

APPENDIX I

EVALUATION OF PAINTS AND OTHER COATING MATERIALS

I. TESTS FOR MAJOR INTEREST TO CONSUMER

1. Hiding Power	75.00
2. Brushing Properties, including recoatability, lapping, etc. (without gloss readings)	95.00 + cost of material on which coating is applied
(with gloss readings)	125.00
3. Gloss on prepared panel including panel preparation	25.00 40.00
4. Clean-up of brush and dry spatters	75.00
5. Washability (gloss readings \$25.00 extra)	250.00 and up
6. Scrubability (gloss readings \$25.00 extra)	250.00 and up
7. Abrasion Resistance (gloss readings \$25.00 extra)	250.00 and up
8. Yellowing	225.00
9. Exterior Weathering by Weatherometer Exposure of Prepared Panels:	
First Specimen, per hour	6.00
Additional Specimens, per hour	0.50
	+ cost of electrodes
Minimum exposure charge	85.00
Panel Preparation, each	27.50
	and up
Color Change	225.00
	extra per panel
Gloss Change	50.00
	extra per panel

10.	Salt Spray Exposure for Exterior Metal Paints:	
	Exposure per panel-hour	0.15
	Minimum exposure charge	75.00
	Panel Preparation, each	27.50
	Set-up Charge (one time per series)	60.00
	Gloss Change	50.00
		extra per panel
11.	Drying Time	75.00
12.	Hardness (scratch test)	75.00
13.	Impact Resistance	175.00
14.	Adhesion	75.00
15.	Flexibility	75.00
16.	Fineness of Grind	50.00
17.	Condition in Container, as received	35.00

II. TESTS OF MAJOR INTEREST TO DISTRIBUTOR AND MANUFACTURER

1.	Storage Stability, condition in container after storage (not including storage)	35.00
2.	Freeze - Thaw Resistance	275.00
3.	Coarse Particles and Skins	75.00
4.	Chemical Analysis:	
	Spectrographic Analysis of Pigment, qualitative	40.00
	% Pigment, Volatile vehicle and non-volatile vehicle	125.00
	Pigment Analysis, quantitative	Quotation on request
	Infrared Analysis of Resin or Solvent Systems	175.00 and up
	Infrared Analysis of Pigment, qualitative	175.00 and up
	Solids, % volume	150.00

Solids, % weight	25.00
Gas Chromatographic Analysis of Solvent	375.00 and up
Separation of Solvent by Vacuum Distillation	145.00
Volatile Organic Compounds, EPA-24	250.00
- With Water by GC, additional	125.00
III. QUALITY CONTROL TESTS	
1. Hiding Power	75.00
2. Brushing Properties - Plus cost of material	95.00
3. Gloss (plus panel preparation)	25.00
4. Chemical Analysis:	
Spectrographic Analysis of Pigment	40.00
% Pigment, Volatile vehicle and non-volatile vehicle	125.00
Pigment Analysis, quantitative	Quotation on request
Infrared Analysis of Resin or Solvent Systems	175.00 and up
Infrared Analysis of Pigment, qualitative	175.00 and up

APPENDIX II

SELECTED WATER AND EFFLUENT ANALYSES METHODS IN  
 ACCORDANCE WITH "STANDARD METHODS FOR EXAMINATION  
 OF WATER AND WASTE-WATER"

Analysis	Method	Cost
Acidity	201	20.00
Alkalinity	201	20.00
Aluminum	ICP	17.00
Arsenic	ICP	95.00
Bicarbonate	102	28.50 + alkalinity
Boron	ICP	50.00
Bromides	108	85.00
Cadmium	ICP	17.00
Calcium	ICP	17.00
Carbonate	102	28.50 + alkalinity
Chloride	112A	30.00
	ASTM D512B	30.00
	ASTM D512C	85.00
Chromium:		
Total	ICP	17.00
Hexavalent	117A	95.00
Hexavalent	ICP	85.00
COD	220	125.00
Copper	ICP	17.00
Cyanide	207A, 207B with distillation	150.00
	207B without distillation	75.00

