

PhazeComp-Generated L^AT_EX Report Template

Aaron A. Zick
Zick Technologies, Inc.

January 3, 2026

Contents

List of Tables	ii
List of Figures	iii
1. Executive Summary	1
2. Introduction	2
2.1. A New Section	2
3. A New Chapter	3
3.1. A New Section	3
3.1.1. A new sub-section	3
4. Conclusions	5
Acknowledgements	6
Nomenclature	7
References	8
Tables	9
Figures	41

List of Tables

1.	Component Properties for Characterization “SCN for MWs and SGs”	9
2.	Mixture “Lab3_Reported_Mud” Compositions	10
3.	Mixture “Lab3_MDT1_Contaminated” Compositions	11
4.	Mixture “Lab3_MDT1_Decontaminated” Compositions	12
5.	Mixture “Lab3_MDT2_Contaminated” Compositions	13
6.	Mixture “Lab3_MDT2_Decontaminated” Compositions	14
7.	Mixture “Lab3_MDT3_Contaminated” Compositions	15
8.	Mixture “Lab3_MDT3_Decontaminated” Compositions	16
9.	Essential Properties for Characterization “SCN EOS”	17
10.	Binary Interaction Parameters for Characterization “SCN EOS”	18
11.	Additional Properties for Characterization “SCN EOS”	22
12.	Mixture “Lab1_Oil_Analysis_1” Compositions	23
13.	Mixture “Lab1_Oil_Analysis_2” Compositions	24
14.	Mixture “Lab1_Recombined_Oil” Compositions	25
15.	Mixture “Lab2_Recombined_Oil” Compositions	26
16.	Mixture “Lab2_Reported_Slimtube_Oil” Compositions	27
17.	Mixture “Lab2_Slimtube_Oil” Compositions	28
18.	Essential Properties for Characterization “Pseudo EOS”	29
19.	Binary Interaction Parameters for Characterization “Pseudo EOS”	29
20.	Additional Properties for Characterization “Pseudo EOS”	30
21.	Mixture “Lab1_Recombined_Oil” Compositions	30
22.	Lab1 Single-Stage Separation	31
23.	Mixture “Lab1_Swelling_Gas” Compositions	31
24.	Lab2 Separator Test #1	31
25.	Lab2 Separator Test #2	31
26.	Lab2 Separator Test #3	32
27.	Lab2 Separation of Slimtube Sample	32
28.	Mixture “Lab3_MDT1_Oil” Compositions	32
29.	Separation of Lab3_MDT1_Oil	33
30.	Mixture “Lab3_Surface_Oil” Compositions	33
31.	Separation of Lab3_Surface_Oil	33
32.	Mixture “Lab3_Swelling_Gas” Compositions	34
33.	Mixture “Lab3_MDT2_Oil” Compositions	34
34.	Single-Stage Separation of Lab3_MDT2_Oil	34
35.	Multi-Stage Separation of Lab3_MDT2_Oil	35
36.	Mixture “Lab3_MDT3_Oil” Compositions	36
37.	Single-Stage Separation of Lab3_MDT3_Oil	36
38.	Mixture “Average_3356.6_m_Oil” Compositions	37
39.	Mixture “Predicted_3200_m_Oil” Compositions	37
40.	Mixture “Predicted_MDT2_Oil” Compositions	38

41.	Mixture “Predicted_MDT3_Oil” Compositions	38
42.	Mixture “Predicted_3350_m_Oil” Compositions	39
43.	Mixture “Predicted_MDT1_Oil” Compositions	39
44.	Mixture “Predicted_3500_m_Oil” Compositions	40
45.	Mixture “Lab1_Slimtube_Gas” Compositions	40
46.	Mixture “Lab2_Slimtube_Gas” Compositions	40

List of Figures

1.	Specific Gravity vs. Molecular Weight for EOS Fluid Characterization “SCN for MWs and SGs.”	41
2.	Molar Gamma Model of Lab3_MDT1_Contaminated C8+ Log Masses. Gamma Shape = 0.76467, Average = 251.59, Bound = 108.63, Origin = 108.63.	42
3.	Molar Gamma Model of Lab3_MDT1_Decontaminated C8+ Log Masses. Gamma Shape = 0.76467, Average = 251.59, Bound = 108.63, Origin = 108.63.	42
4.	Molar Gamma Model of Lab3_MDT2_Contaminated C8+ Log Masses. Gamma Shape = 0.76763, Average = 255.67, Bound = 108.11, Origin = 108.11.	43
5.	Molar Gamma Model of Lab3_MDT2_Decontaminated C8+ Log Masses. Gamma Shape = 0.76763, Average = 255.67, Bound = 108.11, Origin = 108.11.	43
6.	Molar Gamma Model of Lab3_MDT3_Contaminated C8+ Log Masses. Gamma Shape = 0.7494, Average = 256.21, Bound = 108.41, Origin = 108.41.	44
7.	Molar Gamma Model of Lab3_MDT3_Decontaminated C8+ Log Masses. Gamma Shape = 0.7494, Average = 256.21, Bound = 108.41, Origin = 108.41.	44
8.	Specific Gravity vs. Molecular Weight for EOS Fluid Characterization “SCN EOS.”	45
9.	Boiling Temperature vs. Molecular Weight for EOS Fluid Characterization “SCN EOS.”	45
10.	Critical Temperature vs. Molecular Weight for EOS Fluid Characterization “SCN EOS.”	46
11.	Critical Pressure vs. Molecular Weight for EOS Fluid Characterization “SCN EOS.”	46
12.	Acentric Factor vs. Molecular Weight for EOS Fluid Characterization “SCN EOS.”	47
13.	Volume Translation vs. Molecular Weight for EOS Fluid Characterization “SCN EOS.”	47
14.	Critical Z-Factor vs. Molecular Weight for EOS Fluid Characterization “SCN EOS.”	48
15.	Viscosity Z-Factor vs. Molecular Weight for EOS Fluid Characterization “SCN EOS.”	48
16.	Liquid Viscosity vs. Molecular Weight for EOS Fluid Characterization “SCN EOS.”	49
17.	Parachor vs. Molecular Weight for EOS Fluid Characterization “SCN EOS.”	49
18.	Specific Gravity vs. Molecular Weight for EOS Fluid Characterization “Pseudo EOS.”	50
19.	Boiling Temperature vs. Molecular Weight for EOS Fluid Characterization “Pseudo EOS.”	50
20.	Critical Temperature vs. Molecular Weight for EOS Fluid Characterization “Pseudo EOS.”	51
21.	Critical Pressure vs. Molecular Weight for EOS Fluid Characterization “Pseudo EOS.”	51

22.	Acentric Factor vs. Molecular Weight for EOS Fluid Characterization “Pseudo EOS.”	52
23.	Volume Translation vs. Molecular Weight for EOS Fluid Characterization “Pseudo EOS.”	52
24.	Critical Z-Factor vs. Molecular Weight for EOS Fluid Characterization “Pseudo EOS.”	53
25.	Viscosity Z-Factor vs. Molecular Weight for EOS Fluid Characterization “Pseudo EOS.”	53
26.	Liquid Viscosity vs. Molecular Weight for EOS Fluid Characterization “Pseudo EOS.”	54
27.	Parachor vs. Molecular Weight for EOS Fluid Characterization “Pseudo EOS.”	54
28.	Saturation Pressure vs. Mass Fraction Injectant for Lab1 Swelling Test.	55
29.	Overall Density vs. Mass Fraction Injectant for Lab1 Swelling Test.	55
30.	Liquid Volume Fraction vs. Mass Fraction Injectant for Lab1 Swelling Test.	56
31.	Liquid Phase Viscosity vs. Mole Fraction Injectant for Lab1 Viscosity Test.	56
32.	Liquid Volume Fraction, After Removal, vs. Pressure for P/V Test on Lab1 0% Solvent/Oil Mixture.	57
33.	Liquid Volume Fraction, After Removal, vs. Pressure for P/V Test on Lab1 23% Solvent/Oil Mixture.	57
34.	Liquid Volume Fraction, After Removal, vs. Pressure for P/V Test on Lab1 54% Solvent/Oil Mixture.	58
35.	Liquid Volume Fraction, After Removal, vs. Pressure for P/V Test on Lab1 61% Solvent/Oil Mixture.	58
36.	Liquid Volume Fraction, After Removal, vs. Pressure for P/V Test on Lab1 65% Solvent/Oil Mixture.	59
37.	Liquid Volume Fraction, After Removal, vs. Pressure for P/V Test on Lab1 78% Solvent/Oil Mixture.	59
38.	Relative Volume vs. Pressure for Lab2 Constant Composition Expansion.	60
39.	Liquid Volume vs. Pressure for Lab2 Differential Liberation.	60
40.	Cumulative Removal vs. Pressure for Lab2 Differential Liberation.	61
41.	Liquid Phase Density vs. Pressure for Lab2 Differential Liberation.	61
42.	Liquid Phase Viscosity vs. Pressure for Lab2 Differential Liberation.	62
43.	Gas Phase Z-Factor vs. Pressure for Lab2 Differential Liberation.	62
44.	Gas Specific Gravity vs. Pressure for Lab2 Differential Liberation.	63
45.	Gas Phase Viscosity vs. Pressure for Lab2 Differential Liberation.	63
46.	Overall Density vs. Pressure for Lab2 CCE of Surface Sample.	64
47.	Relative Volume vs. Pressure for CCE of Lab3_MDT1_Oil.	64
48.	Liquid Saturation vs. Pressure for CCE of Lab3_MDT1_Oil.	65
49.	Liquid Phase Density vs. Pressure for CCE of Lab3_MDT1_Oil.	65
50.	Volume, After Removal, vs. Pressure for DLE of Lab3_MDT1_Oil.	66
51.	Cumulative Removal vs. Pressure for DLE of Lab3_MDT1_Oil.	66
52.	Liquid Phase Viscosity vs. Pressure for DLE of Lab3_MDT1_Oil.	67
53.	Gas Phase Density vs. Pressure for DLE of Lab3_MDT1_Oil.	67
54.	Gas Specific Gravity vs. Pressure for DLE of Lab3_MDT1_Oil.	68
55.	Gas Phase Z-Factor vs. Pressure for DLE of Lab3_MDT1_Oil.	68
56.	Saturation Pressure vs. Relative Moles Injected for Swelling of Lab3_Surface_Oil with 23% C2+ Gas.	69
57.	Liquid Volume Fraction vs. Relative Moles Injected for Swelling of Lab3_Surface_Oil with 23% C2+ Gas.	69

58.	Overall Density vs. Relative Moles Injected for Swelling of Lab3_Surface_Oil with 23% C2+ Gas.	70
59.	Relative Volume vs. Relative Moles Injected for Swelling of Lab3_Surface_Oil with 23% C2+ Gas.	70
60.	Relative Volume vs. Pressure for CCE of 100% Lab3_Surface_Oil, 0% Injectant. .	71
61.	Liquid Saturation vs. Pressure for CCE of 100% Lab3_Surface_Oil, 0% Injectant. .	71
62.	Overall Density vs. Pressure for CCE of 100% Lab3_Surface_Oil, 0% Injectant. . .	72
63.	Relative Volume vs. Pressure for CCE of 80% Lab3_Surface_Oil, 20% Injectant. .	72
64.	Liquid Saturation vs. Pressure for CCE of 80% Lab3_Surface_Oil, 20% Injectant. .	73
65.	Overall Density vs. Pressure for CCE of 80% Lab3_Surface_Oil, 20% Injectant. . .	73
66.	Relative Volume vs. Pressure for CCE of 60% Lab3_Surface_Oil, 40% Injectant. .	74
67.	Liquid Saturation vs. Pressure for CCE of 60% Lab3_Surface_Oil, 40% Injectant. .	74
68.	Overall Density vs. Pressure for CCE of 60% Lab3_Surface_Oil, 40% Injectant. . .	75
69.	Relative Volume vs. Pressure for CCE of 50% Lab3_Surface_Oil, 50% Injectant. .	75
70.	Liquid Saturation vs. Pressure for CCE of 50% Lab3_Surface_Oil, 50% Injectant. .	76
71.	Overall Density vs. Pressure for CCE of 50% Lab3_Surface_Oil, 50% Injectant. . .	76
72.	Relative Volume vs. Pressure for CCE of 40% Lab3_Surface_Oil, 60% Injectant. .	77
73.	Liquid Saturation vs. Pressure for CCE of 40% Lab3_Surface_Oil, 60% Injectant. .	77
74.	Overall Density vs. Pressure for CCE of 40% Lab3_Surface_Oil, 60% Injectant. . .	78
75.	Liquid Saturation vs. Pressure for CCE of 10% Lab3_Surface_Oil, 90% Injectant. .	78
76.	Overall Density vs. Pressure for CCE of 10% Lab3_Surface_Oil, 90% Injectant. . .	79
77.	Liquid Volume Fraction vs. Pressure for CCE of Lab3_MDT2_Oil.	79
78.	Relative Volume vs. Pressure for CCE of Lab3_MDT2_Oil.	80
79.	Liquid Phase Density vs. Pressure for CCE of Lab3_MDT2_Oil.	80
80.	Cumulative Removal vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.	81
81.	Liquid Phase Density vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.	81
82.	Liquid Volume vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.	82
83.	Liquid Phase Viscosity vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.	82
84.	Gas Phase Density vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.	83
85.	Gas Specific Gravity vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.	83
86.	Gas Phase Z-Factor vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.	84
87.	Gas Phase Viscosity vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.	84
88.	Gas C1 Mole Fraction vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.	85
89.	Gas C2 Mole Fraction vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.	85
90.	Gas C3 Mole Fraction vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.	86
91.	Gas C4+ Mole Fraction vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.	86
92.	Cumulative Removal vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.	87
93.	Liquid Phase Density vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.	87
94.	Liquid Volume vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.	88
95.	Liquid Phase Viscosity vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.	88
96.	Gas Phase Density vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.	89
97.	Gas Specific Gravity vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.	89
98.	Gas Phase Z-Factor vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.	90
99.	Gas Phase Viscosity vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.	90
100.	Gas C1 Mole Fraction vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.	91
101.	Gas C2 Mole Fraction vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.	91
102.	Gas C3 Mole Fraction vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.	92
103.	Gas C4+ Mole Fraction vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.	92
104.	Depth vs. Pressure for Damped Isothermal Segregation from Averaged Sample. .	93

