



QuantityWare Working Paper

Annex B - Comparison of ASTM D1250 Standard Implementations

Detailed results for 90 % “real life” calculation grid

Version History

Version	Date	Description
00	2010-12-17	Initial Version
01	2021-07-09	Modern QW document style applied
02	2023-11-01	Editorial revision and confirmation

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1. ASTM D1250-80 and ASTM D1250-04 - 90 % grid results



Editorial Note:

The decimal point and thousand separators for numbers and quantity values for this document are defined as follows: The decimal point is a comma ',', the thousand separator is a dot '.'. Example: 123.456.789,987

1.1. Table 5A – crude oil, 60 °F base temperature – detailed results

Comparison grid:

Observed temperature: 14 °F to 104 °F, increment 0,2 °F

Observed density: -10 °API to 100 °API, increment 0,1 °API

Quantity compared: Base API gravity @ 60 °F

Absolute numbers:

NSC: Number of successful calculations (may be smaller than calculated grid points)

NDF: Number of deviations found

NDG: Number of deviations where 2004 result lies above 1980 result

NDL: Number of deviations where 2004 result lies below 1980 result

NDD1: Number of deviations which differ by one result grid rounding increment

NDG1: Number of deviations which differ by more than one result grid rounding increment

MAXD: Maximum deviation found

TLCB: Temperature value closest to base at which maximum deviation occurs

DTLCB: Density value for closest temperature value where maximum deviation occurs

Calculated % ratios:

P : % value of differences: $(NDF / NSC) * 100$

PG: % value of deviations - 2004 value above 1980 value: $(NDG / NDF) * 100$

PL: % value of deviations - 2004 value below 1980 value: $(NDL / NDF) * 100$

P1: % value of deviations - deviation one result grid increment: $(NDD1 / NSC) * 100$

PX: % value of deviations - deviation above one result grid increment: $(NDG1 / NSC) * 100$

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	482.913	8.654	6.547	2.107	8.654	0	0,1	59,6	60,0
2	247.58	1.813	921	892	1.813	0	0,1	59,4	37,5
3	247.58	1.813	921	892	1.813	0	0,1	59,4	37,5
4	235.333	6.841	5.626	1.215	6.841	0	0,1	59,6	60,0
5	235.333	6.841	5.626	1.215	6.841	0	0,1	59,6	60,0

C		P	PG	PL	P1	PX	
1		1,8%	75,7%	24,3%	1,8%	0,0%	2004 R./2004 Inc.
2		0,7%	50,8%	49,2%	0,7%	0,0%	1980 R./2004 Inc.
3		0,7%	50,8%	49,2%	0,7%	0,0%	1980 R./1980 Inc.
4		2,9%	82,2%	17,8%	2,9%	0,0%	1980 Ext. R/2004 Inc.
5		2,9%	82,2%	17,8%	2,9%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	242.285	4.357	3.927	430	4.357	0	0,1	59,6	60,0
2	122.905	891	713	178	891	0	0,1	59,4	37,5
3	122.905	891	713	178	891	0	0,1	59,4	37,5
4	119.38	3.466	3.214	252	3.466	0	0,1	59,6	60,0
5	119.38	3.466	3.214	252	3.466	0	0,1	59,6	60,0

C		P	PG	PL	P1	PX	
1		1,8%	90,1%	9,9%	1,8%	0,0%	2004 R./2004 Inc.
2		0,7%	80,0%	20,0%	0,7%	0,0%	1980 R./2004 Inc.
3		0,7%	80,0%	20,0%	0,7%	0,0%	1980 R./1980 Inc.
4		2,9%	92,7%	7,3%	2,9%	0,0%	1980 Ext. R/2004 Inc.
5		2,9%	92,7%	7,3%	2,9%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	240.628	4.297	2.62	1.677	4.297	0	0,1	60,4	60,6
2	124.675	922	208	714	922	0	0,1	60,6	37,6
3	124.675	922	208	714	922	0	0,1	60,6	37,6
4	115.953	3.375	2.412	963	3.375	0	0,1	60,4	60,6
5	115.953	3.375	2.412	963	3.375	0	0,1	60,4	60,6

C		P	PG	PL	P1	PX	
1		1,8%	61,0%	39,0%	1,8%	0,0%	2004 R./2004 Inc.
2		0,7%	22,6%	77,4%	0,7%	0,0%	1980 R./2004 Inc.
3		0,7%	22,6%	77,4%	0,7%	0,0%	1980 R./1980 Inc.
4		2,9%	71,5%	28,5%	2,9%	0,0%	1980 Ext. R/2004 Inc.
5		2,9%	71,5%	28,5%	2,9%	0,0%	1980 Ext./1980 Inc.

1.2. Table 5B – products, 60 °F base temperature – detailed results

Comparison grid:

Observed temperature: 14 °F to 104 °F, increment 0,2 °F

Observed density: -10 °API to 100 °API, increment 0,1 °API

Quantity compared: Base API gravity @ 60 °F

Absolute numbers:

NSC: Number of successful calculations (may be smaller than calculated grid points)

NDF: Number of deviations found

NDG: Number of deviations where 2004 result lies above 1980 result

NDL: Number of deviations where 2004 result lies below 1980 result

NDD1: Number of deviations which differ by one result grid rounding increment

NDG1: Number of deviations which differ by more than one result grid rounding increment

MAXD: Maximum deviation found

TLCB: Temperature value closest to base at which maximum deviation occurs

DTLCB: Density value for closest temperature value where maximum deviation occurs

Calculated % ratios:

P : % value of differences: $(NDF / NSC) * 100$

PG: % value of deviations - 2004 value above 1980 value: $(NDG / NDF) * 100$

PL: % value of deviations - 2004 value below 1980 value: $(NDL / NDF) * 100$

P1: % value of deviations - deviation one result grid increment: $(NDD1 / NSC) * 100$

PX: % value of deviations - deviation above one result grid increment: $(NDG1 / NSC) * 100$

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	482.569	8.742	6.658	2.084	8.742	0	0,1	59,6	54,7
2	382.363	3.492	1.782	1.71	3.492	0	0,1	59,6	54,7
3	382.363	3.492	1.782	1.71	3.492	0	0,1	59,6	54,7
4	100.206	5.25	4.876	374	5.25	0	0,1	59,2	88,6
5	100.206	5.25	4.876	374	5.25	0	0,1	59,2	88,6

C	P	PG	PL	P1	PX	
1	1,8%	76,2%	23,8%	1,8%	0,0%	2004 R./2004 Inc.
2	0,9%	51,0%	49,0%	0,9%	0,0%	1980 R./2004 Inc.
3	0,9%	51,0%	49,0%	0,9%	0,0%	1980 R./1980 Inc.
4	5,2%	92,9%	7,1%	5,2%	0,0%	1980 Ext. R/2004 Inc.
5	5,2%	92,9%	7,1%	5,2%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	242.279	4.451	4.043	408	4.451	0	0,1	59,6	54,7
2	188.672	1.772	1.436	336	1.772	0	0,1	59,6	54,7
3	188.672	1.772	1.436	336	1.772	0	0,1	59,6	54,7
4	53.607	2.679	2.607	72	2.679	0	0,1	59,2	88,6
5	53.607	2.679	2.607	72	2.679	0	0,1	59,2	88,6

C	P	PG	PL	P1	PX	
1	1,8%	90,8%	9,2%	1,8%	0,0%	2004 R./2004 Inc.
2	0,9%	81,0%	19,0%	0,9%	0,0%	1980 R./2004 Inc.
3	0,9%	81,0%	19,0%	0,9%	0,0%	1980 R./1980 Inc.
4	5,0%	97,3%	2,7%	5,0%	0,0%	1980 Ext. R/2004 Inc.
5	5,0%	97,3%	2,7%	5,0%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	240.29	4.291	2.615	1.676	4.291	0	0,1	60,4	55,3
2	193.691	1.72	346	1.374	1.72	0	0,1	60,4	55,3
3	193.691	1.72	346	1.374	1.72	0	0,1	60,4	55,3
4	46.599	2.571	2.269	104	2.571	0	0,1	60,8	88,9
5	46.599	2.571	2.269	104	2.571	0	0,1	60,8	88,9

C	P	PG	PL	P1	PX	
1	1,8%	60,9%	39,1%	1,8%	0,0%	2004 R./2004 Inc.
2	0,9%	20,1%	79,9%	0,9%	0,0%	1980 R./2004 Inc.
3	0,9%	20,1%	79,9%	0,9%	0,0%	1980 R./1980 Inc.
4	5,5%	88,3%	11,7%	5,5%	0,0%	1980 Ext. R/2004 Inc.
5	5,5%	88,3%	11,7%	5,5%	0,0%	1980 Ext./1980 Inc.

1.3. Table 5D – lubricants, 60 °F base temperature – detailed results

Comparison grid:

Observed temperature: 14°F to 104 °F, increment 0,2 °F

Observed density: -10 °API to 45 °API, increment 0,1 °API

Quantity compared: Base API gravity @ 60 °F

Absolute numbers:

NSC: Number of successful calculations (may be smaller than calculated grid points)

NDF: Number of deviations found

NDG: Number of deviations where 2004 result lies above 1980 result

NDL: Number of deviations where 2004 result lies below 1980 result

NDD1: Number of deviations which differ by one result grid rounding increment

NDG1: Number of deviations which differ by more than one result grid rounding increment

MAXD: Maximum deviation found

TLCB: Temperature value closest to base at which maximum deviation occurs

DTLCB: Density value for closest temperature value where maximum deviation occurs

Calculated % ratios:

P : % value of differences: $(NDF / NSC) * 100$

PG: % value of deviations - 2004 value above 1980 value: $(NDG / NDF) * 100$

PL: % value of deviations - 2004 value below 1980 value: $(NDL / NDF) * 100$

P1: % value of deviations - deviation one result grid increment: $(NDD1 / NSC) * 100$

PX: % value of deviations - deviation above one result grid increment: $(NDG1 / NSC) * 100$

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	241.728	5.616	4.964	652	5.616	0	0,1	59,2	26,5
2	241.728	5.616	4.964	652	5.616	0	0,1	59,2	26,5
3	241.728	5.616	4.964	652	5.616	0	0,1	59,2	26,5
4	0	0	0	0	0	0	0,0	0,0	0,0
5	0	0	0	0	0	0	0,0	0,0	0,0

C	P	PG	PL	P1	PX	
1	2,3%	88,4%	11,6%	2,3%	0,0%	2004 R./2004 Inc.
2	2,3%	88,4%	11,6%	2,3%	0,0%	1980 R./2004 Inc.
3	2,3%	88,4%	11,6%	2,3%	0,0%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	122.606	2.828	2.663	165	2.828	0	0,1	59,2	26,5
2	122.606	2.828	2.663	165	2.828	0	0,1	59,2	26,5
3	122.606	2.828	2.663	165	2.828	0	0,1	59,2	26,5
4	0	0	0	0	0	0	0,0	0,0	0,0
5	0	0	0	0	0	0	0,0	0,0	0,0

C	P	PG	PL	P1	PX	
1	2,3%	94,2%	5,8%	2,3%	0,0%	2004 R./2004 Inc.
2	2,3%	94,2%	5,8%	2,3%	0,0%	1980 R./2004 Inc.
3	2,3%	94,2%	5,8%	2,3%	0,0%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	119.122	2.788	2.301	487	2.788	0	0,1	60,8	26,9
2	119.122	2.788	2.301	487	2.788	0	0,1	60,8	26,9
3	119.122	2.788	2.301	487	2.788	0	0,1	60,8	26,9
4	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0

C	P	PG	PL	P1	PX	
1	2,3%	82,5%	17,5%	2,3%	0,0%	2004 R./2004 Inc.
2	2,3%	82,5%	17,5%	2,3%	0,0%	1980 R./2004 Inc.
3	2,3%	82,5%	17,5%	2,3%	0,0%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

1.4. Table 23A – crude oil, 60 °F base temperature – detailed results

Comparison grid:

Observed temperature: 14 °F to 104 °F, increment 0,2 °F

Observed density: 0,6112 relative density to 1,1646 relative density, increment 0,0001 relative density

Quantity compared: Base relative density @ 60 °F

Absolute numbers:

NSC: Number of successful calculations (may be smaller than calculated grid points)

NDF: Number of deviations found

NDG: Number of deviations where 2004 result lies above 1980 result

NDL: Number of deviations where 2004 result lies below 1980 result

NDD1: Number of deviations which differ by one result grid rounding increment

NDG1: Number of deviations which differ by more than one result grid rounding increment

MAXD: Maximum deviation found

TLCB: Temperature value closest to base at which maximum deviation occurs

DTLCB: Density value for closest temperature value where maximum deviation occurs

Calculated % ratios:

P : % value of differences: $(NDF / NSC) * 100$

PG: % value of deviations - 2004 value above 1980 value: $(NDG / NDF) * 100$

PL: % value of deviations - 2004 value below 1980 value: $(NDL / NDF) * 100$

P1: % value of deviations - deviation one result grid increment: $(NDD1 / NSC) * 100$

PX: % value of deviations - deviation above one result grid increment: $(NDG1 / NSC) * 100$

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	2.447.002	1.957.166	979.502	977.664	979.303	977.86	0,0003	59,6	0,8853
2	2.063.968	1.650.885	826.427	824.458	825.963	824.92	0,0003	59,6	0,8853
3	412.752	13.807	6.551	7.256	13.807	0	0,0001	59,6	0,8855
4	383.034	306.281	153.075	153.206	153.34	152.94	0,0003	59,2	10,773
5	76.654	2.261	1.173	1.088	2.261	0	0,0001	59,2	10,775

C	P	PG	PL	P1	PX	
1	80,0%	50,0%	50,0%	40,0%	40,0%	2004 R./2004 Inc.
2	80,0%	50,1%	49,9%	40,0%	40,0%	1980 R./2004 Inc.
3	3,3%	47,4%	52,6%	3,3%	0,0%	1980 R./1980 Inc.
4	80,0%	50,0%	50,0%	40,0%	39,9%	1980 Ext. R/2004 Inc.
5	2,9%	51,9%	48,1%	2,9%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.243.484	997.145	493.468	503.677	492.548	504.6	0,0003	59,6	0,8853
2	1.056.534	847.458	419.334	428.124	418.138	429.32	0,0003	59,6	0,8853
3	211.309	7.256	964	6.292	7.256	0	0,0001	59,6	0,8855
4	186.95	149.687	74.134	75.553	74.41	75.277	0,0003	59,2	10,773
5	37.436	1.089	229	860	1.089	0	0,0001	59,2	10,775

C	P	PG	PL	P1	PX	
1	80,2%	49,5%	50,5%	39,6%	40,6%	2004 R./2004 Inc.
2	80,2%	49,5%	50,5%	39,6%	40,6%	1980 R./2004 Inc.
3	3,4%	13,3%	86,7%	3,4%	0,0%	1980 R./1980 Inc.
4	80,1%	49,5%	50,5%	39,8%	40,3%	1980 Ext. R/2004 Inc.
5	2,9%	21,0%	79,0%	2,9%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.203.518	960.021	486.034	473.987	486.755	473.27	0,0003	60,4	0,8967
2	1.007.434	803.427	407.093	396.334	407.825	395.6	0,0003	60,4	0,8967
3	201.443	6.551	5.587	964	6.551	0	0,0001	60,4	0,8965
4	196.084	156.594	78.941	77.653	78.93	77.664	0,0003	60,8	10,787
5	39.218	1.172	944	228	1.172	0	0,0001	60,8	10,785

C	P	PG	PL	P1	PX	
1	79,8%	50,6%	49,4%	40,4%	39,3%	2004 R./2004 Inc.
2	79,7%	50,7%	49,3%	40,5%	39,3%	1980 R./2004 Inc.
3	3,3%	85,3%	14,7%	3,3%	0,0%	1980 R./1980 Inc.
4	79,9%	50,4%	49,6%	40,3%	39,6%	1980 Ext. R/2004 Inc.
5	3,0%	80,5%	19,5%	3,0%	0,0%	1980 Ext./1980 Inc.

1.5. Table 23B – products, 60 °F base temperature – detailed results

Comparison grid:

Observed temperature: 14 °F to 104 °F, increment 0,2 °F

Observed density: 0,6112 relative density to 1,1646 relative density, increment 0,0001 relative density

Quantity compared: Base relative density @ 60 °F

Absolute numbers:

NSC: Number of successful calculations (may be smaller than calculated grid points)

NDF: Number of deviations found

NDG: Number of deviations where 2004 result lies above 1980 result

NDL: Number of deviations where 2004 result lies below 1980 result

NDD1: Number of deviations which differ by one result grid rounding increment

NDG1: Number of deviations which differ by more than one result grid rounding increment

MAXD: Maximum deviation found

TLCB: Temperature value closest to base at which maximum deviation occurs

DTLCB: Density value for closest temperature value where maximum deviation occurs

Calculated % ratios:

P : % value of differences: $(NDF / NSC) * 100$

PG: % value of deviations - 2004 value above 1980 value: $(NDG / NDF) * 100$

PL: % value of deviations - 2004 value below 1980 value: $(NDL / NDF) * 100$

P1: % value of deviations - deviation one result grid increment: $(NDD1 / NSC) * 100$

PX: % value of deviations - deviation above one result grid increment: $(NDG1 / NSC) * 100$

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	2.443.773	1.954.062	977.59	976.48	978.034	976.03	0,0003	59,6	0,8858
2	1.901.135	1.519.923	760.41	759.51	761.073	758.85	0,0003	59,6	0,8858
3	380.227	12.545	6.097	6.448	12.545	0	0,0001	59,6	0,8860
4	542.638	434.139	217.17	216.97	216.961	217.18	0,0003	59,6	10,787
5	108.527	3.467	1.717	1.75	3.467	0	0,0001	59,6	10,785

C	P	PG	PL	P1	PX	
1	80,0%	50,0%	50,0%	40,0%	39,9%	2004 R./2004 Inc.
2	79,9%	50,0%	50,0%	40,0%	39,9%	1980 R./2004 Inc.
3	3,3%	48,6%	51,4%	3,3%	0,0%	1980 R./1980 Inc.
4	80,0%	50,0%	50,0%	40,0%	40,0%	1980 Ext. R/2004 Inc.
5	3,2%	49,5%	50,5%	3,2%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.243.464	996.151	492.88	503.27	493.777	502.37	0,0003	59,6	0,8858
2	963.005	771.597	381.7	389.9	382.028	389.57	0,0003	59,6	0,8858
3	192.601	6.511	994	5.517	6.511	0	0,0001	59,6	0,8860
4	280.459	224.554	111.18	113.37	111.749	112.81	0,0003	59,6	10,787
5	56.137	1.8	104	1.498	1.8	0	0,0001	59,6	10,785

C	P	PG	PL	P1	PX	
1	80,1%	49,5%	50,5%	39,7%	40,4%	2004 R./2004 Inc.
2	80,1%	49,5%	50,5%	39,7%	40,5%	1980 R./2004 Inc.
3	3,4%	15,3%	84,7%	3,4%	0,0%	1980 R./1980 Inc.
4	80,1%	49,5%	50,5%	39,8%	40,2%	1980 Ext. R/2004 Inc.
5	3,2%	16,8%	83,2%	3,2%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.200.309	957.911	484.71	473.2	484.257	473.65	0,0003	60,4	0,8967
2	938.13	748.326	378.72	369.61	379.045	369.28	0,0003	60,4	0,8967
3	187.626	6.034	5.103	931	6.034	0	0,0001	60,4	0,8965
4	262.179	209.585	105.99	103.59	105.212	104.37	0,0003	60,4	10,768
5	52.39	1.667	1.415	252	1.667	0	0,0001	60,4	10,770

C	P	PG	PL	P1	PX	
1	79,8%	50,6%	49,4%	40,3%	39,5%	2004 R./2004 Inc.
2	79,8%	50,6%	49,4%	40,4%	39,4%	1980 R./2004 Inc.
3	3,2%	84,6%	15,4%	3,2%	0,0%	1980 R./1980 Inc.
4	79,9%	50,6%	49,4%	40,1%	39,8%	1980 Ext. R/2004 Inc.
5	3,2%	84,9%	15,1%	3,2%	0,0%	1980 Ext./1980 Inc.

1.6. Table 23D – lubricants, 60 °F base temperature – detailed results

Comparison grid:

Observed temperature: 14 °F to 104 °F, increment 0,2 °F

Observed density: 0,8017 relative density to 1,1646 relative density, increment 0,0001 relative density

Quantity compared: Base relative density @ 60 °F

Absolute numbers:

NSC: Number of successful calculations (may be smaller than calculated grid points)

NDF: Number of deviations found

NDG: Number of deviations where 2004 result lies above 1980 result

NDL: Number of deviations where 2004 result lies below 1980 result

NDD1: Number of deviations which differ by one result grid rounding increment

NDG1: Number of deviations which differ by more than one result grid rounding increment

MAXD: Maximum deviation found

TLCB: Temperature value closest to base at which maximum deviation occurs

DTLCB: Density value for closest temperature value where maximum deviation occurs

Calculated % ratios:

P : % value of differences: $(NDF / NSC) * 100$

PG: % value of deviations - 2004 value above 1980 value: $(NDG / NDF) * 100$

PL: % value of deviations - 2004 value below 1980 value: $(NDL / NDF) * 100$

P1: % value of deviations - deviation one result grid increment: $(NDD1 / NSC) * 100$

PX: % value of deviations - deviation above one result grid increment: $(NDG1 / NSC) * 100$

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.598.058	1.278.437	638.375	640.06	639.24	639.19	0,0003	59,0	0,8057
2	1.596.732	1.277.379	637.975	639.4	638.71	638.67	0,0003	59,0	0,8057
3	319.347	9.209	4.18	5.029	9.209	0	0,0001	59,0	0,8055
4	1.326	1.058	400	658	536	522	0,0003	91,0	11,537
5	267	6	6	0	6	0	0,0001	71,6	11,605

C	P	PG	PL	P1	PX	
1	80,0%	49,9%	50,1%	40,0%	40,0%	2004 R./2004 Inc.
2	80,0%	49,9%	50,1%	40,0%	40,0%	1980 R./2004 Inc.
3	2,9%	45,4%	54,6%	2,9%	0,0%	1980 R./1980 Inc.
4	79,8%	37,8%	62,2%	40,4%	39,4%	1980 Ext. R/2004 Inc.
5	2,2%	100,0%	0,0%	2,2%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	816.336	653.019	323.837	329.18	326.64	326.38	0,0003	59,0	0,8057
2	816.312	653.001	323.831	329.17	326.62	326.38	0,0003	59,0	0,8057
3	163.307	5.002	1.154	3.848	5.002	0	0,0001	59,0	0,8055
4	24	18	6	12	12	6	0,0002	59,8	11,643
5	6	0	0	0	0	0	0,0000	0,0	0,0000

C	P	PG	PL	P1	PX	
1	80,0%	49,6%	50,4%	40,0%	40,0%	2004 R./2004 Inc.
2	80,0%	49,6%	50,4%	40,0%	40,0%	1980 R./2004 Inc.
3	3,1%	23,1%	76,9%	3,1%	0,0%	1980 R./1980 Inc.
4	75,0%	33,3%	66,7%	50,0%	25,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	781.722	625.418	314.538	310.88	312.61	312.81	0,0003	61,0	0,8
2	780.42	624.378	314.144	310.23	312.09	312.29	0,0003	61,0	0,8
3	156.04	4.207	3.026	1.181	4.207	0	0,0001	61,0	0,8
4	1.302	1.04	394	646	524	516	0,0003	91,0	1,2
5	261	6	6	0	6	0	0,0001	71,6	1,2

C	P	PG	PL	P1	PX	
1	80,0%	50,3%	49,7%	40,0%	40,0%	2004 R./2004 Inc.
2	80,0%	50,3%	49,7%	40,0%	40,0%	1980 R./2004 Inc.
3	2,7%	71,9%	28,1%	2,7%	0,0%	1980 R./1980 Inc.
4	79,9%	37,9%	62,1%	40,2%	39,6%	1980 Ext. R/2004 Inc.
5	2,3%	100,0%	0,0%	2,3%	0,0%	1980 Ext./1980 Inc.

