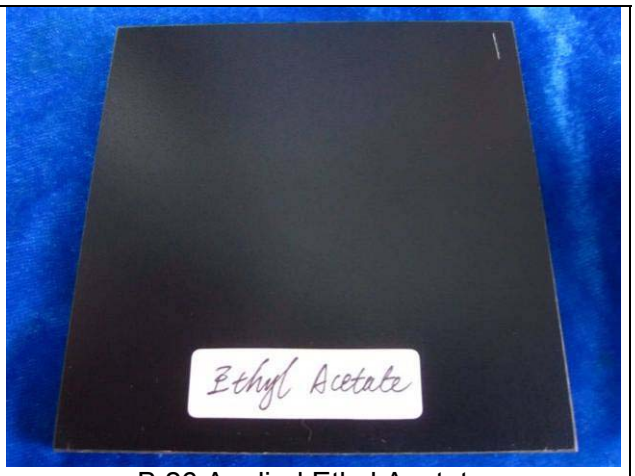
B.22 Applied Chloroform

B.23 Applied Cresol

B.24 Applied Denatured Alcohol

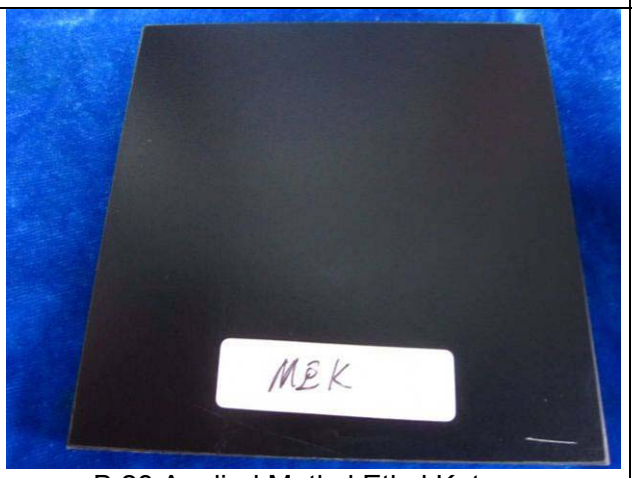


B.25 Applied Dioxane

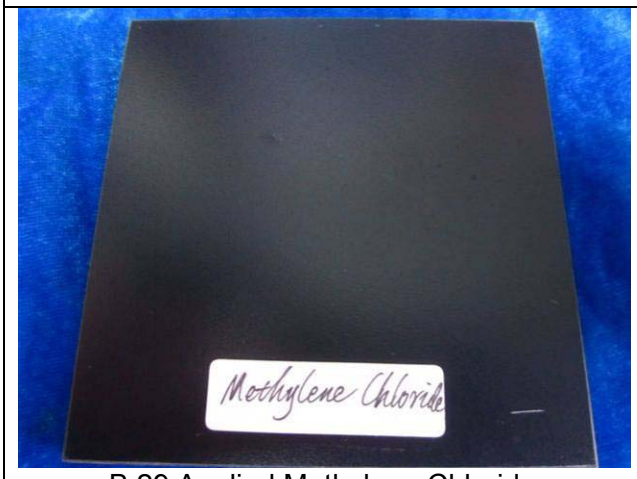


B.26 Applied Ethyl Acetate

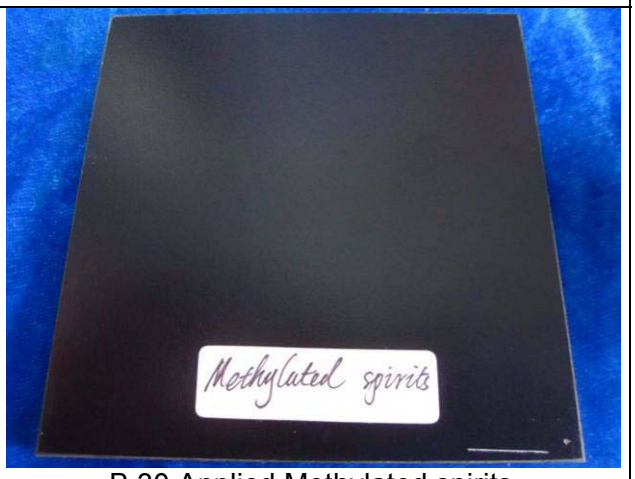
B.27 Applied Furfural