105.	Depth vs. Saturation Pressure for Damped Isothermal Segregation from Averaged Sample.	93
106.	Depth vs. Overall Density for Damped Isothermal Segregation from Averaged Sample.	94
107.	Depth vs. Viscosity for Damped Isothermal Segregation from Averaged Sample. .	94
108.	Depth vs. Overall C1 Mass Fraction for Damped Isothermal Segregation from Averaged Sample.	95
109.	Depth vs. Overall C2-C5 Mass Fraction for Damped Isothermal Segregation from Averaged Sample.	95
110.	Depth vs. Overall C6+ Mass Fraction for Damped Isothermal Segregation from Averaged Sample.	96
111.	Saturation Pressure vs. Temperature, P-T Diagram for Lab1_Recombined_Oil. . .	97
112.	Log of Saturation Pressure vs. Temperature, P-T Diagram for Lab1_Recombined_Oil.	97
113.	Saturation Pressure vs. Mole Fraction Injectant at 96 C, P-X Diagram for Lab1_Recombined_Oil, with Lab1_Swelling_Gas at 96 C	98
114.	Saturation Pressure vs. Mass Fraction Injectant at 96 C, P-X Diagram for Lab1_Recombined_Oil, with Lab1_Swelling_Gas at 96 C	98
115.	Log of Saturation Pressure vs. Mole Fraction Injectant at 96 C, P-X Diagram for Lab1_Recombined_Oil, with Lab1_Swelling_Gas at 96 C	99
116.	Log of Saturation Pressure vs. Log of Mole Fraction Feed at 96 C, P-X Diagram for Lab1_Recombined_Oil, with Lab1_Swelling_Gas at 96 C	99
117.	Saturation Pressure vs. Temperature, P-T Diagram for Lab2_Slimtube_Oil.	100
118.	Log of Saturation Pressure vs. Temperature, P-T Diagram for Lab2_Slimtube_Oil.	100
119.	Saturation Pressure vs. Mole Fraction Injectant at 95.5556 C, P-X Diagram for Lab2_Slimtube_Oil, with Lab2_Slimtube_Gas at 95.6 C	101
120.	Saturation Pressure vs. Mass Fraction Injectant at 95.5556 C, P-X Diagram for Lab2_Slimtube_Oil, with Lab2_Slimtube_Gas at 95.6 C	101
121.	Log of Saturation Pressure vs. Mole Fraction Injectant at 95.5556 C, P-X Diagram for Lab2_Slimtube_Oil, with Lab2_Slimtube_Gas at 95.6 C	102
122.	Log of Saturation Pressure vs. Log of Mole Fraction Feed at 95.5556 C, P-X Diagram for Lab2_Slimtube_Oil, with Lab2_Slimtube_Gas at 95.6 C	102
123.	Saturation Pressure vs. Temperature, P-T Diagram for Lab3_Surface_Oil.	103
124.	Log of Saturation Pressure vs. Temperature, P-T Diagram for Lab3_Surface_Oil. .	103
125.	Saturation Pressure vs. Mole Fraction Injectant at 95.5 C, P-X Diagram for Lab3_Surface_Oil, with Lab3_Swelling_Gas at 95.5 C	104
126.	Saturation Pressure vs. Mass Fraction Injectant at 95.5 C, P-X Diagram for Lab3_Surface_Oil, with Lab3_Swelling_Gas at 95.5 C	104
127.	Log of Saturation Pressure vs. Mole Fraction Injectant at 95.5 C, P-X Diagram for Lab3_Surface_Oil, with Lab3_Swelling_Gas at 95.5 C	105
128.	Log of Saturation Pressure vs. Log of Mole Fraction Feed at 95.5 C, P-X Diagram for Lab3_Surface_Oil, with Lab3_Swelling_Gas at 95.5 C	105
129.	Saturation Pressure vs. Temperature, P-T Diagram for Predicted_3350_m_Oil. . .	106
130.	Log of Saturation Pressure vs. Temperature, P-T Diagram for Predicted_3350_m_Oil.	106
131.	Saturation Pressure vs. Mole Fraction Injectant at 93.4 C, P-X Diagram for Predicted_3350_m_Oil, with Lab3_Swelling_Gas at 93.4 C	107
132.	Saturation Pressure vs. Mass Fraction Injectant at 93.4 C, P-X Diagram for Predicted_3350_m_Oil, with Lab3_Swelling_Gas at 93.4 C	107

133.	Log of Saturation Pressure vs. Mole Fraction Injectant at 93.4 C, P-X Diagram for Predicted_3350_m_Oil, with Lab3_Swelling_Gas at 93.4 C	108
134.	Log of Saturation Pressure vs. Log of Mole Fraction Feed at 93.4 C, P-X Diagram for Predicted_3350_m_Oil, with Lab3_Swelling_Gas at 93.4 C	108
135.	Rs vs. Saturation Pressure, Black Oil Tables from Predicted_3350_m_Oil at 93.5 C, Using Three-Stage Separation Process.	109
136.	Bo vs. Saturation Pressure, Black Oil Tables from Predicted_3350_m_Oil at 93.5 C, Using Three-Stage Separation Process.	109
137.	Rv vs. Saturation Pressure, Black Oil Tables from Predicted_3350_m_Oil at 93.5 C, Using Three-Stage Separation Process.	110
138.	1/Bg vs. Saturation Pressure, Black Oil Tables from Predicted_3350_m_Oil at 93.5 C, Using Three-Stage Separation Process.	110
139.	Viscosity vs. Saturation Pressure, Black Oil Tables from Predicted_3350_m_Oil at 93.5 C, Using Three-Stage Separation Process.	111
140.	Density vs. Saturation Pressure, Black Oil Tables from Predicted_3350_m_Oil at 93.5 C, Using Three-Stage Separation Process.	111
141.	Rs and 1/Rv vs. Saturation Pressure, Black Oil Tables from Predicted_3350_m_Oil at 93.5 C, Using Three-Stage Separation Process.	112

1. Executive Summary

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

2. Introduction

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

2.1. A New Section

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

3. A New Chapter

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

3.1. A New Section

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

3.1.1. A new sub-section

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

A new sub-sub-section

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc

nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

A new paragraph. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

A new sub-paragraph. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

4. Conclusions

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

Acknowledgements

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

Nomenclature

References

Tables

Table 1: Component Properties for Characterization “SCN for MWs and SGs”

Component	LMW	MW	SG
N2		28.014	0.28339
CO2		44.010	0.76193
C1		16.043	0.14609
C2		30.070	0.32976
C3		44.097	0.50977
I-C4		58.123	0.57043
N-C4		58.123	0.59055
I-C5		72.150	0.62952
N-C5		72.150	0.63585
C6	77.714	84.751	0.69921
C7	91.551	98.595	0.72940
C8	105.403	112.460	0.75398
C9	119.362	126.496	0.77457
C10	133.445	140.601	0.79195
C11	147.592	154.767	0.80682
C12	161.797	168.989	0.81967
C13	176.052	183.259	0.83088
C14	190.351	197.571	0.84075
C15	204.687	211.919	0.84950
C16	219.058	226.301	0.85730
C17	233.458	240.711	0.86430
C18	247.886	255.149	0.87063
C19	262.339	269.611	0.87636
C20	276.815	284.096	0.88158
C21	291.313	298.601	0.88635
C22	305.830	313.126	0.89074
C23	320.366	327.669	0.89477
C24	334.920	342.230	0.89850
C25	349.491	356.807	0.90196
C26	364.077	371.400	0.90517
C27	378.678	386.007	0.90817
C28	393.293	400.628	0.91096
C29	407.922	415.262	0.91358
C30+	422.563	602.891	0.93649

Table 2: Mixture “Lab3.Reported_Mud” Compositions

Component	Mole Fractions	Mass Fractions
C10	0.000745	0.000450
C11	0.006677	0.004435
C12	0.024545	0.017801
C13	0.062217	0.048932
C14	0.088766	0.075265
C15	0.137659	0.125199
C16	0.162262	0.157589
C17	0.195969	0.202445
C18	0.180583	0.197740
C19	0.096804	0.112010
C20	0.029970	0.036541
C21	0.005801	0.007433
C22	0.001717	0.002307
C23	0.001901	0.002674
C24	0.000516	0.000757
C25	0.000753	0.001153
C26	0.000134	0.000213
C27	0.000267	0.000442
C28	0.000195	0.000335
C29	0.000296	0.000528
C30+	0.002222	0.005749
MW		233.01

Table 3: Mixture “Lab3_MDT1_Contaminated” Compositions

Component	Mole Fractions	Mass Fractions
N2	0.001755	0.000480
CO2	0.012850	0.005520
C1	0.443321	0.069419
C2	0.054820	0.016090
C3	0.054017	0.023250
I-C4	0.009289	0.005270
N-C4	0.027621	0.015670
I-C5	0.011246	0.007920
N-C5	0.016188	0.011400
C6	0.023742	0.019640
C7	0.033044	0.031800
C8	0.034454	0.037820
C9	0.027375	0.033800
C10	0.024272	0.033310
C11	0.019409	0.029320
C12	0.017012	0.028060
C13	0.017141	0.030660
C14	0.016298	0.031430
C15	0.015050	0.031130
C16	0.013319	0.029420
C17	0.012454	0.029260
C18	0.011412	0.028420
C19	0.009827	0.025860
C20	0.007703	0.021360
C21	0.006420	0.018710
C22	0.005903	0.018040
C23	0.005481	0.017530
C24	0.004748	0.015860
C25	0.004370	0.015220
C26	0.004080	0.014790
C27	0.004087	0.015400
C28	0.003810	0.014900
C29	0.003368	0.013650
C30+	0.044115	0.259597
MW		102.45

Table 4: Mixture “Lab3_MDT1_Decontaminated” Compositions

Component	Mole Fractions	Mass Fractions
N2	0.001783	0.000497
CO2	0.013049	0.005718
C1	0.450175	0.071909
C2	0.055668	0.016667
C3	0.054852	0.024084
I-C4	0.009433	0.005459
N-C4	0.028048	0.016232
I-C5	0.011420	0.008204
N-C5	0.016438	0.011809
C6	0.024109	0.020344
C7	0.033555	0.032940
C8	0.034987	0.039176
C9	0.027798	0.035012
C10	0.024636	0.034488
C11	0.019606	0.030212
C12	0.016895	0.028428
C13	0.016444	0.030004
C14	0.015178	0.029857
C15	0.013154	0.027755
C16	0.011016	0.024822
C17	0.009616	0.023047
C18	0.008796	0.022346
C19	0.008482	0.022769
C20	0.007359	0.020815
C21	0.006429	0.019114
C22	0.005967	0.018604
C23	0.005536	0.018063
C24	0.004813	0.016402
C25	0.004426	0.015724
C26	0.004141	0.015313
C27	0.004146	0.015936
C28	0.003866	0.015422
C29	0.003415	0.014121
C30+	0.044763	0.268703
MW		100.43

Table 5: Mixture “Lab3_MDT2_Contaminated” Compositions

Component	Mole Fractions	Mass Fractions
N2	0.002125	0.000600
CO2	0.011044	0.004899
C1	0.449515	0.072685
C2	0.057070	0.017297
C3	0.055563	0.024695
I-C4	0.009728	0.005699
N-C4	0.027307	0.015997
I-C5	0.011136	0.008098
N-C5	0.015948	0.011598
C6	0.023760	0.020296
C7	0.032799	0.032593
C8	0.035812	0.040592
C9	0.027446	0.034993
C10	0.024693	0.034993
C11	0.019741	0.030794
C12	0.017316	0.029494
C13	0.016726	0.030894
C14	0.014862	0.029594
C15	0.013996	0.029894
C16	0.011791	0.026895
C17	0.010344	0.025095
C18	0.009953	0.025595
C19	0.009235	0.025095
C20	0.007577	0.021696
C21	0.006843	0.020596
C22	0.006019	0.018996
C23	0.005631	0.018596
C24	0.005072	0.017497
C25	0.004671	0.016797
C26	0.004354	0.016297
C27	0.004446	0.017297
C28	0.003665	0.014797
C29	0.003798	0.015897
C30+	0.040015	0.243151
MW		99.22

Table 6: Mixture “Lab3_MDT2_Decontaminated” Compositions

Component	Mole Fractions	Mass Fractions
N2	0.002133	0.000606
CO2	0.011088	0.004945
C1	0.451304	0.073368
C2	0.057297	0.017459
C3	0.055784	0.024927
I-C4	0.009767	0.005752
N-C4	0.027415	0.016147
I-C5	0.011181	0.008174
N-C5	0.016012	0.011707
C6	0.023855	0.020487
C7	0.032930	0.032900
C8	0.035954	0.040973
C9	0.027556	0.035322
C10	0.024788	0.035318
C11	0.019793	0.031041
C12	0.017288	0.029604
C13	0.016545	0.030724
C14	0.014568	0.029165
C15	0.013504	0.028999
C16	0.011193	0.025667
C17	0.009605	0.023429
C18	0.009274	0.023978
C19	0.008886	0.024278
C20	0.007488	0.021556
C21	0.006848	0.020720
C22	0.006036	0.019153
C23	0.005646	0.018746
C24	0.005091	0.017654
C25	0.004686	0.016944
C26	0.004370	0.016448
C27	0.004462	0.017455
C28	0.003678	0.014933
C29	0.003812	0.016041
C30+	0.040165	0.245382
MW		98.68

Table 7: Mixture “Lab3_MDT3_Contaminated” Compositions

Component	Mole Fractions	Mass Fractions
N2	0.001778	0.000500
CO2	0.011315	0.005002
C1	0.454433	0.073222
C2	0.056638	0.017105
C3	0.055109	0.024407
I-C4	0.009253	0.005402
N-C4	0.026731	0.015605
I-C5	0.010905	0.007902
N-C5	0.015737	0.011403
C6	0.023738	0.020206
C7	0.032729	0.032410
C8	0.035867	0.040512
C9	0.027242	0.034610
C10	0.024368	0.034410
C11	0.019370	0.030109
C12	0.016915	0.028709
C13	0.016304	0.030009
C14	0.014518	0.028809
C15	0.013582	0.028909
C16	0.011487	0.026108
C17	0.010054	0.024307
C18	0.009642	0.024707
C19	0.008977	0.024307
C20	0.007362	0.021006
C21	0.006638	0.019906
C22	0.005853	0.018406
C23	0.005471	0.018005
C24	0.004947	0.017005
C25	0.004634	0.016605
C26	0.004130	0.015405
C27	0.004154	0.016105
C28	0.003754	0.015105
C29	0.003694	0.015405
C30+	0.042671	0.258378
MW		99.57

Table 8: Mixture “Lab3_MDT3_Decontaminated” Compositions

Component	Mole Fractions	Mass Fractions
N2	0.001785	0.000505
CO2	0.011360	0.005048
C1	0.456224	0.073901
C2	0.056861	0.017264
C3	0.055327	0.024634
I-C4	0.009290	0.005452
N-C4	0.026837	0.015749
I-C5	0.010948	0.007976
N-C5	0.015799	0.011509
C6	0.023832	0.020393
C7	0.032858	0.032710
C8	0.036009	0.040888
C9	0.027350	0.034931
C10	0.024461	0.034725
C11	0.019420	0.030347
C12	0.016885	0.028810
C13	0.016123	0.029833
C14	0.014226	0.028378
C15	0.013093	0.028016
C16	0.010892	0.024888
C17	0.009321	0.022655
C18	0.008968	0.023103
C19	0.008630	0.023494
C20	0.007273	0.020862
C21	0.006641	0.020022
C22	0.005869	0.018555
C23	0.005485	0.018148
C24	0.004965	0.017156
C25	0.004649	0.016748
C26	0.004146	0.015546
C27	0.004169	0.016250
C28	0.003768	0.015242
C29	0.003707	0.015543
C30+	0.042830	0.260721
MW		99.04

Table 9: Essential Properties for Characterization “SCN EOS”

