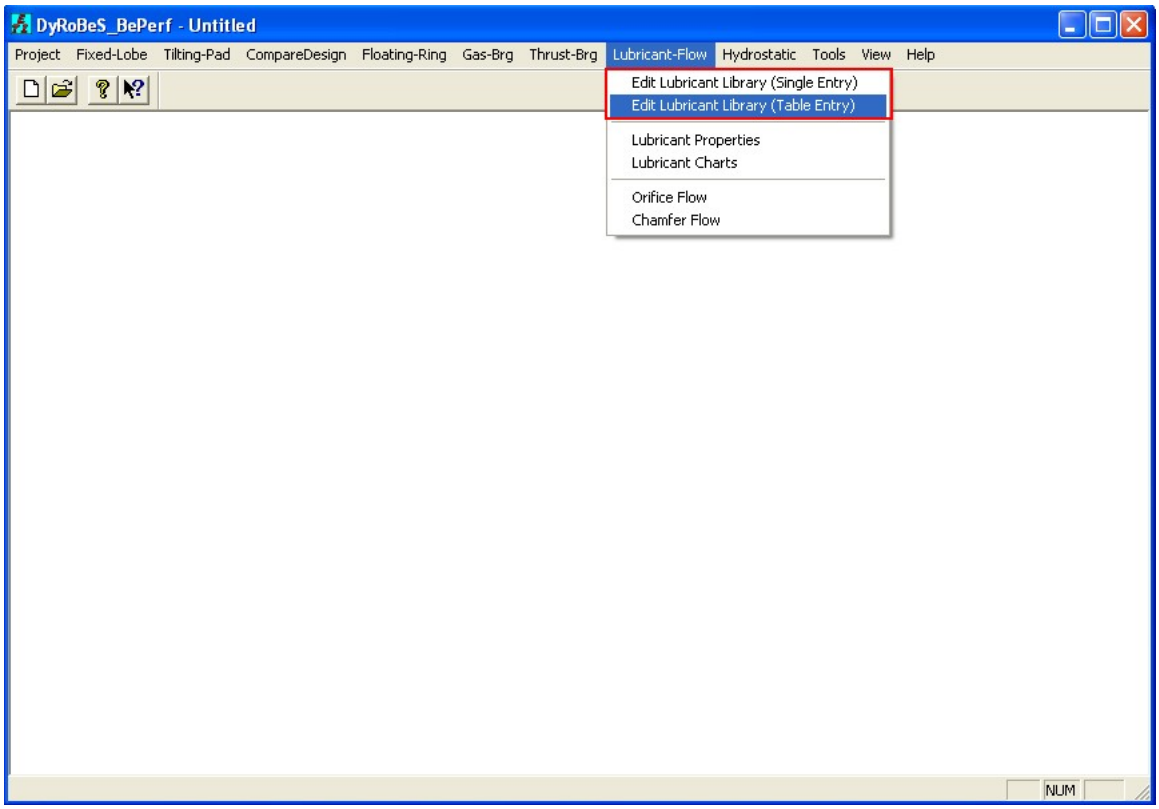
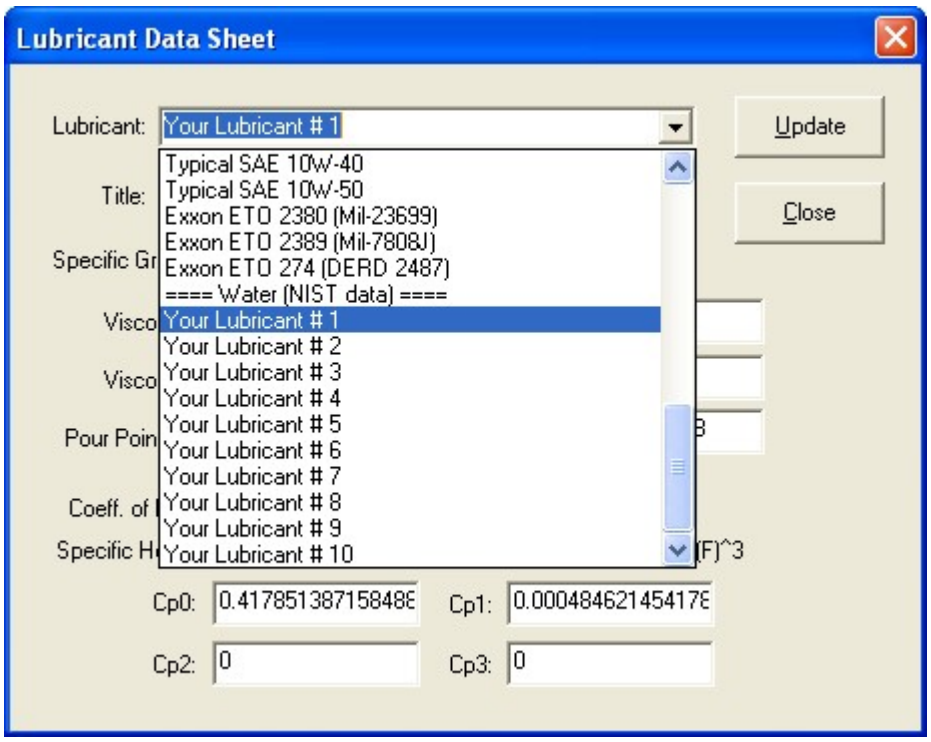
Ver 20 – Design Comparison and New Feature Notes