1.7. Table 53A – crude oil, 15 °C base temperature – detailed results

Comparison grid:

Observed temperature: -10 °C to 40 °C, increment 0,1 °C

Observed density: 611,2 kg/m³ to 1.163,8 kg/m³, increment 0,1 kg/m³

Quantity compared: Base density / kg/m³ @ 15 °C

Absolute numbers:

NSC: Number of successful calculations (may be smaller than calculated grid points)

NDF: Number of deviations found

NDG: Number of deviations where 2004 result lies above 1980 result

NDL: Number of deviations where 2004 result lies below 1980 result

NDD1: Number of deviations which differ by one result grid rounding increment

NDG1: Number of deviations which differ by more than one result grid rounding increment

MAXD: Maximum deviation found

TLCB: Temperature value closest to base at which maximum deviation occurs

DTLCB: Density value for closest temperature value where maximum deviation occurs

Calculated % ratios:

P : % value of differences: $(NDF / NSC) * 100$

PG: % value of deviations - 2004 value above 1980 value: $(NDG / NDF) * 100$

PL: % value of deviations - 2004 value below 1980 value: $(NDL / NDF) * 100$

P1: % value of deviations - deviation one result grid increment: $(NDD1 / NSC) * 100$

PX: % value of deviations - deviation above one result grid increment: $(NDG1 / NSC) * 100$

Results ASTM D1250-80 standard rounding:

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	2.715.629	2.172.687	1.089.776	1.082.911	1.085.952	1.086.735	0,3	14,80	818,3
2	1.585.120	1.268.091	635.966	632.125	634.122	633.969	0,3	14,80	818,3
3	317.024	11.872	6.154	5.718	11.872	0	0,1	14,80	818,5
4	1.130.509	904.596	453.81	450.786	451.83	452.766	0,3	14,70	736,8
5	226.002	10.697	5.414	5.283	10.697	0	0,1	14,70	737,0

C	P	PG	PL	P1	PX	
1	80,0%	50,2%	49,8%	40,0%	40,0%	2004 R./2004 Inc.
2	80,0%	50,2%	49,8%	40,0%	40,0%	1980 R./2004 Inc.
3	3,7%	51,8%	48,2%	3,7%	0,0%	1980 R./1980 Inc.
4	80,0%	50,2%	49,8%	40,0%	40,0%	1980 Ext. R/2004 Inc.
5	4,7%	50,6%	49,4%	4,7%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.350.484	1.083.347	532.158	551.189	534.337	549.01	0,3	14,80	818,3
2	785.105	629.568	309.813	319.755	311.125	318.443	0,3	14,80	818,3
3	157.021	5.72	4	5.716	5.72	0	0,1	14,80	818,5
4	565.379	453.779	222.345	231.434	223.212	230.567	0,3	14,70	736,8
5	113.026	5.283	1	5.282	5.283	0	0,1	14,70	737,0

C	P	PG	PL	P1	PX	
1	80,2%	49,1%	50,9%	39,6%	40,7%	2004 R./2004 Inc.
2	80,2%	49,2%	50,8%	39,6%	40,6%	1980 R./2004 Inc.
3	3,6%	0,1%	99,9%	3,6%	0,0%	1980 R./1980 Inc.
4	80,3%	49,0%	51,0%	39,5%	40,8%	1980 Ext. R/2004 Inc.
5	4,7%	0,0%	100,0%	4,7%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.365.145	1.089.340	557.618	531.722	551.615	537.725	0,3	15,20	818,2
2	800.015	638.523	326.153	312.37	322.997	315.526	0,3	15,20	818,2
3	160.003	6.152	6.15	2	6.152	0	0,1	15,20	818,0
4	565.13	450.817	231.465	219.352	228.618	222.199	0,3	15,30	736,7
5	112.976	5.414	5.413	1	5.414	0	0,1	15,30	736,5

C	P	PG	PL	P1	PX	
1	79,8%	51,2%	48,8%	40,4%	39,4%	2004 R./2004 Inc.
2	79,8%	51,1%	48,9%	40,4%	39,4%	1980 R./2004 Inc.
3	3,8%	100,0%	0,0%	3,8%	0,0%	1980 R./1980 Inc.
4	79,8%	51,3%	48,7%	40,5%	39,3%	1980 Ext. R/2004 Inc.
5	4,8%	100,0%	0,0%	4,8%	0,0%	1980 Ext./1980 Inc.

Results ASTM D1250-80 with "German rounding" (Input data):

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	2.715.629	112.69	57.799	54.891	112.69	0	0,1	14,80	818,2
2	1.585.124	59.264	30.663	28.601	59.264	0	0,1	14,80	818,2
3	1.585.124	59.264	30.663	28.601	59.264	0	0,1	14,80	818,2
4	1.130.505	53.426	27.136	26.29	53.426	0	0,1	14,70	736,8
5	1.130.505	53.426	27.136	26.29	53.426	0	0,1	14,70	736,8

C		P	PG	PL	P1	PX	
1		4,1%	51,3%	48,7%	4,1%	0,0%	2004 R./2004 Inc.
2		3,7%	51,7%	48,3%	3,7%	0,0%	1980 R./2004 Inc.
3		3,7%	51,7%	48,3%	3,7%	0,0%	1980 R./1980 Inc.
4		4,7%	50,8%	49,2%	4,7%	0,0%	1980 Ext. R/2004 Inc.
5		4,7%	50,8%	49,2%	4,7%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.350.484	54.886	19	54.867	54.886	0	0,1	14,80	818,2
2	785.105	28.601	13	28.588	28.601	0	0,1	14,80	818,2
3	785.105	28.601	13	28.588	28.601	0	0,1	14,80	818,2
4	565.379	26.285	6	26.279	26.285	0	0,1	14,70	736,8
5	565.379	26.285	6	26.279	26.285	0	0,1	14,70	736,8

C		P	PG	PL	P1	PX	
1		4,1%	0,0%	100,0%	4,1%	0,0%	2004 R./2004 Inc.
2		3,6%	0,0%	100,0%	3,6%	0,0%	1980 R./2004 Inc.
3		3,6%	0,0%	100,0%	3,6%	0,0%	1980 R./1980 Inc.
4		4,6%	0,0%	100,0%	4,6%	0,0%	1980 Ext. R/2004 Inc.
5		4,6%	0,0%	100,0%	4,6%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.365.145	57.804	57.78	24	57.804	0	0,1	15,20	818,0
2	800.019	30.663	30.65	13	30.663	0	0,1	15,20	818,0
3	800.019	30.663	30.65	13	30.663	0	0,1	15,20	818,0
4	565.126	27.141	27.13	11	27.141	0	0,1	15,30	736,4
5	565.126	27.141	27.13	11	27.141	0	0,1	15,30	736,4

C		P	PG	PL	P1	PX	
1		4,2%	100,0%	0,0%	4,2%	0,0%	2004 R./2004 Inc.
2		3,8%	100,0%	0,0%	3,8%	0,0%	1980 R./2004 Inc.
3		3,8%	100,0%	0,0%	3,8%	0,0%	1980 R./1980 Inc.
4		4,8%	100,0%	0,0%	4,8%	0,0%	1980 Ext. R/2004 Inc.
5		4,8%	100,0%	0,0%	4,8%	0,0%	1980 Ext./1980 Inc.

1.8. Table 53B – products, 15 °C base temperature – detailed results

Comparison grid:

Observed temperature: -10 °C to 40 °C, increment 0,1 °C

Observed density: 611,2 kg/m³ to 1.163,9 kg/m³, increment 0,2 kg/m³

Quantity compared: Base density / kg/m³ @ 15 °C

Absolute numbers:

NSC: Number of successful calculations (may be smaller than calculated grid points)

NDF: Number of deviations found

NDG: Number of deviations where 2004 result lies above 1980 result

NDL: Number of deviations where 2004 result lies below 1980 result

NDD1: Number of deviations which differ by one result grid rounding increment

NDG1: Number of deviations which differ by more than one result grid rounding increment

MAXD: Maximum deviation found

TLCB: Temperature value closest to base at which maximum deviation occurs

DTLCB: Density value for closest temperature value where maximum deviation occurs

Calculated % ratios:

P : % value of differences: $(NDF / NSC) * 100$

PG: % value of deviations - 2004 value above 1980 value: $(NDG / NDF) * 100$

PL: % value of deviations - 2004 value below 1980 value: $(NDL / NDF) * 100$

P1: % value of deviations - deviation one result grid increment: $(NDD1 / NSC) * 100$

PX: % value of deviations - deviation above one result grid increment: $(NDG1 / NSC) * 100$

Results ASTM D1250-80 standard rounding:

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	2.712.301	2.169.932	1.088.600	1.081.332	1.085.256	1.084.676	0,4	-2,40	788,8
2	2.112.500	1.690.002	847.91	842.092	845.198	844.804	0,4	-2,40	788,8
3	422.5	14.887	7.983	6.904	14.873	14	0,2	-8,00	793,0
4	599.801	479.93	240.69	239.24	240.058	239.872	0,3	14,00	1.138,8
5	119.812	1.829	1.222	607	1.829	0	0,1	14,00	1.139,0

C	P	PG	PL	P1	PX	
1	80,0%	50,2%	49,8%	40,0%	40,0%	2004 R./2004 Inc.
2	80,0%	50,2%	49,8%	40,0%	40,0%	1980 R./2004 Inc.
3	3,5%	53,6%	46,4%	3,5%	0,0%	1980 R./1980 Inc.
4	80,0%	50,2%	49,8%	40,0%	40,0%	1980 Ext. R/2004 Inc.
5	1,5%	66,8%	33,2%	1,5%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.350.717	1.082.775	534.874	547.901	536.33	546.445	0,4	-2,40	788,8
2	1.056.250	846.887	417.513	429.374	418.916	427.971	0,4	-2,40	788,8
3	211.25	6.942	49	6.893	6.928	14	0,2	-8,00	793,0
4	294.467	235.888	117.361	118.527	117.414	118.474	0,3	14,00	1.138,8
5	58.794	619	18	601	619	0	0,1	14,00	1.139,0

C	P	PG	PL	P1	PX	
1	80,2%	49,4%	50,6%	39,7%	40,5%	2004 R./2004 Inc.
2	80,2%	49,3%	50,7%	39,7%	40,5%	1980 R./2004 Inc.
3	3,3%	0,7%	99,3%	3,3%	0,0%	1980 R./1980 Inc.
4	80,1%	49,8%	50,2%	39,9%	40,2%	1980 Ext. R/2004 Inc.
5	1,1%	2,9%	97,1%	1,1%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.361.584	1.087.157	553.726	533.431	548.926	538.231	0,3	15,20	792,7
2	1.056.250	843.115	430.397	412.718	426.282	416.833	0,3	15,20	792,7
3	211.25	7.945	7.934	11	7.945	0	0,1	15,20	792,5
4	305.334	244.042	123.329	120.713	122.644	121.398	0,3	16,00	1139,7
5	61.018	1.21	1.204	6	1.21	0	0,1	16,00	1139,5

C	P	PG	PL	P1	PX	
1	79,8%	50,9%	49,1%	40,3%	39,5%	2004 R./2004 Inc.
2	79,8%	51,0%	49,0%	40,4%	39,5%	1980 R./2004 Inc.
3	3,8%	99,9%	0,1%	3,8%	0,0%	1980 R./1980 Inc.
4	79,9%	50,5%	49,5%	40,2%	39,8%	1980 Ext. R/2004 Inc.
5	2,0%	99,5%	0,5%	2,0%	0,0%	1980 Ext./1980 Inc.

Results ASTM D1250-80 with "German rounding" (Input data):

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	2.712.301	83.111	45.547	37.564	83.038	73	0,2	-7,60	793,4
2	2.110.500	73.902	39.42	34.482	73.829	73	0,2	-7,60	793,4
3	2.110.500	73.902	39.42	34.482	73.829	73	0,2	-7,60	793,4
4	601.801	9.209	6.127	3.082	9.209	0	0,1	14,00	1,138,8
5	601.801	9.209	6.127	3.082	9.209	0	0,1	14,00	1,138,8

C	P	PG	PL	P1	PX	
1	3,1%	54,8%	45,2%	3,1%	0,0%	2004 R./2004 Inc.
2	3,5%	53,3%	46,7%	3,5%	0,0%	1980 R./2004 Inc.
3	3,5%	53,3%	46,7%	3,5%	0,0%	1980 R./1980 Inc.
4	1,5%	66,5%	33,5%	1,5%	0,0%	1980 Ext. R/2004 Inc.
5	1,5%	66,5%	33,5%	1,5%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.350.717	37.807	346	37.461	37.734	73	0,2	-7,60	793,4
2	1.055.250	34.667	253	34.414	34.594	73	0,2	-7,60	793,4
3	1.055.250	34.667	253	34.414	34.594	73	0,2	-7,60	793,4
4	295.467	3.14	93	3.047	3.14	0	0,1	14,00	1,138,8
5	295.467	3.14	93	3.047	3.14	0	0,1	14,00	1,138,8

C	P	PG	PL	P1	PX	
1	2,8%	0,9%	99,1%	2,8%	0,0%	2004 R./2004 Inc.
2	3,3%	0,7%	99,3%	3,3%	0,0%	1980 R./2004 Inc.
3	3,3%	0,7%	99,3%	3,3%	0,0%	1980 R./1980 Inc.
4	1,1%	3,0%	97,0%	1,1%	0,0%	1980 Ext. R/2004 Inc.
5	1,1%	3,0%	97,0%	1,1%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
	1.361.584	45.304	45.201	103	45.304	0	0,1	15,20	792,1
	1.055.250	39.235	39.167	68	39.235	0	0,1	15,20	792,1
	1.055.250	39.235	39.167	68	39.235	0	0,1	15,20	792,1
	306.334	6.069	6.034	35	6.069	0	0,1	16,00	1,137,7
	306.334	6.069	6.034	35	6.069	0	0,1	16,00	1,137,7

C	P	PG	PL	P1	PX	
1	3,3%	99,8%	0,2%	3,3%	0,0%	2004 R./2004 Inc.
2	3,7%	99,8%	0,2%	3,7%	0,0%	1980 R./2004 Inc.
3	3,7%	99,8%	0,2%	3,7%	0,0%	1980 R./1980 Inc.
4	2,0%	99,4%	0,6%	2,0%	0,0%	1980 Ext. R/2004 Inc.
5	2,0%	99,4%	0,6%	2,0%	0,0%	1980 Ext./1980 Inc.

1.9. Table 53D – lubricants, 15 °C base temperature – detailed results

Comparison grid:

Observed temperature: -10 °C to 40 °C, increment 0,1 °C

Observed density: 801,3 kg/m³ to 1.163,9 kg/m³, increment 0,1 kg/m³

Quantity compared: Base density / kg/m³ @ 15 °C

Absolute numbers:

NSC: Number of successful calculations (may be smaller than calculated grid points)

NDF: Number of deviations found

NDG: Number of deviations where 2004 result lies above 1980 result

NDL: Number of deviations where 2004 result lies below 1980 result

NDD1: Number of deviations which differ by one result grid rounding increment

NDG1: Number of deviations which differ by more than one result grid rounding increment

MAXD: Maximum deviation found

TLCB: Temperature value closest to base at which maximum deviation occurs

DTLCB: Density value for closest temperature value where maximum deviation occurs

Calculated % ratios:

P : % value of differences: $(NDF / NSC) * 100$

PG: % value of deviations - 2004 value above 1980 value: $(NDG / NDF) * 100$

PL: % value of deviations - 2004 value below 1980 value: $(NDL / NDF) * 100$

P1: % value of deviations - deviation one result grid increment: $(NDD1 / NSC) * 100$

PX: % value of deviations - deviation above one result grid increment: $(NDG1 / NSC) * 100$

Results ASTM D1250-80 standard rounding:

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.774.044	1.419.331	710.169	709.162	709.69	709.641	0,3	18,90	857,7
2	1.774.019	1.419.306	710.169	709.137	709.69	709.616	0,3	18,90	857,7
3	354.704	1.876	1.312	564	1.876	0	0,1	18,90	857,5
4	25	25	0	25	0	25	0,2	15,80	1.163,3
5	0	0	0	0	0	0	0,0	0,00	0,0

C	P	PG	PL	P1	PX	
1	80,0%	50,0%	50,0%	40,0%	40,0%	2004 R./2004 Inc.
2	80,0%	50,0%	50,0%	40,0%	40,0%	1980 R./2004 Inc.
3	0,5%	69,9%	30,1%	0,5%	0,0%	1980 R./1980 Inc.
4	100,0%	0,0%	100,0%	0,0%	100,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	887.141	709.813	354.519	355.294	354.924	354.889	0,3	9,50	1.026,2
2	887.141	709.813	354.519	355.294	354.924	354.889	0,3	9,50	1.026,2
3	177.323	750	229	521	750	0	0,1	9,50	1.026,0
4	0	0	0	0	0	0	0,0	0,00	0,0
5	0	0	0	0	0	0	0,0	0,00	0,0

C	P	PG	PL	P1	PX	
1	80,0%	49,9%	50,1%	40,0%	40,0%	2004 R./2004 Inc.
2	80,0%	49,9%	50,1%	40,0%	40,0%	1980 R./2004 Inc.
3	0,4%	30,5%	69,5%	0,4%	0,0%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	886.903	709.518	355.65	353.868	354.766	354.752	0,3	18,90	857,7
2	886.878	709.493	355.65	353.843	354.766	354.727	0,3	18,90	857,7
3	177.381	1.126	1.083	43	1.126	0	0,1	18,90	857,5
4	25	25	0	25	0	25	0,2	15,80	1163,3
5	0	0	0	0	0	0	0,0	0,00	0,0

C	P	PG	PL	P1	PX	
1	80,0%	50,1%	49,9%	40,0%	40,0%	2004 R./2004 Inc.
2	80,0%	50,1%	49,9%	40,0%	40,0%	1980 R./2004 Inc.
3	0,6%	96,2%	3,8%	0,6%	0,0%	1980 R./1980 Inc.
4	100,0%	0,0%	100,0%	0,0%	100,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Results ASTM D1250-80 "German rounding" (Input data):

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.774.044	9.488	6.597	2.891	9.488	0	0,1	18,90	838,6
2	1.774.044	9.488	6.597	2.891	9.488	0	0,1	18,90	838,6
3	1.774.044	9.488	6.597	2.891	9.488	0	0,1	18,90	838,6
4	0	0	0	0	0	0	0,0	0,00	0,0
5	0	0	0	0	0	0	0,0	0,00	0,0

C	P	PG	PL	P1	PX	
1	0,5%	69,5%	30,5%	0,5%	0,0%	2004 R./2004 Inc.
2	0,5%	69,5%	30,5%	0,5%	0,0%	1980 R./2004 Inc.
3	0,5%	69,5%	30,5%	0,5%	0,0%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	887.141	3.826	1.155	2.671	3.826	0	0,1	9,50	1.014,3
2	887.141	3.826	1.155	2.671	3.826	0	0,1	9,50	1.014,3
3	887.141	3.826	1.155	2.671	3.826	0	0,1	9,50	1.014,3
4	0	0	0	0	0	0	0,0	0,00	0,0
5	0	0	0	0	0	0	0,0	0,00	0,0

C	P	PG	PL	P1	PX	
1	0,4%	30,2%	69,8%	0,4%	0,0%	2004 R./2004 Inc.
2	0,4%	30,2%	69,8%	0,4%	0,0%	1980 R./2004 Inc.
3	0,4%	30,2%	69,8%	0,4%	0,0%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	886.903	5.662	5.442	220	0	0,1	18,90	838,6	0,1
2	886.903	5.662	5.442	5.662	0	0,1	18,90	838,6	0,1
3	886.903	5.662	5.442	5.662	0	0,1	18,90	838,6	0,1
4	0	0	0	0	0	0,0	0,00	0,0	0,0
5	0	0	0	0	0	0,0	0,00	0,0	0,0

C	P	PG	PL	P1	PX	
1	0,6%	96,1%	3,9%	0,6%	0,0%	2004 R./2004 Inc.
2	0,6%	96,1%	3,9%	0,6%	0,0%	1980 R./2004 Inc.
3	0,6%	96,1%	3,9%	0,6%	0,0%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

1.10. Table 59A – crude oil, 20 °C base temperature – detailed results

Comparison grid:

Observed temperature: -5 °C to 45 °C, increment 0,1 °C

Observed density: 606,1 kg/m³ to 1.161,2 kg/m³, increment 0,1 kg/m³

Quantity compared: Base density / kg/m³ @ 20 °C

Absolute numbers:

NSC: Number of successful calculations (may be smaller than calculated grid points)

NDF: Number of deviations found

NDG: Number of deviations where 2004 result lies above 1980 result

NDL: Number of deviations where 2004 result lies below 1980 result

NDD1: Number of deviations which differ by one result grid rounding increment

NDG1: Number of deviations which differ by more than one result grid rounding increment

MAXD: Maximum deviation found

TLCB: Temperature value closest to base at which maximum deviation occurs

DTLCB: Density value for closest temperature value where maximum deviation occurs

Calculated % ratios:

P : % value of differences: $(NDF / NSC) * 100$

PG: % value of deviations - 2004 value above 1980 value: $(NDG / NDF) * 100$

PL: % value of deviations - 2004 value below 1980 value: $(NDL / NDF) * 100$

P1: % value of deviations - deviation one result grid increment: $(NDD1 / NSC) * 100$

PX: % value of deviations - deviation above one result grid increment: $(NDG1 / NSC) * 100$

Results ASTM D1250-80 standard rounding:

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	2.727.681	2.182.361	1.094.097	1.088.264	1.091.116	1.091.245	0,3	19,80	817,3
2	1.591.100	1.272.899	637.845	635.054	636.531	636.368	0,3	19,80	817,3
3	318.22	11.587	5.761	5.826	11.587	0	0,1	19,80	817,5
4	1.136.581	909.462	456.252	453.21	454.585	454.877	0,3	19,70	734,8
5	227.217	11.261	5.563	5.698	11.261	0	0,1	19,70	735,0

C	P	PG	PL	P1	PX	
1	80,0%	50,1%	49,9%	40,0%	40,0%	2004 R./2004 Inc.
2	80,0%	50,1%	49,9%	40,0%	40,0%	1980 R./2004 Inc.
3	3,6%	49,7%	50,3%	3,6%	0,0%	1980 R./1980 Inc.
4	80,0%	50,2%	49,8%	40,0%	40,0%	1980 Ext. R/2004 Inc.
5	5,0%	49,4%	50,6%	5,0%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.356.410	1.088.058	534.124	553.934	536.741	551.317	0,3	19,80	817,3
2	788.035	631.899	310.863	321.036	312.219	319.68	0,3	19,80	817,3
3	157.607	5.827	3	5.824	5.827	0	0,1	19,80	817,5
4	568.375	456.159	223.261	232.898	224.522	231.637	0,3	19,70	734,8
5	113.675	5.7	2	5.698	5.7	0	0,1	19,70	735,0

C	P	PG	PL	P1	PX	
1	80,2%	49,1%	50,9%	39,6%	40,6%	2004 R./2004 Inc.
2	80,2%	49,2%	50,8%	39,6%	40,6%	1980 R./2004 Inc.
3	3,7%	0,1%	99,9%	3,7%	0,0%	1980 R./1980 Inc.
4	80,3%	48,9%	51,1%	39,5%	40,8%	1980 Ext. R/2004 Inc.
5	5,0%	0,0%	100,0%	5,0%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.371.271	1.094.303	559.973	534.33	554.375	539.928	0,3	20,20	815,2
2	803.065	641	326.982	314.018	324.312	316.688	0,3	20,20	815,2
3	160.613	5.76	5.758	2	5.76	0	0,1	20,20	815,0
4	568.206	453.303	232.991	220.312	230.063	223.24	0,3	20,30	734,7
5	113.542	5.561	5.561	0	5.561	0	0,1	20,30	734,5

C	P	PG	PL	P1	PX	
1	79,8%	51,2%	48,8%	40,4%	39,4%	2004 R./2004 Inc.
2	79,8%	51,0%	49,0%	40,4%	39,4%	1980 R./2004 Inc.
3	3,6%	100,0%	0,0%	3,6%	0,0%	1980 R./1980 Inc.
4	79,8%	51,4%	48,6%	40,5%	39,3%	1980 Ext. R/2004 Inc.
5	4,9%	100,0%	0,0%	4,9%	0,0%	1980 Ext./1980 Inc.