Component	MW	Tc (K)	Pc (bar)	AF	VTran	ZcVis	Pchor
N2	28.014	126.200	33.9800	0.03700	−0.16758	0.29178	59.10
CO2	44.010	304.120	73.7400	0.22500	0.00191	0.27433	80.00
C1	16.043	190.560	45.9900	0.01100	−0.14996	0.28620	71.00
C2	30.070	305.320	48.7200	0.09900	−0.06280	0.27924	111.00
C3	44.097	369.830	42.4800	0.15200	−0.06381	0.27630	151.00
I-C4	58.123	407.850	36.4000	0.18600	−0.06197	0.28199	188.80
N-C4	58.123	425.120	37.9600	0.20000	−0.05393	0.27385	191.00
I-C5	72.150	460.390	33.8100	0.22900	−0.05646	0.27231	227.40
N-C5	72.150	469.700	33.7000	0.25200	−0.02928	0.26837	231.00
C6	84.751	513.482	33.2738	0.24565	−0.02474	0.26937	238.40
C7	98.595	548.497	30.6745	0.28230	−0.00820	0.26601	271.63
C8	112.460	579.790	28.5096	0.31809	0.00569	0.26355	304.90
C9	126.496	608.034	26.6688	0.35344	0.01630	0.26245	338.59
C10	140.601	633.638	25.0637	0.38879	0.02551	0.26198	372.44
C11	154.767	656.967	23.6316	0.42389	0.03433	0.26176	406.44
C12	168.989	678.316	22.3551	0.45899	0.04227	0.26179	440.57
C13	183.259	697.934	21.2094	0.49067	0.04946	0.26198	474.82
C14	197.571	716.029	20.1758	0.52390	0.05598	0.26230	509.17
C15	211.919	732.779	19.2390	0.55671	0.06189	0.26271	543.61
C16	226.301	748.334	18.3869	0.58907	0.06723	0.26320	578.12
C17	240.711	762.825	17.6091	0.62093	0.07203	0.26376	612.71
C18	255.149	776.364	16.8968	0.65228	0.07634	0.26438	647.36
C19	269.611	789.048	16.2427	0.68308	0.08018	0.26505	682.07
C20	284.096	800.961	15.6403	0.71332	0.08359	0.26578	716.83
C21	298.601	812.177	15.0840	0.74300	0.08660	0.26655	751.64
C22	313.126	822.761	14.5690	0.77211	0.08923	0.26737	786.50
C23	327.669	832.769	14.0910	0.80064	0.09152	0.26823	821.41
C24	342.230	842.251	13.6463	0.82860	0.09349	0.26912	856.35
C25	356.807	851.252	13.2316	0.85600	0.09518	0.27005	891.34
C26	371.400	859.812	12.8441	0.88284	0.09660	0.27100	926.36
C27	386.007	867.964	12.4812	0.90912	0.09777	0.27198	961.42
C28	400.628	875.742	12.1406	0.93486	0.09873	0.27298	996.51
C29	415.262	883.172	11.8205	0.96007	0.09948	0.27401	1031.63
C30+	602.891	956.060	8.9445	1.23959	0.09809	0.28782	1481.94

Table 10: Binary Interaction Parameters for Characterization “SCN EOS”

	N2	CO2	C1	C2	C3
CO2	-0.01200				
C1	0.03600	0.09600			
C2	0.10000	0.10000	0.00189		
C3	0.10000	0.10000	0.00622	0.00023	
I-C4	0.10000	0.10000	0.01188	0.00079	0.00017
N-C4	0.10000	0.10000	0.01118	0.00071	0.00013
I-C5	0.10000	0.10000	0.01602	0.00127	0.00042
N-C5	0.10000	0.10000	0.01626	0.00130	0.00044
C6	0.10000	0.10000	0.01933	0.00168	0.00067
C7	0.10000	0.10000	0.02346	0.00222	0.00103
C8	0.10000	0.10000	0.02734	0.00275	0.00140
C9	0.10000	0.10000	0.03101	0.00326	0.00178
C10	0.10000	0.10000	0.03450	0.00376	0.00215
C11	0.10000	0.10000	0.03785	0.00425	0.00253
C12	0.10000	0.10000	0.04104	0.00473	0.00290
C13	0.10000	0.10000	0.04408	0.00518	0.00326
C14	0.10000	0.10000	0.04698	0.00563	0.00362
C15	0.10000	0.10000	0.04975	0.00605	0.00396
C16	0.10000	0.10000	0.05239	0.00646	0.00430
C17	0.10000	0.10000	0.05490	0.00686	0.00463
C18	0.10000	0.10000	0.05730	0.00723	0.00494
C19	0.10000	0.10000	0.05958	0.00760	0.00524
C20	0.10000	0.10000	0.06175	0.00794	0.00554
C21	0.10000	0.10000	0.06383	0.00828	0.00582
C22	0.10000	0.10000	0.06580	0.00860	0.00609
C23	0.10000	0.10000	0.06769	0.00891	0.00635
C24	0.10000	0.10000	0.06950	0.00920	0.00660
C25	0.10000	0.10000	0.07122	0.00948	0.00685
C26	0.10000	0.10000	0.07287	0.00976	0.00708
C27	0.10000	0.10000	0.07444	0.01002	0.00730
C28	0.10000	0.10000	0.07596	0.01027	0.00752
C29	0.10000	0.10000	0.07741	0.01051	0.00773
C30+	0.12663	0.12663	0.11847	0.03959	0.03651

Table 10: Binary Interaction Parameters for Characterization “SCN EOS” (cont.)

	I-C4	N-C4	I-C5	N-C5	C6
N-C4	0.00000				
I-C5	0.00006	0.00008			
N-C5	0.00006	0.00009	0.00000		
C6	0.00017	0.00021	0.00003	0.00003	
C7	0.00037	0.00042	0.00013	0.00012	0.00004
C8	0.00060	0.00067	0.00029	0.00027	0.00013
C9	0.00086	0.00094	0.00047	0.00045	0.00026
C10	0.00112	0.00122	0.00067	0.00065	0.00042
C11	0.00140	0.00151	0.00089	0.00087	0.00060
C12	0.00168	0.00180	0.00112	0.00109	0.00079
C13	0.00196	0.00209	0.00135	0.00132	0.00098
C14	0.00224	0.00238	0.00158	0.00155	0.00118
C15	0.00252	0.00266	0.00182	0.00178	0.00139
C16	0.00279	0.00294	0.00205	0.00201	0.00159
C17	0.00305	0.00321	0.00228	0.00224	0.00179
C18	0.00331	0.00347	0.00250	0.00246	0.00199
C19	0.00356	0.00373	0.00272	0.00268	0.00219
C20	0.00380	0.00398	0.00294	0.00289	0.00238
C21	0.00404	0.00422	0.00314	0.00310	0.00257
C22	0.00427	0.00445	0.00335	0.00330	0.00275
C23	0.00449	0.00468	0.00354	0.00349	0.00293
C24	0.00470	0.00490	0.00373	0.00368	0.00311
C25	0.00491	0.00511	0.00392	0.00387	0.00328
C26	0.00511	0.00531	0.00410	0.00405	0.00344
C27	0.00530	0.00551	0.00427	0.00422	0.00360
C28	0.00549	0.00570	0.00444	0.00439	0.00376
C29	0.00567	0.00588	0.00460	0.00455	0.00391
C30+	0.03417	0.03441	0.03294	0.03288	0.03213

Table 10: Binary Interaction Parameters for Characterization “SCN EOS” (cont.)

	C7	C8	C9	C10	C11
C8	0.00003				
C9	0.00010	0.00002			
C10	0.00021	0.00008	0.00002		
C11	0.00033	0.00017	0.00007	0.00002	
C12	0.00048	0.00027	0.00014	0.00006	0.00001
C13	0.00063	0.00039	0.00023	0.00012	0.00005
C14	0.00080	0.00052	0.00033	0.00019	0.00010
C15	0.00097	0.00066	0.00044	0.00028	0.00016
C16	0.00114	0.00081	0.00056	0.00038	0.00024
C17	0.00131	0.00095	0.00068	0.00048	0.00032
C18	0.00148	0.00110	0.00081	0.00058	0.00041
C19	0.00165	0.00125	0.00094	0.00069	0.00050
C20	0.00182	0.00140	0.00107	0.00081	0.00060
C21	0.00199	0.00154	0.00119	0.00092	0.00070
C22	0.00215	0.00169	0.00132	0.00103	0.00079
C23	0.00231	0.00183	0.00145	0.00114	0.00089
C24	0.00246	0.00197	0.00157	0.00125	0.00099
C25	0.00262	0.00210	0.00169	0.00136	0.00109
C26	0.00276	0.00223	0.00181	0.00147	0.00118
C27	0.00291	0.00236	0.00193	0.00157	0.00128
C28	0.00305	0.00249	0.00204	0.00168	0.00137
C29	0.00318	0.00261	0.00215	0.00178	0.00146
C30+	0.03127	0.03058	0.03001	0.02954	0.02913

Table 10: Binary Interaction Parameters for Characterization “SCN EOS” (cont.)

	C12	C13	C14	C15	C16
C13	0.00001				
C14	0.00004	0.00001			
C15	0.00009	0.00004	0.00001		
C16	0.00014	0.00007	0.00003	0.00001	
C17	0.00021	0.00012	0.00006	0.00003	0.00001
C18	0.00028	0.00018	0.00011	0.00006	0.00002
C19	0.00036	0.00024	0.00016	0.00009	0.00005
C20	0.00044	0.00031	0.00021	0.00014	0.00008
C21	0.00052	0.00038	0.00027	0.00018	0.00012
C22	0.00060	0.00045	0.00033	0.00024	0.00016
C23	0.00069	0.00053	0.00040	0.00029	0.00021
C24	0.00078	0.00060	0.00046	0.00035	0.00026
C25	0.00086	0.00068	0.00053	0.00041	0.00031
C26	0.00095	0.00076	0.00060	0.00047	0.00036
C27	0.00104	0.00083	0.00067	0.00053	0.00041
C28	0.00112	0.00091	0.00073	0.00059	0.00047
C29	0.00120	0.00099	0.00080	0.00065	0.00052
C30+	0.02879	0.02850	0.02824	0.02802	0.02783

Table 10: Binary Interaction Parameters for Characterization “SCN EOS” (cont.)

	C17	C18	C19	C20	C21
C18	0.00001				
C19	0.00002	0.00000			
C20	0.00004	0.00002	0.00000		
C21	0.00007	0.00004	0.00002	0.00000	
C22	0.00010	0.00006	0.00003	0.00001	0.00000
C23	0.00014	0.00009	0.00006	0.00003	0.00001
C24	0.00018	0.00013	0.00008	0.00005	0.00003
C25	0.00023	0.00016	0.00011	0.00007	0.00004
C26	0.00027	0.00020	0.00014	0.00010	0.00006
C27	0.00032	0.00024	0.00018	0.00013	0.00009
C28	0.00037	0.00028	0.00021	0.00016	0.00011
C29	0.00041	0.00033	0.00025	0.00019	0.00014
C30+	0.02767	0.02752	0.02740	0.02729	0.02720

Table 10: Binary Interaction Parameters for Characterization “SCN EOS” (cont.)

	C22	C23	C24	C25	C26
C23	0.00000				
C24	0.00001	0.00000			
C25	0.00002	0.00001	0.00000		
C26	0.00004	0.00002	0.00001	0.00000	
C27	0.00006	0.00004	0.00002	0.00001	0.00000
C28	0.00008	0.00005	0.00003	0.00002	0.00001
C29	0.00010	0.00007	0.00005	0.00003	0.00002
C30+	0.02712	0.02704	0.02698	0.02693	0.02688

Table 10: Binary Interaction Parameters for Characterization “SCN EOS” (cont.)

	C27	C28	C29
C28	0.00000		
C29	0.00001	0.00000	
C30+	0.02684	0.02680	0.02677

Table 11: Additional Properties for Characterization “SCN EOS”

Component	SG	Tb (C)	Zc	Visc (cp)
N2	0.28339	−195.90291	0.29178	
CO2	0.76193	−88.26608	0.27433	
C1	0.14609	−161.59338	0.28620	
C2	0.32976	−88.71667	0.27924	
C3	0.50977	−42.21618	0.27630	
I-C4	0.57043	−11.65811	0.28199	
N-C4	0.59055	−0.51619	0.27385	
I-C5	0.62952	28.01296	0.27231	
N-C5	0.63585	36.18684	0.26837	
C6	0.69921	64.83930	0.26937	
C7	0.72940	94.25535	0.26470	0.24166
C8	0.75398	121.35092	0.26056	0.30650
C9	0.77457	146.51023	0.25684	0.38367
C10	0.79195	169.99044	0.25345	0.47437
C11	0.80682	191.98102	0.25031	0.57993
C12	0.81967	212.63178	0.24738	0.70168
C13	0.83088	232.06704	0.24461	0.84092
C14	0.84075	250.39330	0.24195	0.99891
C15	0.84950	267.70376	0.23940	1.17687
C16	0.85730	284.08099	0.23692	1.37598
C17	0.86430	299.59884	0.23450	1.59738
C18	0.87063	314.32372	0.23213	1.84214
C19	0.87636	328.31560	0.22981	2.11132
C20	0.88158	341.62882	0.22754	2.40590
C21	0.88635	354.31270	0.22531	2.72683
C22	0.89074	366.41217	0.22311	3.07503
C23	0.89477	377.96816	0.22096	3.45136
C24	0.89850	389.01807	0.21884	3.85665
C25	0.90196	399.59611	0.21676	4.29169
C26	0.90517	409.73362	0.21472	4.75723
C27	0.90817	419.45935	0.21272	5.25399
C28	0.91096	428.79974	0.21075	5.78268
C29	0.91358	437.77907	0.20882	6.34396
C30+	0.93649	528.47876	0.18723	16.61871

Table 12: Mixture “Lab1_Oil_Analysis_1” Compositions

Component	Mole Fractions	Mass Fractions
N2	0.003056	0.000795
CO2	0.020013	0.008176
C1	0.452604	0.067402
C2	0.054715	0.015272
C3	0.047222	0.019330
I-C4	0.007591	0.004096
N-C4	0.020604	0.011117
I-C5	0.008084	0.005414
N-C5	0.011830	0.007923
C6	0.019433	0.015288
C7	0.023648	0.021643
C8	0.034839	0.036370
C9	0.029556	0.034705
C10	0.028128	0.036712
C11	0.022754	0.032689
C12	0.020663	0.032414
C13	0.018452	0.031389
C14	0.015738	0.028863
C15	0.015525	0.030539
C16	0.012089	0.025395
C17	0.010677	0.023857
C18	0.009989	0.023659
C19	0.009328	0.023346
C20	0.007348	0.019378
C21	0.005284	0.014647
C22	0.004801	0.013956
C23	0.005549	0.016879
C24	0.005054	0.016054
C25	0.004194	0.013892
C26	0.004384	0.015112
C27	0.003343	0.011979
C28	0.004010	0.014913
C29	0.003531	0.013612
C30+	0.055963	0.313189
MW		107.73

Table 13: Mixture “Lab1_Oil_Analysis_2” Compositions

Component	Mole Fractions	Mass Fractions
N2	0.001875	0.000493
CO2	0.012433	0.005141
C1	0.439100	0.066181
C2	0.055257	0.015610
C3	0.052396	0.021707
I-C4	0.009374	0.005119
N-C4	0.027530	0.015033
I-C5	0.011644	0.007892
N-C5	0.017564	0.011905
C6	0.031332	0.024947
C7	0.031656	0.029322
C8	0.038464	0.040638
C9	0.026339	0.031301
C10	0.024253	0.032036
C11	0.018932	0.027527
C12	0.016922	0.026865
C13	0.016301	0.028065
C14	0.013095	0.024306
C15	0.013045	0.025971
C16	0.011325	0.024078
C17	0.009035	0.020432
C18	0.008930	0.021407
C19	0.008182	0.020723
C20	0.006591	0.017590
C21	0.005193	0.014567
C22	0.005959	0.017530
C23	0.004884	0.015034
C24	0.005440	0.017490
C25	0.004675	0.015671
C26	0.004483	0.015642
C27	0.004302	0.015602
C28	0.004492	0.016905
C29	0.003916	0.015279
C30+	0.055083	0.311989
MW		106.44