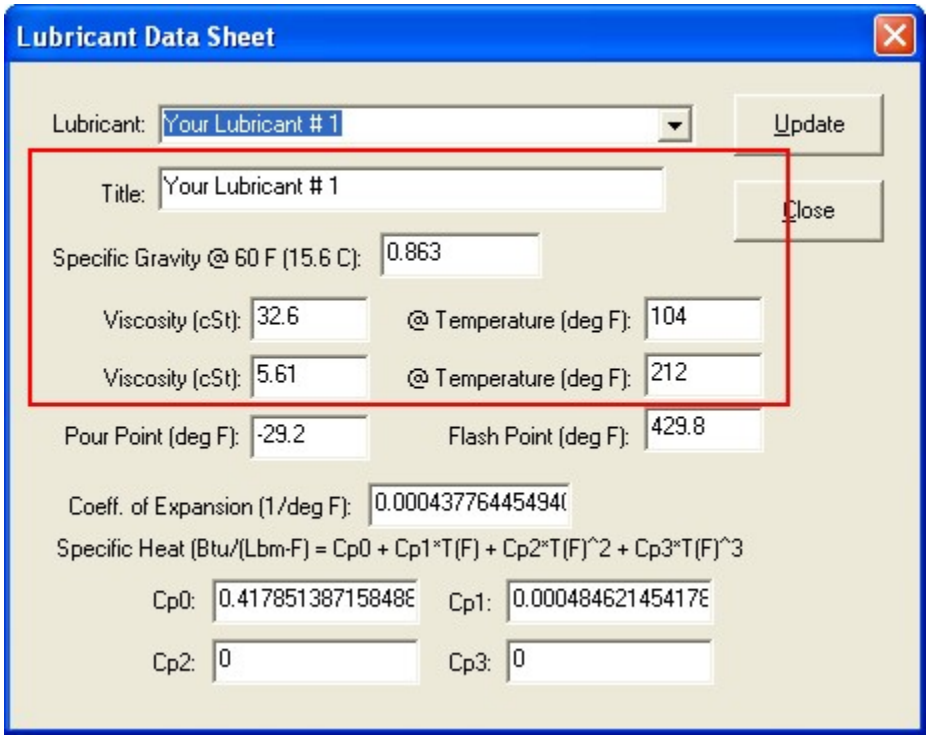
Part 3 - Modify the Lubricant Library

The lubricant properties are stored in the library file: OilData.Oil. You can use the following two options to modify the lubricant properties as shown below:



1) The first option is the Single Entry option. This function has existed since Ver 1.0. This function allows you to modify the existing lubricant properties. However, the first 33 lubricants in the library cannot be modified. You can only modify the lubricants that you added.