Analysis	Method	Cost
Fluoride		
- 121A Titrimetric Method		125.00
- Thorium Nitrate Method		85.00
Hardness (calcium and magnesium)	ICP	50.00
Hexane Solubles	137	50.00
Freon Solubles	137	n/a
Iron	ICP	17.00
Lead	ICP	17.00
Magnesium	ICP	17.00
Manganese	ICP	17.00
Mercury	Flameless Atomic Absorption	90.00
Nickel	ICP	17.00
Nitrate	133A	85.00
Oil and Grease	137	50.00
pH	144	15.00
Phenol	222B, 222C	125.00
	222b, 222D	125.00
Phosphate	223D	85.00
Potassium	Atomic Absorption	17.00
Sodium	Atomic Absorption	17.00
Sulfate	156C	85.00
Sulfide	427C	85.00
Total Solids	224A	40.00
Total Dissolved Solids	225E	30.00
Total Suspended Solids	224C	57.00
Zinc	ICP	17.00

APPENDIX III

SELECTED TESTS CONDUCTED ON PERMANENT TYPE ANTI-FREEZE

Ash	20.00
Boiling Point	40.00
Freezing Point	60.00
pH	15.00
Reserve Alkalinity	50.00
Borax (From Determination of Boron)	50.00
Water	26.00
Alkaline Earths, qualitative	17.50
Sulfates and Carbonates, qualitative	17.50
Chlorides, qualitative	17.50
Adjacent Glycols	55.00
Flash Point (Cleveland Open Cup)	25.00
Specific Gravity	25.00
Foaming Tendency	125.00
Corrosion Test, per run	195.00

APPENDIX IV

GREASE TESTS

Bomb Copper Corrosion (any other common metal may also be used with no change in price), 100 hrs.	67.50
Consistency of Grease (Penetration)	
Unworked	25.00
Worked 60 strokes	30.00
Worked 10,000 strokes	65.00
Worked 100,000 strokes	100.00
1/4 scale, unworked	30.00
1/4 scale, worked 60 strokes	35.00
Consistency of Grease (Roll Stability)	
2 hrs. at ambient temperature	75.00
100 hrs. at 150 F.	200.00
Deleterious Particles	27.50
Dirt Count	60.00
Dropping Point	27.50
Evaporation	
22 hrs. at 210 F.	60.00
6 1/2 hrs. at 400 F.	60.00
Free Acidity	20.00
Free Alkali	20.00
Infrared Analysis of fractions, each	125.00 and up
Load Carrying Capacity and Wear Tests	
Timken Load Carrying Capacity	130.00 + parts
Timken Abrasion	500.00
Load Wear Index	120.00 + parts
Mean Hertz Load	225.00 + parts
Falex E.P.	67.50 + parts
Falex Wear	67.50 + parts and up

GREASE TESTS CONTINUED:

4-Ball Wear Test	
1 Kg., 167 F., 1200 RPM, 1 hr.	47.50
10 Kg., 167 F., 1200 RPM, 1 hr.	47.50
40 Kg., 167 F., 1200 RPM, 1 hr.	47.50
Same at 300 F. and above	60.00
2 hour test	20.00 Addt'l
Fretting Wear Test, plus parts	135.00
Mobility @ 0 F., (U.S. Steel Method)	150.00
Navy Gear Test, per load (two usually required)	250.00
	+ parts
Leakage Tendency from wheel bearings	
- ASTM D1263	97.50
- ASTM D4290, plus parts	160.00
Life Performance, plus parts	
- 40 Hours	350.00
- 80 Hours	350.00
Low Temperature Torque, ASTM D1478	
+60 F. and above	100.00
+60 F. to -30 F.	110.00
Below -30 F.	135.00
Low Temperature Torque, ASTM D4693	275.00
Oil Content (including separation for characterization of oil)	70.00 and up
Oil Separation at ambient temperature (Pressure Method)	37.50
Oil Separation at elevated temperature (Cone Method)	37.50
Oxidation Stability	
100 hours	60.00
400 hours	145.00
100 hours with metal catalyst	67.50
Pour Point of Oil (not including separation of oil)	
Above 30 F.	25.00
From 30 F. to -20 F.	27.50
From -20 F. to -50 F.	35.00
Below -50 F.	48.50

GREASE TESTS CONTINUED:

Protection Tests	
Rust Protection (Bearing)	195.00 + parts
Alternate Method (Appendix X.2)	195.00 + parts
Salt Spray Exposure	
Panel Preparation, each	27.50
Exposure, per specimen/hour	0.15
Minimum Exposure Charge, per sample	75.00
Set-up charge	60.00
Humidity Exposure	
Panel Preparation, each	27.50
Exposure, per specimen/hour	0.15
Minimum Exposure Charge, per sample	75.00
Galvanic Corrosion, humidity	52.50
Galvanic Corrosion, salt spray	135.00
Soap Content	70.00
Spectrographic Analysis of Ash	40.00
Static Heat Test	175.00
Water Emulsion Tolerance	165.00
Viscosity, Apparent	
75 F. to 115 F.	125.00
-20 F. to 75 F.	145.00
-21 F. to -100 F.	185.00
Viscosity of Oil (not including separation)	
@ 40 C.	20.00
@ 100 C.	20.00
Viscosity Index of Oil	n/c
Water Content (Karl Fischer)	26.00
Water Resistance	
@ 100 F.	62.50
@ 175 F.	75.00
Water Spray Resistance	87.50

APPENDIX V

KEROSINE, (ASTM D3699, Type 1-K and 2-K)

Appearance		
Color, Saybolt, ASTM D156		17.50
Composition		
Mercaptan Sulfur, D3227		135.00
Doctor Test, ASTM D4952		12.00
Total Sulfur, ASTM D1266		30.00
Volatility		
Distillation, ASTM D86		25.00
Flash Point, ASTM D56		25.00
Fluidity		
Freezing Point, ASTM D2386		60.00
Viscosity @ 40 C., ASTM D445		20.00
Combustion		
Burning Quality, ASTM D187		85.00
Corrosion		
Copper Corrosion, 3 hrs. @ 100 C., ASTM D130		15.00
	TOTAL INCLUDING MERCAPTAN SULFUR	407.00
	TOTAL WITH DOCTOR TEST BUT WITHOUT MERCAPTAN SULFUR	272.00

APPENDIX VI

FUEL OIL (BURNING OIL) TESTS

No. 1 and No. 2 Fuel Oil

Pensky-Martens Closed Cup Flash Point	25.00
Pour Point (average cost)	27.50
Water & Sediment	15.00
Ramsbottom Carbon Residue on 10% Residuum	45.00
Distillation	25.00
Viscosity @ 40 C.	20.00
Specific Gravity (convert from API)	8.00
Copper Corrosion	15.00
Sulfur	30.00
TOTAL	210.50

No. 4, 4 Light, 5 Light, and 5 Heavy Fuel Oil

Pensky-Martens Closed Cup Flash Point	25.00
Pour Point (Required for 4 and 4 Light), average	27.50
Water by Distillation	15.00
Sediment by extraction	20.00
Ash	20.00
Viscosity @ 40 C. or 100 C.	
Reverse Flow	
@ 40 C. or 100 C., each	27.50
Viscosity @ 40 C. (required for 4 Light)	27.50
Sulfur, ASTM D129, optional	30.00
Density (From API Gravity, Required for 4 Light)	12.00

Total for No. 4 Light 147.00

Total for No. 4 135.00

Total for No. 5 Light 107.50

Total for No. 5 Heavy 107.50

Optimum Preheating Temperature - No Charge Provided  
 Viscosities Are Determined  
 At Two Temperatures

Optional - Trace Sulfur by UV Fluorescence 85.00

FUEL OIL (BURNING OIL) TESTS CONTINUED:

No. 6 Fuel Oil

Pensky-Martens Closed Cup Flash Point	25.00
Water by Distillation	15.00
Sediment by Extraction	20.00
Viscosity @ 100 C.	
Reverse Flow	27.50
Sulfur, ASTM D129 (Optional)	30.00
Pour Point (Optional), average cost	25.00

Total For No. 6 117.50

APPENDIX VII

DIESEL FUEL

No. 1 and No. 2 Diesel Fuel

Pensky-Martens Closed Cup Flash Point	25.00
Cloud Point (average cost)	35.00
Water & Sediment, Trace	18.50
Ramsbottom Carbon Residue on 10% Residuum	55.00
Ash	25.00
Distillation	25.00
Viscosity @ 40 C.	20.00
Sulfur, D4294/D5453	30.00/85.00
Corrosion	15.00
Cetane	85.00
TOTAL	388.50