Table 14: Mixture “Lab1_Recombined_Oil” Compositions

Component	Mole Fractions	Mass Fractions
N2	0.001828	0.000497
CO2	0.012150	0.005184
C1	0.447841	0.069648
C2	0.053900	0.015712
C3	0.051208	0.021890
I-C4	0.009176	0.005170
N-C4	0.027044	0.015237
I-C5	0.011497	0.008041
N-C5	0.017422	0.012185
C6	0.031206	0.025638
C7	0.031720	0.030317
C8	0.038652	0.042137
C9	0.026488	0.032480
C10	0.024371	0.033217
C11	0.018994	0.028496
C12	0.016935	0.027742
C13	0.016316	0.028985
C14	0.013152	0.025190
C15	0.013071	0.026852
C16	0.011349	0.024898
C17	0.009015	0.021035
C18	0.008932	0.022091
C19	0.008184	0.021389
C20	0.006638	0.018280
C21	0.005189	0.015021
C22	0.005970	0.018123
C23	0.004945	0.015706
C24	0.005447	0.018069
C25	0.004704	0.016271
C26	0.004518	0.016265
C27	0.004268	0.015972
C28	0.004526	0.017579
C29	0.003894	0.015675
C30+	0.049451	0.289007
MW		103.16

Table 15: Mixture “Lab2_Recombined_Oil” Compositions

Component	Mole Fractions	Mass Fractions
N2	0.001369	0.000376
CO2	0.009147	0.003951
C1	0.467469	0.073605
C2	0.051637	0.015239
C3	0.049992	0.021636
I-C4	0.008905	0.005080
N-C4	0.026055	0.014863
I-C5	0.011292	0.007996
N-C5	0.016739	0.011853
C6	0.024060	0.020013
C7	0.033301	0.032224
C8	0.034266	0.037821
C9	0.027117	0.033665
C10	0.024212	0.033411
C11	0.020488	0.031121
C12	0.017281	0.028662
C13	0.015229	0.027390
C14	0.014607	0.028323
C15	0.011824	0.024592
C16	0.010690	0.023744
C17	0.009225	0.021793
C18	0.008838	0.022133
C19	0.008460	0.022387
C20	0.006904	0.019249
C21	0.006192	0.018147
C22	0.005712	0.017553
C23	0.004957	0.015942
C24	0.004645	0.015603
C25	0.004407	0.015434
C26	0.003839	0.013992
C27	0.003559	0.013483
C28	0.003213	0.012635
C29	0.003059	0.012466
C30+	0.051312	0.303616
MW		101.89

Table 16: Mixture “Lab2_Reported_Slimtube_Oil” Compositions

Component	Mole Fractions	Mass Fractions
N2	0.008579	0.002300
CO2	0.011634	0.004900
C1	0.450066	0.069100
C2	0.055947	0.016100
C3	0.053790	0.022700
I-C4	0.008809	0.004900
N-C4	0.025528	0.014200
I-C5	0.010717	0.007400
N-C5	0.015352	0.010600
C6	0.021823	0.017700
C7	0.032112	0.030300
C8	0.034286	0.036900
C9	0.027920	0.033800
C10	0.022444	0.030200
C11	0.018567	0.027500
C12	0.016448	0.026600
C13	0.015680	0.027500
C14	0.014015	0.026500
C15	0.013214	0.026800
C16	0.011497	0.024900
C17	0.009637	0.022200
C18	0.009583	0.023400
C19	0.009030	0.023300
C20	0.007062	0.019200
C21	0.006439	0.018400
C22	0.005907	0.017700
C23	0.005453	0.017100
C24	0.004977	0.016300
C25	0.004715	0.016100
C26	0.004136	0.014700
C27	0.003952	0.014600
C28	0.003782	0.014500
C29	0.003724	0.014800
C30+	0.053174	0.306800
MW		104.49

Table 17: Mixture “Lab2_Slimtube_Oil” Compositions

Component	Mole Fractions	Mass Fractions
N2	0.011535	0.003120
CO2	0.015595	0.006627
C1	0.429506	0.066534
C2	0.074702	0.021690
C3	0.070480	0.030010
I-C4	0.011136	0.006250
N-C4	0.031570	0.017718
I-C5	0.012156	0.008468
N-C5	0.016855	0.011742
C6	0.021379	0.017495
C7	0.028832	0.027448
C8	0.029603	0.032146
C9	0.023760	0.029020
C10	0.019003	0.025799
C11	0.015693	0.023451
C12	0.013894	0.022671
C13	0.013243	0.023433
C14	0.011836	0.022579
C15	0.011159	0.022834
C16	0.009709	0.021215
C17	0.008138	0.018915
C18	0.008092	0.019937
C19	0.007626	0.019852
C20	0.005963	0.016359
C21	0.005437	0.015677
C22	0.004988	0.015081
C23	0.004605	0.014569
C24	0.004203	0.013888
C25	0.003982	0.013717
C26	0.003492	0.012525
C27	0.003337	0.012439
C28	0.003194	0.012354
C29	0.003145	0.012610
C30+	0.062155	0.361829
MW		103.56

Table 18: Essential Properties for Characterization “Pseudo EOS”

Component	MW	Tc (K)	Pc (bar)	AF	VTran	ZcVis	Pchor
CO2	44.010	304.120	73.7400	0.22500	0.00191	0.27433	80.00
C1+N2	16.093	190.241	45.9329	0.01106	−0.15003	0.28622	70.95
C2	30.070	305.320	48.7200	0.09900	−0.06280	0.27924	111.00
C3	44.097	369.830	42.4800	0.15200	−0.06381	0.27630	151.00
C4	58.123	420.683	37.5591	0.19639	−0.05600	0.27595	190.43
C5	72.150	465.930	33.7480	0.24260	−0.04027	0.26996	229.52
C6	84.751	513.482	33.2738	0.24565	−0.02474	0.26937	238.40
C7	98.595	548.497	30.6745	0.28230	−0.00820	0.26601	271.63
C8-C9	118.581	592.340	27.6658	0.33368	0.01061	0.26304	319.59
C10-C13	159.400	663.670	23.1765	0.43593	0.03737	0.26188	417.56
C14-C19	228.734	750.258	18.2338	0.59494	0.06821	0.26349	583.96
C20-C29	340.077	840.053	13.7048	0.82400	0.09266	0.26943	851.18
C30+	602.891	956.060	8.9445	1.23959	0.09809	0.28782	1481.94

Table 19: Binary Interaction Parameters for Characterization “Pseudo EOS”

	CO2	C1+N2	C2	C3
C1+N2	0.09563			
C2	0.10000	0.00205		
C3	0.10000	0.00637	0.00023	
C4	0.10000	0.01149	0.00073	0.00014
C5	0.10000	0.01629	0.00129	0.00043
C6	0.10000	0.01945	0.00168	0.00067
C7	0.10000	0.02357	0.00222	0.00103
C8-C9	0.09999	0.02913	0.00298	0.00157
C10-C13	0.09998	0.03918	0.00443	0.00267
C14-C19	0.09998	0.05308	0.00655	0.00438
C20-C29	0.09998	0.06942	0.00918	0.00658
C30+	0.12663	0.11840	0.03959	0.03651

Table 19: Binary Interaction Parameters for Characterization “Pseudo EOS” (cont.)

	C4	C5	C6	C7
C5	0.00008			
C6	0.00020	0.00003		
C7	0.00041	0.00013	0.00004	
C8-C9	0.00077	0.00036	0.00019	0.00006
C10-C13	0.00159	0.00096	0.00067	0.00039
C14-C19	0.00296	0.00208	0.00164	0.00118
C20-C29	0.00483	0.00369	0.00310	0.00245
C30+	0.03435	0.03290	0.03213	0.03127

Table 19: Binary Interaction Parameters for Characterization “Pseudo EOS” (cont.)

	C8-C9	C10-C13	C14-C19	C20-C29
C10-C13	0.00015			
C14-C19	0.00072	0.00022		
C20-C29	0.00177	0.00090	0.00023	
C30+	0.03031	0.02900	0.02779	0.02699

Table 20: Additional Properties for Characterization “Pseudo EOS”

Component	SG	Tb (C)	Zc	Visc (cp)
CO2	0.76193	−88.2661	0.27433	
C1+N2	0.14661	−161.7620	0.28622	
C2	0.32976	−88.7167	0.27924	
C3	0.50977	−42.2162	0.27630	
C4	0.58558	−3.3840	0.27595	
C5	0.63331	32.8644	0.26996	
C6	0.69921	64.8393	0.26937	
C7	0.72940	94.2554	0.26470	0.24166
C8-C9	0.76343	132.4894	0.25883	0.33933
C10-C13	0.81119	198.6209	0.24913	0.62179
C14-C19	0.85848	286.3976	0.23615	1.42396
C20-C29	0.89790	386.7496	0.21859	3.84358
C30+	0.93649	528.4788	0.18723	16.61871

Table 21: Mixture “Lab1_Recombined_Oil” Compositions

Component	Mole Fractions	Mass Fractions
CO2	0.012145	0.005184
C1+N2	0.449447	0.070144
C2	0.053878	0.015712
C3	0.051187	0.021890
C4	0.036205	0.020408
C5	0.028907	0.020226
C6	0.031193	0.025638
C7	0.031707	0.030317
C8-C9	0.064886	0.074617
C10-C13	0.076619	0.118441
C14-C19	0.063769	0.141455
C20-C29	0.050625	0.166962
C30+	0.049430	0.289007
MW		103.12

Table 22: Lab1 Single-Stage Separation

Temp (C)	Pres (barg)	GOR (sm ³ /m ³)	
		Expt	Calc
15.000	0.0	137.00	140.26
RMS % Err			2.38
Ave % Bias			2.38

Table 23: Mixture “Lab1_Swelling_Gas” Compositions

Component	Mole Fractions	Mass Fractions
CO ₂	0.015288	0.026200
C ₁ +N ₂	0.688555	0.431501
C ₂	0.108113	0.126594
C ₃	0.094324	0.161970
C ₄	0.044464	0.100638
C ₅	0.019284	0.054181
C ₆	0.029972	0.098916
MW		25.68

Table 24: Lab2 Separator Test #1

Temp (C)	Pres (barg)	Tot Vol 2 (m ³)		Cum GOR (sm ³ /m ³)		Liq Den (kg/m ³)	
		Expt	Calc	Expt	Calc	Expt	Calc
38.000	40.000	1.0990	1.1042	92.66	91.31		806.03
38.000	12.500	1.0580	1.0644	113.43	110.00		822.15
15.000	0.000	1.0000	1.0115	136.58	128.95	843.80	845.77
RMS % Err			0.57		2.16		0.23
Ave % Bias			0.61		-2.26		0.23

Table 25: Lab2 Separator Test #2

Temp (C)	Pres (barg)	Tot Vol 2 (m ³)		Cum GOR (sm ³ /m ³)		Liq Den (kg/m ³)	
		Expt	Calc	Expt	Calc	Expt	Calc
38.000	40.000	1.1020	1.1097	92.16	91.31		806.03
15.000	0.000	1.0000	1.0036	137.33	133.84	848.10	848.97
RMS % Err			0.67		1.00		0.10
Ave % Bias			0.61		-1.10		0.10

Table 26: Lab2 Separator Test #3

Temp (C)	Pres (barg)	Tot Vol 2 (m3)		Cum GOR (sm3/m3)		Liq Den (kg/m3)	
		Expt	Calc	Expt	Calc	Expt	Calc
74.000	9.6800	1.0620	1.0651	132.73	130.01		821.40
74.000	3.2200	1.0520	1.0544	137.62	134.65		825.43
15.000	0.0000	1.0000	1.0194	149.12	140.32	853.40	852.48
RMS % Err			0.56		2.40		0.11
Ave % Bias			0.53		-2.56		-0.11

Table 27: Lab2 Separation of Slimtube Sample

Temp (F)	Pres (psig)	Cum GOR (scf/bbl)		Rel Vol 2		Liq Den (g/cm3)	
		Expt	Calc	Expt	Calc	Expt	Calc
68.000	0.0	878.00	888.30		0.67054	0.86280	0.86385
60.000	0.0	881.00	889.97	0.67100	0.66929	0.86600	0.86548
RMS % Err			1.10		0.26		0.10
Ave % Bias			1.09		-0.26		0.03

Table 28: Mixture "Lab3_MDT1_Oil" Compositions

Component	Mole Fractions	Mass Fractions
CO2	0.012847	0.005520
C1+N2	0.444878	0.069899
C2	0.054806	0.016090
C3	0.054003	0.023250
C4	0.036900	0.020940
C5	0.027427	0.019320
C6	0.023736	0.019640
C7	0.033035	0.031800
C8-C9	0.061862	0.071619
C10-C13	0.077975	0.121349
C14-C19	0.078596	0.175518
C20-C29	0.049833	0.165458
C30+	0.044103	0.259597
MW		102.43

Table 29: Separation of Lab3_MDT1_Oil

Temp (C)	Pres (bar)	GOR (sm ³ /m ³)		Liq Den (g/cm ³)	
		Expt	Calc	Expt	Calc
15.000	1.0000	145.20	140.54	0.85300	0.85251
RMS % Err			3.21		0.06
Ave % Bias			-3.21		-0.06

Table 30: Mixture “Lab3_Surface_Oil” Compositions

Component	Mole Fractions	Mass Fractions
CO2	0.013819	0.006176
C1+N2	0.469434	0.076722
C2	0.056363	0.017212
C3	0.054641	0.024470
C4	0.036089	0.021303
C5	0.026004	0.019053
C6	0.022222	0.019126
C7	0.031286	0.031326
C8-C9	0.059586	0.071757
C10-C13	0.071726	0.116111
C14-C19	0.064395	0.149586
C20-C29	0.049098	0.169571
C30+	0.045337	0.277587
MW		98.47

Table 31: Separation of Lab3_Surface_Oil

Temp (C)	Pres (psig)	GOR (sm ³ /m ³)		Liq Den (g/cm ³)	
		Expt	Calc	Expt	Calc
15.000	0.0	156.00	155.74	0.85880	0.85517
RMS % Err			0.17		0.42
Ave % Bias			-0.17		-0.42

Table 32: Mixture “Lab3_Swelling_Gas” Compositions

Component	Mole Fractions	Mass Fractions
CO2	0.013499	0.025838
C1+N2	0.755126	0.528530
C2	0.088091	0.115207
C3	0.080692	0.154757
C4	0.041696	0.105403
C5	0.014899	0.046751
C6	0.003660	0.013492
C7	0.002337	0.010023
MW		22.99

Table 33: Mixture “Lab3_MDT2_Oil” Compositions

Component	Mole Fractions	Mass Fractions
CO2	0.011040	0.004899
C1+N2	0.451647	0.073285
C2	0.057049	0.017297
C3	0.055542	0.024695
C4	0.037021	0.021696
C5	0.027075	0.019696
C6	0.023751	0.020296
C7	0.032787	0.032593
C8-C9	0.063218	0.075585
C10-C13	0.078507	0.126175
C14-C19	0.070316	0.162168
C20-C29	0.052047	0.178464
C30+	0.040000	0.243151
MW		99.18

Table 34: Single-Stage Separation of Lab3_MDT2_Oil

Temp (C)	Pres (kPa)	GOR (sm3/m3)		Liq Den (g/cm3)		Liq MW	
		Expt	Calc	Expt	Calc	Expt	Calc
15.000	101.33	154.50	147.85	0.85930	0.85061	225.00	220.33
RMS % Err			4.31		1.01		2.07
Ave % Bias			-4.31		-1.01		-2.07

Table 34: Single-Stage Separation of Lab3_MDT2_Oil (cont.)