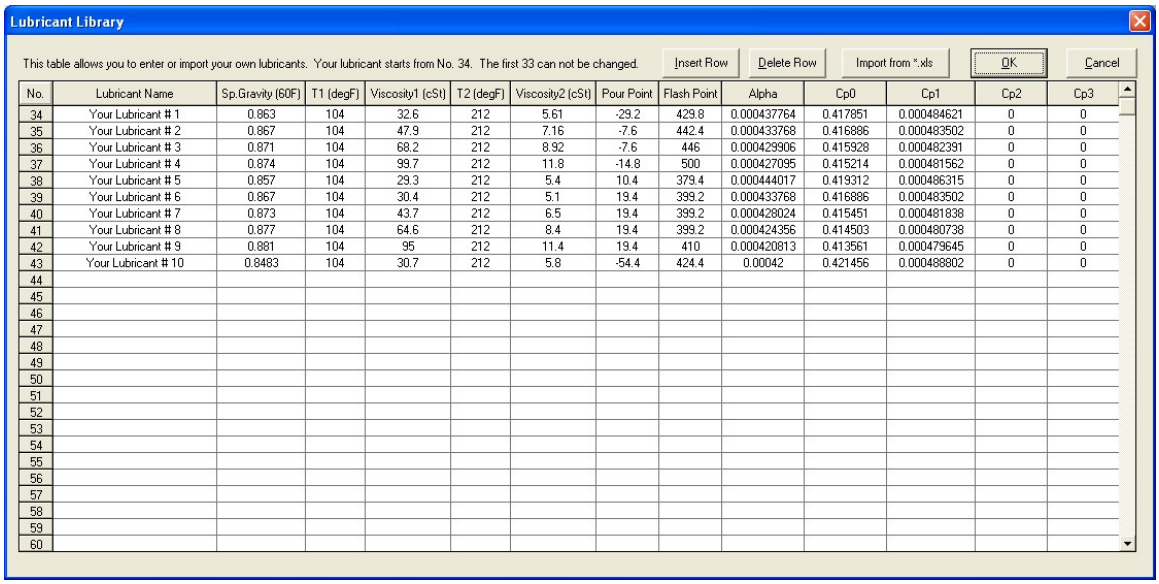




The Specific Gravity at 60 deg F and two viscosities at different temperatures are the most important parameters that cannot be zero. The Pour and Flash Points are only entered for reference purposes and not used in the calculation. If the Coefficient of Expansion (Alpha) and the Specific Heat Coefficients (Cp1, Cp1, Cp2, Cp3) are zeros,

the program will calculate these values for you based on the published papers and ASTM charts and table. So, if you do not know these values, enter zero.

2) The second option allows you to enter and modify the lubricants from a table. You may also import the lubricants from an Excel file (*.xls).



No.	Lubricant Name	Sp.Gravity (60F)	T1 (degF)	Viscosity1 (cSt)	T2 (degF)	Viscosity2 (cSt)	Pour Point	Flash Point	Alpha	Cp0	Cp1	Cp2	Cp3
34	Your Lubricant # 1	0.863	104	32.6	212	5.61	-29.2	429.8	0.000437764	0.417851	0.000484621	0	0
35	Your Lubricant # 2	0.867	104	47.9	212	7.16	-7.6	442.4	0.000433768	0.416886	0.000483502	0	0
36	Your Lubricant # 3	0.871	104	68.2	212	8.92	-7.6	446	0.000429906	0.415928	0.000482391	0	0
37	Your Lubricant # 4	0.874	104	99.7	212	11.8	-14.8	500	0.000427095	0.415214	0.000481562	0	0
38	Your Lubricant # 5	0.857	104	29.3	212	5.4	10.4	379.4	0.000444017	0.419312	0.000486315	0	0
39	Your Lubricant # 6	0.867	104	30.4	212	5.1	19.4	399.2	0.000433768	0.416886	0.000483502	0	0
40	Your Lubricant # 7	0.873	104	43.7	212	6.5	19.4	399.2	0.000428024	0.415451	0.000481838	0	0
41	Your Lubricant # 8	0.877	104	64.6	212	8.4	19.4	399.2	0.000424356	0.414503	0.000480738	0	0
42	Your Lubricant # 9	0.881	104	95	212	11.4	19.4	410	0.000420813	0.413561	0.000479645	0	0
43	Your Lubricant # 10	0.8483	104	30.7	212	5.8	-54.4	424.4	0.00042	0.421456	0.000488802	0	0
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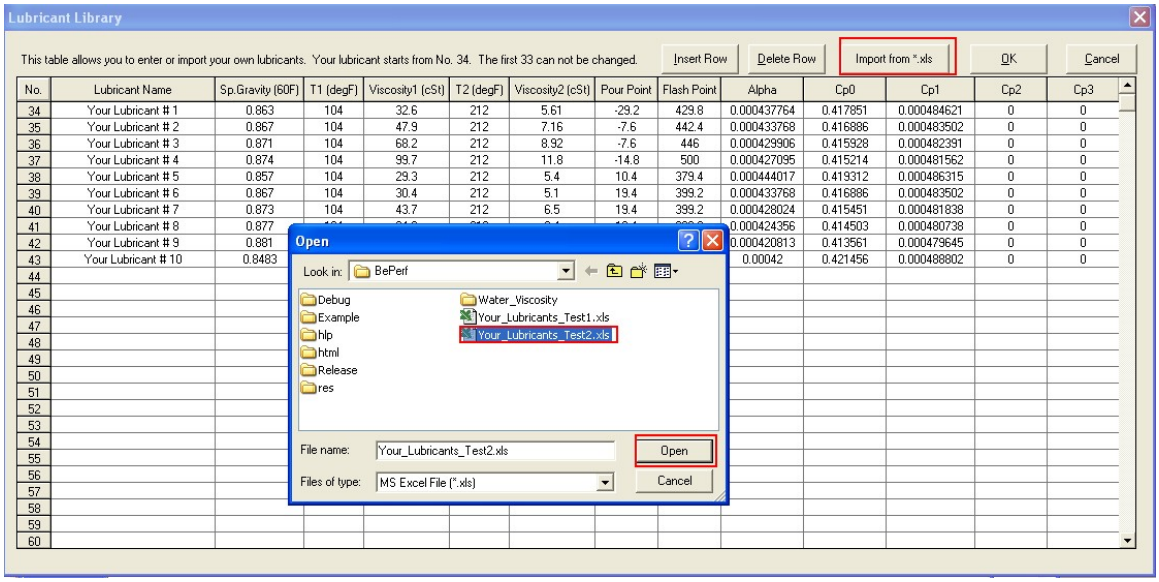