Results ASTM D1250-80 with "German rounding" (Input data):

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	2.727.681	114.103	56.502	57.601	114.103	0	0,1	19,80	815,2
2	1.591.108	57.709	28.622	29.087	57.709	0	0,1	19,80	815,2
3	1.591.108	57.709	28.622	29.087	57.709	0	0,1	19,80	815,2
4	1.136.573	56.394	27.88	28.514	56.394	0	0,1	19,70	734,9
5	1.136.573	56.394	27.88	28.514	56.394	0	0,1	19,70	734,9

C		P	PG	PL	P1	PX	
1		4,2%	49,5%	50,5%	4,2%	0,0%	2004 R./2004 Inc.
2		3,6%	49,6%	50,4%	3,6%	0,0%	1980 R./2004 Inc.
3		3,6%	49,6%	50,4%	3,6%	0,0%	1980 R./1980 Inc.
4		5,0%	49,4%	50,6%	5,0%	0,0%	1980 Ext. R/2004 Inc.
5		5,0%	49,4%	50,6%	5,0%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.356.410	57.613	25	57.588	57.613	0	0,1	19,80	815,2
2	788.044	29.093	14	29.079	29.093	0	0,1	19,80	815,2
3	788.044	29.093	14	29.079	29.093	0	0,1	19,80	815,2
4	568.366	28.52	11	28.509	28.52	0	0,1	19,70	734,9
5	568.366	28.52	11	28.509	28.52	0	0,1	19,70	734,9

C		P	PG	PL	P1	PX	
1		4,2%	0,0%	100,0%	4,2%	0,0%	2004 R./2004 Inc.
2		3,7%	0,0%	100,0%	3,7%	0,0%	1980 R./2004 Inc.
3		3,7%	0,0%	100,0%	3,7%	0,0%	1980 R./1980 Inc.
4		5,0%	0,0%	100,0%	5,0%	0,0%	1980 Ext. R/2004 Inc.
5		5,0%	0,0%	100,0%	5,0%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.371.271	56.49	56.477	13	56.49	0	0,1	20,20	814,9
2	803.064	28.616	28.608	8	28.616	0	0,1	20,20	814,9
3	803.064	28.616	28.608	8	28.616	0	0,1	20,20	814,9
4	568.207	27.874	27.869	5	27.874	0	0,1	20,30	734,5
5	568.207	27.874	27.869	5	27.874	0	0,1	20,30	734,5

C		P	PG	PL	P1	PX	
1		4,1%	100,0%	0,0%	4,1%	0,0%	2004 R./2004 Inc.
2		3,6%	100,0%	0,0%	3,6%	0,0%	1980 R./2004 Inc.
3		3,6%	100,0%	0,0%	3,6%	0,0%	1980 R./1980 Inc.
4		4,9%	100,0%	0,0%	4,9%	0,0%	1980 Ext. R/2004 Inc.
5		4,9%	100,0%	0,0%	4,9%	0,0%	1980 Ext./1980 Inc.

1.11. Table 59B – products, 20 °C base temperature – detailed results

Comparison grid:

Observed temperature: -5 °C to 45 °C, increment 0,1 °C

Observed density: 606,1 kg/m³ to 1.160,6 kg/m³, increment 0,1 kg/m³

Quantity compared: Base density / kg/m³ @ 20 °C

Absolute numbers:

NSC: Number of successful calculations (may be smaller than calculated grid points)

NDF: Number of deviations found

NDG: Number of deviations where 2004 result lies above 1980 result

NDL: Number of deviations where 2004 result lies below 1980 result

NDD1: Number of deviations which differ by one result grid rounding increment

NDG1: Number of deviations which differ by more than one result grid rounding increment

MAXD: Maximum deviation found

TLCB: Temperature value closest to base at which maximum deviation occurs

DTLCB: Density value for closest temperature value where maximum deviation occurs

Calculated % ratios:

P : % value of differences: $(NDF / NSC) * 100$

PG: % value of deviations - 2004 value above 1980 value: $(NDG / NDF) * 100$

PL: % value of deviations - 2004 value below 1980 value: $(NDL / NDF) * 100$

P1: % value of deviations - deviation one result grid increment: $(NDD1 / NSC) * 100$

PX: % value of deviations - deviation above one result grid increment: $(NDG1 / NSC) * 100$

Results ASTM D1250-80 standard rounding:

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	2.721.108	2.176.975	1.091.220	1.085.755	1.088.788	1.088.187	0,4	2,20	786,8
2	2.112.500	1.690.100	846.966	843.134	845.03	845.07	0,4	2,20	786,8
3	422.5	15.521	7.76	7.761	15.482	39	0,2	-2,40	786,5
4	608.608	486.875	244.254	242.621	243.758	243.117	0,3	19,00	1.142,8
5	121.672	2.238	1.322	916	2.238	0	0,1	19,00	1.143,0

C	P	PG	PL	P1	PX	
1	80,0%	50,1%	49,9%	40,0%	40,0%	2004 R./2004 Inc.
2	80,0%	50,1%	49,9%	40,0%	40,0%	1980 R./2004 Inc.
3	3,7%	50,0%	50,0%	3,7%	0,0%	1980 R./1980 Inc.
4	80,0%	50,2%	49,8%	40,1%	39,9%	1980 Ext. R/2004 Inc.
5	1,8%	59,1%	40,9%	1,8%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.354.901	1.086.111	535.552	550.559	537.851	548.26	0,4	2,20	786,8
2	1.056.250	846.978	416.735	430.243	418.755	428.223	0,4	2,20	786,8
3	211.25	7.762	11	7.751	7.723	39	0,2	-2,40	786,5
4	298.651	239.133	118.817	120.316	119.096	120.037	0,3	19,00	1.142,8
5	59.78	917	6	911	917	0	0,1	19,00	1.143,0

C	P	PG	PL	P1	PX	
1	80,2%	49,3%	50,7%	39,7%	40,5%	2004 R./2004 Inc.
2	80,2%	49,2%	50,8%	39,6%	40,5%	1980 R./2004 Inc.
3	3,7%	0,1%	99,9%	3,7%	0,0%	1980 R./1980 Inc.
4	80,1%	49,7%	50,3%	39,9%	40,2%	1980 Ext. R/2004 Inc.
5	1,5%	0,7%	99,3%	1,5%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.366.207	1.090.864	555.668	535.196	550.937	539.927	0,3	20,30	773,7
2	1.056.250	843.122	430.231	412.891	426.275	416.847	0,3	20,30	773,7
3	211.25	7.759	7.749	10	7.759	0	0,1	20,30	773,5
4	309.957	247.742	125.437	122.305	124.662	123.08	0,3	21,00	1143,7
5	61.892	1.321	1.316	5	1.321	0	0,1	21,00	1143,5

C	P	PG	PL	P1	PX	
1	79,8%	50,9%	49,1%	40,3%	39,5%	2004 R./2004 Inc.
2	79,8%	51,0%	49,0%	40,4%	39,5%	1980 R./2004 Inc.
3	3,7%	99,9%	0,1%	3,7%	0,0%	1980 R./1980 Inc.
4	79,9%	50,6%	49,4%	40,2%	39,7%	1980 Ext. R/2004 Inc.
5	2,1%	99,6%	0,4%	2,1%	0,0%	1980 Ext./1980 Inc.

Results ASTM D1250-80 with "German rounding" (Input data):

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	2.721.108	88.935	45.449	43.486	88.804	131	0,2	-2,00	785,9
2	2.110.500	77.635	38.732	38.903	77.504	131	0,2	-2,00	785,9
3	2.110.500	77.635	38.732	38.903	77.504	131	0,2	-2,00	785,9
4	610.608	11.3	6.717	4.583	11.3	0	0,1	19,00	1.142,7
5	610.608	11.3	6.717	4.583	11.3	0	0,1	19,00	1.142,7

C	P	PG	PL	P1	PX	
1	3,3%	51,1%	48,9%	3,3%	0,0%	2004 R./2004 Inc.
2	3,7%	49,9%	50,1%	3,7%	0,0%	1980 R./2004 Inc.
3	3,7%	49,9%	50,1%	3,7%	0,0%	1980 R./1980 Inc.
4	1,9%	59,4%	40,6%	1,9%	0,0%	1980 Ext. R/2004 Inc.
5	1,9%	59,4%	40,6%	1,9%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.354.901	43.525	102	43.423	43.394	131	0,2	-2,00	785,9
2	1.055.250	38.928	64	38.864	38.797	131	0,2	-2,00	785,9
3	1.055.250	38.928	64	38.864	38.797	131	0,2	-2,00	785,9
4	299.651	4.597	38	4.559	4.597	0	0,1	19,00	1.142,7
5	299.651	4.597	38	4.559	4.597	0	0,1	19,00	1.142,7

C	P	PG	PL	P1	PX	
1	3,2%	0,2%	99,8%	3,2%	0,0%	2004 R./2004 Inc.
2	3,7%	0,2%	99,8%	3,7%	0,0%	1980 R./2004 Inc.
3	3,7%	0,2%	99,8%	3,7%	0,0%	1980 R./1980 Inc.
4	1,5%	0,8%	99,2%	1,5%	0,0%	1980 Ext. R/2004 Inc.
5	1,5%	0,8%	99,2%	1,5%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.366.207	45.41	45.347	63	45.41	0	0,1	20,20	789,1
2	1.055.250	38.707	38.668	39	38.707	0	0,1	20,20	789,1
3	1.055.250	38.707	38.668	39	38.707	0	0,1	20,20	789,1
4	310.957	6.703	6.679	24	6.703	0	0,1	21,00	1143,4
5	310.957	6.703	6.679	24	6.703	0	0,1	21,00	1143,4

C	P	PG	PL	P1	PX	
1	3,3%	99,9%	0,1%	3,3%	0,0%	2004 R./2004 Inc.
2	3,7%	99,9%	0,1%	3,7%	0,0%	1980 R./2004 Inc.
3	3,7%	99,9%	0,1%	3,7%	0,0%	1980 R./1980 Inc.
4	2,2%	99,6%	0,4%	2,2%	0,0%	1980 Ext. R/2004 Inc.
5	2,2%	99,6%	0,4%	2,2%	0,0%	1980 Ext./1980 Inc.

1.12. Table 59D – lubricants, 20 °C base temperature – detailed results

Comparison grid:

Observed temperature: -5 °C to 45 °C, increment 0,1 °C

Observed density: 798,1 kg/m³ to 1.160,7 kg/m³, increment 0,1 kg/m³

Quantity compared: Base density / kg/m³ @ 20 °C

Absolute numbers:

NSC: Number of successful calculations (may be smaller than calculated grid points)

NDF: Number of deviations found

NDG: Number of deviations where 2004 result lies above 1980 result

NDL: Number of deviations where 2004 result lies below 1980 result

NDD1: Number of deviations which differ by one result grid rounding increment

NDG1: Number of deviations which differ by more than one result grid rounding increment

MAXD: Maximum deviation found

TLCB: Temperature value closest to base at which maximum deviation occurs

DTLCB: Density value for closest temperature value where maximum deviation occurs

Calculated % ratios:

P : % value of differences: $(NDF / NSC) * 100$

PG: % value of deviations - 2004 value above 1980 value: $(NDG / NDF) * 100$

PL: % value of deviations - 2004 value below 1980 value: $(NDL / NDF) * 100$

P1: % value of deviations - deviation one result grid increment: $(NDD1 / NSC) * 100$

PX: % value of deviations - deviation above one result grid increment: $(NDG1 / NSC) * 100$

Results ASTM D1250-80 with standard rounding:

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.773.968	1.419.268	710.697	708.571	709.653	709.615	0,3	23,10	1.066,7
2	1.773.943	1.419.243	710.697	708.546	709.653	709.59	0,3	23,10	1.066,7
3	354.69	1.405	1.106	299	1.405	0	0,1	23,10	1.066,5
4	25	25	0	25	0	25	0,2	20,60	1.160,3
5	0	0	0	0	0	0	0,0	0,00	0,0

C	P	PG	PL	P1	PX	
1	80,0%	50,1%	49,9%	40,0%	40,0%	2004 R./2004 Inc.
2	80,0%	50,1%	49,9%	40,0%	40,0%	1980 R./2004 Inc.
3	0,4%	78,7%	21,3%	0,4%	0,0%	1980 R./1980 Inc.
4	100,0%	0,0%	100,0%	0,0%	100,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	886.95	709.563	354.781	354.782	354.782	354.781	0,3	11,80	805,3
2	886.95	709.563	354.781	354.782	354.782	354.781	0,3	11,80	805,3
3	177.385	349	97	252	349	0	0,1	11,80	805,5
4	0	0	0	0	0	0	0,0	0,00	0,0
5	0	0	0	0	0	0	0,0	0,00	0,0

C	P	PG	PL	P1	PX	
1	80,0%	50,0%	50,0%	40,0%	40,0%	2004 R./2004 Inc.
2	80,0%	50,0%	50,0%	40,0%	40,0%	1980 R./2004 Inc.
3	0,2%	27,8%	72,2%	0,2%	0,0%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	887.018	709.705	355.916	353.789	354.871	354.834	0,3	23,10	1066,7
2	886.993	709.68	355.916	353.764	354.871	354.809	0,3	23,10	1066,7
3	177.305	1.056	1.009	47	1.056	0	0,1	23,10	1066,5
4	25	25	0	25	0	25	0,2	20,60	1160,3
5	0	0	0	0	0	0	0,0	0,00	0,0

C	P	PG	PL	P1	PX	
1	80,0%	50,1%	49,9%	40,0%	40,0%	2004 R./2004 Inc.
2	80,0%	50,2%	49,8%	40,0%	40,0%	1980 R./2004 Inc.
3	0,6%	95,5%	4,5%	0,6%	0,0%	1980 R./1980 Inc.
4	100,0%	0,0%	100,0%	0,0%	100,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Results ASTM D1250-80 with "German rounding" (Input data):

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.773.968	7.171	5.627	1.544	7.171	0	0,1	23,10	1.057,8
2	1.773.968	7.171	5.627	1.544	7.171	0	0,1	23,10	1.057,8
3	1.773.968	7.171	5.627	1.544	7.171	0	0,1	23,10	1.057,8
4	0	0	0	0	0	0	0,0	0,00	0,0
5	0	0	0	0	0	0	0,0	0,00	0,0

C	P	PG	PL	P1	PX	
1	0,4%	78,5%	21,5%	0,4%	0,0%	2004 R./2004 Inc.
2	0,4%	78,5%	21,5%	0,4%	0,0%	1980 R./2004 Inc.
3	0,4%	78,5%	21,5%	0,4%	0,0%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	886.95	1.924	564	1.36	1.924	0	0,1	11,80	803,7
2	886.95	1.924	564	1.36	1.924	0	0,1	11,80	803,7
3	886.95	1.924	564	1.36	1.924	0	0,1	11,80	803,7
4	0	0	0	0	0	0	0,0	0,00	0,0
5	0	0	0	0	0	0	0,0	0,00	0,0

C	P	PG	PL	P1	PX	
1	0,2%	29,3%	70,7%	0,2%	0,0%	2004 R./2004 Inc.
2	0,2%	29,3%	70,7%	0,2%	0,0%	1980 R./2004 Inc.
3	0,2%	29,3%	70,7%	0,2%	0,0%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	887.018	5.247	5.063	184	5.247	0	0,1	23,10	1057,8
2	887.018	5.247	5.063	184	5.247	0	0,1	23,10	1057,8
3	887.018	5.247	5.063	184	5.247	0	0,1	23,10	1057,8
4	0	0	0	0	0	0	0,0	0,00	0,0
5	0	0	0	0	0	0	0,0	0,00	0,0

C	P	PG	PL	P1	PX	
1	0,6%	96,5%	3,5%	0,6%	0,0%	2004 R./2004 Inc.
2	0,6%	96,5%	3,5%	0,6%	0,0%	1980 R./2004 Inc.
3	0,6%	96,5%	3,5%	0,6%	0,0%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

1.13. Table 6A – crude oil, 60 °F base temperature – detailed results

Comparison grid:

Observed temperature: 14 °F to 104 °F, increment 0,2 °F

Base density @ 60 °F: -10 °API to 100 °API, increment 0,2 °API

Quantity compared: Volume correction factor observed to base (5 & 4 decimals rounding)

Absolute numbers:

NSC: Number of successful calculations (may be smaller than calculated grid points)

NDF: Number of deviations found

NDG: Number of deviations where 2004 result lies above 1980 result

NDL: Number of deviations where 2004 result lies below 1980 result

NDD1: Number of deviations which differ by one result grid rounding increment

NDG1: Number of deviations which differ by more than one result grid rounding increment

MAXD: Maximum deviation found

TLCB: Temperature value closest to base at which maximum deviation occurs

DTLCB: Density value for closest temperature value where maximum deviation occurs

Calculated % ratios:

P : % value of differences: $(NDF / NSC) * 100$

PG: % value of deviations – 2004 value above 1980 value: $(NDG / NDF) * 100$

PL: % value of deviations – 2004 value below 1980 value: $(NDL / NDF) * 100$

P1: % value of deviations – deviation one result grid increment: $(NDD1 / NSC) * 100$

PX: % value of deviations – deviation above one result grid increment: $(NDG1 / NSC) * 100$

VCF - 5 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	495.45	301.69	121.264	180.426	124.244	177.446	0,00006	38,0	95,6
2	247.95	143.456	59.872	83.584	54.806	88.65	0,00006	32,6	54,8
3	247.95	143.456	59.872	83.584	54.806	88.65	0,00006	32,6	54,8
4	247.5	158.234	61.392	96.842	69.438	88.796	0,00006	38,0	95,6
5	247.5	158.234	61.392	96.842	69.438	88.796	0,00006	38,0	95,6

C	P	PG	PL	P1	PX	
1	60,9%	40,2%	59,8%	25,1%	35,8%	2004 R./2004 Inc.
2	57,9%	41,7%	58,3%	22,1%	35,8%	1980 R./2004 Inc.
3	57,9%	41,7%	58,3%	22,1%	35,8%	1980 R./1980 Inc.
4	63,9%	38,8%	61,2%	28,1%	35,9%	1980 Ext. R/2004 Inc.
5	63,9%	38,8%	61,2%	28,1%	35,9%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	253.23	227.784	121.264	106.52	50.444	177.34	0,00006	38,0	95,6
2	126.73	113.959	59.872	54.087	25.309	88.65	0,00006	32,6	54,8
3	126.73	113.959	59.872	54.087	25.309	88.65	0,00006	32,6	54,8
4	126.5	113.825	61.392	52.433	25.135	88.69	0,00006	38,0	95,6
5	126.5	113.825	61.392	52.433	25.135	88.69	0,00006	38,0	95,6

C	P	PG	PL	P1	PX	
1	90,0%	53,2%	46,8%	19,9%	70,0%	2004 R./2004 Inc.
2	89,9%	52,5%	47,5%	20,0%	70,0%	1980 R./2004 Inc.
3	89,9%	52,5%	47,5%	20,0%	70,0%	1980 R./1980 Inc.
4	90,0%	53,9%	46,1%	19,9%	70,1%	1980 Ext. R/2004 Inc.
5	90,0%	53,9%	46,1%	19,9%	70,1%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	242.22	73.906	0	73.906	73.8	106	0,00002	96,8	98,7
2	121.22	29.497	0	29.497	29.497	0	0,00001	60,2	16,7
3	121.22	29.497	0	29.497	29.497	0	0,00001	60,2	16,7
4	121	44.409	0	44.409	44.303	106	0,00002	96,8	98,7
5	121	44.409	0	44.409	44.303	106	0,00002	96,8	98,7

C	P	PG	PL	P1	PX	
1	30,5%	0,0%	100,0%	30,5%	0,0%	2004 R./2004 Inc.
2	24,3%	0,0%	100,0%	24,3%	0,0%	1980 R./2004 Inc.
3	24,3%	0,0%	100,0%	24,3%	0,0%	1980 R./1980 Inc.
4	36,7%	0,0%	100,0%	36,6%	0,1%	1980 Ext. R/2004 Inc.
5	36,7%	0,0%	100,0%	36,6%	0,1%	1980 Ext./1980 Inc.

VCF - 4 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	495.45	9.218	7.509	1.709	9.218	0	0,0001	59,8	78,1
2	247.95	3.148	2.947	201	3.148	0	0,0001	59,2	3,8
3	247.95	3.148	2.947	201	3.148	0	0,0001	59,2	3,8
4	247.5	6.07	4.562	1.508	6.07	0	0,0001	59,8	78,1
5	247.5	6.07	4.562	1.508	6.07	0	0,0001	59,8	78,1

C	P	PG	PL	P1	PX	
1	1,9%	81,5%	18,5%	1,9%	0,0%	2004 R./2004 Inc.
2	1,3%	93,6%	6,4%	1,3%	0,0%	1980 R./2004 Inc.
3	1,3%	93,6%	6,4%	1,3%	0,0%	1980 R./1980 Inc.
4	2,5%	75,2%	24,8%	2,5%	0,0%	1980 Ext. R/2004 Inc.
5	2,5%	75,2%	24,8%	2,5%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	253.23	7.509	7.509	0	7.509	0	0,0001	59,8	78,1
2	126.73	2.947	2.947	0	2.947	0	0,0001	59,2	3,8
3	126.73	2.947	2.947	0	2.947	0	0,0001	59,2	3,8
4	126.5	4.562	4.562	0	4.562	0	0,0001	59,8	78,1
5	126.5	4.562	4.562	0	4.562	0	0,0001	59,8	78,1

C	P	PG	PL	P1	PX	
1	3,0%	100,0%	0,0%	3,0%	0,0%	2004 R./2004 Inc.
2	2,3%	100,0%	0,0%	2,3%	0,0%	1980 R./2004 Inc.
3	2,3%	100,0%	0,0%	2,3%	0,0%	1980 R./1980 Inc.
4	3,6%	100,0%	0,0%	3,6%	0,0%	1980 Ext. R/2004 Inc.
5	3,6%	100,0%	0,0%	3,6%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	242.22	1.709	0	1.709	1.709	0	0,0001	80,4	98,7
2	121.22	201	0	201	201	0	0,0001	89,4	49,1
3	121.22	201	0	201	201	0	0,0001	89,4	49,1
4	121	1.508	0	1.508	1.508	0	0,0001	80,4	98,7
5	121	1.508	0	1.508	1.508	0	0,0001	80,4	98,7

C	P	PG	PL	P1	PX	
1	0,7%	0,0%	100,0%	0,7%	0,0%	2004 R./2004 Inc.
2	0,2%	0,0%	100,0%	0,2%	0,0%	1980 R./2004 Inc.
3	0,2%	0,0%	100,0%	0,2%	0,0%	1980 R./1980 Inc.
4	1,2%	0,0%	100,0%	1,2%	0,0%	1980 Ext. R/2004 Inc.
5	1,2%	0,0%	100,0%	1,2%	0,0%	1980 Ext./1980 Inc.