Temp (C)	Pres (kPa)	C1 y (%)		C2 y (%)		C4+ y (%)	
		Expt	Calc	Expt	Calc	Expt	Calc
15.000	101.33	70.770	72.541	9.0000	9.0227	9.7000	8.1217
RMS % Err			2.50		0.25		16.27
Ave % Bias			2.50		0.25		-16.27

Table 35: Multi-Stage Separation of Lab3_MDT2_Oil

Temp (C)	Pres (kPa)	Liq Vol (m3)		Cum GOR (sm3/m3)		Liq Den (g/cm3)	
		Expt	Calc	Expt	Calc	Expt	Calc
67.000	1599.6	1.1040	1.0820	114.50	121.44	0.80300	0.81026
85.000	179.0	1.0770	1.0312	132.10	143.42	0.79500	0.81941
15.000	101.3	1.0000	0.9931	142.20	148.92	0.85700	0.85081
RMS % Err			2.68		6.04		1.77
Ave % Bias			-2.26		5.86		0.99

Table 35: Multi-Stage Separation of Lab3_MDT2_Oil (cont.)

Temp (C)	Pres (kPa)	C1 y (%)		C2 y (%)		C4+ y (%)	
		Expt	Calc	Expt	Calc	Expt	Calc
67.000	1599.6	78.172	77.963	8.751	8.584	4.392	4.854
85.000	179.0	28.398	28.090	11.531	12.324	38.405	37.095
15.000	101.3		70.132		9.246		8.917
RMS % Err			0.34		4.97		2.56
Ave % Bias			-0.33		2.71		-1.10

Table 36: Mixture “Lab3_MDT3_Oil” Compositions

Component	Mole Fractions	Mass Fractions
CO2	0.011315	0.005002
C1+N2	0.456096	0.073722
C2	0.056636	0.017105
C3	0.055107	0.024407
C4	0.035983	0.021006
C5	0.026641	0.019306
C6	0.023738	0.020206
C7	0.032728	0.032410
C8-C9	0.063075	0.075123
C10-C13	0.076975	0.123237
C14-C19	0.068403	0.157147
C20-C29	0.050634	0.172952
C30+	0.042669	0.258378
MW		99.56

Table 37: Single-Stage Separation of Lab3_MDT3_Oil

Temp (C)	Pres (kPa)	GOR (sm3/m3)		Liq Den (g/cm3)		Liq MW	
		Expt	Calc	Expt	Calc	Expt	Calc
15.000	101.33	149.80	148.29	0.85830	0.85210	228.00	223.26
RMS % Err			1.01		0.72		2.08
Ave % Bias			-1.01		-0.72		-2.08

Table 37: Single-Stage Separation of Lab3_MDT3_Oil (cont.)

Temp (C)	Pres (kPa)	C1 y (%)		C2 y (%)		C4+ y (%)	
		Expt	Calc	Expt	Calc	Expt	Calc
15.000	101.33	72.450	72.859	9.0200	8.9116	8.1500	7.9774
RMS % Err			0.56		1.20		2.12
Ave % Bias			0.56		-1.20		-2.12

Table 38: Mixture “Average_3356.6_m_Oil” Compositions

Component	Mole Fractions	Mass Fractions
CO2	0.011826	0.005237
C1+N2	0.454478	0.073595
C2	0.056614	0.017130
C3	0.055324	0.024548
C4	0.036928	0.021597
C5	0.027263	0.019793
C6	0.023931	0.020408
C7	0.033112	0.032850
C8-C9	0.063220	0.075434
C10-C13	0.077629	0.124512
C14-C19	0.066135	0.152215
C20-C29	0.050968	0.174411
C30+	0.042573	0.258268
MW		99.38

Table 39: Mixture “Predicted_3200_m_Oil” Compositions

Component	Mole Fractions	Mass Fractions
CO2	0.011826	0.005363
C1+N2	0.459367	0.076174
C2	0.057008	0.017664
C3	0.055640	0.025281
C4	0.037094	0.022216
C5	0.027353	0.020335
C6	0.023949	0.020914
C7	0.033086	0.033613
C8-C9	0.063030	0.077014
C10-C13	0.077045	0.126544
C14-C19	0.065144	0.153537
C20-C29	0.049624	0.173891
C30+	0.039833	0.247453
MW		97.05

Table 40: Mixture “Predicted_MDT2_Oil” Compositions

Component	Mole Fractions	Mass Fractions
CO2	0.011826	0.005267
C1+N2	0.455660	0.074213
C2	0.056710	0.017258
C3	0.055401	0.024725
C4	0.036969	0.021746
C5	0.027286	0.019924
C6	0.023936	0.020531
C7	0.033107	0.033035
C8-C9	0.063177	0.075818
C10-C13	0.077491	0.125009
C14-C19	0.065898	0.152547
C20-C29	0.050644	0.174303
C30+	0.041895	0.255625
MW		98.81

Table 41: Mixture “Predicted_MDT3_Oil” Compositions

Component	Mole Fractions	Mass Fractions
CO2	0.011826	0.005245
C1+N2	0.454776	0.073751
C2	0.056638	0.017162
C3	0.055343	0.024593
C4	0.036938	0.021635
C5	0.027269	0.019826
C6	0.023932	0.020439
C7	0.033111	0.032897
C8-C9	0.063209	0.075531
C10-C13	0.077594	0.124638
C14-C19	0.066075	0.152300
C20-C29	0.050886	0.174385
C30+	0.042401	0.257601
MW		99.24

Table 42: Mixture “Predicted_3350_m_Oil” Compositions

Component	Mole Fractions	Mass Fractions
CO2	0.011826	0.005242
C1+N2	0.454665	0.073693
C2	0.056629	0.017150
C3	0.055336	0.024576
C4	0.036934	0.021621
C5	0.027267	0.019814
C6	0.023932	0.020427
C7	0.033111	0.032879
C8-C9	0.063213	0.075495
C10-C13	0.077607	0.124591
C14-C19	0.066097	0.152268
C20-C29	0.050917	0.174395
C30+	0.042465	0.257850
MW		99.29

Table 43: Mixture “Predicted_MDT1_Oil” Compositions

Component	Mole Fractions	Mass Fractions
CO2	0.011826	0.005200
C1+N2	0.453009	0.072833
C2	0.056494	0.016971
C3	0.055226	0.024330
C4	0.036875	0.021412
C5	0.027234	0.019631
C6	0.023924	0.020256
C7	0.033117	0.032620
C8-C9	0.063272	0.074956
C10-C13	0.077797	0.123889
C14-C19	0.066426	0.151794
C20-C29	0.051370	0.174531
C30+	0.043429	0.261579
MW		100.10

Table 44: Mixture “Predicted_3500_m_Oil” Compositions

Component	Mole Fractions	Mass Fractions
CO2	0.011826	0.005126
C1+N2	0.450086	0.071333
C2	0.056254	0.016659
C3	0.055030	0.023898
C4	0.036769	0.021047
C5	0.027174	0.019308
C6	0.023907	0.019953
C7	0.033123	0.032162
C8-C9	0.063366	0.073999
C10-C13	0.078120	0.122633
C14-C19	0.066998	0.150921
C20-C29	0.052168	0.174718
C30+	0.045179	0.268244
MW		101.54

Table 45: Mixture “Lab1_Slimtube_Gas” Compositions

Component	Mole Fractions	Mass Fractions
CO2	0.021994	0.037298
C1+N2	0.665804	0.412877
C2	0.115668	0.134024
C3	0.107970	0.183463
C4	0.046687	0.104564
C5	0.018495	0.051419
C6	0.023381	0.076355
MW		25.95

Table 46: Mixture “Lab2_Slimtube_Gas” Compositions

Component	Mole Fractions	Mass Fractions
CO2	0.013599	0.025836
C1+N2	0.752726	0.522939
C2	0.087991	0.114222
C3	0.081692	0.155512
C4	0.040596	0.101861
C5	0.015398	0.047961
C6	0.003965	0.014507
C7	0.004032	0.017163
MW		23.16

Figures

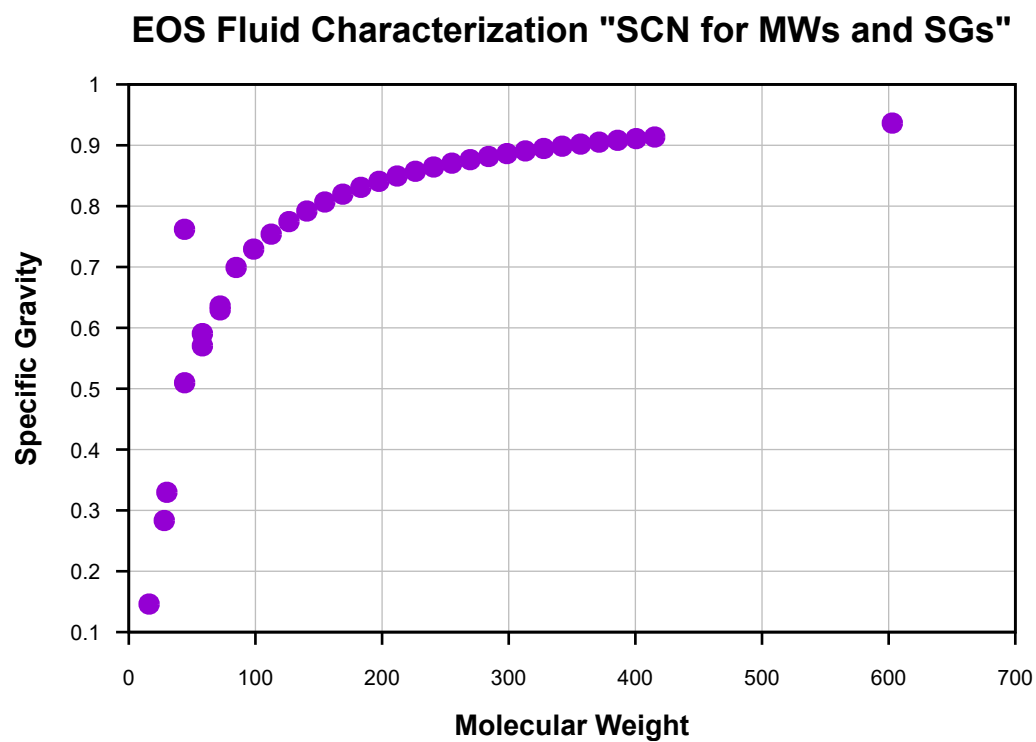


Figure 1: Specific Gravity vs. Molecular Weight for EOS Fluid Characterization "SCN for MWs and SGs."

Gamma Model of Lab3_MDT1_Contaminated C8+ Log Masses

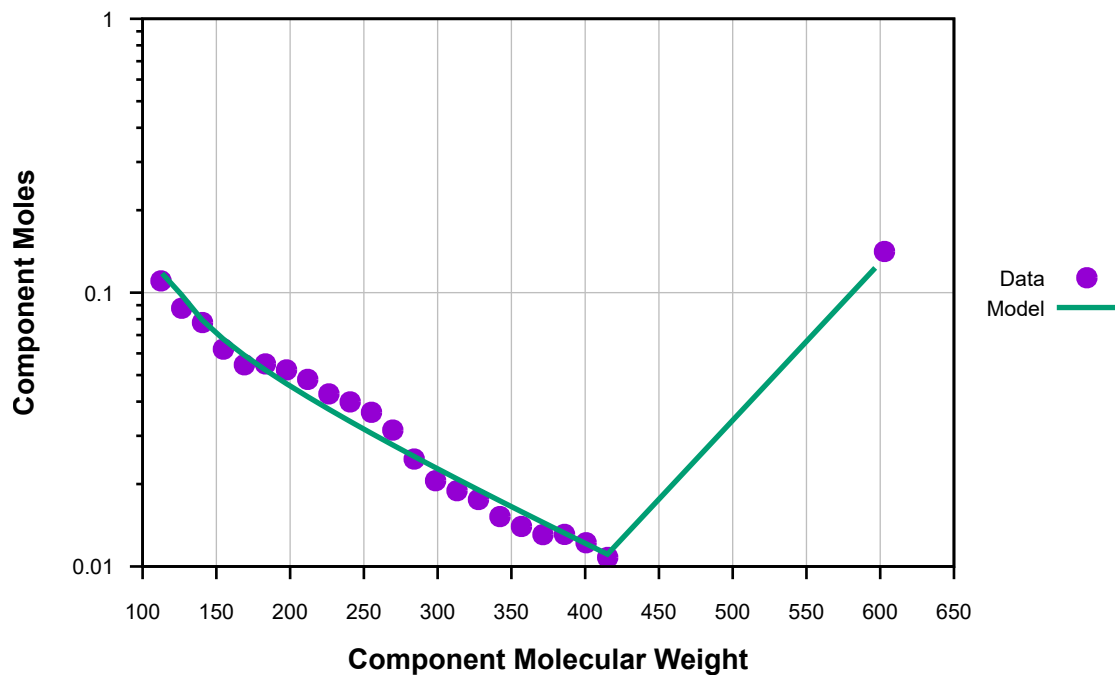


Figure 2: Molar Gamma Model of Lab3_MDT1_Contaminated C8+ Log Masses. Gamma Shape = 0.76467, Average = 251.59, Bound = 108.63, Origin = 108.63.

Gamma Model of Lab3_MDT1_Decontaminated C8+ Log Masses

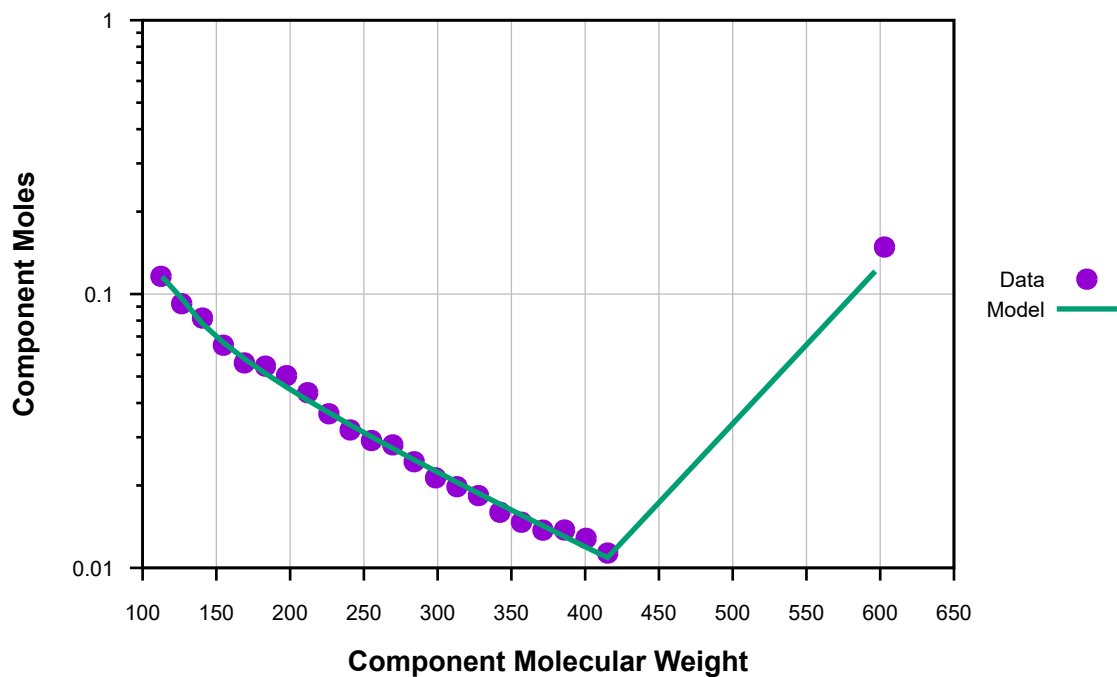


Figure 3: Molar Gamma Model of Lab3_MDT1_Decontaminated C8+ Log Masses. Gamma Shape = 0.76467, Average = 251.59, Bound = 108.63, Origin = 108.63.

