

## TEST PROCEDURE FOR FUME HOOD LINER RESISTANCE TO CHEMICAL SPILLS/ SPLASHES AND FUMES

The purpose of the Fume Hood Liner Resistance Evaluation is to obtain quantitative information on the resistance of material/finish to chemicals. Separate procedures are followed for the Spill/Splash Test and for the Fume Test.

### TEST SAMPLE PREPARATION

**SPILL/SPLASH TEST:** Divide a 45" x 12" panel into fifty-one 3/4" spaces for application of forty-eight chemicals. Reagent No. 1 is a solid, not applicable. The actual test spaces are numbered 2 - 49, while blank spaces are provided between reagents 31 - 32, 36 - 37 and 43 - 44 to prevent unwanted interaction of chemicals.

**FUME TEST:** Cut 3" individual squares numbered 1 - 49. Upon completion of test, mount tested squares for viewing and evaluation.

### TEST PROCEDURE

**GENERAL:** Test duration is 24 hours. Tests shall be performed in a fume hood, sash opened, for face velocity of 100 FPM. Baffles shall be adjusted for fume draw at sample position. Room temperature shall be 68-72°F. Humidity, while preferred at 20-50%RH, shall be recorded. Upon completion of the test period, the test samples shall be removed, flushed with water, cleaned with naphtha and detergent, rinsed and wiped dry; then shall be evaluated.

**SPILLS/SPLASH TEST:** The panel shall be secured to orient the 3/4" x 12" spaces vertically. Five drops of each listed reagent shall be applied at the top center of its corresponding space, allowing flow down the full panel height. **CAUTION: FLUSH AWAY REAGENT DROPS AT BOTTOM OF PANEL.**

**FUME TEST:** Forty-nine 100 milliliter beakers shall be spaced nominally 1-3/4" in a template allowing blank spaces as shown to prevent unwanted chemical fume interaction. Each beaker shall have 25 milliliters (approximately 1/2") of respective reagent. **NOTE:** beaker pouring lip permits atmospheric oxygen to enter and participate in the reaction of fumes. Lip shall be oriented toward rear of hood. Numbered sample squares are placed over respective beakers.

42	0	43	0	44	45	46	47	48	49
37	38	39	40	41	0	0	0	0	0
31	0	0	32	33	34	35	36	0	0
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

## TEST PROCEDURE FOR

FUME HOOD LINER RESISTANCE TO CHEMICAL SPILLS/  
SPLASHES AND FUMESMaterial Identification & Details: Haysite H220 Polyester ResinWhite (P-Liner)Relative Humidity: 46% @ 72°F (5-19-99)37% @ 72°F (5-20-99)

## PERFORMANCE RATINGS:

NO EFFECT (NE) - No detectable change in surface material.

EXCELLENT (EX) - Slight detectable change in color or gloss, but no change to the function or life of the working surface material.

GOOD (G) - A clearly discernable change in color or gloss, but no significant impairment of working surface function or life.

FAIR (F) - Objectionable change in appearance due to surface discoloration or etch, possibly resulting in deterioration of function over an extended period of time.

FAILURE (FL) - Pitting, cratering or erosion of working surface material. Obvious and significant deterioration.

		PERFORMANCE RATING				PERFORMANCE RATING	
		Spills/Splashes	Fumes			Spills/Splashes	Fumes
1.	Sodium Hydroxide Flake	--	NE	26.	M. E. K.	NE	EX
2.	40% Sodium Hydroxide	EX	NE	27.	Acetone	NE	EX
3.	20% Sodium Hydroxide	EX	NE	28.	Ethyl Acetate	NE	EX
4.	10% Sodium Hydroxide	EX	EX	29.	Amyl Acetate	NE	NE
5.	Ammonium Hydroxide, 28%	NE	NE	30.	Ethyl Ether	NE	EX
† 6.	Eidorado - Plus (Solution)	NE	NE	31.	Silver Nitrate, 10%	G	NE
7.	Chloroform	NE	NE	32.	Di Methyl Formamide	NE	EX
†† 8.	LpH® SE (Solution)	NE	NE	33.	Formaldehyde, 37%	NE	NE
9.	Trichloroethylene	NE	EX	34.	Formic Acid, 88%	EX	EX
10.	Monochlorobenzene	NE	NE	35.	Acetic Acid, Glacial	NE	NE
11.	Tincture of Iodine	G	EX	36.	Dichloroacetic Acid	EX	EX
12.	Methyl Alcohol	NE	NE	37.	Chromic Acid, Saturated	G	NE
13.	Ethyl Alcohol	NE	NE	38.	Phosphoric Acid, 85%	EX	NE
14.	Butyl Alcohol	NE	NE	39.	Sulfuric Acid, 33%	NE	NE
15.	Phenol, 85%	EX	EX	40.	Sulfuric Acid, 77%	NE	NE
16.	Cresol	EX	NE	41.	Sulfuric Acid, 93%	EX	NE
17.	Sodium Sulfide, Saturated	G	NE	42.	Hydrogen Peroxide, 30%	NE	NE
18.	Furfural	G	NE	43.	Acid Dichromate	NE	NE
19.	Dioxane	NE	EX	44.	Nitric Acid, 20%	EX	NE
20.	Zinc Chloride, Saturated	NE	NE	45.	Nitric Acid, 30%	EX	NE
21.	Benzene	NE	NE	46.	40 and 47 Equal Parts	EX	G
22.	Toluene	NE	NE	47.	Nitric Acid, 70%	EX	G
23.	Xylene	NE	EX	48.	Hydrochloric Acid, 37%	NE	NE
24.	Gasoline	NE	NE	49.	Hydrofluoric Acid, 48%	EX	F
25.	Naphthalene	NE	NE				

I certify that this test was conducted under my supervision in exact accordance with the test procedure as described.

Name: [Signature]Title: Laboratory Services ManagerDate: 5/21/99Notary: [Signature]

† 6: Hospital Grade disinfectant/cleaner from Puritan/Church &amp; Dwight Chemical Co.

†† 8: Hospital Grade disinfectant/cleaner from Calgon Vestal Laboratories

AL-1122 MAY95 USA

**CARDINAL**  
  
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Notary Public  
 My Commission Expires 6/3/01  
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