1.14. Table 6B – products, 60 °F base temperature – detailed results

Comparison grid:

Observed temperature: 14 °F to 104 °F, increment 0,2 °F

Base density @ 60 °F: -10 °API to 100 °API, increment 0,2 °API

Quantity compared: Volume correction factor observed to base (5 & 4 decimals rounding)

Absolute numbers:

NSC: Number of successful calculations (may be smaller than calculated grid points)

NDF: Number of deviations found

NDG: Number of deviations where 2004 result lies above 1980 result

NDL: Number of deviations where 2004 result lies below 1980 result

NDD1: Number of deviations which differ by one result grid rounding increment

NDG1: Number of deviations which differ by more than one result grid rounding increment

MAXD: Maximum deviation found

TLCB: Temperature value closest to base at which maximum deviation occurs

DTLCB: Density value for closest temperature value where maximum deviation occurs

Calculated % ratios:

P : % value of differences: $(NDF / NSC) * 100$

PG: % value of deviations – 2004 value above 1980 value: $(NDG / NDF) * 100$

PL: % value of deviations – 2004 value below 1980 value: $(NDL / NDF) * 100$

P1: % value of deviations – deviation one result grid increment: $(NDD1 / NSC) * 100$

PX: % value of deviations – deviation above one result grid increment: $(NDG1 / NSC) * 100$

VCF -5 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	495.45	306.406	121.692	184.714	128.944	177.462	0,00006	38,6	96,0
2	382.95	234.616	93.819	140.797	97.605	137.011	0,00006	36,2	80,2
3	382.95	234.616	93.819	140.797	97.605	137.011	0,00006	36,2	80,2
4	112.5	71.79	27.873	43.917	31.339	40.451	0,00006	38,6	96,0
5	112.5	71.79	27.873	43.917	31.339	40.451	0,00006	38,6	96,0

C	P	PG	PL	P1	PX	
1	61,8%	39,7%	60,3%	26,0%	35,8%	2004 R./2004 Inc.
2	61,3%	40,0%	60,0%	25,5%	35,8%	1980 R./2004 Inc.
3	61,3%	40,0%	60,0%	25,5%	35,8%	1980 R./1980 Inc.
4	63,8%	38,8%	61,2%	27,9%	36,0%	1980 Ext. R/2004 Inc.
5	63,8%	38,8%	61,2%	27,9%	36,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	253.23	227.997	121.692	106.305	50.707	177.29	0,00006	38,6	96,0
2	195.73	176.242	93.819	82.423	39.254	136.988	0,00006	36,2	80,2
3	195.73	176.242	93.819	82.423	39.254	136.988	0,00006	36,2	80,2
4	57.5	51.755	27.873	23.882	11.453	40.302	0,00006	38,6	96,0
5	57.5	51.755	27.873	23.882	11.453	40.302	0,00006	38,6	96,0

C	P	PG	PL	P1	PX	
1	90,0%	53,4%	46,6%	20,0%	70,0%	2004 R./2004 Inc.
2	90,0%	53,2%	46,8%	20,1%	70,0%	1980 R./2004 Inc.
3	90,0%	53,2%	46,8%	20,1%	70,0%	1980 R./1980 Inc.
4	90,0%	53,9%	46,1%	19,9%	70,1%	1980 Ext. R/2004 Inc.
5	90,0%	53,9%	46,1%	19,9%	70,1%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	242.22	78.409	0	78.409	78.237	172	0,00002	96	98,4
2	187.22	58.374	0	58.374	58.351	23	0,00002	100,2	84,8
3	187.22	58.374	0	58.374	58.351	23	0,00002	100,2	84,8
4	55	20.035	0	20.035	19.886	149	0,00002	96	98,4
5	55	20.035	0	20.035	19.886	149	0,00002	96	98,4

C	P	PG	PL	P1	PX	
	32,4%	0,0%	100,0%	32,3%	0,1%	2004 R./2004 Inc.
	31,2%	0,0%	100,0%	31,2%	0,0%	1980 R./2004 Inc.
	31,2%	0,0%	100,0%	31,2%	0,0%	1980 R./1980 Inc.
	36,4%	0,0%	100,0%	36,2%	0,3%	1980 Ext. R/2004 Inc.
	36,4%	0,0%	100,0%	36,2%	0,3%	1980 Ext./1980 Inc.

VCF - 4 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	495.45	9.859	7.879	1.98	9.859	0	0,0001	59,6	93,4
2	382.95	7.021	5.827	1.194	7.021	0	0,0001	59,2	82,9
3	382.95	7.021	5.827	1.194	7.021	0	0,0001	59,2	82,9
4	112.5	2.838	2.052	786	2.838	0	0,0001	59,6	93,4
5	112.5	2.838	2.052	786	2.838	0	0,0001	59,6	93,4

C	P	PG	PL	P1	PX	
1	2,0%	79,9%	20,1%	2,0%	0,0%	2004 R./2004 Inc.
2	1,8%	83,0%	17,0%	1,8%	0,0%	1980 R./2004 Inc.
3	1,8%	83,0%	17,0%	1,8%	0,0%	1980 R./1980 Inc.
4	2,5%	72,3%	27,7%	2,5%	0,0%	1980 Ext. R/2004 Inc.
5	2,5%	72,3%	27,7%	2,5%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	253.23	7.879	7.879	0	7.879	0	0,0001	59,6	93,4
2	195.73	5.827	5.827	0	5.827	0	0,0001	59,2	82,9
3	195.73	5.827	5.827	0	5.827	0	0,0001	59,2	82,9
4	57.5	2.052	2.052	0	2.052	0	0,0001	59,6	93,4
5	57.5	2.052	2.052	0	2.052	0	0,0001	59,6	93,4

C	P	PG	PL	P1	PX	
1	3,1%	100,0%	0,0%	3,1%	0,0%	2004 R./2004 Inc.
2	3,0%	100,0%	0,0%	3,0%	0,0%	1980 R./2004 Inc.
3	3,0%	100,0%	0,0%	3,0%	0,0%	1980 R./1980 Inc.
4	3,6%	100,0%	0,0%	3,6%	0,0%	1980 Ext. R/2004 Inc.
5	3,6%	100,0%	0,0%	3,6%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	242.22	1.980	0	1.980	1.98	0	0,0001	79,4	91,6
2	187.22	1.194	0	1.194	1.194	0	0,0001	81,2	78,4
3	187.22	1.194	0	1.194	1.194	0	0,0001	81,2	78,4
4	55	786	0	786	786	0	0,0001	79,4	91,6
5	55	786	0	786	786	0	0,0001	79,4	91,6

C	P	PG	PL	P1	PX	
1	0,8%	0,0%	100,0%	0,8%	0,0%	2004 R./2004 Inc.
2	0,6%	0,0%	100,0%	0,6%	0,0%	1980 R./2004 Inc.
3	0,6%	0,0%	100,0%	0,6%	0,0%	1980 R./1980 Inc.
4	1,4%	0,0%	100,0%	1,4%	0,0%	1980 Ext. R/2004 Inc.
5	1,4%	0,0%	100,0%	1,4%	0,0%	1980 Ext./1980 Inc.

1.15. Table 6C – special applications, 60 °F base temperature – detailed results

Comparison grid:

Observed temperature: 14 °F to 104 °F, increment 0,2 °F

Thermal expansion coefficient @ 60 °F: 0,0002300 1 /°F to 0,0009300 1 / °F, increment 0,0000001

Quantity compared: Volume correction factor observed to base (5 & 4 decimals rounding)

Absolute numbers:

NSC: Number of successful calculations (may be smaller than calculated grid points)

NDF: Number of deviations found

NDG: Number of deviations where 2004 result lies above 1980 result

NDL: Number of deviations where 2004 result lies below 1980 result

NDD1: Number of deviations which differ by one result grid rounding increment

NDG1: Number of deviations which differ by more than one result grid rounding increment

MAXD: Maximum deviation found

TLCB: Temperature value closest to base at which maximum deviation occurs

TTLCB: Thermal expansion coefficient for closest temperature value where maximum deviation occurs

Calculated % ratios:

P : % value of differences: $(NDF / NSC) * 100$

PG: % value of deviations – 2004 value above 1980 value: $(NDG / NDF) * 100$

PL: % value of deviations – 2004 value below 1980 value: $(NDL / NDF) * 100$

P1: % value of deviations – deviation one result grid increment: $(NDD1 / NSC) * 100$

PX: % value of deviations – deviation above one result grid increment: $(NDG1 / NSC) * 100$

VCF - 5 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	3.150.450	2.010.421	815.755	1.194.666	839.952	1.170.469	0,00007	23,8	0,000889
2	2.971.350	1.902.813	766.679	1.136.134	796.453	1.106.360	0,00007	23,8	0,000889
3	594.45	376.651	147.08	229.571	163.658	212.993	0,00006	36,8	0,000926
4	179.1	107.608	49.076	58.532	43.499	64.109	0,00006	40,2	0,000260
5	36	18.997	8.529	10.468	6.168	12.829	0,00005	59,8	0,000230

C		P	PG	PL	P1	PX	
1		63,8%	40,6%	59,4%	26,7%	37,2%	2004 R./2004 Inc.
2		64,0%	40,3%	59,7%	26,8%	37,2%	1980 R./2004 Inc.
3		63,4%	39,0%	61,0%	27,5%	35,8%	1980 R./1980 Inc.
4		60,1%	45,6%	54,4%	24,3%	35,8%	1980 Ext. R/2004 Inc.
5		52,8%	44,9%	55,1%	17,1%	35,6%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.610.230	1.449.428	777.711	671.717	321.811	1.127.617	0,00007	23,8	0,000889
2	1.518.690	1.367.162	735.192	631.97	303.434	1.063.728	0,00007	23,8	0,000889
3	303.83	273.5	147.08	126.42	60.64	212.86	0,00006	36,8	0,000926
4	91.54	82.266	42.519	39.747	18.377	63.889	0,00006	40,2	0,000260
5	18.4	16.528	8.529	7.999	3.699	12.829	0,00005	59,8	0,000230

C		P	PG	PL	P1	PX	
1		90,0%	53,7%	46,3%	20,0%	70,0%	2004 R./2004 Inc.
2		90,0%	53,8%	46,2%	20,0%	70,0%	1980 R./2004 Inc.
3		90,0%	53,8%	46,2%	20,0%	70,1%	1980 R./1980 Inc.
4		89,9%	51,7%	48,3%	20,1%	69,8%	1980 Ext. R/2004 Inc.
5		89,8%	51,6%	48,4%	20,1%	69,7%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.540.220	560.993	38.044	522.949	518.141	42.852	0,00003	103,8	0,000927
2	1.452.660	535.651	31.487	504.164	493.019	42.632	0,00003	103,8	0,000927
3	290.62	103.151	0	103.151	103.018	133	0,00002	99,8	0,000916
4	87.56	25.342	6.557	18.785	25.122	220	0,00002	97,2	0,000269
5	17.6	2.469	0	2.469	2.469	0	0,00001	61,4	0,000253

C		P	PG	PL	P1	PX	
1		36,4%	6,8%	93,2%	33,6%	2,8%	2004 R./2004 Inc.
2		36,9%	5,9%	94,1%	33,9%	2,9%	1980 R./2004 Inc.
3		35,5%	0,0%	100,0%	35,4%	0,0%	1980 R./1980 Inc.
4		28,9%	25,9%	74,1%	28,7%	0,3%	1980 Ext. R/2004 Inc.
5		14,0%	0,0%	100,0%	14,0%	0,0%	1980 Ext./1980 Inc.

VCF - 4 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	TTLCB
1	3.150.450	95.457	58.231	37.226	95.457	0	0,0001	59,8	0,0002498
2	2.971.350	91.855	56.114	35.741	91.855	0	0,0001	59,8	0,0007499
3	594.45	13.445	10.433	3.012	13.445	0	0,0001	59,8	0,0007500
4	179.1	3.602	2.117	1.485	3.602	0	0,0001	59,8	0,0002498
5	36	266	266	0	266	0	0,0001	59,4	0,0002500

C	P	PG	PL	P1	PX	
1	3,0%	61,0%	39,0%	3,0%	0,0%	2004 R./2004 Inc.
2	3,1%	61,1%	38,9%	3,1%	0,0%	1980 R./2004 Inc.
3	2,3%	77,6%	22,4%	2,3%	0,0%	1980 R./1980 Inc.
4	2,0%	58,8%	41,2%	2,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,7%	100,0%	0,0%	0,7%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	TTLCB
1	1.610.230	62.954	58.204	4.75	62.954	0	0,0001	59,8	0,0002498
2	1.518.690	60.158	56.109	4.049	60.158	0	0,0001	59,8	0,0007499
3	303.83	10.433	10.433	0	10.433	0	0,0001	59,8	0,0007500
4	91.54	2.796	2.095	701	2.796	0	0,0001	59,8	0,0002498
5	18.4	266	266	0	266	0	0,0001	59,4	0,0002500

C	P	PG	PL	P1	PX	
1	3,9%	92,5%	7,5%	3,9%	0,0%	2004 R./2004 Inc.
2	4,0%	93,3%	6,7%	4,0%	0,0%	1980 R./2004 Inc.
3	3,4%	100,0%	0,0%	3,4%	0,0%	1980 R./1980 Inc.
4	3,1%	74,9%	25,1%	3,1%	0,0%	1980 Ext. R/2004 Inc.
5	1,4%	100,0%	0,0%	1,4%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	TTLCB
1	1.540.220	32.503	27	32.476	32.503	0	0,0001	71,8	0,0009252
2	1.452.660	31.697	5	31.692	31.697	0	0,0001	71,8	0,0009252
3	290.62	3.012	0	3.012	3.012	0	0,0001	81,4	0,0008805
4	87.56	806	22	784	806	0	0,0001	79,4	0,0002447
5	17.6	0	0	0	0	0	0,0000	0	0,0000000

C	P	PG	PL	P1	PX	
1	2,1%	0,1%	99,9%	2,1%	0,0%	2004 R./2004 Inc.
2	2,2%	0,0%	100,0%	2,2%	0,0%	1980 R./2004 Inc.
3	1,0%	0,0%	100,0%	1,0%	0,0%	1980 R./1980 Inc.
4	0,9%	2,7%	97,3%	0,9%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

1.16. Table 6D – lubricants, 60 °F base temperature – detailed results

Comparison grid:

Observed temperature: 14 °F to 104 °F, increment 0,2 °F

Base density @ 60 °F: -10 °API to 45 °API, increment 0,1 °API

Quantity compared: Volume correction factor observed to base (5 & 4 decimals rounding)

Absolute numbers:

NSC: Number of successful calculations (may be smaller than calculated grid points)

NDF: Number of deviations found

NDG: Number of deviations where 2004 result lies above 1980 result

NDL: Number of deviations where 2004 result lies below 1980 result

NDD1: Number of deviations which differ by one result grid rounding increment

NDG1: Number of deviations which differ by more than one result grid rounding increment

MAXD: Maximum deviation found

TLCB: Temperature value closest to base at which maximum deviation occurs

DTLCB: Density value for closest temperature value where maximum deviation occurs

Calculated % ratios:

P : % value of differences: $(NDF / NSC) * 100$

PG: % value of deviations – 2004 value above 1980 value: $(NDG / NDF) * 100$

PL: % value of deviations – 2004 value below 1980 value: $(NDL / NDF) * 100$

P1: % value of deviations – deviation one result grid increment: $(NDD1 / NSC) * 100$

PX: % value of deviations – deviation above one result grid increment: $(NDG1 / NSC) * 100$

VCF - 5 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	247.5	139.528	59.396	80.132	50.722	88.806	0,00006	23,0	43,0
2	247.5	139.528	59.396	80.132	50.722	88.806	0,00006	23,0	43,0
3	247.5	139.528	59.396	80.132	50.722	88.806	0,00006	23,0	43,0
4	0	0	0	0	0	0	0,00000	0,0	0,0
5	0	0	0	0	0	0	0,00000	0,0	0,0

C		P	PG	PL	P1	PX	
1		56,4%	42,6%	57,4%	20,5%	35,9%	2004 R./2004 Inc.
2		56,4%	42,6%	57,4%	20,5%	35,9%	1980 R./2004 Inc.
3		56,4%	42,6%	57,4%	20,5%	35,9%	1980 R./1980 Inc.
4		0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5		0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	126.5	113.908	59.396	54.512	25.102	88.806	0,00006	23,0	43,0
2	126.5	113.908	59.396	54.512	25.102	88.806	0,00006	23,0	43,0
3	126.5	113.908	59.396	54.512	25.102	88.806	0,00006	23,0	43,0
4	0	0	0	0	0	0	0,00000	0,0	0,0
5	0	0	0	0	0	0	0,00000	0,0	0,0

C		P	PG	PL	P1	PX	
1		90,0%	52,1%	47,9%	19,8%	70,2%	2004 R./2004 Inc.
2		90,0%	52,1%	47,9%	19,8%	70,2%	1980 R./2004 Inc.
3		90,0%	52,1%	47,9%	19,8%	70,2%	1980 R./1980 Inc.
4		0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5		0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	121	25.62	0	25.62	25.62	0	0,00001	60,2	0,2
2	121	25.62	0	25.62	25.62	0	0,00001	60,2	0,2
3	121	25.62	0	25.62	25.62	0	0,00001	60,2	0,2
4	0	0	0	0	0	0	0,00000	0	0
5	0	0	0	0	0	0	0,00000	0	0

C		P	PG	PL	P1	PX	
1		21,2%	0,0%	100,0%	21,2%	0,0%	2004 R./2004 Inc.
2		21,2%	0,0%	100,0%	21,2%	0,0%	1980 R./2004 Inc.
3		21,2%	0,0%	100,0%	21,2%	0,0%	1980 R./1980 Inc.
4		0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5		0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

VCF - 4 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	247.5	2.674	2.616	58	2.674	0	0,0001	59,6	20,5
2	247.5	2.674	2.616	58	2.674	0	0,0001	59,6	20,5
3	247.5	2.674	2.616	58	2.674	0	0,0001	59,6	20,5
4	0	0	0	0	0	0	0,0000	0,0	0,0
5	0	0	0	0	0	0	0,0000	0,0	0,0

C	P	PG	PL	P1	PX	
1	1,1%	97,8%	2,2%	1,1%	0,0%	2004 R./2004 Inc.
2	1,1%	97,8%	2,2%	1,1%	0,0%	1980 R./2004 Inc.
3	1,1%	97,8%	2,2%	1,1%	0,0%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	126.5	2.616	2.616	0	2.616	0	0,0001	59,6	20,5
2	126.5	2.616	2.616	0	2.616	0	0,0001	59,6	20,5
3	126.5	2.616	2.616	0	2.616	0	0,0001	59,6	20,5
4	0	0	0	0	0	0	0,0000	0,0	0,0
5	0	0	0	0	0	0	0,0000	0,0	0,0

C	P	PG	PL	P1	PX	
1	2,1%	100,0%	0,0%	2,1%	0,0%	2004 R./2004 Inc.
2	2,1%	100,0%	0,0%	2,1%	0,0%	1980 R./2004 Inc.
3	2,1%	100,0%	0,0%	2,1%	0,0%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	121	58	0	58	58	0	0,0001	95	34
2	121	58	0	58	58	0	0,0001	95	34
3	121	58	0	58	58	0	0,0001	95	34
4	0	0	0	0	0	0	0,0000	0	0
5	0	0	0	0	0	0	0,0000	0	0

C	P	PG	PL	P1	PX	
1	0,0%	0,0%	100,0%	0,0%	0,0%	2004 R./2004 Inc.
2	0,0%	0,0%	100,0%	0,0%	0,0%	1980 R./2004 Inc.
3	0,0%	0,0%	100,0%	0,0%	0,0%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

1.17. Table 24A – crude oil, 60 °F base temperature – detailed results

Comparison grid:

Observed temperature: 14 °F to 104 °F, increment 0,2 °F

Base relative density @ 60 °F: 0,6112 to 1,1646, increment 0,1

Quantity compared: Volume correction factor observed to base (5 & 4 decimals rounding)

Absolute numbers:

NSC: Number of successful calculations (may be smaller than calculated grid points)

NDF: Number of deviations found

NDG: Number of deviations where 2004 result lies above 1980 result

NDL: Number of deviations where 2004 result lies below 1980 result

NDD1: Number of deviations which differ by one result grid rounding increment

NDG1: Number of deviations which differ by more than one result grid rounding increment

MAXD: Maximum deviation found

TLCB: Temperature value closest to base at which maximum deviation occurs

DTLCB: Density value for closest temperature value where maximum deviation occurs

Calculated % ratios:

P : % value of differences: $(NDF / NSC) * 100$

PG: % value of deviations – 2004 value above 1980 value: $(NDG / NDF) * 100$

PL: % value of deviations – 2004 value below 1980 value: $(NDL / NDF) * 100$

P1: % value of deviations – deviation one result grid increment: $(NDD1 / NSC) * 100$

PX: % value of deviations – deviation above one result grid increment: $(NDG1 / NSC) * 100$

VCF - 5 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	2.490.300	1.555.399	675.759	879.64	612.03	943.369	0,00009	15,0	0,6193
2	1.431.000	867.428	372.964	494.464	345.52	521.908	0,00007	26,4	0,7678
3	286.2	164.192	69.033	95.159	61.864	102.328	0,00006	30,8	0,7915
4	1.059.300	687.971	302.795	385.176	266.51	421.461	0,00009	15,0	0,6193
5	211.95	130.12	52.034	78.086	54.143	75.977	0,00006	35,6	0,6185

C	P	PG	PL	P1	PX	
1	62,5%	43,4%	56,6%	24,6%	37,9%	2004 R./2004 Inc.
2	60,6%	43,0%	57,0%	24,1%	36,5%	1980 R./2004 Inc.
3	57,4%	42,0%	58,0%	21,6%	35,8%	1980 R./1980 Inc.
4	64,9%	44,0%	56,0%	25,2%	39,8%	1980 Ext. R/2004 Inc.
5	61,4%	40,0%	60,0%	25,5%	35,8%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.272.820	1.145.842	605.453	540.389	254.362	891.48	0,00009	15,0	0,6193
2	731.4	658.168	345.07	313.098	146.348	511.82	0,00007	26,4	0,7678
3	146.28	131.649	69.033	62.616	29.321	102.328	0,00006	30,8	0,7915
4	541.42	487.674	260.383	227.291	108.014	379.66	0,00009	15,0	0,6193
5	108.33	97.549	52.034	45.515	21.617	75.932	0,00006	35,6	0,6185

C	P	PG	PL	P1	PX	
1	90,0%	52,8%	47,2%	20,0%	70,0%	2004 R./2004 Inc.
2	90,0%	52,4%	47,6%	20,0%	70,0%	1980 R./2004 Inc.
3	90,0%	52,4%	47,6%	20,0%	70,0%	1980 R./1980 Inc.
4	90,1%	53,4%	46,6%	20,0%	70,1%	1980 Ext. R/2004 Inc.
5	90,0%	53,3%	46,7%	20,0%	70,1%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.217.480	409.557	70.306	339.251	357.668	51.889	0,00004	96,8	0,6118
2	699.6	209.26	27.894	181.366	199.172	10.088	0,00003	102,4	0,7708
3	139.92	32.543	0	32.543	32.543	0	0,00001	60,2	0,7710
4	517.88	200.297	42.412	157.885	158.496	41.801	0,00004	96,8	0,6118
5	103.62	32.571	0	32.571	32.526	45	0,00002	98,6	0,6330

C	P	PG	PL	P1	PX	
1	33,6%	17,2%	82,8%	29,4%	4,3%	2004 R./2004 Inc.
2	29,9%	13,3%	86,7%	28,5%	1,4%	1980 R./2004 Inc.
3	23,3%	0,0%	100,0%	23,3%	0,0%	1980 R./1980 Inc.
4	38,7%	21,2%	78,8%	30,6%	8,1%	1980 Ext. R/2004 Inc.
5	31,4%	0,0%	100,0%	31,4%	0,0%	1980 Ext./1980 Inc.