Gamma Model of Lab3_MDT2_Contaminated C8+ Log Masses

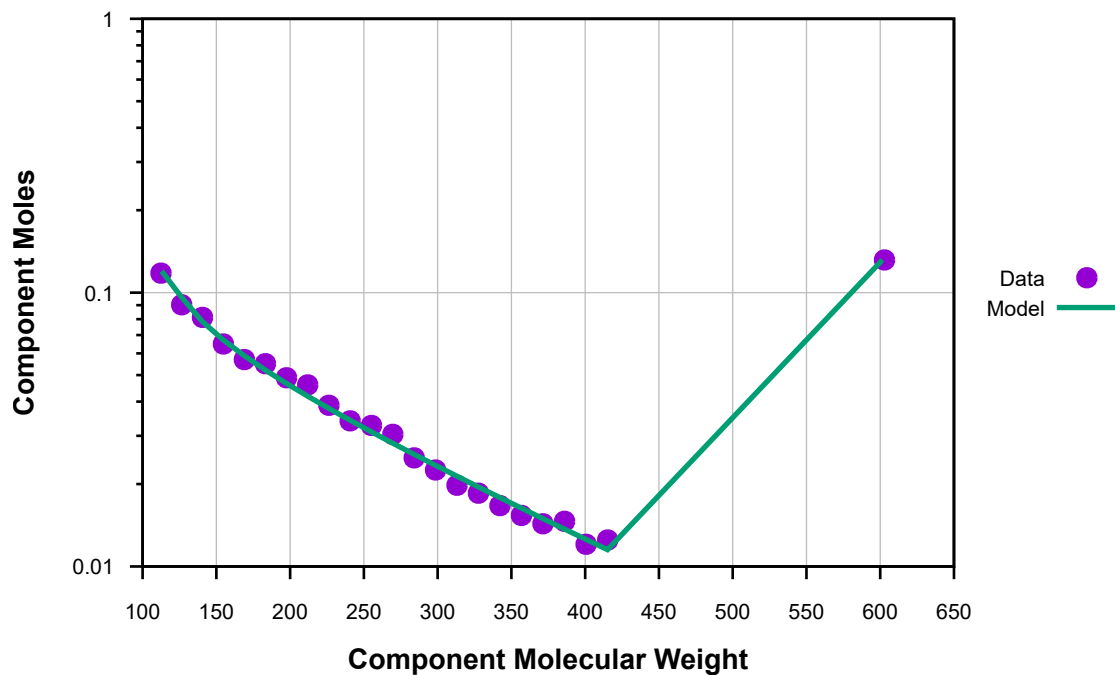


Figure 4: Molar Gamma Model of Lab3_MDT2_Contaminated C8+ Log Masses. Gamma Shape = 0.76763, Average = 255.67, Bound = 108.11, Origin = 108.11.

Gamma Model of Lab3_MDT2_Decontaminated C8+ Log Masses

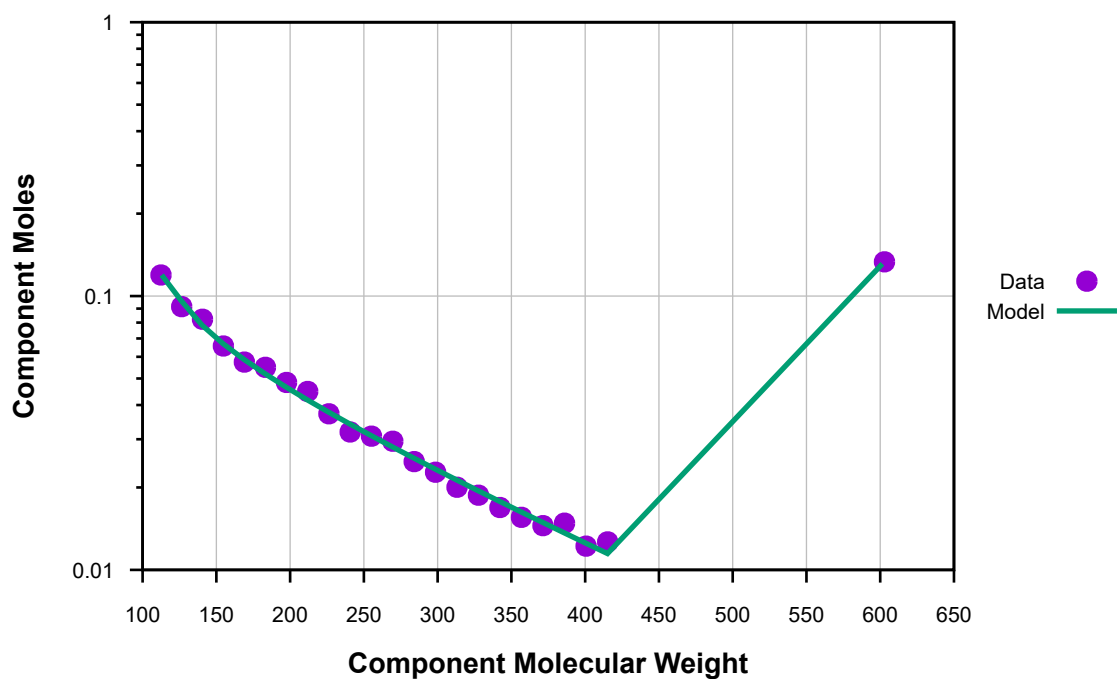


Figure 5: Molar Gamma Model of Lab3_MDT2_Decontaminated C8+ Log Masses. Gamma Shape = 0.76763, Average = 255.67, Bound = 108.11, Origin = 108.11.

Gamma Model of Lab3_MDT3_Contaminated C8+ Log Masses

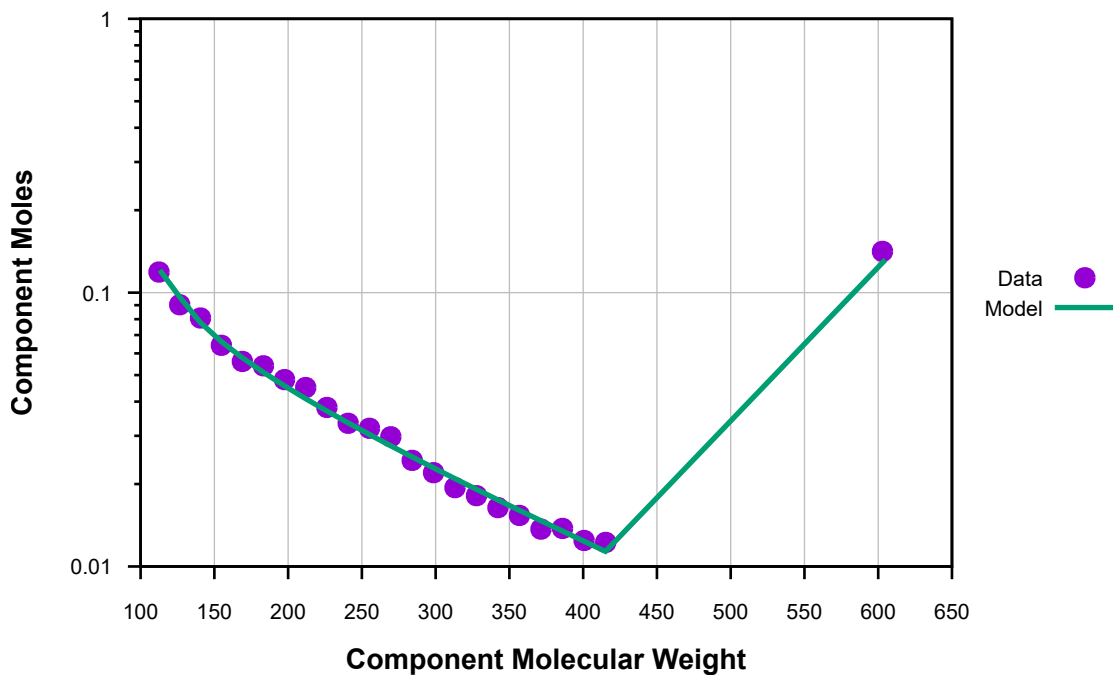


Figure 6: Molar Gamma Model of Lab3_MDT3_Contaminated C8+ Log Masses. Gamma Shape = 0.7494, Average = 256.21, Bound = 108.41, Origin = 108.41.

Gamma Model of Lab3_MDT3_Decontaminated C8+ Log Masses

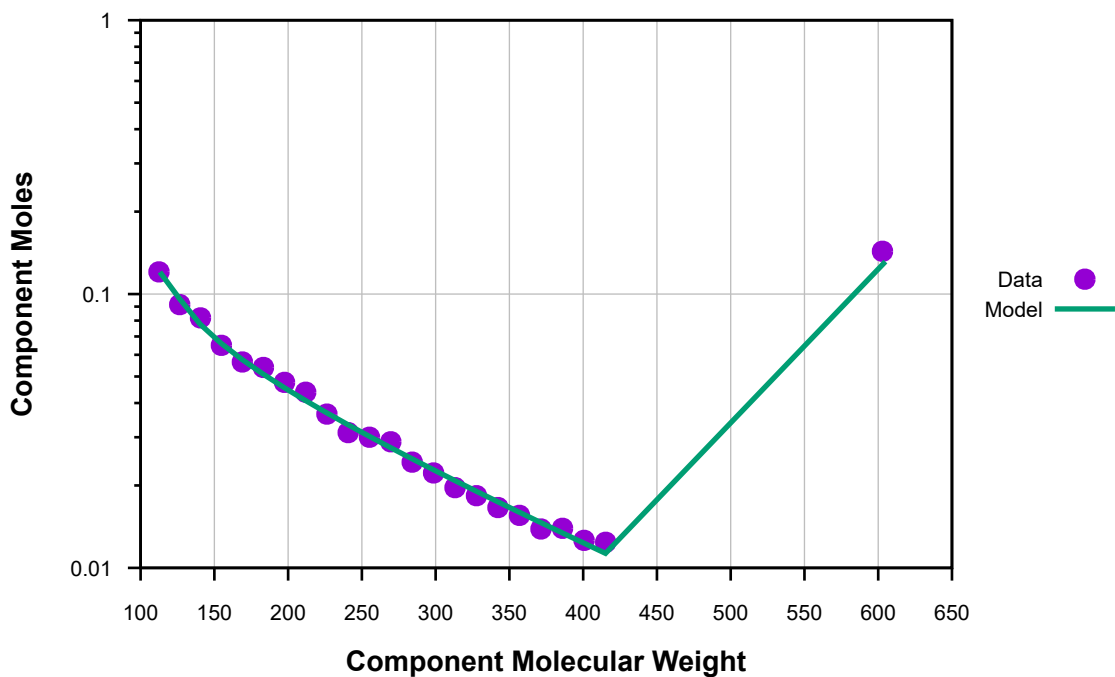


Figure 7: Molar Gamma Model of Lab3_MDT3_Decontaminated C8+ Log Masses. Gamma Shape = 0.7494, Average = 256.21, Bound = 108.41, Origin = 108.41.

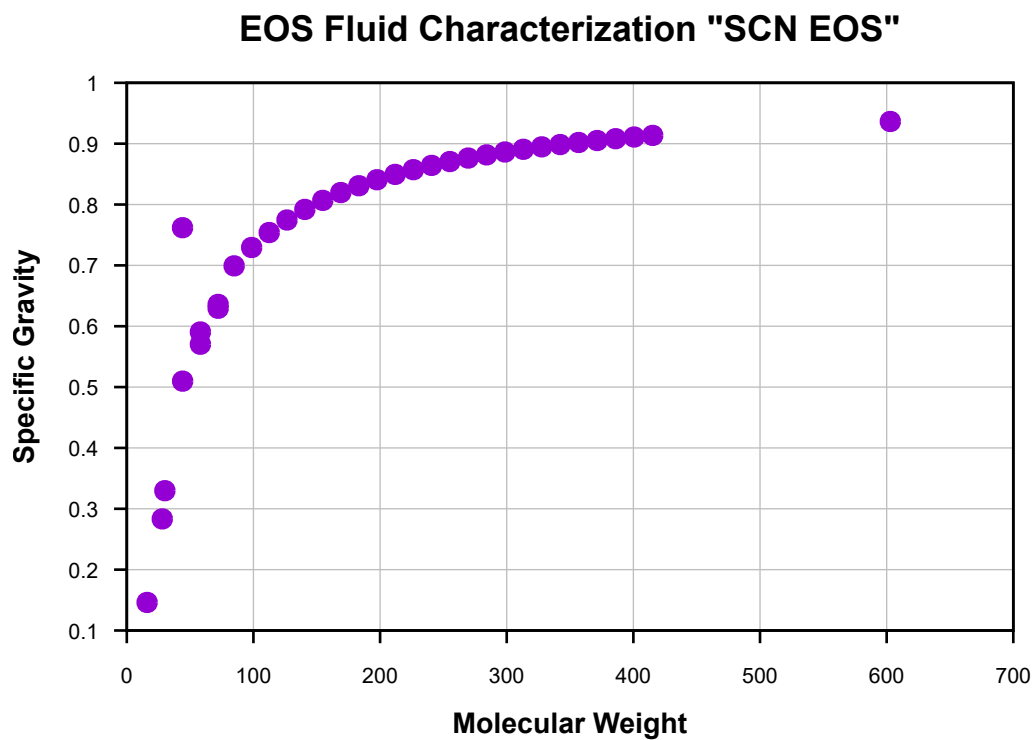


Figure 8: Specific Gravity vs. Molecular Weight for EOS Fluid Characterization “SCN EOS.”

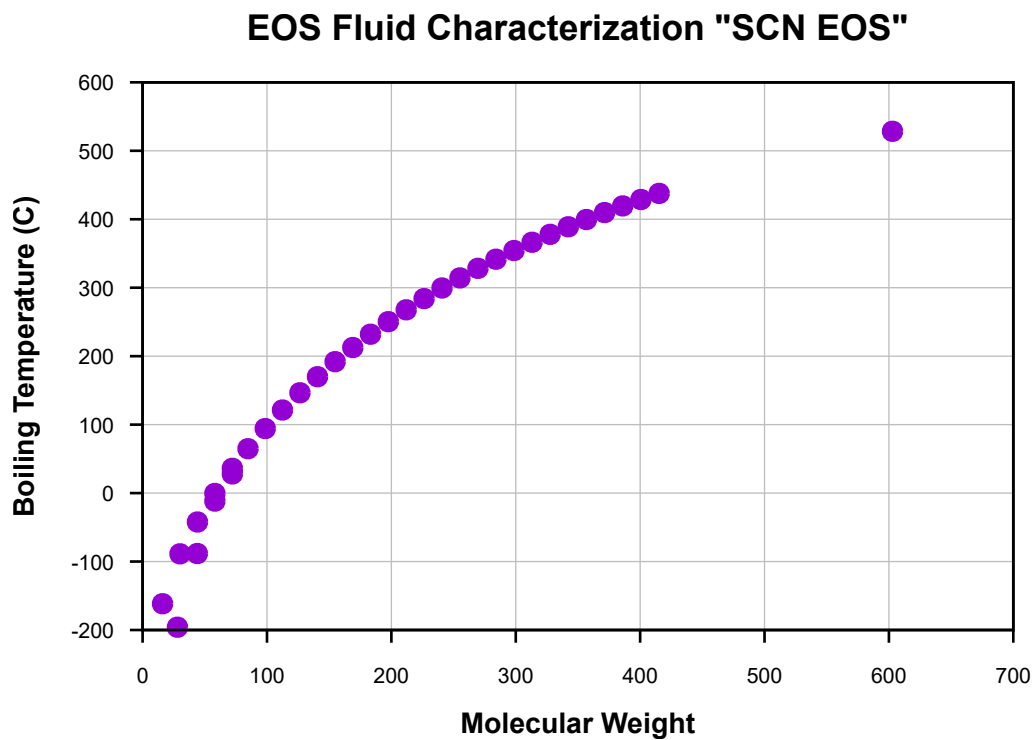


Figure 9: Boiling Temperature vs. Molecular Weight for EOS Fluid Characterization “SCN EOS.”