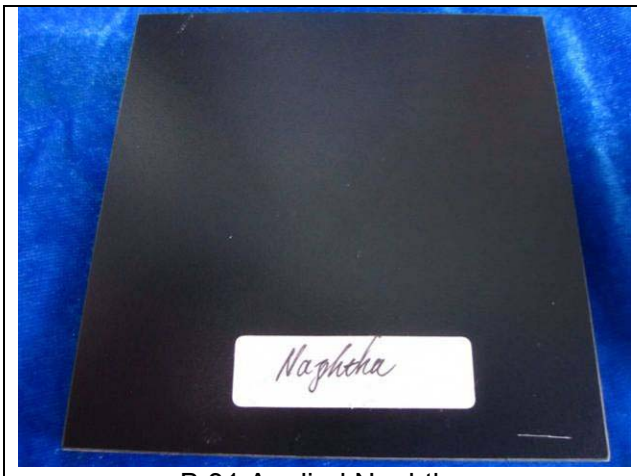
B.28 Applied Methyl Ethyl Ketone



B.29 Applied Methylene Chloride

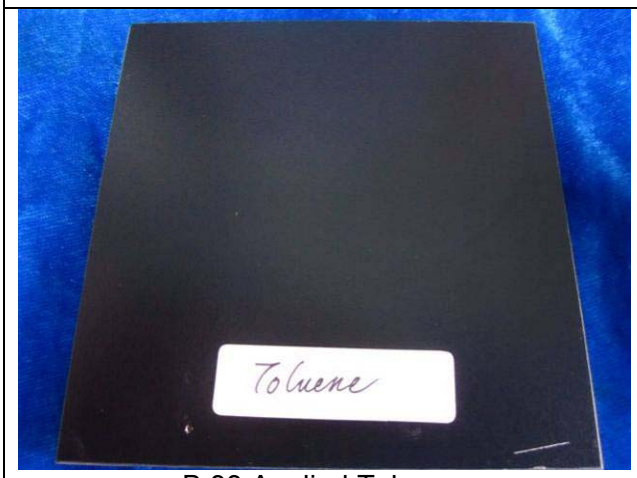


B.30 Applied Methylated spirits

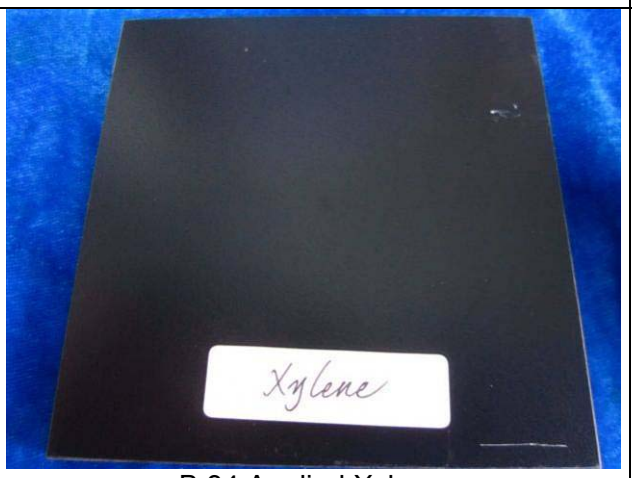


B.31 Applied Naphtha

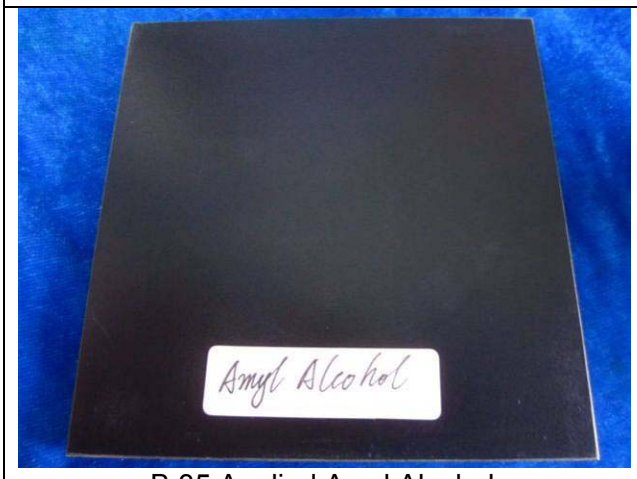
B.32 Applied Tetrahydrofuran