VCF - 4 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	2.490.300	75.989	44.15	31.839	75.989	0	0,0001	59,8	0,6752
2	1.431.000	32.6	20.076	12.524	32.6	0	0,0001	59,4	0,7653
3	286.2	3.513	3.3	213	3.513	0	0,0001	59,2	0,7795
4	1.059.300	43.389	24.074	19.315	43.389	0	0,0001	59,8	0,6752
5	211.95	4.306	3.358	948	4.306	0	0,0001	59,6	0,6250

C	P	PG	PL	P1	PX	
1	3,1%	58,1%	41,9%	3,1%	0,0%	2004 R./2004 Inc.
2	2,3%	61,6%	38,4%	2,3%	0,0%	1980 R./2004 Inc.
3	1,2%	93,9%	6,1%	1,2%	0,0%	1980 R./1980 Inc.
4	4,1%	55,5%	44,5%	4,1%	0,0%	1980 Ext. R/2004 Inc.
5	2,0%	78,0%	22,0%	2,0%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.272.820	50.189	41.881	8.308	50.189	0	0,0001	59,8	0,6752
2	731.4	23.277	19.937	3.34	23.277	0	0,0001	59,4	0,7653
3	146.28	3.3	3.3	0	3.3	0	0,0001	59,2	0,7795
4	541.42	26.912	21.944	4.968	26.912	0	0,0001	59,8	0,6752
5	108.33	3.358	3.358	0	3.358	0	0,0001	59,6	0,6250

C	P	PG	PL	P1	PX	
1	3,9%	83,4%	16,6%	3,9%	0,0%	2004 R./2004 Inc.
2	3,2%	85,7%	14,3%	3,2%	0,0%	1980 R./2004 Inc.
3	2,3%	100,0%	0,0%	2,3%	0,0%	1980 R./1980 Inc.
4	5,0%	81,5%	18,5%	5,0%	0,0%	1980 Ext. R/2004 Inc.
5	3,1%	100,0%	0,0%	3,1%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
	1.217.480	25.8	2.269	23.531	25.8	0	0,0001	66,6	0,6213
	699.6	9.323	139	9.184	9.323	0	0,0001	71,4	0,7603
	139.92	213	0	213	213	0	0,0001	89,4	0,7835
	517.88	16.477	2.13	14.347	16.477	0	0,0001	66,6	0,6213
	103.62	948	0	948	948	0	0,0001	82,4	0,6260

C	P	PG	PL	P1	PX	
1	2,1%	8,8%	91,2%	2,1%	0,0%	2004 R./2004 Inc.
2	1,3%	1,5%	98,5%	1,3%	0,0%	1980 R./2004 Inc.
3	0,2%	0,0%	100,0%	0,2%	0,0%	1980 R./1980 Inc.
4	3,2%	12,9%	87,1%	3,2%	0,0%	1980 Ext. R/2004 Inc.
5	0,9%	0,0%	100,0%	0,9%	0,0%	1980 Ext./1980 Inc.

1.18. Table 24B – products, 60 °F base temperature – detailed results

Comparison grid:

Observed temperature: 14 °F to 104 °F, increment 0,2 °F

Base relative density @ 60 °F: 0,6112 to 1,1646, increment 0,1

Quantity compared: Volume correction factor observed to base (5 & 4 decimals rounding)

Absolute numbers:

NSC: Number of successful calculations (may be smaller than calculated grid points)

NDF: Number of deviations found

NDG: Number of deviations where 2004 result lies above 1980 result

NDL: Number of deviations where 2004 result lies below 1980 result

NDD1: Number of deviations which differ by one result grid rounding increment

NDG1: Number of deviations which differ by more than one result grid rounding increment

MAXD: Maximum deviation found

TLCB: Temperature value closest to base at which maximum deviation occurs

DTLCB: Density value for closest temperature value where maximum deviation occurs

Calculated % ratios:

P : % value of differences: $(NDF / NSC) * 100$

PG: % value of deviations – 2004 value above 1980 value: $(NDG / NDF) * 100$

PL: % value of deviations – 2004 value below 1980 value: $(NDL / NDF) * 100$

P1: % value of deviations – deviation one result grid increment: $(NDD1 / NSC) * 100$

PX: % value of deviations – deviation above one result grid increment: $(NDG1 / NSC) * 100$

VCF - 5 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	2.490.300	1.535.529	653.912	881.617	587.864	947.665	0,00011	19,2	0,7743
2	1.903.500	1.182.343	501.596	680.747	458.049	724.294	0,00011	19,2	0,7743
3	380.7	227.792	92.731	135.061	91.469	136.323	0,00006	33,4	0,7040
4	586.8	353.186	152.316	200.87	129.815	223.371	0,00008	22,6	0,6123
5	117.45	69.848	28.561	41.287	27.712	42.136	0,00006	38,0	0,6205

C		P	PG	PL	P1	PX	
1		61,7%	42,6%	57,4%	23,6%	38,1%	2004 R./2004 Inc.
2		62,1%	42,4%	57,6%	24,1%	38,1%	1980 R./2004 Inc.
3		59,8%	40,7%	59,3%	24,0%	35,8%	1980 R./1980 Inc.
4		60,2%	43,1%	56,9%	22,1%	38,1%	1980 Ext. R/2004 Inc.
5		59,5%	40,9%	59,1%	23,6%	35,9%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.272.820	1.145.840	606.48	539.36	253.693	892.147	0,00011	19,2	0,7743
2	972.9	876.027	463.77	412.257	194.116	681.911	0,00011	19,2	0,7743
3	194.58	175.097	92.731	82.366	38.787	136.31	0,00006	33,4	0,7040
4	299.92	269.813	142.71	127.103	59.577	210.236	0,00008	22,6	0,6123
5	60.03	53.973	28.561	25.412	11.924	42.049	0,00006	38,0	0,6205

C		P	PG	PL	P1	PX	
1		90,0%	52,9%	47,1%	19,9%	70,1%	2004 R./2004 Inc.
2		90,0%	52,9%	47,1%	20,0%	70,1%	1980 R./2004 Inc.
3		90,0%	53,0%	47,0%	19,9%	70,1%	1980 R./1980 Inc.
4		90,0%	52,9%	47,1%	19,9%	70,1%	1980 Ext. R/2004 Inc.
5		89,9%	52,9%	47,1%	19,9%	70,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.217.480	389.689	47.432	342.257	334.171	55.518	0,00007	101,4	0,7718
2	930.6	306.316	37.826	268.49	263.933	42.383	0,00007	101,4	0,7718
3	186.12	52.695	0	52.695	52.682	13	0,00002	100,8	0,6690
4	286.88	83.373	9.606	73.767	70.238	13.135	0,00004	100	0,6123
5	57.42	15.875	0	15.875	15.788	87	0,00002	95,2	0,6125

C		P	PG	PL	P1	PX	
1		32,0%	12,2%	87,8%	27,4%	4,6%	2004 R./2004 Inc.
2		32,9%	12,3%	87,7%	28,4%	4,6%	1980 R./2004 Inc.
3		28,3%	0,0%	100,0%	28,3%	0,0%	1980 R./1980 Inc.
4		29,1%	11,5%	88,5%	24,5%	4,6%	1980 Ext. R/2004 Inc.
5		27,6%	0,0%	100,0%	27,5%	0,2%	1980 Ext./1980 Inc.

VCF - 4 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	2.490.300	74.851	45.416	29.435	74.851	0	0,0001	59,8	0,6953
2	1.903.500	59.396	35.821	23.575	59.396	0	0,0001	59,8	0,6953
3	380.7	6.192	5.33	862	6.192	0	0,0001	59,6	0,9990
4	586.8	15.455	9.595	5.86	15.455	0	0,0001	59,2	11,538
5	117.45	2.057	1.616	441	2.057	0	0,0001	59,0	0,6410

C	P	PG	PL	P1	PX	
1	3,0%	60,7%	39,3%	3,0%	0,0%	2004 R./2004 Inc.
2	3,1%	60,3%	39,7%	3,1%	0,0%	1980 R./2004 Inc.
3	1,6%	86,1%	13,9%	1,6%	0,0%	1980 R./1980 Inc.
4	2,6%	62,1%	37,9%	2,6%	0,0%	1980 Ext. R/2004 Inc.
5	1,8%	78,6%	21,4%	1,8%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.272.820	49.26	42.14	7.12	49.26	0	0,0001	59,8	0,6953
2	972.9	38.936	32.913	6.023	38.936	0	0,0001	59,8	0,6953
3	194.58	5.33	5.33	0	5.33	0	0,0001	59,6	0,9990
4	299.92	10.324	9.227	1.097	10.324	0	0,0001	59,2	11,538
5	60.03	1.616	1.616	0	1.616	0	0,0001	59,0	0,6410

C	P	PG	PL	P1	PX	
1	3,9%	85,5%	14,5%	3,9%	0,0%	2004 R./2004 Inc.
2	4,0%	84,5%	15,5%	4,0%	0,0%	1980 R./2004 Inc.
3	2,7%	100,0%	0,0%	2,7%	0,0%	1980 R./1980 Inc.
4	3,4%	89,4%	10,6%	3,4%	0,0%	1980 Ext. R/2004 Inc.
5	2,7%	100,0%	0,0%	2,7%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.217.480	25.591	3.276	22.315	25.591	0	0,0001	64,0	0,7833
2	930.6	20.46	2.908	17.552	20.46	0	0,0001	64,0	0,7833
3	186.12	862	0	862	862	0	0,0001	81,0	0,6780
4	286.88	5.131	368	4.763	5.131	0	0,0001	67,2	0,6203
5	57.42	441	0	441	441	0	0,0001	81,0	0,6190

C	P	PG	PL	P1	PX	
1	2,1%	12,8%	87,2%	2,1%	0,0%	2004 R./2004 Inc.
2	2,2%	14,2%	85,8%	2,2%	0,0%	1980 R./2004 Inc.
3	0,5%	0,0%	100,0%	0,5%	0,0%	1980 R./1980 Inc.
4	1,8%	7,2%	92,8%	1,8%	0,0%	1980 Ext. R/2004 Inc.
5	0,8%	0,0%	100,0%	0,8%	0,0%	1980 Ext./1980 Inc.

1.19. Table 24C – special applications, 60 °F base temperature – detailed results

Comparison grid:

Observed temperature: 14 °F to 104 °F, increment 0,2 °F

Thermal expansion coefficient @ 60 °F: 0,0002300 1 / °F to 0,0009300 1 / °F, increment 0,0000001

Quantity compared: Volume correction factor observed to base (5 & 4 decimals rounding)

Absolute numbers:

NSC: Number of successful calculations (may be smaller than calculated grid points)

NDF: Number of deviations found

NDG: Number of deviations where 2004 result lies above 1980 result

NDL: Number of deviations where 2004 result lies below 1980 result

NDD1: Number of deviations which differ by one result grid rounding increment

NDG1: Number of deviations which differ by more than one result grid rounding increment

MAXD: Maximum deviation found

TLCB: Temperature value closest to base at which maximum deviation occurs

TTLCB: Thermal expansion coefficient for closest temperature value where maximum deviation occurs

Calculated % ratios:

P : % value of differences: $(NDF / NSC) * 100$

PG: % value of deviations – 2004 value above 1980 value: $(NDG / NDF) * 100$

PL: % value of deviations – 2004 value below 1980 value: $(NDL / NDF) * 100$

P1: % value of deviations – deviation one result grid increment: $(NDD1 / NSC) * 100$

PX: % value of deviations – deviation above one result grid increment: $(NDG1 / NSC) * 100$

VCF - 5 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	TTLCB
1	3.150.450	2.010.421	815.755	1.194.666	839.952	1.170.469	0,00007	23,8	0,0008892
2	2.971.350	1.902.813	766.679	1.136.134	796.453	1.106.360	0,00007	23,8	0,0008892
3	594.45	376.651	147.08	229.571	163.658	212.993	0,00006	36,8	0,0009265
4	179.1	107.608	49.076	58.532	43.499	64.109	0,00006	40,2	0,0002607
5	36	18.997	8.529	10.468	6.168	12.829	0,00005	59,8	0,0002300

C		P	PG	PL	P1	PX	
1		63,8%	40,6%	59,4%	26,7%	37,2%	2004 R./2004 Inc.
2		64,0%	40,3%	59,7%	26,8%	37,2%	1980 R./2004 Inc.
3		63,4%	39,0%	61,0%	27,5%	35,8%	1980 R./1980 Inc.
4		60,1%	45,6%	54,4%	24,3%	35,8%	1980 Ext. R/2004 Inc.
5		52,8%	44,9%	55,1%	17,1%	35,6%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	TTLCB
1	1.610.230	1.449.428	777.711	671.717	321.811	1.127.617	0,00007	23,8	0,0008892
2	1.518.690	1.367.162	735.192	631.97	303.434	1.063.728	0,00007	23,8	0,0008892
3	303.83	273.5	147.08	126.42	60.64	212.86	0,00006	36,8	0,0009265
4	91.54	82.266	42.519	39.747	18.377	63.889	0,00006	40,2	0,0002607
5	18.4	16.528	8.529	7.999	3.699	12.829	0,00005	59,8	0,0002300

C		P	PG	PL	P1	PX	
1		90,0%	53,7%	46,3%	20,0%	70,0%	2004 R./2004 Inc.
2		90,0%	53,8%	46,2%	20,0%	70,0%	1980 R./2004 Inc.
3		90,0%	53,8%	46,2%	20,0%	70,1%	1980 R./1980 Inc.
4		89,9%	51,7%	48,3%	20,1%	69,8%	1980 Ext. R/2004 Inc.
5		89,8%	51,6%	48,4%	20,1%	69,7%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	TTLCB
1	1.540.220	560.993	38.044	522.949	518.141	42.852	0,00003	103,8	0,0009272
2	1.452.660	535.651	31.487	504.164	493.019	42.632	0,00003	103,8	0,0009272
3	290.62	103.151	0	103.151	103.018	133	0,00002	99,8	0,0009160
4	87.56	25.342	6.557	18.785	25.122	220	0,00002	97,2	0,0002697
5	17.6	2.469	0	2.469	2.469	0	0,00001	61,4	0,0002535

C		P	PG	PL	P1	PX	
1		36,4%	6,8%	93,2%	33,6%	2,8%	2004 R./2004 Inc.
2		36,9%	5,9%	94,1%	33,9%	2,9%	1980 R./2004 Inc.
3		35,5%	0,0%	100,0%	35,4%	0,0%	1980 R./1980 Inc.
4		28,9%	25,9%	74,1%	28,7%	0,3%	1980 Ext. R/2004 Inc.
5		14,0%	0,0%	100,0%	14,0%	0,0%	1980 Ext./1980 Inc.

VCF - 4 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	TTLCB
1	3.150.450	95.457	58.231	37.226	95.457	0	0,0001	59,8	0,0002498
2	2.971.350	91.855	56.114	35.741	91.855	0	0,0001	59,8	0,0007499
3	594.45	13.445	10.433	3.012	13.445	0	0,0001	59,8	0,0007500
4	179.1	3.602	2.117	1.485	3.602	0	0,0001	59,8	0,0002498
5	36	266	266	0	266	0	0,0001	59,4	0,0002500

C	P	PG	PL	P1	PX	
1	3,0%	61,0%	39,0%	3,0%	0,0%	2004 R./2004 Inc.
2	3,1%	61,1%	38,9%	3,1%	0,0%	1980 R./2004 Inc.
3	2,3%	77,6%	22,4%	2,3%	0,0%	1980 R./1980 Inc.
4	2,0%	58,8%	41,2%	2,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,7%	100,0%	0,0%	0,7%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	TTLCB
1	1.610.230	62.954	58.204	4.75	62.954	0	0,0001	59,8	0,0002498
2	1.518.690	60.158	56.109	4.049	60.158	0	0,0001	59,8	0,0007499
3	303.83	10.433	10.433	0	10.433	0	0,0001	59,8	0,0007500
4	91.54	2.796	2.095	701	2.796	0	0,0001	59,8	0,0002498
5	18.4	266	266	0	266	0	0,0001	59,4	0,0002500

C	P	PG	PL	P1	PX	
1	3,9%	92,5%	7,5%	3,9%	0,0%	2004 R./2004 Inc.
2	4,0%	93,3%	6,7%	4,0%	0,0%	1980 R./2004 Inc.
3	3,4%	100,0%	0,0%	3,4%	0,0%	1980 R./1980 Inc.
4	3,1%	74,9%	25,1%	3,1%	0,0%	1980 Ext. R/2004 Inc.
5	1,4%	100,0%	0,0%	1,4%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	TTLCB
1	1.540.220	32.503	27	32.476	32.503	0	0,0001	71,8	0,0009252
2	1.452.660	31.697	5	31.692	31.697	0	0,0001	71,8	0,0009252
3	290.62	3.012	0	3.012	3.012	0	0,0001	81,4	0,0008805
4	87.56	806	22	784	806	0	0,0001	79,4	0,0002447
5	17.6	0	0	0	0	0	0,0000	0	0,0000000

C	P	PG	PL	P1	PX	
1	2,1%	0,1%	99,9%	2,1%	0,0%	2004 R./2004 Inc.
2	2,2%	0,0%	100,0%	2,2%	0,0%	1980 R./2004 Inc.
3	1,0%	0,0%	100,0%	1,0%	0,0%	1980 R./1980 Inc.
4	0,9%	2,7%	97,3%	0,9%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

1.20. Table 24D – lubricants, 60 °F base temperature – detailed results

Comparison grid:

Observed temperature: 14 °F to 104 °F, increment 0,2 °F

Base relative density @ 60 °F: 0,8017 to 1,1646, increment 0,1

Quantity compared: Volume correction factor observed to base (5 & 4 decimals rounding)

Absolute numbers:

NSC: Number of successful calculations (may be smaller than calculated grid points)

NDF: Number of deviations found

NDG: Number of deviations where 2004 result lies above 1980 result

NDL: Number of deviations where 2004 result lies below 1980 result

NDD1: Number of deviations which differ by one result grid rounding increment

NDG1: Number of deviations which differ by more than one result grid rounding increment

MAXD: Maximum deviation found

TLCB: Temperature value closest to base at which maximum deviation occurs

DTLCB: Density value for closest temperature value where maximum deviation occurs

Calculated % ratios:

P : % value of differences: $(NDF / NSC) * 100$

PG: % value of deviations – 2004 value above 1980 value: $(NDG / NDF) * 100$

PL: % value of deviations – 2004 value below 1980 value: $(NDL / NDF) * 100$

P1: % value of deviations – deviation one result grid increment: $(NDD1 / NSC) * 100$

PX: % value of deviations – deviation above one result grid increment: $(NDG1 / NSC) * 100$

VCF - 5 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.633.500	918.818	393.32	525.498	332.808	586.01	0,00006	39,6	0,8023
2	1.631.700	917.824	392.9	524.924	332.475	585.349	0,00006	39,6	0,8023
3	326.25	182.829	78.162	104.667	65.805	117.024	0,00006	23,6	0,8185
4	1.8	994	420	574	333	661	0,00005	48,8	11,646
5	450	241	104	137	75	166	0,00005	47,8	11,645

C		P	PG	PL	P1	PX	
1		56,2%	42,8%	57,2%	20,4%	35,9%	2004 R./2004 Inc.
2		56,2%	42,8%	57,2%	20,4%	35,9%	1980 R./2004 Inc.
3		56,0%	42,8%	57,2%	20,2%	35,9%	1980 R./1980 Inc.
4		55,2%	42,3%	57,7%	18,5%	36,7%	1980 Ext. R/2004 Inc.
5		53,6%	43,2%	56,8%	16,7%	36,9%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	834.9	751.891	391.479	360.412	165.915	585.976	0,00006	39,6	0,8023
2	833.98	751.074	391.059	360.015	165.759	585.315	0,00006	39,6	0,8023
3	166.75	150.159	78.162	71.997	33.135	117.024	0,00006	23,6	0,8185
4	920	817	420	397	156	661	0,00005	48,8	11,646
5	230	204	104	100	38	166	0,00005	47,8	11,645

C		P	PG	PL	P1	PX	
1		90,1%	52,1%	47,9%	19,9%	70,2%	2004 R./2004 Inc.
2		90,1%	52,1%	47,9%	19,9%	70,2%	1980 R./2004 Inc.
3		90,1%	52,1%	47,9%	19,9%	70,2%	1980 R./1980 Inc.
4		88,8%	51,4%	48,6%	17,0%	71,8%	1980 Ext. R/2004 Inc.
5		88,7%	51,0%	49,0%	16,5%	72,2%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	798.6	166.927	1.841	165.086	166.893	34	0,00002	98,4	0,8023
2	797.72	166.75	1.841	164.909	166.716	34	0,00002	98,4	0,8023
3	159.5	32.67	0	32.67	32.67	0	0,00001	60,2	0,9310
4	880	177	0	177	177	0	0,00001	75,0	11,643
5	220	37	0	37	37	0	0,00001	76,2	11,645

C		P	PG	PL	P1	PX	
1		20,9%	1,1%	98,9%	20,9%	0,0%	2004 R./2004 Inc.
2		20,9%	1,1%	98,9%	20,9%	0,0%	1980 R./2004 Inc.
3		20,5%	0,0%	100,0%	20,5%	0,0%	1980 R./1980 Inc.
4		20,1%	0,0%	100,0%	20,1%	0,0%	1980 Ext. R/2004 Inc.
5		16,8%	0,0%	100,0%	16,8%	0,0%	1980 Ext./1980 Inc.

VCF - 4 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.633.500	19.14	16.734	2.406	19.14	0	0,0001	59,6	0,9308
2	1.631.700	19.126	16.72	2.406	19.126	0	0,0001	59,6	0,9308
3	326.25	3.292	3.242	50	3.292	0	0,0001	59,6	0,9310
4	1.8	14	14	0	14	0	0,0001	43,8	11,643
5	450	3	3	0	3	0	0,0001	43,8	11,645

C	P	PG	PL	P1	PX	
1	1,2%	87,4%	12,6%	1,2%	0,0%	2004 R./2004 Inc.
2	1,2%	87,4%	12,6%	1,2%	0,0%	1980 R./2004 Inc.
3	1,0%	98,5%	1,5%	1,0%	0,0%	1980 R./1980 Inc.
4	0,8%	100,0%	0,0%	0,8%	0,0%	1980 Ext. R/2004 Inc.
5	0,7%	100,0%	0,0%	0,7%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	834.9	17.014	16.734	280	17.014	0	0,0001	59,6	0,9308
2	833.98	17	16.72	280	17	0	0,0001	59,6	0,9308
3	166.75	3.242	3.242	0	3.242	0	0,0001	59,6	0,9310
4	920	14	14	0	14	0	0,0001	43,8	11,643
5	230	3	3	0	3	0	0,0001	43,8	11,645

C	P	PG	PL	P1	PX	
1	2,0%	98,4%	1,6%	2,0%	0,0%	2004 R./2004 Inc.
2	2,0%	98,4%	1,6%	2,0%	0,0%	1980 R./2004 Inc.
3	1,9%	100,0%	0,0%	1,9%	0,0%	1980 R./1980 Inc.
4	1,5%	100,0%	0,0%	1,5%	0,0%	1980 Ext. R/2004 Inc.
5	1,3%	100,0%	0,0%	1,3%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	798.6	2.126	0	2.126	2.126	0	0,0001	82,4	0,8758
2	797.72	2.126	0	2.126	2.126	0	0,0001	82,4	0,8758
3	159.5	50	0	50	50	0	0,0001	94,2	0,8475
4	880	0	0	0	0	0	0,0000	0,0	0,0000
5	220	0	0	0	0	0	0,0000	0,0	0,0000

C	P	PG	PL	P1	PX	
1	0,3%	0,0%	100,0%	0,3%	0,0%	2004 R./2004 Inc.
2	0,3%	0,0%	100,0%	0,3%	0,0%	1980 R./2004 Inc.
3	0,0%	0,0%	100,0%	0,0%	0,0%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

1.21. Table 54A – crude oil, 15 °C base temperature – detailed results

Comparison grid:

Observed temperature: -10 °C to 40 °C, increment 0,1 °C

Base density @ 15 °C: 611,2 kg/m³ to 1.163,8 kg/m³, increment 0,1 kg/m³

Quantity compared: Volume correction factor observed to base (5 & 4 decimals rounding)

Absolute numbers:

NSC: Number of successful calculations (may be smaller than calculated grid points)

NDF: Number of deviations found

NDG: Number of deviations where 2004 result lies above 1980 result

NDL: Number of deviations where 2004 result lies below 1980 result

NDD1: Number of deviations which differ by one result grid rounding increment

NDG1: Number of deviations which differ by more than one result grid rounding increment

MAXD: Maximum deviation found

TLCB: Temperature value closest to base at which maximum deviation occurs

DTLCB: Density value for closest temperature value where maximum deviation occurs

Calculated % ratios:

P : % value of differences: $(NDF / NSC) * 100$

PG: % value of deviations - 2004 value above 1980 value: $(NDG / NDF) * 100$

PL: % value of deviations - 2004 value below 1980 value: $(NDL / NDF) * 100$

P1: % value of deviations - deviation one result grid increment: $(NDD1 / NSC) * 100$

PX: % value of deviations - deviation above one result grid increment: $(NDG1 / NSC) * 100$

Results ASTM D1250-80 standard rounding
VCF - 5 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	2.763.000	1.811.654	690.271	1.121.383	710.129	1.101.525	0,00009	-3,60	614,3
2	1.587.500	1.016.682	389.057	627.625	424.182	592.5	0,00007	-1,60	759,8
3	317.5	208.924	77.239	131.685	96.829	112.095	0,00006	4,20	763,0
4	1.175.500	794.972	301.214	493.758	285.947	509.025	0,00009	-3,60	614,3
5	235	168.95	59.849	109.101	68.805	100.145	0,00007	-3,60	614,5

C	P	PG	PL	P1	PX	
1	65,6%	38,1%	61,9%	25,7%	39,9%	2004 R./2004 Inc.
2	64,0%	38,3%	61,7%	26,7%	37,3%	1980 R./2004 Inc.
3	65,8%	37,0%	63,0%	30,5%	35,3%	1980 R./1980 Inc.
4	67,6%	37,9%	62,1%	24,3%	43,3%	1980 Ext. R/2004 Inc.
5	71,9%	35,4%	64,6%	29,3%	42,6%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.381.500	1.243.371	685.691	557.68	276.117	967.254	0,00009	-3,60	614,3
2	793.75	714.454	386.315	328.139	158.84	555.614	0,00007	-1,60	759,8
3	158.75	142.917	77.239	65.678	31.864	111.053	0,00006	4,20	763,0
4	587.75	528.917	299.376	229.541	117.277	411.64	0,00009	-3,60	614,3
5	117.5	105.712	59.849	45.863	23.445	82.267	0,00007	-3,60	614,5

C	P	PG	PL	P1	PX	
1	90,0%	55,1%	44,9%	20,0%	70,0%	2004 R./2004 Inc.
2	90,0%	54,1%	45,9%	20,0%	70,0%	1980 R./2004 Inc.
3	90,0%	54,0%	46,0%	20,1%	70,0%	1980 R./1980 Inc.
4	90,0%	56,6%	43,4%	20,0%	70,0%	1980 Ext. R/2004 Inc.
5	90,0%	56,6%	43,4%	20,0%	70,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.381.500	568.283	4.58	563.703	434.012	134.271	0,00006	37,50	613,3
2	793.75	302.228	2.742	299.486	265.342	36.886	0,00003	32,90	763,3
3	158.75	66.007	0	66.007	64.965	1.042	0,00002	32,90	763,5
4	587.75	266.055	1.838	264.217	168.67	97.385	0,00006	37,50	613,3
5	117.5	63.238	0	63.238	45.36	17.878	0,00004	39,90	614,5

C	P	PG	PL	P1	PX	
1	41,1%	0,8%	99,2%	31,4%	9,7%	2004 R./2004 Inc.
2	38,1%	0,9%	99,1%	33,4%	4,6%	1980 R./2004 Inc.
3	41,6%	0,0%	100,0%	40,9%	0,7%	1980 R./1980 Inc.
4	45,3%	0,7%	99,3%	28,7%	16,6%	1980 Ext. R/2004 Inc.
5	53,8%	0,0%	100,0%	38,6%	15,2%	1980 Ext./1980 Inc.

