Package Checking Calculation Worksheet - Density Meter Method - Draft 1

	Product		10W-30 Oil	H2O	milk, homo	mineral spirits	mineral spirits
Barometer	air temp, °C		15	20	20	20	20
	barometric press, mmHg		760	760	760	760	760
Density	$\rho_{substance\ (g/cc)}$		**0.8500**	**0.9990**	**1.0290**	**0.8030**	**0.7984**
Meter	temperature substance	$t_{product}$, °C	**20**	**15.56**	**20**	**15.56**	**20.56**
Table	coefficient of expansion	alpha	**0.000830**	**0.000179**	**0.000256**	**0.000930**	**0.000930**
	reference temperature	$t_{refernce}$, °C	**15.56**	**20**	**4**	**15.56**	**15.56**
Table	Viscosity Correction	g/cc	**0.0003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**
Scale	total weight	pounds	**7.113**	**8.330**	**8.604**	**6.692**	**6.692**
Weight	tare	pounds	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
	net weight	pounds	7.113	8.330	8.604	6.692	6.692
	Test Package Content	Gallons	**1.000**	**1.001**	**0.999**	**1.000**	**1.001**
		over/short(+/-)	0.000	0.001	-0.001	0.000	0.001
	calculated from above net wt	fluid ounces	**128.0**	**128.1**	**127.9**	**128.0**	**128.1**
		over/short(+/-)	**0.0**	**0.1**	**-0.1**	**0.0**	**0.1**
		ml	**3785**	**3789**	**3781**	**3785**	**3789**
		over/short(+/-)	0	4	-4	0	4
		liter	**3.785**	**3.789**	**3.781**	**3.785**	**3.789**
		over/short(+/-)	0.000	0.004	-0.004	0.000	0.004
	Density of air		0.0012	0.0012	0.0012	0.0012	0.0012
	density reference temp		0.8534	0.9982	1.0332	0.8030	0.8021
	Apparent Density		0.8523	0.9972	1.0322	0.8019	0.8010
	App Mass, lb (gal @ ref T)		7.113100	8.321732	8.613838	6.692313	6.684906
	lb X factor	gal	0.140586	0.120167	0.116092	0.149425	0.149591
		floz	17.995	15.381	14.860	19.126	19.148
			109.098	127.764	131.966	102.640	102.640