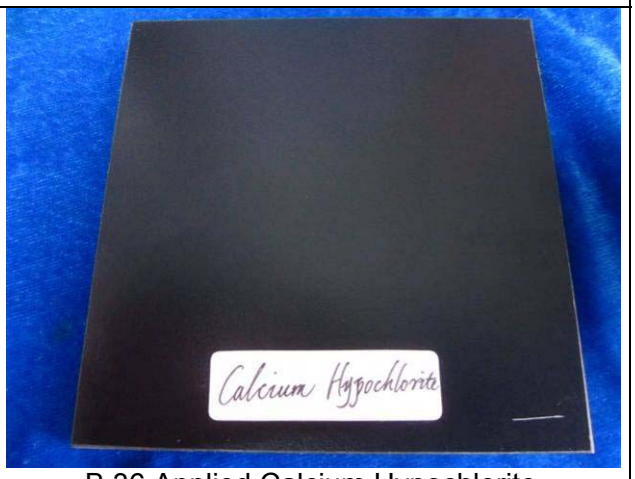
B.33 Applied Toluene



B.34 Applied Xylene

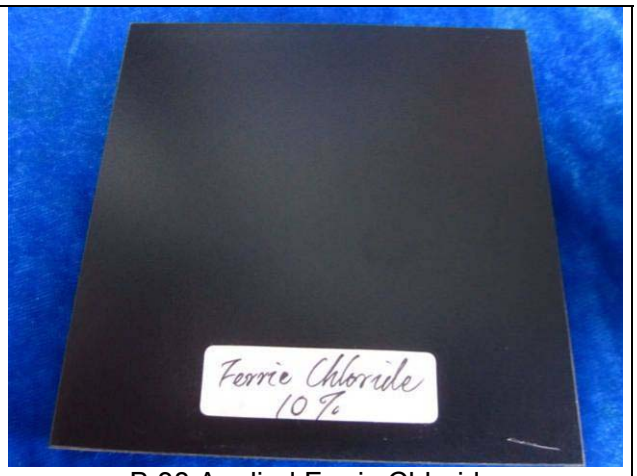


B.35 Applied Amyl Alcohol



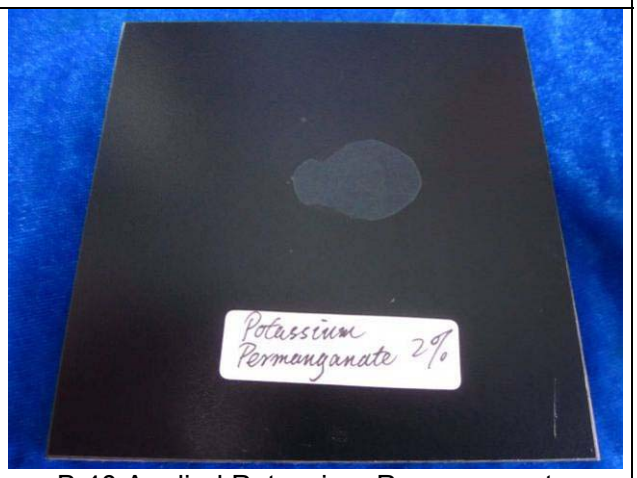
B.36 Applied Calcium Hypochlorite

B.37 Applied Copper Sulphate

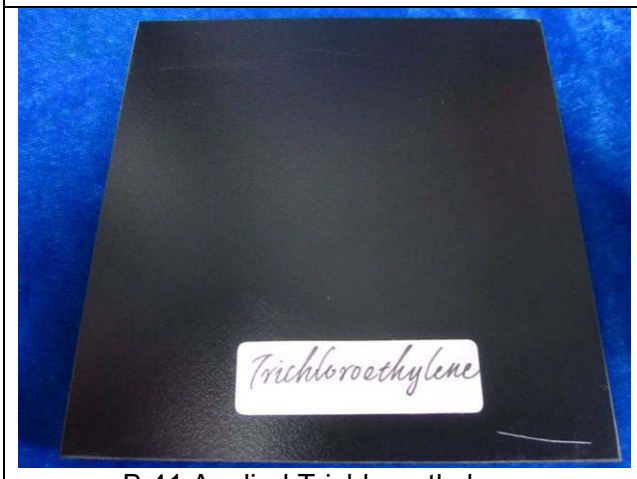


B.38 Applied Ferric Chloride