No.	Lubricant Name	Sp.Gravity (60F)	T1 (degF)	Viscosity1 (cSt)	T2 (degF)	Viscosity2 (cSt)	Pour Point	Flash Point	Alpha	Cp0	Cp1	Cp2	Cp3
34	Your Lubricant # 1	0.863	104	32.6	212	5.61	-29.2	429.8	0.000437764	0.417851	0.000484621	0	0
35	Your Lubricant # 2	0.867	104	47.9	212	7.16	-7.6	442.4	0.000433768	0.416886	0.000483502	0	0
36	Your Lubricant # 3	0.871	104	68.2	212	8.92	-7.6	446	0.000429906	0.415928	0.000482391	0	0
37	Your Lubricant # 4	0.874	104	99.7	212	11.8	-14.8	500	0.000427095	0.415214	0.000481562	0	0
38	Your Lubricant # 5	0.857	104	29.3	212	5.4	10.4	379.4	0.000444017	0.419312	0.000486315	0	0
39	Your Lubricant # 6	0.867	104	30.4	212	5.1	19.4	399.2	0.000433768	0.416886	0.000483502	0	0
40	Your Lubricant # 7	0.873	104	43.7	212	6.5	19.4	399.2	0.000428024	0.415451	0.000481838	0	0
41	Your Lubricant # 8	0.877							0.000424356	0.414503	0.000480738	0	0
42	Your Lubricant # 9	0.881							0.000420813	0.413561	0.000479645	0	0
43	Your Lubricant # 10	0.8483							0.00042	0.421456	0.000488802	0	0
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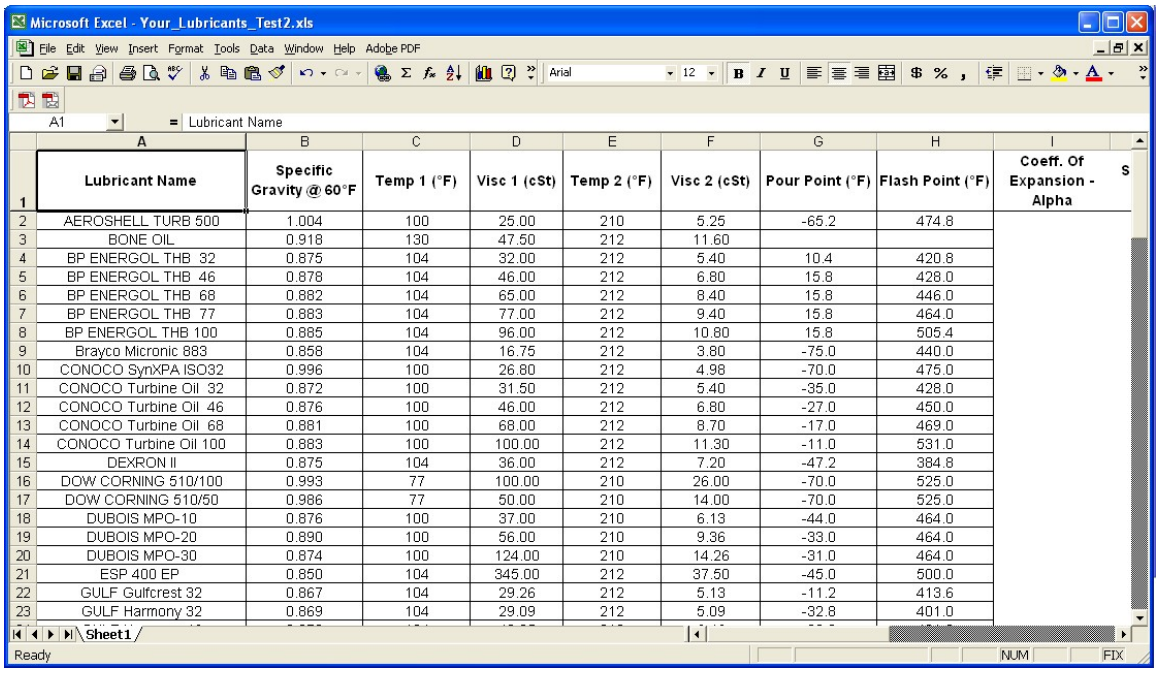
The xls file was created using MS Excel as shown below. Since the Coefficients and Expansion and Specific Heat Coefficients are , they are blank in the xls file.