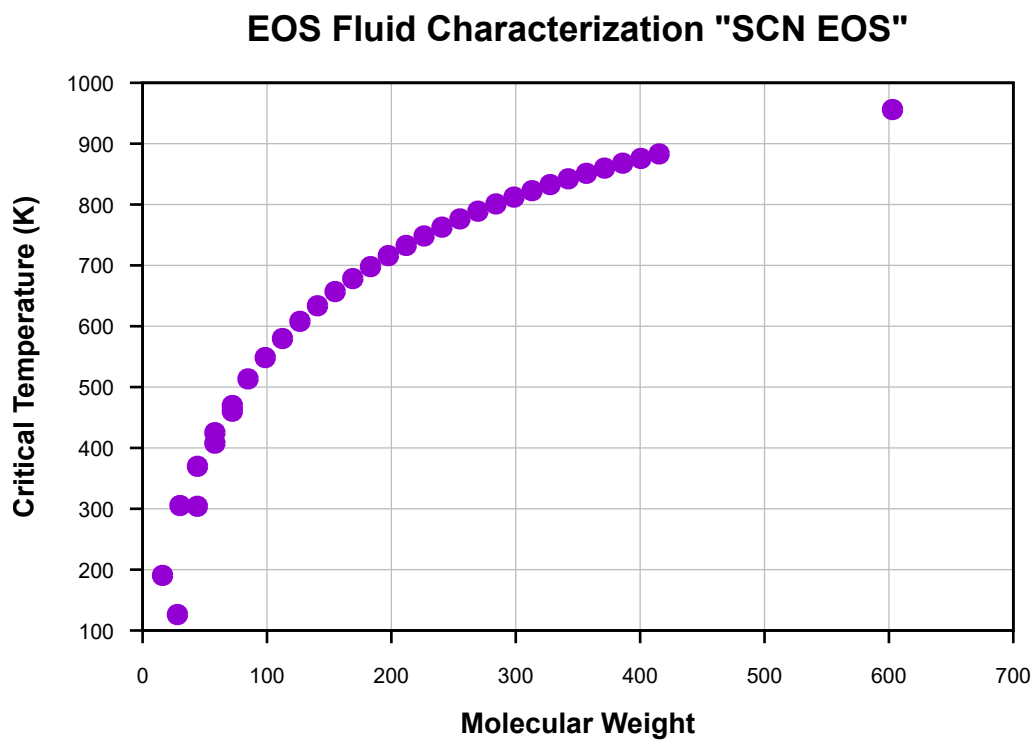


Figure 10: Critical Temperature vs. Molecular Weight for EOS Fluid Characterization "SCN EOS."

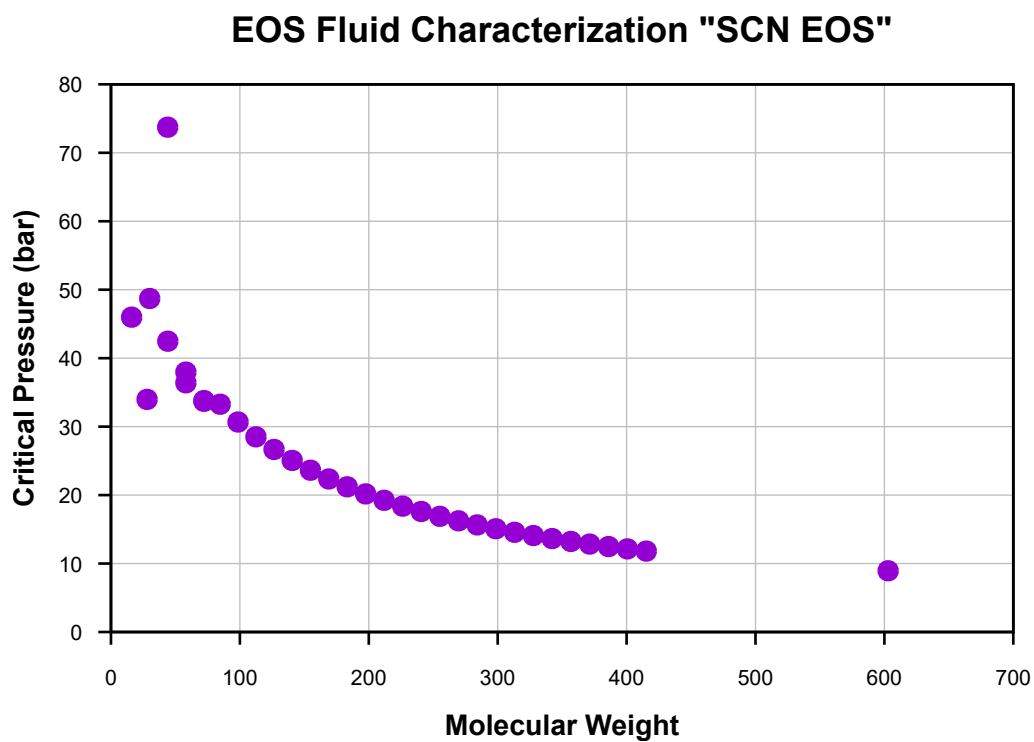


Figure 11: Critical Pressure vs. Molecular Weight for EOS Fluid Characterization "SCN EOS."

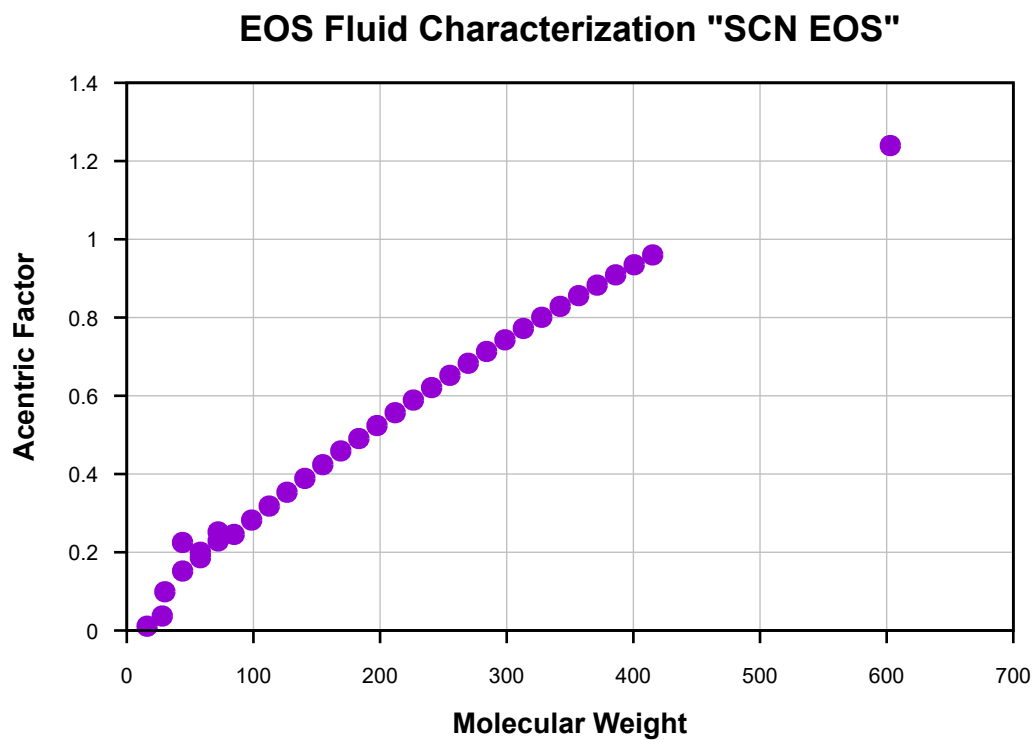


Figure 12: Acentric Factor vs. Molecular Weight for EOS Fluid Characterization “SCN EOS.”

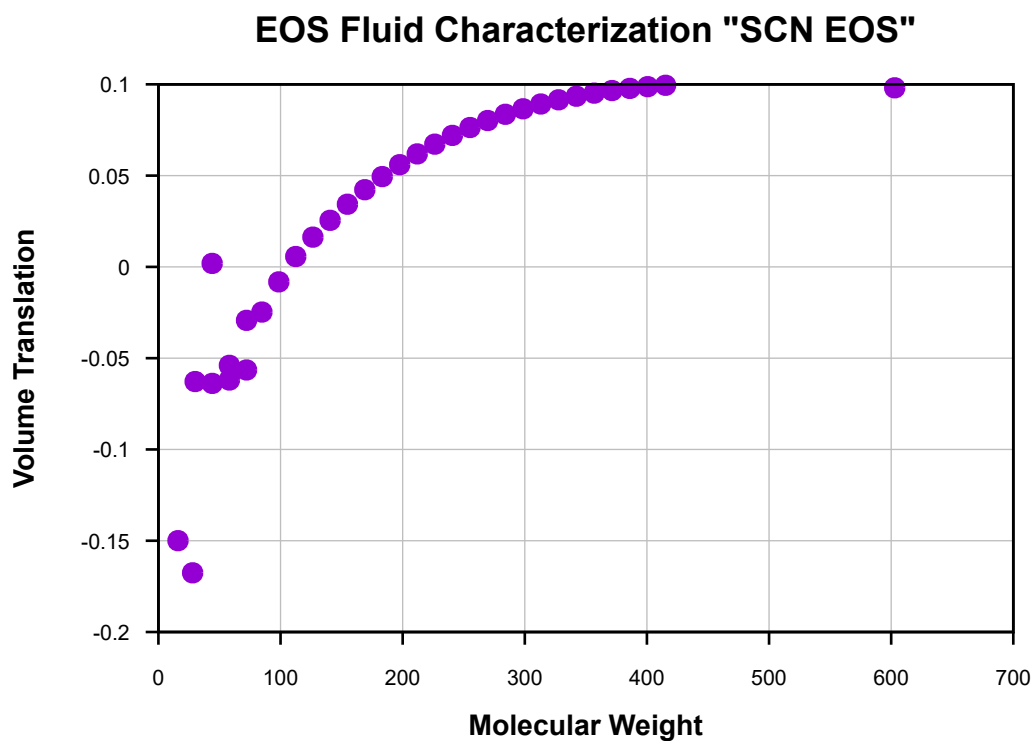


Figure 13: Volume Translation vs. Molecular Weight for EOS Fluid Characterization “SCN EOS.”

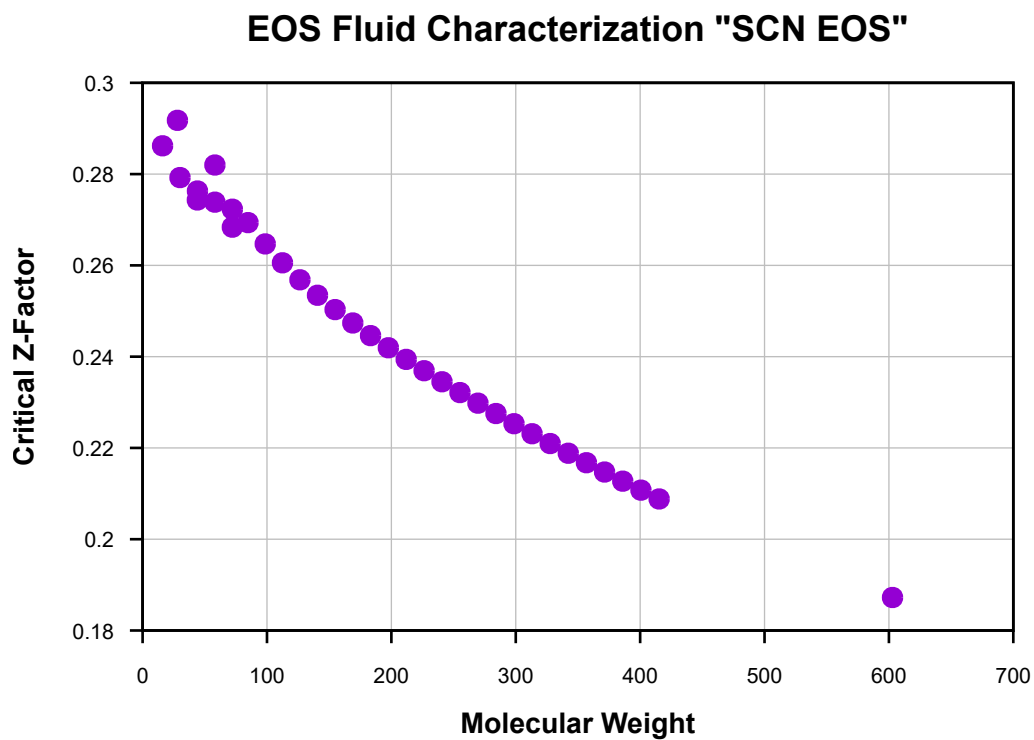


Figure 14: Critical Z-Factor vs. Molecular Weight for EOS Fluid Characterization "SCN EOS."

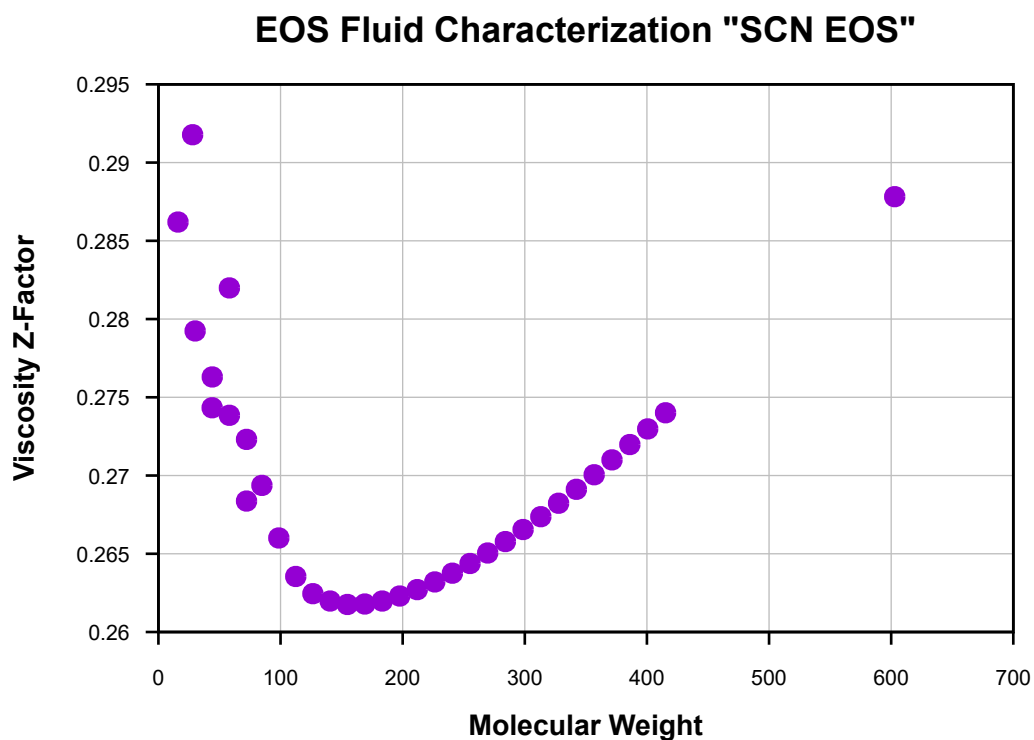


Figure 15: Viscosity Z-Factor vs. Molecular Weight for EOS Fluid Characterization "SCN EOS."