B.39 Applied Phenolphthalein



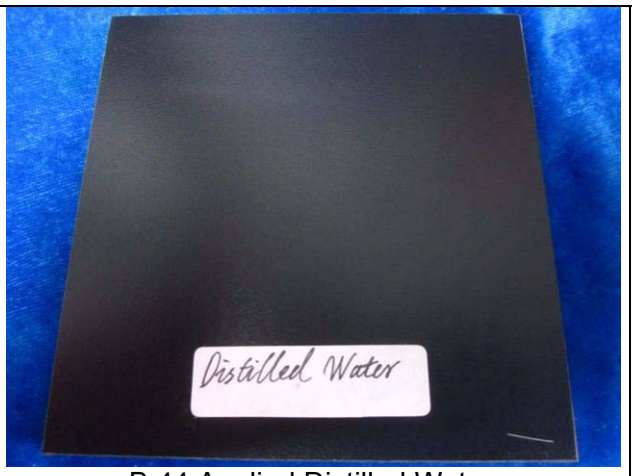
B.40 Applied Potassium Permanganate



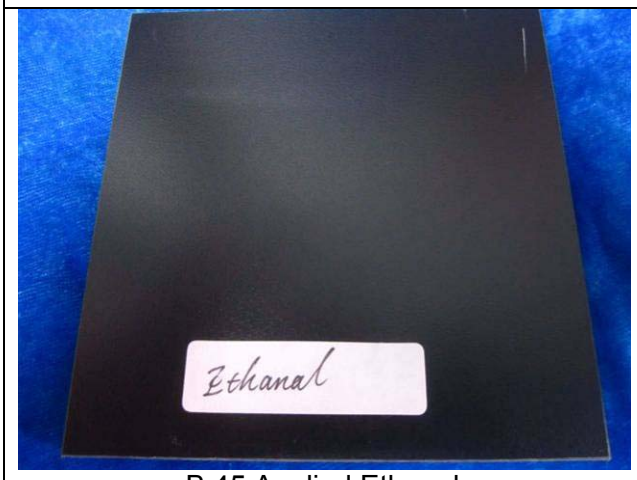
B.41 Applied Trichloroethylene

B.42 Applied Acetone

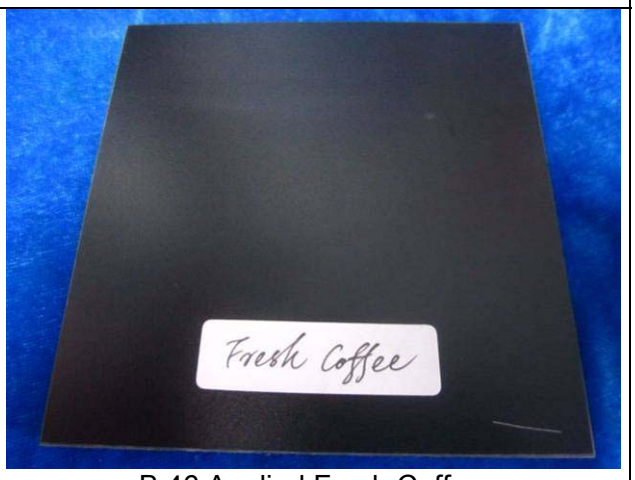
B.43 Applied Citric Acid



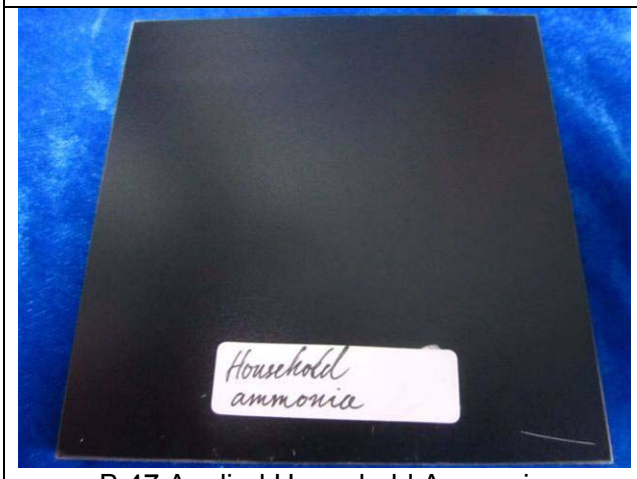
B.44 Applied Distilled Water