Microsoft Excel - Your_Lubricants_Test2.xls

File Edit View Insert Format Tools Data Window Help Adobe PDF

A1 = Lubricant Name

	A	B	C	D	E	F	G	H	I
1	Lubricant Name	Specific Gravity @ 60°F	Temp 1 (°F)	Visc 1 (cSt)	Temp 2 (°F)	Visc 2 (cSt)	Pour Point (°F)	Flash Point (°F)	Coeff. Of Expansion - Alpha
2	AEROSHELL TURB 500	1.004	100	25.00	210	5.25	-65.2	474.8	
3	BONE OIL	0.918	130	47.50	212	11.60			
4	BP ENERGOL THB 32	0.875	104	32.00	212	5.40	10.4	420.8	
5	BP ENERGOL THB 46	0.878	104	46.00	212	6.80	15.8	428.0	
6	BP ENERGOL THB 68	0.882	104	65.00	212	8.40	15.8	446.0	
7	BP ENERGOL THB 77	0.883	104	77.00	212	9.40	15.8	464.0	
8	BP ENERGOL THB 100	0.885	104	96.00	212	10.80	15.8	505.4	
9	Brayco Micronic 883	0.858	104	16.75	212	3.80	-75.0	440.0	
10	CONOCO SynXPA ISO32	0.996	100	26.80	212	4.98	-70.0	475.0	
11	CONOCO Turbine Oil 32	0.872	100	31.50	212	5.40	-35.0	428.0	
12	CONOCO Turbine Oil 46	0.876	100	46.00	212	6.80	-27.0	450.0	
13	CONOCO Turbine Oil 68	0.881	100	68.00	212	8.70	-17.0	469.0	
14	CONOCO Turbine Oil 100	0.883	100	100.00	212	11.30	-11.0	531.0	
15	DEXRON II	0.875	104	36.00	212	7.20	-47.2	384.8	
16	DOW CORNING 510/100	0.993	77	100.00	210	26.00	-70.0	525.0	
17	DOW CORNING 510/50	0.986	77	50.00	210	14.00	-70.0	525.0	
18	DUBOIS MPO-10	0.876	100	37.00	210	6.13	-44.0	464.0	
19	DUBOIS MPO-20	0.890	100	56.00	210	9.36	-33.0	464.0	
20	DUBOIS MPO-30	0.874	100	124.00	210	14.26	-31.0	464.0	
21	ESP 400 EP	0.850	104	345.00	212	37.50	-45.0	500.0	
22	GULF Gulfcrest 32	0.867	104	29.26	212	5.13	-11.2	413.6	
23	GULF Harmony 32	0.869	104	29.09	212	5.09	-32.8	401.0	