No. 1 and No. 2 Low-Sulfur Diesel Fuel

All The Requirements of No. 1 and No. 2 Diesel Fuel Plus:	
API Gravity (Required For Cetane Index)	12.00
Cetane Index or	No Charge
Aromaticity	65.00
TOTAL with Cetane Index	400.50
TOTAL with Aromaticity	453.50

No. 4 Diesel Fuel

Pensky-Martens Closed Cup Flash Point	25.00
Cloud Point (average cost)	35.00
Water & Sediment	15.00
Ash	25.00
Viscosity @ 40 C.	20.00
Sulfur (ASTM D129/D4294)	30.00
Cetane	85.00
TOTAL	235.00

Optional Tests For All Grades

Filtration Cleanliness	60.00
Oxidation Stability (Accelerated Method)	90.00
Steam Jet Existent Gum	40.00
Trace Sulfur by UV Fluorescence (required by EPA regulation after 2006)	85.00
Biodiesel Content	87.50

## APPENDIX VIII

## COMPREHENSIVE GASOLINE ANALYSIS

Doctor Test	12.00	
Distillation	25.00	
Reid Vapor Pressure	17.50	
Lead	22.50	
Copper Corrosion	15.00	
Existent Gum	25.00	
Potential Gum, 240 min.	30.00	
Induction Period, 240 min.	27.50	
Sulfur	85.00	
Phosphorus	60.00	
Research Octane	85.00	
Motor Octane	85.00	
V/L Ratio (calculated)	25.00	
Water Tolerance	50.00	
	TOTAL	564.50
Optional Tests		
Alcohols by Gas Chromatography		275.00
Ethers by Gas Chromatography		275.00

APPENDIX IX

SELECTED ANALYSES FOR LPG

Reid Vapor Pressure	38.50
Temperature at 95% Evaporated	47.50
Composition by Gas Chromatography	275.00
R No.	35.00
O No.	35.00
Specific Gravity	35.00
Copper Corrosion	40.00
Sulfur	125.00
Hydrogen Sulfide	50.00
Moisture, Valve Freeze	85.00
Free Water	n/c with specific gravity
Mercaptans by Gas Chromatography, per analyte	750.00
Disulfides by Gas Chromatography, per analyte	750.00

## APPENDIX X

## JET TURBINE FUEL ANALYSIS

Acidity	20.00
Aromatics (FIA)	65.00
Sulfur, Mercaptan	135.00
Sulfur, Total	30.00
Doctor Test	12.00
Distillation	25.00
Flash Point	25.00
API Gravity	8.00
Reid Vapor Pressure	17.50
Freezing Point	60.00
Viscosity @ -4 F.	42.50
Net Heat of Combustion, ASTM D1405	n/c
Aniline Point	25.00
Sulfur (x-ray)	25.00
Sulfur (bomb method)	27.50
Net Heat of Combustion, Measured, ASTM D240	
Jet A, plus sulfur	72.00
JP-4, plus sulfur	90.00
Smoke Point	38.50
Naphthalenes	87.50
Copper Corrosion	15.00
Thermal Stability, plus parts	195.00
Existent Gum	40.00
Water Reaction	22.50
Electrical Conductivity	38.50
Water Separometer Index, Modified (WSIM)	135.00

APPENDIX X (CONTINUED)

MIL-T-5624L, Am. 2, Turbine Fuel, Aviation,  
Grades JP-4 and JP-5

Saybolt Color (ASTM D156)	17.50
Total Acid No. (ASTM D3242)	33.00
Aromatics and Olefins (ASTM D1319)	
JP-4	65.00
JP-5	65.00
Mercaptan Sulfur (ASTM D3227)	135.00
Doctor Test (optional)	12.00
Total Sulfur (ASTM D1266)	30.00
Distillation (ASTM D86)	25.00
Explosiveness (FTMS 791b, 1151.1, Note 2)	85.00
Flash Point, PMCC, (ASTM D93, Note 2)	25.00
API Gravity and Density @ 60 F. (ASTM D1298, Note 3)	8.00
Density @ 15 C., by pycnometer (Optional)	25.00
Reid Vapor Pressure (ASTM D323, Note 1)	17.50
Freezing Point (ASTM D2386)	60.00
Viscosity @ -20 C. (ASTM D445, Note 2)	42.50
Heating Value	
Aniline-Gravity Product and/or Calculated Net Heat of Combustion (ASTM D1405)	33.00
Measured Net Heat of Combustion (ASTM D240)	45.00
	plus cost of sulfur and hydrogen determinations

Note 1: Required for JP-4 only.