VCF - 4 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	2.763.000	122.378	66.537	55.841	122.378	0	0,0001	14,90	639,8
2	1.587.500	52.019	30.824	21.195	52.019	0	0,0001	14,80	904,8
3	317.5	8.688	6.038	2.65	8.688	0	0,0001	14,70	858,5
4	1.175.500	70.359	35.713	34.646	70.359	0	0,0001	14,90	639,8
5	235	13.164	6.935	6.229	13.164	0	0,0001	14,70	725,5

C	P	PG	PL	P1	PX	
1	4,4%	54,4%	45,6%	4,4%	0,0%	2004 R./2004 Inc.
2	3,3%	59,3%	40,7%	3,3%	0,0%	1980 R./2004 Inc.
3	2,7%	69,5%	30,5%	2,7%	0,0%	1980 R./1980 Inc.
4	6,0%	50,8%	49,2%	6,0%	0,0%	1980 Ext. R/2004 Inc.
5	5,6%	52,7%	47,3%	5,6%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.381.500	68.558	66.537	2.021	68.558	0	0,0001	14,90	639,8
2	793.75	31.597	30.824	773	31.597	0	0,0001	14,80	904,8
3	158.75	6.038	6.038	0	6.038	0	0,0001	14,70	858,5
4	587.75	36.961	35.713	1.248	36.961	0	0,0001	14,90	639,8
5	117.5	6.935	6.935	0	6.935	0	0,0001	14,70	725,5

C	P	PG	PL	P1	PX	
1	5,0%	97,1%	2,9%	5,0%	0,0%	2004 R./2004 Inc.
2	4,0%	97,6%	2,4%	4,0%	0,0%	1980 R./2004 Inc.
3	3,8%	100,0%	0,0%	3,8%	0,0%	1980 R./1980 Inc.
4	6,3%	96,6%	3,4%	6,3%	0,0%	1980 Ext. R/2004 Inc.
5	5,9%	100,0%	0,0%	5,9%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.381.500	53.82	0	53.82	53.82	0	0,0001	17,50	615,8
2	793.75	20.422	0	20.422	20.422	0	0,0001	19,80	764,3
3	158.75	2.65	0	2.65	2.65	0	0,0001	24,90	775,0
4	587.75	33.398	0	33.398	33.398	0	0,0001	17,50	615,8
5	117.5	6.229	0	6.229	6.229	0	0,0001	20,40	623,5

C	P	PG	PL	P1	PX	
1	3,9%	0,0%	100,0%	3,9%	0,0%	2004 R./2004 Inc.
2	2,6%	0,0%	100,0%	2,6%	0,0%	1980 R./2004 Inc.
3	1,7%	0,0%	100,0%	1,7%	0,0%	1980 R./1980 Inc.
4	5,7%	0,0%	100,0%	5,7%	0,0%	1980 Ext. R/2004 Inc.
5	5,3%	0,0%	100,0%	5,3%	0,0%	1980 Ext./1980 Inc.

Results ASTM D1250-80 with "German rounding" (Input data)
VCF - 5 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	2.763.000	1.890.660	685.348	1.205.312	828.016	1.062.644	0,00007	-3,00	613,9
2	1.585.500	1.043.044	385.57	657.474	482.863	560.181	0,00006	4,30	784,1
3	1.585.500	1.043.044	385.57	657.474	482.863	560.181	0,00006	4,30	784,1
4	1.177.500	847.616	299.778	547.838	345.153	502.463	0,00007	-3,00	613,9
5	1.177.500	847.616	299.778	547.838	345.153	502.463	0,00007	-3,00	613,9

C	P	PG	PL	P1	PX	
1	68,4%	36,2%	63,8%	30,0%	38,5%	2004 R./2004 Inc.
2	65,8%	37,0%	63,0%	30,5%	35,3%	1980 R./2004 Inc.
3	65,8%	37,0%	63,0%	30,5%	35,3%	1980 R./1980 Inc.
4	72,0%	35,4%	64,6%	29,3%	42,7%	1980 Ext. R/2004 Inc.
5	72,0%	35,4%	64,6%	29,3%	42,7%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.381.500	1.243.371	685.348	558.023	276.282	967.089	0,00007	-3,00	613,9
2	792.75	713.554	385.57	327.984	158.641	554.913	0,00006	4,30	784,1
3	792.75	713.554	385.57	327.984	158.641	554.913	0,00006	4,30	784,1
4	588.75	529.817	299.778	230.039	117.641	412.176	0,00007	-3,00	613,9
5	588.75	529.817	299.778	230.039	117.641	412.176	0,00007	-3,00	613,9

C	P	PG	PL	P1	PX	
1	90,0%	55,1%	44,9%	20,0%	70,0%	2004 R./2004 Inc.
2	90,0%	54,0%	46,0%	20,0%	70,0%	1980 R./2004 Inc.
3	90,0%	54,0%	46,0%	20,0%	70,0%	1980 R./1980 Inc.
4	90,0%	56,6%	43,4%	20,0%	70,0%	1980 Ext. R/2004 Inc.
5	90,0%	56,6%	43,4%	20,0%	70,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.381.500	647.289	0	647.289	551.734	95.555	0,00004	39,80	611,2
2	792.75	329.49	0	329.49	324.222	5.268	0,00002	32,30	758,2
3	792.75	329.49	0	329.49	324.222	5.268	0,00002	32,30	758,2
4	588.75	317.799	0	317.799	227.512	90.287	0,00004	39,80	611,2
5	588.75	317.799	0	317.799	227.512	90.287	0,00004	39,80	611,2

C	P	PG	PL	P1	PX	
1	46,9%	0,0%	100,0%	39,9%	6,9%	2004 R./2004 Inc.
2	41,6%	0,0%	100,0%	40,9%	0,7%	1980 R./2004 Inc.
3	41,6%	0,0%	100,0%	40,9%	0,7%	1980 R./1980 Inc.
4	54,0%	0,0%	100,0%	38,6%	15,3%	1980 Ext. R/2004 Inc.
5	54,0%	0,0%	100,0%	38,6%	15,3%	1980 Ext./1980 Inc.

VCF - 4 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	2.763.000	109.365	64.173	45.192	109.365	0	0,0001	14,90	639,8
2	1.585.500	43.143	29.756	13.387	43.143	0	0,0001	14,80	904,8
3	1.585.500	43.143	29.756	13.387	43.143	0	0,0001	14,80	904,8
4	1.177.500	66.222	34.417	31.805	66.222	0	0,0001	14,90	639,8
5	1.177.500	66.222	34.417	31.805	66.222	0	0,0001	14,90	639,8

C	P	PG	PL	P1	PX	
1	4,0%	58,7%	41,3%	4,0%	0,0%	2004 R./2004 Inc.
2	2,7%	69,0%	31,0%	2,7%	0,0%	1980 R./2004 Inc.
3	2,7%	69,0%	31,0%	2,7%	0,0%	1980 R./1980 Inc.
4	5,6%	52,0%	48,0%	5,6%	0,0%	1980 Ext. R/2004 Inc.
5	5,6%	52,0%	48,0%	5,6%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.381.500	64.173	64.173	0	64.173	0	0,0001	14,90	639,8
2	792.75	29.756	29.756	0	29.756	0	0,0001	14,80	904,8
3	792.75	29.756	29.756	0	29.756	0	0,0001	14,80	904,8
4	588.75	34.417	34.417	0	34.417	0	0,0001	14,90	639,8
5	588.75	34.417	34.417	0	34.417	0	0,0001	14,90	639,8

C	P	PG	PL	P1	PX	
1	4,6%	100,0%	0,0%	4,6%	0,0%	2004 R./2004 Inc.
2	3,8%	100,0%	0,0%	3,8%	0,0%	1980 R./2004 Inc.
3	3,8%	100,0%	0,0%	3,8%	0,0%	1980 R./1980 Inc.
4	5,8%	100,0%	0,0%	5,8%	0,0%	1980 Ext. R/2004 Inc.
5	5,8%	100,0%	0,0%	5,8%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.381.500	45.192	0	45.192	45.192	0	0,0001	20,20	619,3
2	792.75	13.387	0	13.387	13.387	0	0,0001	24,30	770,3
3	792.75	13.387	0	13.387	13.387	0	0,0001	24,30	770,3
4	588.75	31.805	0	31.805	31.805	0	0,0001	20,20	619,3
5	588.75	31.805	0	31.805	31.805	0	0,0001	20,20	619,3

C	P	PG	PL	P1	PX	
1	3,3%	0,0%	100,0%	3,3%	0,0%	2004 R./2004 Inc.
2	1,7%	0,0%	100,0%	1,7%	0,0%	1980 R./2004 Inc.
3	1,7%	0,0%	100,0%	1,7%	0,0%	1980 R./1980 Inc.
4	5,4%	0,0%	100,0%	5,4%	0,0%	1980 Ext. R/2004 Inc.
5	5,4%	0,0%	100,0%	5,4%	0,0%	1980 Ext./1980 Inc.

1.22. Table 54B – products, 15 °C base temperature – detailed results

Comparison grid:

Observed temperature: -10 °C to 40 °C, increment 0,1 °C

Base density @ 15 °C: 611,2 kg/m³ to 1.163,9 kg/m³, increment 0,1 kg/m³

Quantity compared: Volume correction factor observed to base (5 & 4 decimals rounding)

Absolute numbers:

NSC: Number of successful calculations (may be smaller than calculated grid points)

NDF: Number of deviations found

NDG: Number of deviations where 2004 result lies above 1980 result

NDL: Number of deviations where 2004 result lies below 1980 result

NDD1: Number of deviations which differ by one result grid rounding increment

NDG1: Number of deviations which differ by more than one result grid rounding increment

MAXD: Maximum deviation found

TLCB: Temperature value closest to base at which maximum deviation occurs

DTLCB: Density value for closest temperature value where maximum deviation occurs

Calculated % ratios:

P : % value of differences: $(NDF / NSC) * 100$

PG: % value of deviations - 2004 value above 1980 value: $(NDG / NDF) * 100$

PL: % value of deviations - 2004 value below 1980 value: $(NDL / NDF) * 100$

P1: % value of deviations - deviation one result grid increment: $(NDD1 / NSC) * 100$

PX: % value of deviations - deviation above one result grid increment: $(NDG1 / NSC) * 100$

Results ASTM D1250-80 standard rounding
VCF - 5 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	2.763.500	1.663.958	707.344	956.614	592.595	1.071.363	0,00022	-9,20	771,3
2	2.112.500	1.288.120	544.822	743.298	463.308	824.812	0,00022	-9,20	771,3
3	422.5	252.598	102.416	150.182	95.088	157.51	0,00016	-8,10	771,0
4	651	375.838	162.522	213.316	129.287	246.551	0,00008	-9,00	611,3
5	130	74.563	30.256	44.307	28.164	46.399	0,00006	0,00	620,0

C	P	PG	PL	P1	PX	
1	60,2%	42,5%	57,5%	21,4%	38,8%	2004 R./2004 Inc.
2	61,0%	42,3%	57,7%	21,9%	39,0%	1980 R./2004 Inc.
3	59,8%	40,5%	59,5%	22,5%	37,3%	1980 R./1980 Inc.
4	57,7%	43,2%	56,8%	19,9%	37,9%	1980 Ext. R/2004 Inc.
5	57,4%	40,6%	59,4%	21,7%	35,7%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.381.750	1.246.427	662.302	584.125	271.644	974.783	0,00022	-9,20	771,3
2	1.056.250	953.296	510.885	442.411	206.751	746.545	0,00022	-9,20	771,3
3	211.25	190.794	102.416	88.378	41.251	149.543	0,00016	-8,10	771,0
4	325.5	293.131	151.417	141.714	64.893	228.238	0,00008	-9,00	611,3
5	65	58.539	30.256	28.283	12.988	45.551	0,00006	0,00	620,0

C	P	PG	PL	P1	PX	
1	90,2%	53,1%	46,9%	19,7%	70,5%	2004 R./2004 Inc.
2	90,3%	53,6%	46,4%	19,6%	70,7%	1980 R./2004 Inc.
3	90,3%	53,7%	46,3%	19,5%	70,8%	1980 R./1980 Inc.
4	90,1%	51,7%	48,3%	19,9%	70,1%	1980 Ext. R/2004 Inc.
5	90,1%	51,7%	48,3%	20,0%	70,1%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.381.750	417.531	45.042	372.489	320.951	96.58	0,00019	39,90	771,3
2	1.056.250	334.824	33.937	300.887	256.557	78.267	0,00019	39,90	771,3
3	211.25	61.804	0	61.804	53.837	7.967	0,00013	39,40	771,5
4	325.5	82.707	11.105	71.602	64.394	18.313	0,00004	36,20	612,8
5	65	16.024	0	16.024	15.176	848	0,00002	32,90	612,5

C	P	PG	PL	P1	PX	
1	30,2%	10,8%	89,2%	23,2%	7,0%	2004 R./2004 Inc.
2	31,7%	10,1%	89,9%	24,3%	7,4%	1980 R./2004 Inc.
3	29,3%	0,0%	100,0%	25,5%	3,8%	1980 R./1980 Inc.
4	25,4%	13,4%	86,6%	19,8%	5,6%	1980 Ext. R/2004 Inc.
5	24,7%	0,0%	100,0%	23,3%	1,3%	1980 Ext./1980 Inc.

VCF - 4 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	2.763.500	107.365	53.715	53.65	103.915	3.45	0,0002	29,10	771,3
2	2.112.500	91.998	46.495	45.503	88.548	3.45	0,0002	29,10	771,3
3	422.5	15.259	8.361	6.898	15.158	101	0,0002	36,30	771,5
4	651	15.367	7.22	8.147	15.367	0	0,0001	14,90	648,7
5	130	1.872	1.001	871	1.872	0	0,0001	14,60	616,0

C	P	PG	PL	P1	PX	
1	3,9%	50,0%	50,0%	3,8%	0,1%	2004 R./2004 Inc.
2	4,4%	50,5%	49,5%	4,2%	0,2%	1980 R./2004 Inc.
3	3,6%	54,8%	45,2%	3,6%	0,0%	1980 R./1980 Inc.
4	2,4%	47,0%	53,0%	2,4%	0,0%	1980 Ext. R/2004 Inc.
5	1,4%	53,5%	46,5%	1,4%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.381.750	61.18	53.621	7.559	59.652	1.528	0,0002	0,60	771,8
2	1.056.250	52.024	46.485	5.539	50.496	1.528	0,0002	0,60	771,8
3	211.25	8.362	8.361	1	8.334	28	0,0002	-7,30	771,0
4	325.5	9.156	7.136	2.02	9.156	0	0,0001	14,90	648,7
5	65	1.001	1.001	0	1.001	0	0,0001	14,60	616,0

C	P	PG	PL	P1	PX	
1	4,4%	87,6%	12,4%	4,3%	0,1%	2004 R./2004 Inc.
2	4,9%	89,4%	10,6%	4,8%	0,1%	1980 R./2004 Inc.
3	4,0%	100,0%	0,0%	3,9%	0,0%	1980 R./1980 Inc.
4	2,8%	77,9%	22,1%	2,8%	0,0%	1980 Ext. R/2004 Inc.
5	1,5%	100,0%	0,0%	1,5%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.381.750	46.185	94	46.091	44.263	1.922	0,0002	29,10	771,3
2	1.056.250	39.974	10	39.964	38.052	1.922	0,0002	29,10	771,3
3	211.25	6.897	0	6.897	6.824	73	0,0002	36,30	771,5
4	325.5	6.211	84	6.127	6.211	0	0,0001	19,40	622,3
5	65	871	0	871	871	0	0,0001	25,00	615,5

C	P	PG	PL	P1	PX	
1	3,3%	0,2%	99,8%	3,2%	0,1%	2004 R./2004 Inc.
2	3,8%	0,0%	100,0%	3,6%	0,2%	1980 R./2004 Inc.
3	3,3%	0,0%	100,0%	3,2%	0,0%	1980 R./1980 Inc.
4	1,9%	1,4%	98,6%	1,9%	0,0%	1980 Ext. R/2004 Inc.
5	1,3%	0,0%	100,0%	1,3%	0,0%	1980 Ext./1980 Inc.

Results ASTM D1250-80 with "German rounding" (Input data)
VCF - 5 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	2.763.500	1.639.380	663.577	975.803	619.236	1.020.144	0,00016	-7,90	770,9
2	2.110.500	1.263.984	511.607	752.377	477.197	786.787	0,00016	-7,90	770,9
3	2.110.500	1.263.984	511.607	752.377	477.197	786.787	0,00016	-7,90	770,9
4	653	375.396	151.97	223.426	142.039	233.357	0,00006	0,00	620,0
5	653	375.396	151.97	223.426	142.039	233.357	0,00006	0,00	620,0

C	P	PG	PL	P1	PX	
1	59,3%	40,5%	59,5%	22,4%	36,9%	2004 R./2004 Inc.
2	59,9%	40,5%	59,5%	22,6%	37,3%	1980 R./2004 Inc.
3	59,9%	40,5%	59,5%	22,6%	37,3%	1980 R./1980 Inc.
4	57,5%	40,5%	59,5%	21,8%	35,7%	1980 Ext. R/2004 Inc.
5	57,5%	40,5%	59,5%	21,8%	35,7%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.381.750	1.246.818	663.577	583.241	270.923	975.895	0,00016	-7,90	770,9
2	1.055.250	952.787	511.607	441.18	205.833	746.954	0,00016	-7,90	770,9
3	1.055.250	952.787	511.607	441.18	205.833	746.954	0,00016	-7,90	770,9
4	326.5	294.031	151.97	142.061	65.09	228.941	0,00006	0,00	620,0
5	326.5	294.031	151.97	142.061	65.09	228.941	0,00006	0,00	620,0

C	P	PG	PL	P1	PX	
1	90,2%	53,2%	46,8%	19,6%	70,6%	2004 R./2004 Inc.
2	90,3%	53,7%	46,3%	19,5%	70,8%	1980 R./2004 Inc.
3	90,3%	53,7%	46,3%	19,5%	70,8%	1980 R./1980 Inc.
4	90,1%	51,7%	48,3%	19,9%	70,1%	1980 Ext. R/2004 Inc.
5	90,1%	51,7%	48,3%	19,9%	70,1%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.381.750	392.562	0	392.562	348.313	44.249	0,00013	39,30	771,1
2	1.055.250	311.197	0	311.197	271.364	39.833	0,00013	39,30	771,1
3	1.055.250	311.197	0	311.197	271.364	39.833	0,00013	39,30	771,1
4	326.5	81.365	0	81.365	76.949	4.416	0,00002	32,50	617,3
5	326.5	81.365	0	81.365	76.949	4.416	0,00002	32,50	617,3

C	P	PG	PL	P1	PX	
1	28,4%	0,0%	100,0%	25,2%	3,2%	2004 R./2004 Inc.
2	29,5%	0,0%	100,0%	25,7%	3,8%	1980 R./2004 Inc.
3	29,5%	0,0%	100,0%	25,7%	3,8%	1980 R./1980 Inc.
4	24,9%	0,0%	100,0%	23,6%	1,4%	1980 Ext. R/2004 Inc.
5	24,9%	0,0%	100,0%	23,6%	1,4%	1980 Ext./1980 Inc.

VCF - 4 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	2.763.500	86.787	47.709	39.078	86.24	547	0,0002	35,60	772,7
2	2.110.500	77.115	42.487	34.628	76.568	547	0,0002	35,60	772,7
3	2.110.500	77.115	42.487	34.628	76.568	547	0,0002	35,60	772,7
4	653	9.672	5.222	4.45	9.672	0	0,0001	14,90	648,6
5	653	9.672	5.222	4.45	9.672	0	0,0001	14,90	648,6

C	P	PG	PL	P1	PX	
1	3,1%	55,0%	45,0%	3,1%	0,0%	2004 R./2004 Inc.
2	3,7%	55,1%	44,9%	3,6%	0,0%	1980 R./2004 Inc.
3	3,7%	55,1%	44,9%	3,6%	0,0%	1980 R./1980 Inc.
4	1,5%	54,0%	46,0%	1,5%	0,0%	1980 Ext. R/2004 Inc.
5	1,5%	54,0%	46,0%	1,5%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.381.750	47.71	47.709	1	47.547	163	0,0002	-7,10	770,9
2	1.055.250	42.488	42.487	1	42.325	163	0,0002	-7,10	770,9
3	1.055.250	42.488	42.487	1	42.325	163	0,0002	-7,10	770,9
4	326.5	5.222	5.222	0	5.222	0	0,0001	14,90	648,6
5	326.5	5.222	5.222	0	5.222	0	0,0001	14,90	648,6

C	P	PG	PL	P1	PX	
1	3,5%	100,0%	0,0%	3,4%	0,0%	2004 R./2004 Inc.
2	4,0%	100,0%	0,0%	4,0%	0,0%	1980 R./2004 Inc.
3	4,0%	100,0%	0,0%	4,0%	0,0%	1980 R./1980 Inc.
4	1,6%	100,0%	0,0%	1,6%	0,0%	1980 Ext. R/2004 Inc.
5	1,6%	100,0%	0,0%	1,6%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.381.750	39.077	0	39.077	38.693	384	0,0002	35,60	772,7
2	1.055.250	34.627	0	34.627	34.243	384	0,0002	35,60	772,7
3	1.055.250	34.627	0	34.627	34.243	384	0,0002	35,60	772,7
4	326.5	4.45	0	4.45	4.45	0	0,0001	24,80	614,8
5	326.5	4.45	0	4.45	4.45	0	0,0001	24,80	614,8

C	P	PG	PL	P1	PX	
1	2,8%	0,0%	100,0%	2,8%	0,0%	2004 R./2004 Inc.
2	3,3%	0,0%	100,0%	3,2%	0,0%	1980 R./2004 Inc.
3	3,3%	0,0%	100,0%	3,2%	0,0%	1980 R./1980 Inc.
4	1,4%	0,0%	100,0%	1,4%	0,0%	1980 Ext. R/2004 Inc.
5	1,4%	0,0%	100,0%	1,4%	0,0%	1980 Ext./1980 Inc.