Sheet1

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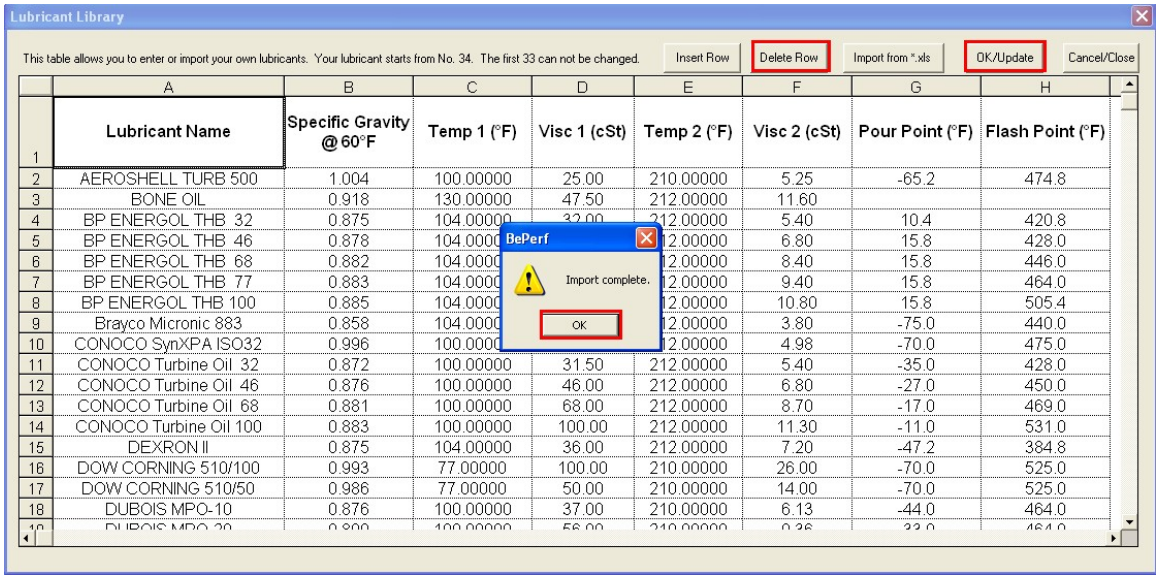

Lubricant Library

This table allows you to enter or import your own lubricants. Your lubricant starts from No. 34. The first 33 can not be changed.

Insert Row | Delete Row | Import from *.xls | OK/Update | Cancel/Close

	A	B	C	D	E	F	G	H
1	Lubricant Name	Specific Gravity @ 60°F	Temp 1 (°F)	Visc 1 (cSt)	Temp 2 (°F)	Visc 2 (cSt)	Pour Point (°F)	Flash Point (°F)
2	AEROSHELL TURB 500	1.004	100.00000	25.00	210.00000	5.25	-65.2	474.8
3	BONE OIL	0.918	130.00000	47.50	212.00000	11.60		
4	BP ENERGOL THB 32	0.875	104.00000	32.00	212.00000	5.40	10.4	420.8
5	BP ENERGOL THB 46	0.878	104.0000		12.00000	6.80	15.8	428.0
6	BP ENERGOL THB 68	0.882	104.0000		12.00000	8.40	15.8	446.0
7	BP ENERGOL THB 77	0.883	104.0000		12.00000	9.40	15.8	464.0
8	BP ENERGOL THB 100	0.885	104.0000		12.00000	10.80	15.8	505.4
9	Brayco Micronic 883	0.858	104.0000		12.00000	3.80	-75.0	440.0
10	CONOCO SynXPA ISO32	0.996	100.0000		12.00000	4.98	-70.0	475.0
11	CONOCO Turbine Oil 32	0.872	100.00000	31.50	212.00000	5.40	-35.0	428.0
12	CONOCO Turbine Oil 46	0.876	100.00000	46.00	212.00000	6.80	-27.0	450.0
13	CONOCO Turbine Oil 68	0.881	100.00000	68.00	212.00000	8.70	-17.0	469.0
14	CONOCO Turbine Oil 100	0.883	100.00000	100.00	212.00000	11.30	-11.0	531.0
15	DEXRON II	0.875	104.00000	36.00	212.00000	7.20	-47.2	384.8
16	DOW CORNING 510/100	0.993	77.00000	100.00	210.00000	26.00	-70.0	525.0
17	DOW CORNING 510/50	0.986	77.00000	50.00	210.00000	14.00	-70.0	525.0
18	DUBOIS MPO-10	0.876	100.00000	37.00	210.00000	6.13	-44.0	464.0

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Import complete.

OK

After imported the file, Click OK. Since the first line (row) is not the lubricant data, just a description used in the xls file, so click the first line to highlight it and then click Delete Row to delete this line. Then click OK/Update to update the lubricant library. Once the OK/Update is clicked, the lubricant library is updated. You can also use this option to modify multiple lubricants in this table.