Note 2: Required for JP-5 only.

Note 3: API Gravity is defined at 60 F. which is not equal  
to 15 C.

APPENDIX X (CONTINUED)

Hydrogen Content (ASTM E191)	45.00
Smoke Point (ASTM D1322)	38.50
Naphthalenes, optional (ASTM D1840)	87.50
Copper Corrosion, 2 hrs. @ 100 C. (ASTM D130)	15.00
Thermal Stability (ASTM D3241), plus parts	195.00
Existent Gum, Steam Jet (ASTM D381)	40.00
Particulate Matter and Filtration Time, Filtration of one gallon (ASTM D2276)	60.00
Water Reaction (ASTM D1094)	22.50
WSIM (ASTM D2550)	135.00
FSII (FTMS 791b, 5327.3)	27.50
Fuel Electrical Conductivity (ASTM D2624, Note 1)	38.50
Peroxide Number (ASTM D3703, Note 2)	30.00

Note 1: Required for JP-4 only.

Note 2: Required for JP-5 only.

APPENDIX XI

SELECTED TESTS FOR AUTOMATIC TRANSMISSION FLUID

Coefficient of Expansion @ 60 F.	60.00
Compatibility	90.00
	per set of blends
Copper Corrosion, 3 hrs. @ 300 F.	50.00
Corrosion and Oxidation Test (with sludge)	150.00
Flash Point and Fire Point (average cost)	30.00
Foaming Characteristics	50.00
Galvanic Corrosion	52.50
Rubber Swell, Elongation, Hardness	175.00
	+ cost of
	rubber parts
	if o-rings or
	seals are used
Rust Protection, Humidity Cabinet, 100 hrs., 3 panels	157.50
Rust Test with distilled water	57.50
Specific Gravity	
@ 60 F. (from API Gravity)	8.00
@ 210 F.	35.00
@ 300 F.	75.00
Specific Heat, 60 F. to 300 F., 5% precision	750.00
Timken Abrasion, 6 hour	500.00
	+ parts
Viscosity @ 100 F.	25.00
Viscosity @ 210 F.	25.00
Viscosity @ 0 F. (extrapolated)	n/c
Viscosity @ 0 F. (Brookfield)	85.00
Viscosity @ -10 F. (Brookfield)	85.00
Viscosity @ -20 F. (Brookfield)	85.00
Viscosity @ -30 F. (Brookfield)	85.00
Viscosity @ -40 F. (Brookfield)	85.00

APPENDIX XII

BRAKE FLUID MOTOR VEHICLE SAFETY STANDARD NO. 116

S 5.1.1	Equilibrium Reflux Boiling Point (Duplicate Determination)	80.00
S 5.1.2	Wet Equilibrium Reflux Boiling Point (Duplicate Determination)	450.00 + cost of SAE RM-1 compatibility fluid
S 5.1.3	Kinematic Viscosity	
	@ 100 C.	25.00
	@ -40 C.	42.50
S 5.1.4	pH Value	65.00
S 5.1.5	Brake Fluid Stability	
	S 5.1.5.1 High Temperature Stability (Duplicate Determination)	225.00
	S 5.1.5.2 Chemical Stability	125.00
		+ cost of SAE RM-1 compatibility fluid
S 5.1.6	Corrosion (Duplicate Determination)	
	DOT 3 or 4	525.00 + parts
	DOT 5	850.00 + parts
S 5.1.7	Fluidity and Appearance at Low Temperature	195.00
S 5.1.8	Evaporation (Quadruplicate Determination)	325.00
S 5.1.9	Water Tolerance	
	DOT 3 or 4	225.00
	DOT 5	575.00
S 5.1.10	Compatibility	225.00 + cost of SAE RM-1 compatibility fluid
S 5.1.11	Resistance to Oxidation (Duplicate Determination)	
	DOT 3 or 4	350.00
	DOT 5	675.00
S 5.1.12	Effects on SBR Cups, plus cost of SBR cups	
	70 hrs. @ 70 C.	125.00
	70 hrs. @ 120 C.	125.00
S 5.1.13	Stroking Properties	Not available
S 5.1.14	Fluid Color (Visual)	n/c