1.23. Table 54D – lubricants, 15 °C base temperature – detailed results

Comparison grid:

Observed temperature: -10 °C to 40 °C, increment 0,1 °C

Base density @ 15 °C: 801,3 kg/m³ to 1.163,9 kg/m³, increment 0,1 kg/m³

Quantity compared: Volume correction factor observed to base (5 & 4 decimals rounding)

Absolute numbers:

NSC: Number of successful calculations (may be smaller than calculated grid points)

NDF: Number of deviations found

NDG: Number of deviations where 2004 result lies above 1980 result

NDL: Number of deviations where 2004 result lies below 1980 result

NDD1: Number of deviations which differ by one result grid rounding increment

NDG1: Number of deviations which differ by more than one result grid rounding increment

MAXD: Maximum deviation found

TLCB: Temperature value closest to base at which maximum deviation occurs

DTLCB: Density value for closest temperature value where maximum deviation occurs

Calculated % ratios:

P : % value of differences: $(NDF / NSC) * 100$

PG: % value of deviations - 2004 value above 1980 value: $(NDG / NDF) * 100$

PL: % value of deviations - 2004 value below 1980 value: $(NDL / NDF) * 100$

P1: % value of deviations - deviation one result grid increment: $(NDD1 / NSC) * 100$

PX: % value of deviations - deviation above one result grid increment: $(NDG1 / NSC) * 100$

Results ASTM D1250-80 standard rounding
VCF - 5 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.813.000	919.783	439.017	480.766	283.857	635.926	0,00006	-6,70	814,2
2	1.813.000	919.783	439.017	480.766	283.857	635.926	0,00006	-6,70	814,2
3	362.5	172.486	82.045	90.441	45.329	127.157	0,00005	14,90	1.142,0
4	0	0	0	0	0	0	0,00000	0,00	0,0
5	0	0	0	0	0	0	0,00000	0,00	0,0

C	P	PG	PL	P1	PX	
1	50,7%	47,7%	52,3%	15,7%	35,1%	2004 R./2004 Inc.
2	50,7%	47,7%	52,3%	15,7%	35,1%	1980 R./2004 Inc.
3	47,6%	47,6%	52,4%	12,5%	35,1%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	906.5	816.497	409.096	407.401	180.571	635.926	0,00006	-6,70	814,2
2	906.5	816.497	409.096	407.401	180.571	635.926	0,00006	-6,70	814,2
3	181.25	163.253	81.787	81.466	36.096	127.157	0,00005	14,90	1.142,0
4	0	0	0	0	0	0	0,00000	0,00	0,0
5	0	0	0	0	0	0	0,00000	0,00	0,0

C	P	PG	PL	P1	PX	
1	90,1%	50,1%	49,9%	19,9%	70,2%	2004 R./2004 Inc.
2	90,1%	50,1%	49,9%	19,9%	70,2%	1980 R./2004 Inc.
3	90,1%	50,1%	49,9%	19,9%	70,2%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	906.5	103.286	29.921	73.365	103.286	0	0,00001	15,10	837,1
2	906.5	103.286	29.921	73.365	103.286	0	0,00001	15,10	837,1
3	181.25	9.233	258	8.975	9.233	0	0,00001	15,10	1141,5
4	0	0	0	0	0	0	0,00000	0,00	0,0
5	0	0	0	0	0	0	0,00000	0,00	0,0

C	P	PG	PL	P1	PX	
1	11,4%	29,0%	71,0%	11,4%	0,0%	2004 R./2004 Inc.
2	11,4%	29,0%	71,0%	11,4%	0,0%	1980 R./2004 Inc.
3	5,1%	2,8%	97,2%	5,1%	0,0%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

VCF - 4 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.813.000	9.903	5.753	4.15	9.903	0	0,0001	14,80	837,1
2	1.813.000	9.903	5.753	4.15	9.903	0	0,0001	14,80	837,1
3	362.5	647	468	179	647	0	0,0001	14,40	837,0
4	0	0	0	0	0	0	0,0000	0,00	0,0
5	0	0	0	0	0	0	0,0000	0,00	0,0

C		P	PG	PL	P1	PX	
1		0,5%	58,1%	41,9%	0,5%	0,0%	2004 R./2004 Inc.
2		0,5%	58,1%	41,9%	0,5%	0,0%	1980 R./2004 Inc.
3		0,2%	72,3%	27,7%	0,2%	0,0%	1980 R./1980 Inc.
4		0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5		0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	906.5	9.87	5.753	4.117	9.87	0	0,0001	14,80	837,1
2	906.5	9.87	5.753	4.117	9.87	0	0,0001	14,80	837,1
3	181.25	647	468	179	647	0	0,0001	14,40	837,0
4	0	0	0	0	0	0	0,0000	0,00	0,0
5	0	0	0	0	0	0	0,0000	0,00	0,0

C		P	PG	PL	P1	PX	
1		1,1%	58,3%	41,7%	1,1%	0,0%	2004 R./2004 Inc.
2		1,1%	58,3%	41,7%	1,1%	0,0%	1980 R./2004 Inc.
3		0,4%	72,3%	27,7%	0,4%	0,0%	1980 R./1980 Inc.
4		0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5		0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	906.5	33	0	33	33	0	0,0001	35,40	821,8
2	906.5	33	0	33	33	0	0,0001	35,40	821,8
3	181.25	0	0	0	0	0	0,0000	0,00	0,0
4	0	0	0	0	0	0	0,0000	0,00	0,0
5	0	0	0	0	0	0	0,0000	0,00	0,0

C		P	PG	PL	P1	PX	
1		0,0%	0,0%	86,7%	100,0%	0,0%	2004 R./2004 Inc.
2		0,0%	0,0%	86,7%	100,0%	0,0%	1980 R./2004 Inc.
3		0,0%	0,0%	100,0%	0,0%	0,0%	1980 R./1980 Inc.
4		0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5		0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Results ASTM D1250-80 with "German rounding" (Input data)
VCF - 5 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.813.000	863.642	410.508	453.134	227.716	635.926	0,00005	14,90	1.141,6
2	1.813.000	863.642	410.508	453.134	227.716	635.926	0,00005	14,90	1.141,6
3	1.813.000	863.642	410.508	453.134	227.716	635.926	0,00005	14,90	1.141,6
4	0	0	0	0	0	0	0,00000	0,00	0,0
5	0	0	0	0	0	0	0,00000	0,00	0,0

C	P	PG	PL	P1	PX	
1	47,6%	47,5%	52,5%	12,6%	35,1%	2004 R./2004 Inc.
2	47,6%	47,5%	52,5%	12,6%	35,1%	1980 R./2004 Inc.
3	47,6%	47,5%	52,5%	12,6%	35,1%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	906.5	816.497	409.193	407.304	180.571	635.926	0,00005	14,90	1.141,6
2	906.5	816.497	409.193	407.304	180.571	635.926	0,00005	14,90	1.141,6
3	906.5	816.497	409.193	407.304	180.571	635.926	0,00005	14,90	1.141,6
4	0	0	0	0	0	0	0,00000	0,00	0,0
5	0	0	0	0	0	0	0,00000	0,00	0,0

C	P	PG	PL	P1	PX	
1	90,1%	50,1%	49,9%	19,9%	70,2%	2004 R./2004 Inc.
2	90,1%	50,1%	49,9%	19,9%	70,2%	1980 R./2004 Inc.
3	90,1%	50,1%	49,9%	19,9%	70,2%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	906.5	47.145	1.315	45.83	47.145	0	0,00001	15,10	965,8
2	906.5	47.145	1.315	45.83	47.145	0	0,00001	15,10	965,8
3	906.5	47.145	1.315	45.83	47.145	0	0,00001	15,10	965,8
4	0	0	0	0	0	0	0,00000	0,00	0,0
5	0	0	0	0	0	0	0,00000	0,00	0,0

C	P	PG	PL	P1	PX	
1	5,2%	2,8%	97,2%	5,2%	0,0%	2004 R./2004 Inc.
2	5,2%	2,8%	97,2%	5,2%	0,0%	1980 R./2004 Inc.
3	5,2%	2,8%	97,2%	5,2%	0,0%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

VCF - 4 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.813.000	3.353	2.543	810	3.353	0	0,0001	14,60	1.004,4
2	1.813.000	3.353	2.543	810	3.353	0	0,0001	14,60	1.004,4
3	1.813.000	3.353	2.543	810	3.353	0	0,0001	14,60	1.004,4
4	0	0	0	0	0	0	0,0000	0,00	0,0
5	0	0	0	0	0	0	0,0000	0,00	0,0

C	P	PG	PL	P1	PX	
1	0,2%	75,8%	24,2%	0,2%	0,0%	2004 R./2004 Inc.
2	0,2%	75,8%	24,2%	0,2%	0,0%	1980 R./2004 Inc.
3	0,2%	75,8%	24,2%	0,2%	0,0%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	906.5	3.353	2.543	810	3.353	0	0,0001	14,60	1.004,4
2	906.5	3.353	2.543	810	3.353	0	0,0001	14,60	1.004,4
3	906.5	3.353	2.543	810	3.353	0	0,0001	14,60	1.004,4
4	0	0	0	0	0	0	0,0000	0,00	0,0
5	0	0	0	0	0	0	0,0000	0,00	0,0

C	P	PG	PL	P1	PX	
1	0,4%	75,8%	24,2%	0,4%	0,0%	2004 R./2004 Inc.
2	0,4%	75,8%	24,2%	0,4%	0,0%	1980 R./2004 Inc.
3	0,4%	75,8%	24,2%	0,4%	0,0%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	906.5	0	0	0	0	0	0,0000	0,00	0,0
2	906.5	0	0	0	0	0	0,0000	0,00	0,0
3	906.5	0	0	0	0	0	0,0000	0,00	0,0
4	0	0	0	0	0	0	0,0000	0,00	0,0
5	0	0	0	0	0	0	0,0000	0,00	0,0

C	P	PG	PL	P1	PX	
1	0,0%	0,0%	0,0%	0,0%	0,0%	2004 R./2004 Inc.
2	0,0%	0,0%	0,0%	0,0%	0,0%	1980 R./2004 Inc.
3	0,0%	0,0%	0,0%	0,0%	0,0%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

1.24. Table 60A – crude oil, 20 °C base temperature – detailed results

Comparison grid:

Observed temperature: -5 °C to 45 °C, increment 0,1 °C

Base density @ 20 °C: 606,1 kg/m³ to 1.161,2 kg/m³, increment 0,1 kg/m³

Quantity compared: Volume correction factor observed to base (5 & 4 decimals rounding)

Absolute numbers:

NSC: Number of successful calculations (may be smaller than calculated grid points)

NDF: Number of deviations found

NDG: Number of deviations where 2004 result lies above 1980 result

NDL: Number of deviations where 2004 result lies below 1980 result

NDD1: Number of deviations which differ by one result grid rounding increment

NDG1: Number of deviations which differ by more than one result grid rounding increment

MAXD: Maximum deviation found

TLCB: Temperature value closest to base at which maximum deviation occurs

DTLCB: Density value for closest temperature value where maximum deviation occurs

Calculated % ratios:

P : % value of differences: $(NDF / NSC) * 100$

PG: % value of deviations - 2004 value above 1980 value: $(NDG / NDF) * 100$

PL: % value of deviations - 2004 value below 1980 value: $(NDL / NDF) * 100$

P1: % value of deviations - deviation one result grid increment: $(NDD1 / NSC) * 100$

PX: % value of deviations - deviation above one result grid increment: $(NDG1 / NSC) * 100$

Results ASTM D1250-80 standard rounding
VCF - 5 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	2.775.000	1.840.462	699.81	1.140.652	724.453	1.116.009	0,00010	-2,00	615,3
2	1.592.500	1.029.658	392.934	636.724	432.131	597.527	0,00008	-3,30	754,8
3	318.5	210.964	77.724	133.24	97.76	113.204	0,00006	11,10	754,5
4	1.182.500	810.804	306.876	503.928	292.322	518.482	0,00010	-2,00	615,3
5	236.5	170.872	60.565	110.307	67.999	102.873	0,00008	-2,20	616,5

C		P	PG	PL	P1	PX	
1		66,3%	38,0%	62,0%	26,1%	40,2%	2004 R./2004 Inc.
2		64,7%	38,2%	61,8%	27,1%	37,5%	1980 R./2004 Inc.
3		66,2%	36,8%	63,2%	30,7%	35,5%	1980 R./1980 Inc.
4		68,6%	37,8%	62,2%	24,7%	43,8%	1980 Ext. R/2004 Inc.
5		72,3%	35,4%	64,6%	28,8%	43,5%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.387.500	1.248.630	691.706	556.924	277.128	971.502	0,00010	-2,00	615,3
2	796.25	716.608	388.572	328.036	159.337	557.271	0,00008	-3,30	754,8
3	159.25	143.312	77.724	65.588	31.801	111.511	0,00006	11,10	754,5
4	591.25	532.022	303.134	228.888	117.791	414.231	0,00010	-2,00	615,3
5	118.25	106.342	60.565	45.777	23.503	82.839	0,00008	-2,20	616,5

C		P	PG	PL	P1	PX	
1		90,0%	55,4%	44,6%	20,0%	70,0%	2004 R./2004 Inc.
2		90,0%	54,2%	45,8%	20,0%	70,0%	1980 R./2004 Inc.
3		90,0%	54,2%	45,8%	20,0%	70,0%	1980 R./1980 Inc.
4		90,0%	57,0%	43,0%	19,9%	70,1%	1980 Ext. R/2004 Inc.
5		89,9%	57,0%	43,0%	19,9%	70,1%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.387.500	591.832	8.104	583.728	447.325	144.507	0,00007	44,20	616,3
2	796.25	313.05	4.362	308.688	272.794	40.256	0,00004	43,30	753,8
3	159.25	67.652	0	67.652	65.959	1.693	0,00002	34,90	754,0
4	591.25	278.782	3.742	275.04	174.531	104.251	0,00007	44,20	616,3
5	118.25	64.53	0	64.53	44.496	20.034	0,00004	41,30	615,5

C		P	PG	PL	P1	PX	
1		42,7%	1,4%	98,6%	32,2%	10,4%	2004 R./2004 Inc.
2		39,3%	1,4%	98,6%	34,3%	5,1%	1980 R./2004 Inc.
3		42,5%	0,0%	100,0%	41,4%	1,1%	1980 R./1980 Inc.
4		47,2%	1,3%	98,7%	29,5%	17,6%	1980 Ext. R/2004 Inc.
5		54,6%	0,0%	100,0%	37,6%	16,9%	1980 Ext./1980 Inc.

VCF - 4 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	2.775.000	129.167	69.675	59.492	129.167	0	0,0001	19,90	638,8
2	1.592.500	54.382	31.939	22.443	54.382	0	0,0001	19,60	836,8
3	318.5	9.145	6.175	2.97	9.145	0	0,0001	19,60	837,0
4	1.182.500	74.785	37.736	37.049	74.785	0	0,0001	19,90	638,8
5	236.5	14.083	7.248	6.835	14.083	0	0,0001	19,80	700,0

C		P	PG	PL	P1	PX	
1		4,7%	53,9%	46,1%	4,7%	0,0%	2004 R./2004 Inc.
2		3,4%	58,7%	41,3%	3,4%	0,0%	1980 R./2004 Inc.
3		2,9%	67,5%	32,5%	2,9%	0,0%	1980 R./1980 Inc.
4		6,3%	50,5%	49,5%	6,3%	0,0%	1980 Ext. R/2004 Inc.
5		6,0%	51,5%	48,5%	6,0%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.387.500	71.489	69.675	1.814	71.489	0	0,0001	19,90	638,8
2	796.25	32.682	31.939	743	32.682	0	0,0001	19,60	836,8
3	159.25	6.175	6.175	0	6.175	0	0,0001	19,60	837,0
4	591.25	38.807	37.736	1.071	38.807	0	0,0001	19,90	638,8
5	118.25	7.248	7.248	0	7.248	0	0,0001	19,80	700,0

C		P	PG	PL	P1	PX	
1		5,2%	97,5%	2,5%	5,2%	0,0%	2004 R./2004 Inc.
2		4,1%	97,7%	2,3%	4,1%	0,0%	1980 R./2004 Inc.
3		3,9%	100,0%	0,0%	3,9%	0,0%	1980 R./1980 Inc.
4		6,6%	97,2%	2,8%	6,6%	0,0%	1980 Ext. R/2004 Inc.
5		6,1%	100,0%	0,0%	6,1%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.387.500	57.678	0	57.678	57.678	0	0,0001	22,20	616,3
2	796.25	21.7	0	21.7	21.7	0	0,0001	24,60	754,8
3	159.25	2.97	0	2.97	2.97	0	0,0001	28,40	755,0
4	591.25	35.978	0	35.978	35.978	0	0,0001	22,20	616,3
5	118.25	6.835	0	6.835	6.835	0	0,0001	24,60	615,5

C		P	PG	PL	P1	PX	
1		4,2%	0,0%	100,0%	4,2%	0,0%	2004 R./2004 Inc.
2		2,7%	0,0%	100,0%	2,7%	0,0%	1980 R./2004 Inc.
3		1,9%	0,0%	100,0%	1,9%	0,0%	1980 R./1980 Inc.
4		6,1%	0,2%	99,9%	6,1%	0,0%	1980 Ext. R/2004 Inc.
5		5,8%	0,0%	100,0%	5,8%	0,0%	1980 Ext./1980 Inc.

Results ASTM D1250-80 with "German rounding" (Input data)
VCF - 5 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	2.775.000	1.910.121	691.905	1.218.216	829.72	1.080.401	0,00008	-2,20	616,5
2	1.591.500	1.053.481	388.213	665.268	488.135	565.346	0,00006	12,60	754,2
3	1.591.500	1.053.481	388.213	665.268	488.135	565.346	0,00006	12,60	754,2
4	1.183.500	856.64	303.692	552.948	341.585	515.055	0,00008	-2,20	616,5
5	1.183.500	856.64	303.692	552.948	341.585	515.055	0,00008	-2,20	616,5

C	P	PG	PL	P1	PX	
1	68,8%	36,2%	63,8%	29,9%	38,9%	2004 R./2004 Inc.
2	66,2%	36,9%	63,1%	30,7%	35,5%	1980 R./2004 Inc.
3	66,2%	36,9%	63,1%	30,7%	35,5%	1980 R./1980 Inc.
4	72,4%	35,5%	64,5%	28,9%	43,5%	1980 Ext. R/2004 Inc.
5	72,4%	35,5%	64,5%	28,9%	43,5%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.387.500	1.248.613	691.905	556.708	277.426	971.187	0,00008	-2,20	616,5
2	795.75	716.155	388.213	327.942	159.235	556.92	0,00006	12,60	754,2
3	795.75	716.155	388.213	327.942	159.235	556.92	0,00006	12,60	754,2
4	591.75	532.458	303.692	228.766	118.191	414.267	0,00008	-2,20	616,5
5	591.75	532.458	303.692	228.766	118.191	414.267	0,00008	-2,20	616,5

C	P	PG	PL	P1	PX	
1	90,0%	55,4%	44,6%	20,0%	70,0%	2004 R./2004 Inc.
2	90,0%	54,2%	45,8%	20,0%	70,0%	1980 R./2004 Inc.
3	90,0%	54,2%	45,8%	20,0%	70,0%	1980 R./1980 Inc.
4	90,0%	57,0%	43,0%	20,0%	70,0%	1980 Ext. R/2004 Inc.
5	90,0%	57,0%	43,0%	20,0%	70,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.387.500	661.508	0	661.508	552.294	109.214	0,00004	40,80	616,3
2	795.75	337.326	0	337.326	328.9	8.426	0,00002	34,60	754,1
3	795.75	337.326	0	337.326	328.9	8.426	0,00002	34,60	754,1
4	591.75	324.182	0	324.182	223.394	100.788	0,00004	40,80	616,3
5	591.75	324.182	0	324.182	223.394	100.788	0,00004	40,80	616,3

C	P	PG	PL	P1	PX	
1	47,7%	0,0%	100,0%	39,8%	7,9%	2004 R./2004 Inc.
2	42,4%	0,0%	100,0%	41,3%	1,1%	1980 R./2004 Inc.
3	42,4%	0,0%	100,0%	41,3%	1,1%	1980 R./1980 Inc.
4	54,8%	0,0%	100,0%	37,8%	17,0%	1980 Ext. R/2004 Inc.
5	54,8%	0,0%	100,0%	37,8%	17,0%	1980 Ext./1980 Inc.

VCF - 4 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	2.775.000	116.946	68.06	48.886	116.946	0	0,0001	19,90	638,8
2	1.591.500	45.658	31.064	14.594	45.658	0	0,0001	19,80	904,1
3	1.591.500	45.658	31.064	14.594	45.658	0	0,0001	19,80	904,1
4	1.183.500	71.288	36.996	34.292	71.288	0	0,0001	19,90	638,8
5	1.183.500	71.288	36.996	34.292	71.288	0	0,0001	19,90	638,8

C	P	PG	PL	P1	PX	
1	4,2%	58,2%	41,8%	4,2%	0,0%	2004 R./2004 Inc.
2	2,9%	68,0%	32,0%	2,9%	0,0%	1980 R./2004 Inc.
3	2,9%	68,0%	32,0%	2,9%	0,0%	1980 R./1980 Inc.
4	6,0%	51,9%	48,1%	6,0%	0,0%	1980 Ext. R/2004 Inc.
5	6,0%	51,9%	48,1%	6,0%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.387.500	68.06	68.06	0	68.06	0	0,0001	19,90	638,8
2	795.75	31.064	31.064	0	31.064	0	0,0001	19,80	904,1
3	795.75	31.064	31.064	0	31.064	0	0,0001	19,80	904,1
4	591.75	36.996	36.996	0	36.996	0	0,0001	19,90	638,8
5	591.75	36.996	36.996	0	36.996	0	0,0001	19,90	638,8

C	P	PG	PL	P1	PX	
1	4,9%	100,0%	0,0%	4,9%	0,0%	2004 R./2004 Inc.
2	3,9%	100,0%	0,0%	3,9%	0,0%	1980 R./2004 Inc.
3	3,9%	100,0%	0,0%	3,9%	0,0%	1980 R./1980 Inc.
4	6,3%	100,0%	0,0%	6,3%	0,0%	1980 Ext. R/2004 Inc.
5	6,3%	100,0%	0,0%	6,3%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.387.500	48.886	0	48.886	48.886	0	0,0001	24,60	611,4
2	795.75	14.594	0	14.594	14.594	0	0,0001	28,10	771,8
3	795.75	14.594	0	14.594	14.594	0	0,0001	28,10	771,8
4	591.75	34.292	0	34.292	34.292	0	0,0001	24,60	611,4
5	591.75	34.292	0	34.292	34.292	0	0,0001	24,60	611,4

C	P	PG	PL	P1	PX	
1	3,5%	0,0%	100,0%	3,5%	0,0%	2004 R./2004 Inc.
2	1,8%	0,0%	100,0%	1,8%	0,0%	1980 R./2004 Inc.
3	1,8%	0,0%	100,0%	1,8%	0,0%	1980 R./1980 Inc.
4	5,8%	0,0%	100,0%	5,8%	0,0%	1980 Ext. R/2004 Inc.
5	5,8%	0,0%	100,0%	5,8%	0,0%	1980 Ext./1980 Inc.