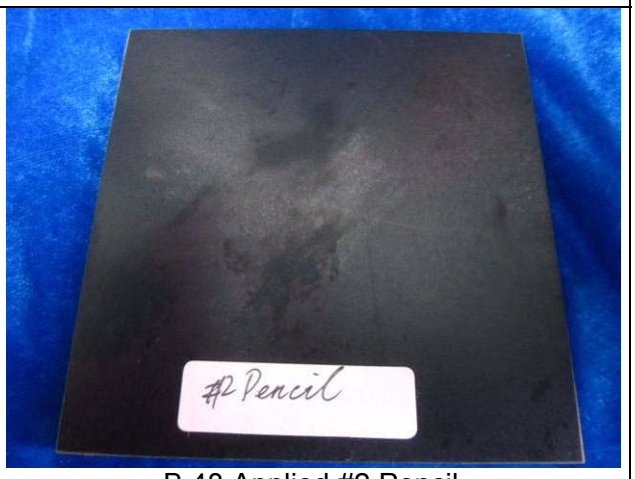
B.45 Applied Ethanol



B.46 Applied Fresh Coffee

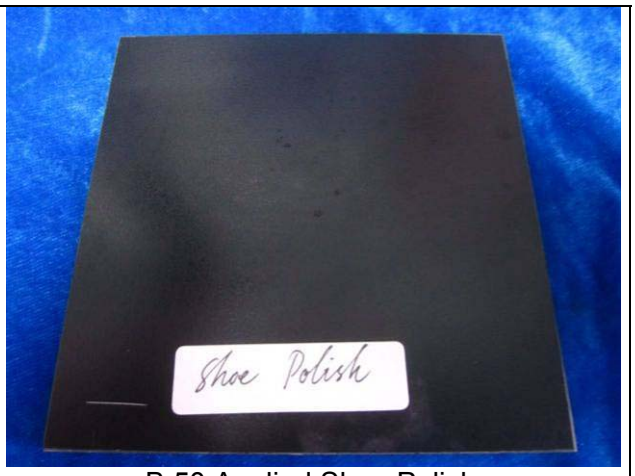


B.47 Applied Household Ammonia

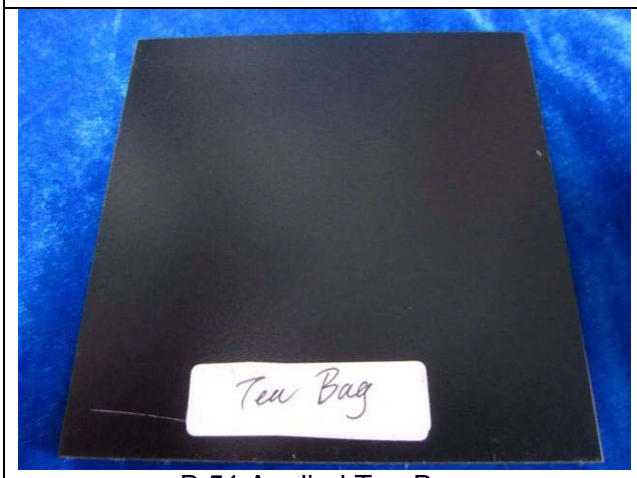


B.48 Applied #2 Pencil

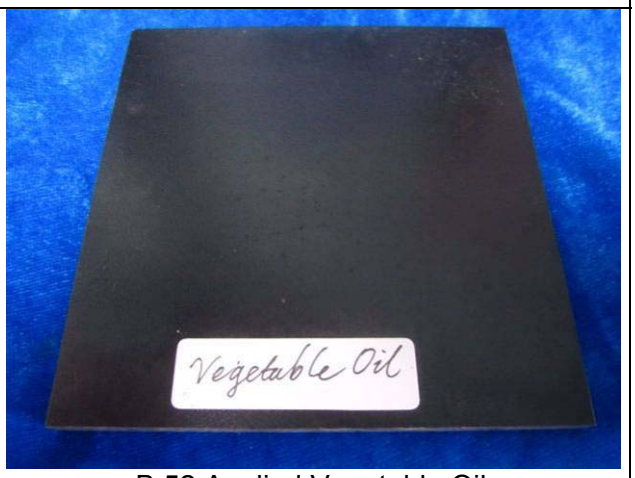
B.49 Applied Stamp Pad Ink