1.25. Table 60B – products, 20 °C base temperature – detailed results

Comparison grid:

Observed temperature: -5 °C to 45 °C, increment 0,1 °C

Base density @ 20 °C: 611,2 kg/m³ to 1.160,6 kg/m³, increment 0,1 kg/m³

Quantity compared: Volume correction factor observed to base (5 & 4 decimals rounding)

Absolute numbers:

NSC: Number of successful calculations (may be smaller than calculated grid points)

NDF: Number of deviations found

NDG: Number of deviations where 2004 result lies above 1980 result

NDL: Number of deviations where 2004 result lies below 1980 result

NDD1: Number of deviations which differ by one result grid rounding increment

NDG1: Number of deviations which differ by more than one result grid rounding increment

MAXD: Maximum deviation found

TLCB: Temperature value closest to base at which maximum deviation occurs

DTLCB: Density value for closest temperature value where maximum deviation occurs

Calculated % ratios:

P : % value of differences: $(NDF / NSC) * 100$

PG: % value of deviations - 2004 value above 1980 value: $(NDG / NDF) * 100$

PL: % value of deviations - 2004 value below 1980 value: $(NDL / NDF) * 100$

P1: % value of deviations - deviation one result grid increment: $(NDD1 / NSC) * 100$

PX: % value of deviations - deviation above one result grid increment: $(NDG1 / NSC) * 100$

Results ASTM D1250-80 standard rounding
VCF - 5 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	2.772.500	1.685.388	710.19	975.198	600.659	1.084.729	0,00023	-5,00	767,8
2	2.117.500	1.303.126	547.416	755.71	469.381	833.745	0,00023	-5,00	767,8
3	423.5	256.917	103.311	153.606	97.7	159.217	0,00017	-2,80	768,5
4	655	382.262	162.774	219.488	131.278	250.984	0,00008	-1,00	647,8
5	131	76.83	30.688	46.142	29.006	47.824	0,00006	10,40	626,0

C	P	PG	PL	P1	PX	
1	60,8%	42,1%	57,9%	21,7%	39,1%	2004 R./2004 Inc.
2	61,5%	42,0%	58,0%	22,2%	39,4%	1980 R./2004 Inc.
3	60,7%	40,2%	59,8%	23,1%	37,6%	1980 R./1980 Inc.
4	58,4%	42,6%	57,4%	20,0%	38,3%	1980 Ext. R/2004 Inc.
5	58,6%	39,9%	60,1%	22,1%	36,5%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.386.250	1.250.519	668.703	581.816	272.154	978.365	0,00023	-5,00	767,8
2	1.058.750	955.576	515.15	440.426	206.996	748.58	0,00023	-5,00	767,8
3	211.75	191.253	103.307	87.946	41.467	149.786	0,00017	-2,80	768,5
4	327.5	294.943	153.553	141.39	65.158	229.785	0,00008	-1,00	647,8
5	65.5	58.997	30.688	28.309	13.058	45.939	0,00006	10,40	626,0

C	P	PG	PL	P1	PX	
1	90,2%	53,5%	46,5%	19,6%	70,6%	2004 R./2004 Inc.
2	90,3%	53,9%	46,1%	19,6%	70,7%	1980 R./2004 Inc.
3	90,3%	54,0%	46,0%	19,6%	70,7%	1980 R./1980 Inc.
4	90,1%	52,1%	47,9%	19,9%	70,2%	1980 Ext. R/2004 Inc.
5	90,1%	52,0%	48,0%	19,9%	70,1%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.386.250	434.869	41.487	393.382	328.505	106.364	0,00019	44,20	768,3
2	1.058.750	347.55	32.266	315.284	262.385	85.165	0,00019	44,20	768,3
3	211.75	65.664	4	65.66	56.233	9.431	0,00013	43,20	768,5
4	327.5	87.319	9.221	78.098	66.12	21.199	0,00004	39,50	622,8
5	65.5	17.833	0	17.833	15.948	1.885	0,00002	34,70	625,5

C	P	PG	PL	P1	PX	
1	31,4%	9,5%	90,5%	23,7%	7,7%	2004 R./2004 Inc.
2	32,8%	9,3%	90,7%	24,8%	8,0%	1980 R./2004 Inc.
3	31,0%	0,0%	100,0%	26,6%	4,5%	1980 R./1980 Inc.
4	26,7%	10,6%	89,4%	20,2%	6,5%	1980 Ext. R/2004 Inc.
5	27,2%	0,0%	100,0%	24,3%	2,9%	1980 Ext./1980 Inc.

VCF - 4 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	2.772.500	113.914	58.04	55.874	110.744	3.17	0,0002	6,40	768,3
2	2.117.500	96.987	49.708	47.279	93.817	3.17	0,0002	6,40	768,3
3	423.5	16.636	9.124	7.512	16.513	123	0,0002	40,20	768,5
4	655	16.927	8.332	8.595	16.927	0	0,0001	19,60	616,2
5	131	2.423	1.313	1.11	2.423	0	0,0001	19,00	610,0

C	P	PG	PL	P1	PX	
1	4,1%	51,0%	49,0%	4,0%	0,1%	2004 R./2004 Inc.
2	4,6%	51,3%	48,7%	4,4%	0,1%	1980 R./2004 Inc.
3	3,9%	54,8%	45,2%	3,9%	0,0%	1980 R./1980 Inc.
4	2,6%	49,2%	50,8%	2,6%	0,0%	1980 Ext. R/2004 Inc.
5	1,8%	54,2%	45,8%	1,8%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.386.250	64.614	57.823	6.791	63.161	1.453	0,0002	6,40	768,3
2	1.058.750	54.673	49.621	5.052	53.22	1.453	0,0002	6,40	768,3
3	211.75	9.135	9.124	11	9.093	42	0,0002	-0,90	768,0
4	327.5	9.941	8.202	1.739	9.941	0	0,0001	19,60	616,2
5	65.5	1.313	1.313	0	1.313	0	0,0001	19,00	610,0

C	P	PG	PL	P1	PX	
1	4,7%	89,5%	10,5%	4,6%	0,1%	2004 R./2004 Inc.
2	5,2%	90,8%	9,2%	5,0%	0,1%	1980 R./2004 Inc.
3	4,3%	99,9%	0,1%	4,3%	0,0%	1980 R./1980 Inc.
4	3,0%	82,5%	17,5%	3,0%	0,0%	1980 Ext. R/2004 Inc.
5	2,0%	100,0%	0,0%	2,0%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.386.250	49.3	217	49.083	47.583	1.717	0,0002	34,00	773,3
2	1.058.750	42.314	87	42.227	40.597	1.717	0,0002	34,00	773,3
3	211.75	7.501	0	7.501	7.42	81	0,0002	40,20	768,5
4	327.5	6.986	130	6.856	6.986	0	0,0001	24,40	611,3
5	65.5	1.11	0	1.11	1.11	0	0,0001	28,90	644,0

C	P	PG	PL	P1	PX	
1	3,6%	0,4%	99,6%	3,4%	0,1%	2004 R./2004 Inc.
2	4,0%	0,2%	99,8%	3,8%	0,2%	1980 R./2004 Inc.
3	3,5%	0,0%	100,0%	3,5%	0,0%	1980 R./1980 Inc.
4	2,1%	1,9%	98,1%	2,1%	0,0%	1980 Ext. R/2004 Inc.
5	1,7%	0,0%	100,0%	1,7%	0,0%	1980 Ext./1980 Inc.

Results ASTM D1250-80 with "German rounding" (Input data)
VCF - 5 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	2.772.500	1.667.377	669.553	997.824	632.023	1.035.354	0,00017	-2,80	768,5
2	2.118.500	1.284.329	516.159	768.17	487.485	796.844	0,00017	-2,80	768,5
3	2.118.500	1.284.329	516.159	768.17	487.485	796.844	0,00017	-2,80	768,5
4	654	383.048	153.394	229.654	144.538	238.51	0,00006	10,40	626,0
5	654	383.048	153.394	229.654	144.538	238.51	0,00006	10,40	626,0

C	P	PG	PL	P1	PX	
1	60,1%	40,2%	59,8%	22,8%	37,3%	2004 R./2004 Inc.
2	60,6%	40,2%	59,8%	23,0%	37,6%	1980 R./2004 Inc.
3	60,6%	40,2%	59,8%	23,0%	37,6%	1980 R./1980 Inc.
4	58,6%	40,0%	60,0%	22,1%	36,5%	1980 Ext. R/2004 Inc.
5	58,6%	40,0%	60,0%	22,1%	36,5%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.386.250	1.250.793	669.538	581.255	271.671	979.122	0,00017	-2,80	768,5
2	1.059.250	956.267	516.146	440.121	206.598	749.669	0,00017	-2,80	768,5
3	1.059.250	956.267	516.146	440.121	206.598	749.669	0,00017	-2,80	768,5
4	327	294.526	153.392	141.134	65.073	229.453	0,00006	10,40	626,0
5	327	294.526	153.392	141.134	65.073	229.453	0,00006	10,40	626,0

C	P	PG	PL	P1	PX	
1	90,2%	53,5%	46,5%	19,6%	70,6%	2004 R./2004 Inc.
2	90,3%	54,0%	46,0%	19,5%	70,8%	1980 R./2004 Inc.
3	90,3%	54,0%	46,0%	19,5%	70,8%	1980 R./1980 Inc.
4	90,1%	52,1%	47,9%	19,9%	70,2%	1980 Ext. R/2004 Inc.
5	90,1%	52,1%	47,9%	19,9%	70,2%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.386.250	416.584	15	416.569	360.352	56.232	0,00014	44,70	768,3
2	1.059.250	328.062	13	328.049	280.887	47.175	0,00014	44,70	768,3
3	1.059.250	328.062	13	328.049	280.887	47.175	0,00014	44,70	768,3
4	327	88.522	2	88.52	79.465	9.057	0,00003	44,80	624,3
5	327	88.522	2	88.52	79.465	9.057	0,00003	44,80	624,3

C	P	PG	PL	P1	PX	
1	30,1%	0,0%	100,0%	26,0%	4,1%	2004 R./2004 Inc.
2	31,0%	0,0%	100,0%	26,5%	4,5%	1980 R./2004 Inc.
3	31,0%	0,0%	100,0%	26,5%	4,5%	1980 R./1980 Inc.
4	27,1%	0,0%	100,0%	24,3%	2,8%	1980 Ext. R/2004 Inc.
5	27,1%	0,0%	100,0%	24,3%	2,8%	1980 Ext./1980 Inc.

VCF - 4 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	2.772.500	94.616	51.886	42.73	94.04	576	0,0002	39,90	768,3
2	2.118.500	82.638	45.377	37.261	82.062	576	0,0002	39,90	768,3
3	2.118.500	82.638	45.377	37.261	82.062	576	0,0002	39,90	768,3
4	654	11.978	6.509	5.469	11.978	0	0,0001	19,60	616,1
5	654	11.978	6.509	5.469	11.978	0	0,0001	19,60	616,1

C	P	PG	PL	P1	PX	
1	3,4%	54,8%	45,2%	3,4%	0,0%	2004 R./2004 Inc.
2	3,9%	54,9%	45,1%	3,9%	0,0%	1980 R./2004 Inc.
3	3,9%	54,9%	45,1%	3,9%	0,0%	1980 R./1980 Inc.
4	1,8%	54,3%	45,7%	1,8%	0,0%	1980 Ext. R/2004 Inc.
5	1,8%	54,3%	45,7%	1,8%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.386.250	51.961	51.886	75	51.749	212	0,0002	-0,70	767,9
2	1.059.250	45.443	45.377	66	45.231	212	0,0002	-0,70	767,9
3	1.059.250	45.443	45.377	66	45.231	212	0,0002	-0,70	767,9
4	327	6.518	6.509	9	6.518	0	0,0001	19,60	616,1
5	327	6.518	6.509	9	6.518	0	0,0001	19,60	616,1

C	P	PG	PL	P1	PX	
1	3,7%	99,9%	0,1%	3,7%	0,0%	2004 R./2004 Inc.
2	4,3%	99,9%	0,1%	4,3%	0,0%	1980 R./2004 Inc.
3	4,3%	99,9%	0,1%	4,3%	0,0%	1980 R./1980 Inc.
4	2,0%	99,9%	0,1%	2,0%	0,0%	1980 Ext. R/2004 Inc.
5	2,0%	99,9%	0,1%	2,0%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.386.250	42.655	0	42.655	42.291	364	0,0002	39,90	768,3
2	1.059.250	37.195	0	37.195	36.831	364	0,0002	39,90	768,3
3	1.059.250	37.195	0	37.195	36.831	364	0,0002	39,90	768,3
4	327	5.46	0	5.46	5.46	0	0,0001	27,60	623,9
5	327	5.46	0	5.46	5.46	0	0,0001	27,60	623,9

C	P	PG	PL	P1	PX	
1	3,1%	0,0%	100,0%	3,1%	0,0%	2004 R./2004 Inc.
2	3,5%	0,0%	100,0%	3,5%	0,0%	1980 R./2004 Inc.
3	3,5%	0,0%	100,0%	3,5%	0,0%	1980 R./1980 Inc.
4	1,7%	0,0%	100,0%	1,7%	0,0%	1980 Ext. R/2004 Inc.
5	1,7%	0,0%	100,0%	1,7%	0,0%	1980 Ext./1980 Inc.

1.26. Table 60D – lubricants, 20 °C base temperature – detailed results

Comparison grid:

Observed temperature: -5 °C to 45 °C, increment 0,1 °C

Base density @ 20 °C: 798,1 kg/m³ to 1.160,7 kg/m³, increment 0,1 kg/m³

Quantity compared: Volume correction factor observed to base (5 & 4 decimals rounding)

Absolute numbers:

NSC: Number of successful calculations (may be smaller than calculated grid points)

NDF: Number of deviations found

NDG: Number of deviations where 2004 result lies above 1980 result

NDL: Number of deviations where 2004 result lies below 1980 result

NDD1: Number of deviations which differ by one result grid rounding increment

NDG1: Number of deviations which differ by more than one result grid rounding increment

MAXD: Maximum deviation found

TLCB: Temperature value closest to base at which maximum deviation occurs

DTLCB: Density value for closest temperature value where maximum deviation occurs

Calculated % ratios:

P : % value of differences: $(NDF / NSC) * 100$

PG: % value of deviations - 2004 value above 1980 value: $(NDG / NDF) * 100$

PL: % value of deviations - 2004 value below 1980 value: $(NDL / NDF) * 100$

P1: % value of deviations - deviation one result grid increment: $(NDD1 / NSC) * 100$

PX: % value of deviations - deviation above one result grid increment: $(NDG1 / NSC) * 100$

Results ASTM D1250-80 standard rounding
VCF - 5 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.813.000	917.364	447.219	470.145	281.469	635.895	0,00006	-1,00	824,7
2	1.813.000	917.364	447.219	470.145	281.469	635.895	0,00006	-1,00	824,7
3	362.5	170.268	82.838	87.43	43.148	127.12	0,00005	19,90	1.143,5
4	0	0	0	0	0	0	0,00000	0,00	0,0
5	0	0	0	0	0	0	0,00000	0,00	0,0

C	P	PG	PL	P1	PX	
1	50,6%	48,8%	51,2%	15,5%	35,1%	2004 R./2004 Inc.
2	50,6%	48,8%	51,2%	15,5%	35,1%	1980 R./2004 Inc.
3	47,0%	48,7%	51,3%	11,9%	35,1%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	906.5	816.539	407.115	409.424	180.644	635.895	0,00006	-1,00	824,7
2	906.5	816.539	407.115	409.424	180.644	635.895	0,00006	-1,00	824,7
3	181.25	163.307	81.407	81.9	36.187	127.12	0,00005	19,90	1.143,5
4	0	0	0	0	0	0	0,00000	0,00	0,0
5	0	0	0	0	0	0	0,00000	0,00	0,0

C	P	PG	PL	P1	PX	
1	90,1%	49,9%	50,1%	19,9%	70,1%	2004 R./2004 Inc.
2	90,1%	49,9%	50,1%	19,9%	70,1%	1980 R./2004 Inc.
3	90,1%	49,8%	50,2%	20,0%	70,1%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	906.5	100.825	40.104	60.721	100.825	0	0,00001	20,10	838,8
2	906.5	100.825	40.104	60.721	100.825	0	0,00001	20,10	838,8
3	181.25	6.961	1.431	5.53	6.961	0	0,00001	20,20	932,0
4	0	0	0	0	0	0	0,00000	0,00	0,0
5	0	0	0	0	0	0	0,00000	0,00	0,0

C	P	PG	PL	P1	PX	
1	11,1%	39,8%	60,2%	11,1%	0,0%	2004 R./2004 Inc.
2	11,1%	39,8%	60,2%	11,1%	0,0%	1980 R./2004 Inc.
3	3,8%	20,6%	79,4%	3,8%	0,0%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

VCF - 4 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.813.000	9.853	4.702	5.151	9.853	0	0,0001	19,80	838,8
2	1.813.000	9.853	4.702	5.151	9.853	0	0,0001	19,80	838,8
3	362.5	681	274	407	681	0	0,0001	18,90	922,5
4	0	0	0	0	0	0	0,0000	0,00	0,0
5	0	0	0	0	0	0	0,0000	0,00	0,0

C		P	PG	PL	P1	PX	
1		0,5%	47,7%	52,3%	0,5%	0,0%	2004 R./2004 Inc.
2		0,5%	47,7%	52,3%	0,5%	0,0%	1980 R./2004 Inc.
3		0,2%	40,2%	59,8%	0,2%	0,0%	1980 R./1980 Inc.
4		0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5		0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	906.5	9.835	4.691	5.144	9.835	0	0,0001	19,80	838,8
2	906.5	9.835	4.691	5.144	9.835	0	0,0001	19,80	838,8
3	181.25	681	274	407	681	0	0,0001	18,90	922,5
4	0	0	0	0	0	0	0,0000	0,00	0,0
5	0	0	0	0	0	0	0,0000	0,00	0,0

C		P	PG	PL	P1	PX	
1		1,1%	47,7%	52,3%	1,1%	0,0%	2004 R./2004 Inc.
2		1,1%	47,7%	52,3%	1,1%	0,0%	1980 R./2004 Inc.
3		0,4%	40,2%	59,8%	0,4%	0,0%	1980 R./1980 Inc.
4		0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5		0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	906.5	18	11	7	18	0	0,0001	41,70	804,7
2	906.5	18	11	7	18	0	0,0001	41,70	804,7
3	181.25	0	0	0	0	0	0,0000	0,00	0,0
4	0	0	0	0	0	0	0,0000	0,00	0,0
5	0	0	0	0	0	0	0,0000	0,00	0,0

C		P	PG	PL	P1	PX	
1		0,0%	61,1%	38,9%	0,0%	0,0%	2004 R./2004 Inc.
2		0,0%	61,1%	38,9%	0,0%	0,0%	1980 R./2004 Inc.
3		0,0%	0,0%	0,0%	0,0%	0,0%	1980 R./1980 Inc.
4		0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5		0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Results ASTM D1250-80 with "German rounding" (Input data)
VCF - 5 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.813.000	851.206	414.617	436.589	215.311	635.895	0,00005	19,90	1.143,4
2	1.813.000	851.206	414.617	436.589	215.311	635.895	0,00005	19,90	1.143,4
3	0	0	414.617	436.589	215.311	635.895	0,00005	19,90	1.143,4
4	0	0	0	0	0	0	0,00000	0,00	0,0
5	1.813.000	851.206	0	0	0	0	0,00000	0,00	0,0

C	P	PG	PL	P1	PX	
1	47,0%	48,7%	51,3%	11,9%	35,1%	2004 R./2004 Inc.
2	47,0%	48,7%	51,3%	11,9%	35,1%	1980 R./2004 Inc.
3	47,0%	48,7%	51,3%	11,9%	35,1%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	906.5	816.539	406.909	409.63	180.644	635.895	0,00005	19,90	1.143,4
2	906.5	816.539	406.909	409.63	180.644	635.895	0,00005	19,90	1.143,4
3	906.5	816.539	406.909	409.63	180.644	635.895	0,00005	19,90	1.143,4
4	0	0	0	0	0	0	0,00000	0,00	0,0
5	0	0	0	0	0	0	0,00000	0,00	0,0

C	P	PG	PL	P1	PX	
1	90,1%	49,8%	50,2%	19,9%	70,1%	2004 R./2004 Inc.
2	90,1%	49,8%	50,2%	19,9%	70,1%	1980 R./2004 Inc.
3	90,1%	49,8%	50,2%	19,9%	70,1%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	906.5	34.667	7.708	26.959	34.667	0	0,00001	20,10	1143,3
2	906.5	34.667	7.708	26.959	34.667	0	0,00001	20,10	1143,3
3	906.5	34.667	7.708	26.959	34.667	0	0,00001	20,10	1143,3
4	0	0	0	0	0	0	0,00000	0,00	0,0
5	0	0	0	0	0	0	0,00000	0,00	0,0

C	P	PG	PL	P1	PX	
1	3,8%	22,2%	77,8%	3,8%	0,0%	2004 R./2004 Inc.
2	3,8%	22,2%	77,8%	3,8%	0,0%	1980 R./2004 Inc.
3	3,8%	22,2%	77,8%	3,8%	0,0%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

VCF - 4 decimals

All temperature values

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	1.813.000	3.339	1.34	1.999	3.339	0	0,0001	19,50	898,7
2	1.813.000	3.339	1.34	1.999	3.339	0	0,0001	19,50	898,7
3	1.813.000	3.339	1.34	1.999	3.339	0	0,0001	19,50	898,7
4	0	0	0	0	0	0	0,0000	0,00	0,0
5	0	0	0	0	0	0	0,0000	0,00	0,0

C	P	PG	PL	P1	PX	
1	0,2%	40,1%	59,9%	0,2%	0,0%	2004 R./2004 Inc.
2	0,2%	40,1%	59,9%	0,2%	0,0%	1980 R./2004 Inc.
3	0,2%	40,1%	59,9%	0,2%	0,0%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Temperature values below base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	906.5	3.339	1.34	1.999	3.339	0	0,0001	19,50	898,7
2	906.5	3.339	1.34	1.999	3.339	0	0,0001	19,50	898,7
3	906.5	3.339	1.34	1.999	3.339	0	0,0001	19,50	898,7
4	0	0	0	0	0	0	0,0000	0,00	0,0
5	0	0	0	0	0	0	0,0000	0,00	0,0

C	P	PG	PL	P1	PX	
1	0,4%	40,1%	59,9%	0,4%	0,0%	2004 R./2004 Inc.
2	0,4%	40,1%	59,9%	0,4%	0,0%	1980 R./2004 Inc.
3	0,4%	40,1%	59,9%	0,4%	0,0%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

Temperature values equal to or above base

C	NSC	NDF	NDG	NDL	NDD1	NDG1	MAXD	TLCB	DTLCB
1	906.5	0	0	0	0	0	0,0000	0,00	0,0
2	906.5	0	0	0	0	0	0,0000	0,00	0,0
3	906.5	0	0	0	0	0	0,0000	0,00	0,0
4	0	0	0	0	0	0	0,0000	0,00	0,0
5	0	0	0	0	0	0	0,0000	0,00	0,0

C	P	PG	PL	P1	PX	
1	0,0%	0,0%	0,0%	0,0%	0,0%	2004 R./2004 Inc.
2	0,0%	0,0%	0,0%	0,0%	0,0%	1980 R./2004 Inc.
3	0,0%	0,0%	0,0%	0,0%	0,0%	1980 R./1980 Inc.
4	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext. R/2004 Inc.
5	0,0%	0,0%	0,0%	0,0%	0,0%	1980 Ext./1980 Inc.

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