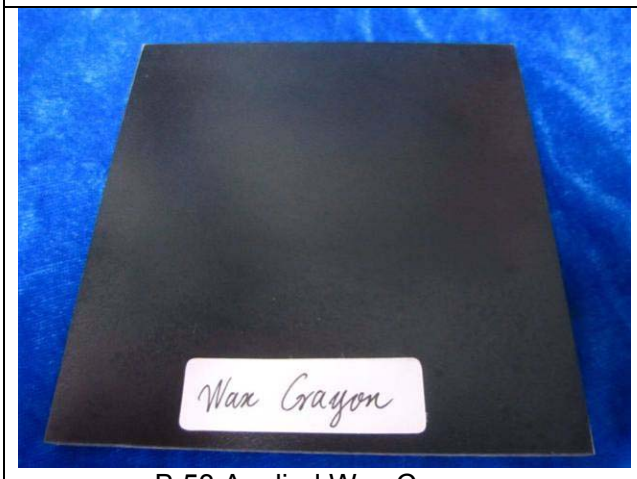
B.50 Applied Shoe Polish



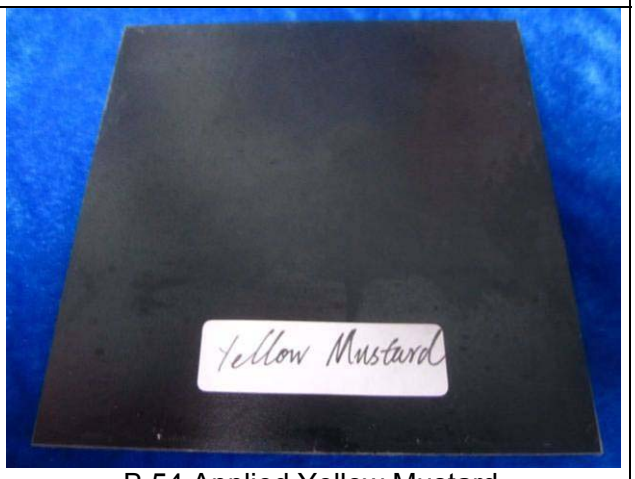
B.51 Applied Tea Bag



B.52 Applied Vegetable Oil



B.53 Applied Wax Crayon



B.54 Applied Yellow Mustard

9 Revision Page

Revision No.	Date	Changes	Author	Reviewer
0	2011-9-15	First issue	Jones Zhong	Jeff Deng

END OF DOCUMENT