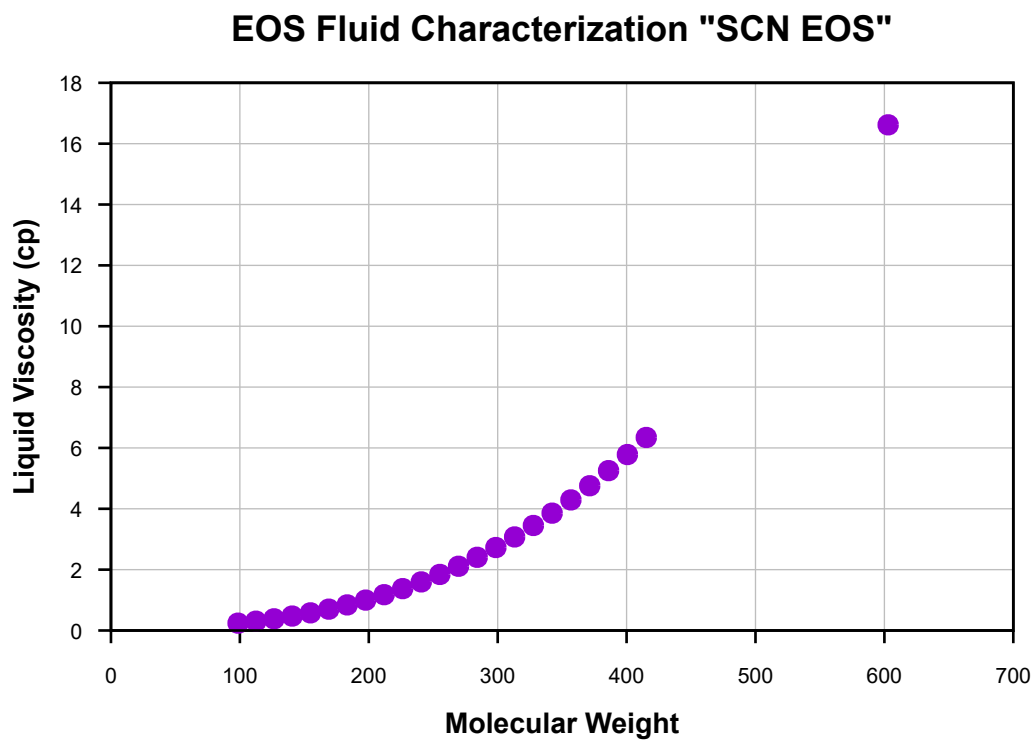


Figure 16: Liquid Viscosity vs. Molecular Weight for EOS Fluid Characterization “SCN EOS.”

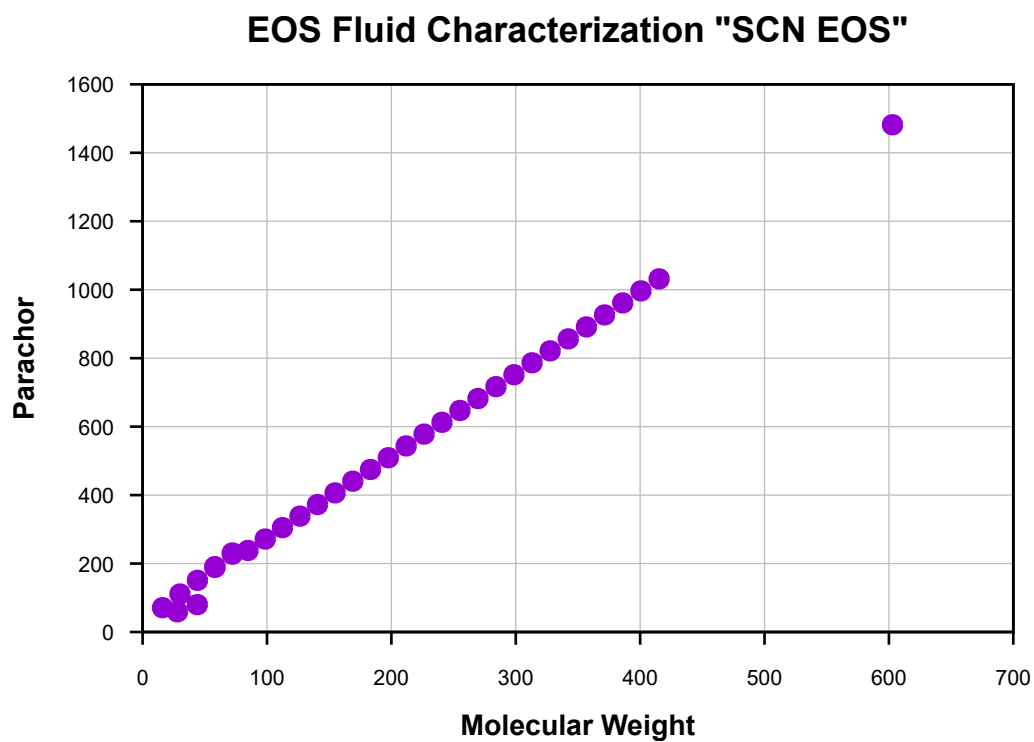


Figure 17: Parachor vs. Molecular Weight for EOS Fluid Characterization “SCN EOS.”

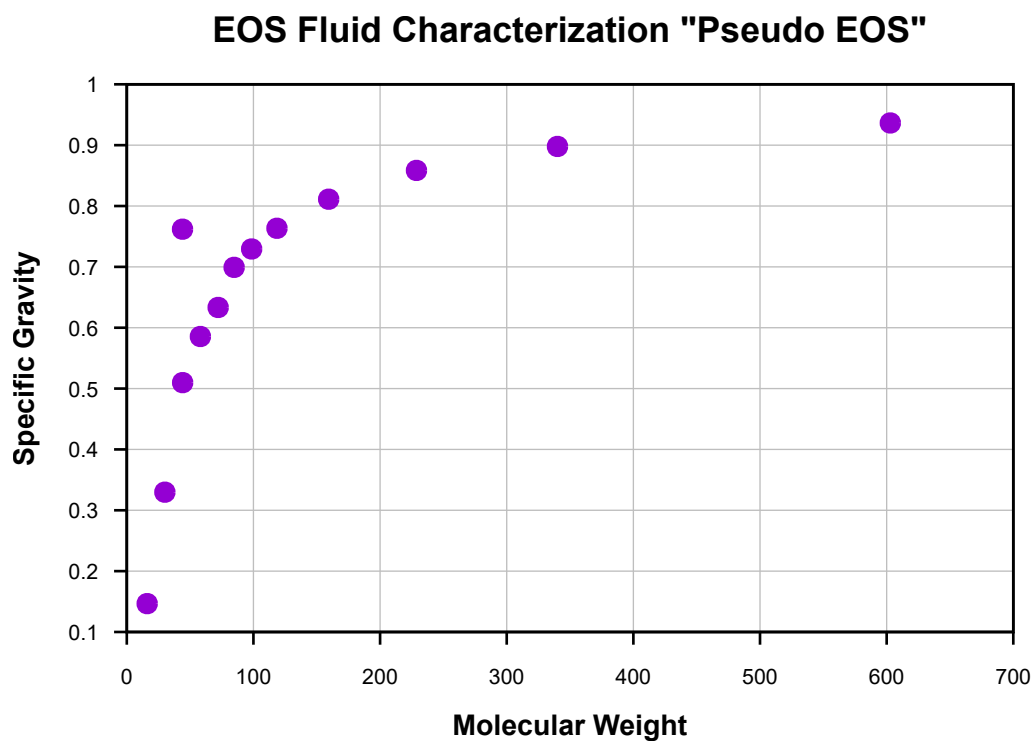


Figure 18: Specific Gravity vs. Molecular Weight for EOS Fluid Characterization “Pseudo EOS.”

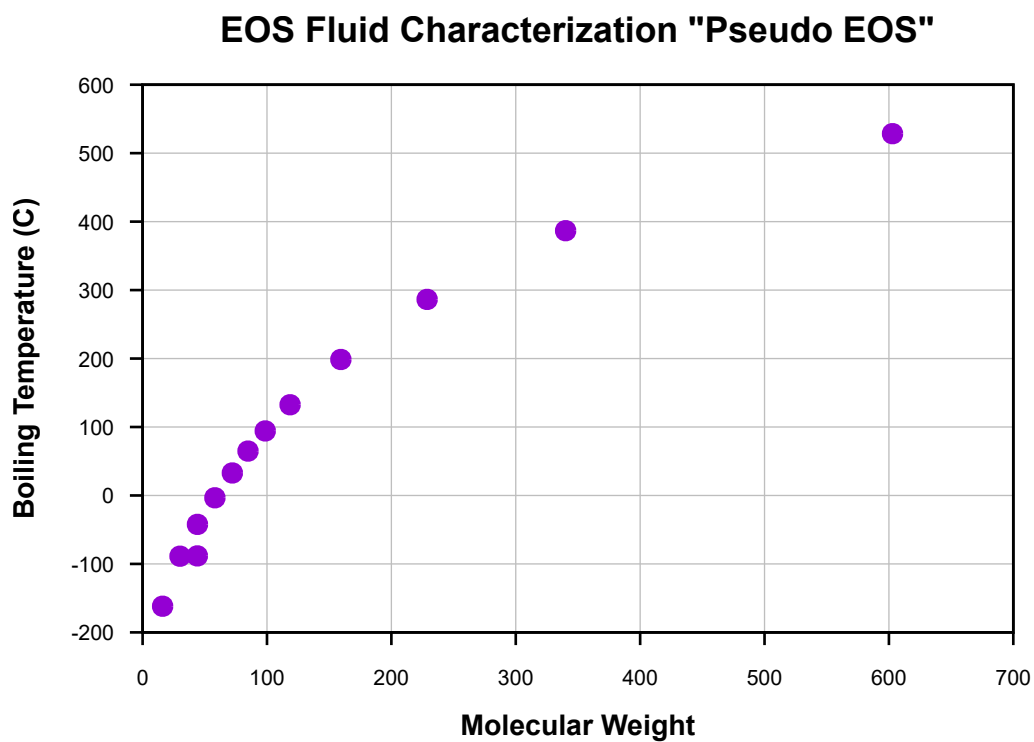


Figure 19: Boiling Temperature vs. Molecular Weight for EOS Fluid Characterization “Pseudo EOS.”

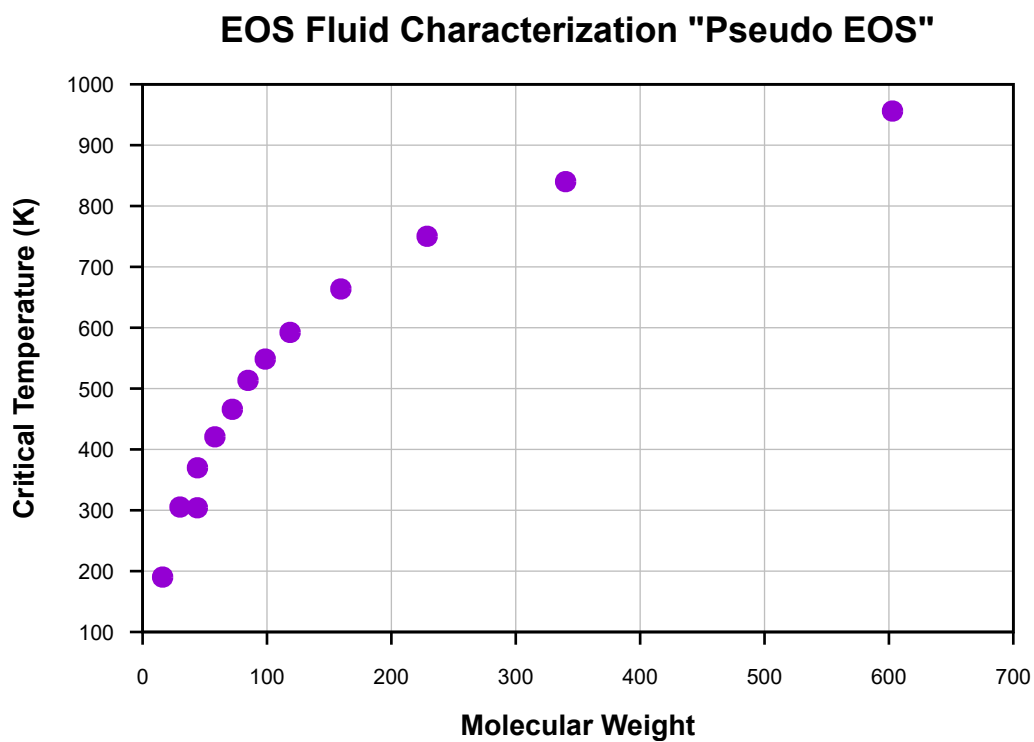


Figure 20: Critical Temperature vs. Molecular Weight for EOS Fluid Characterization “Pseudo EOS.”

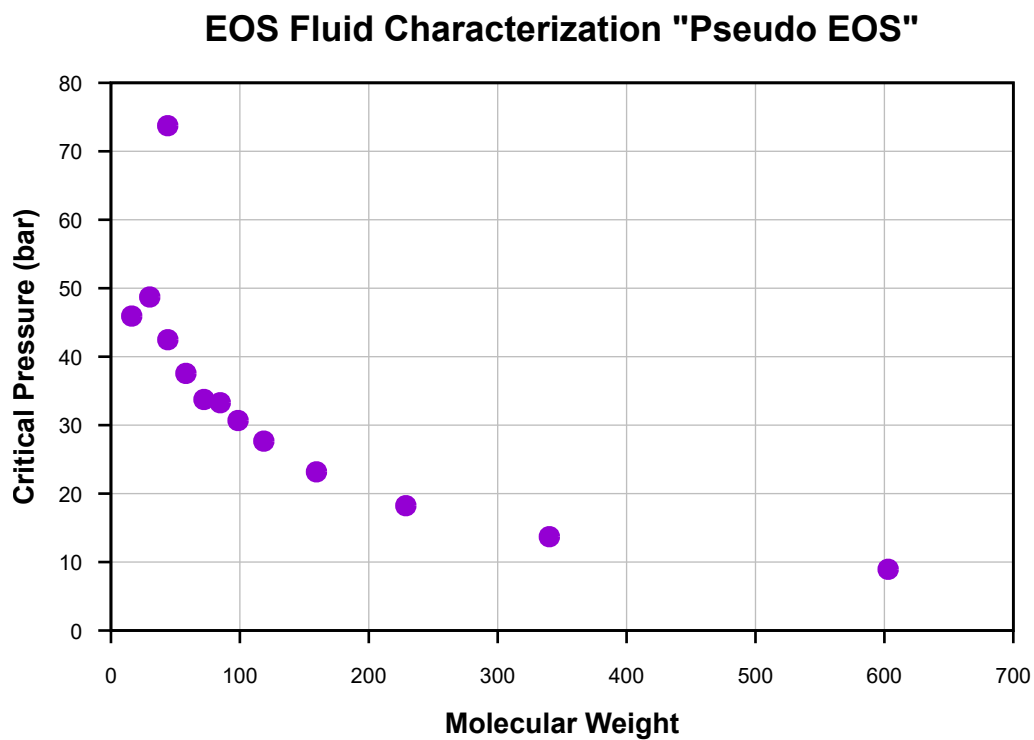


Figure 21: Critical Pressure vs. Molecular Weight for EOS Fluid Characterization “Pseudo EOS.”

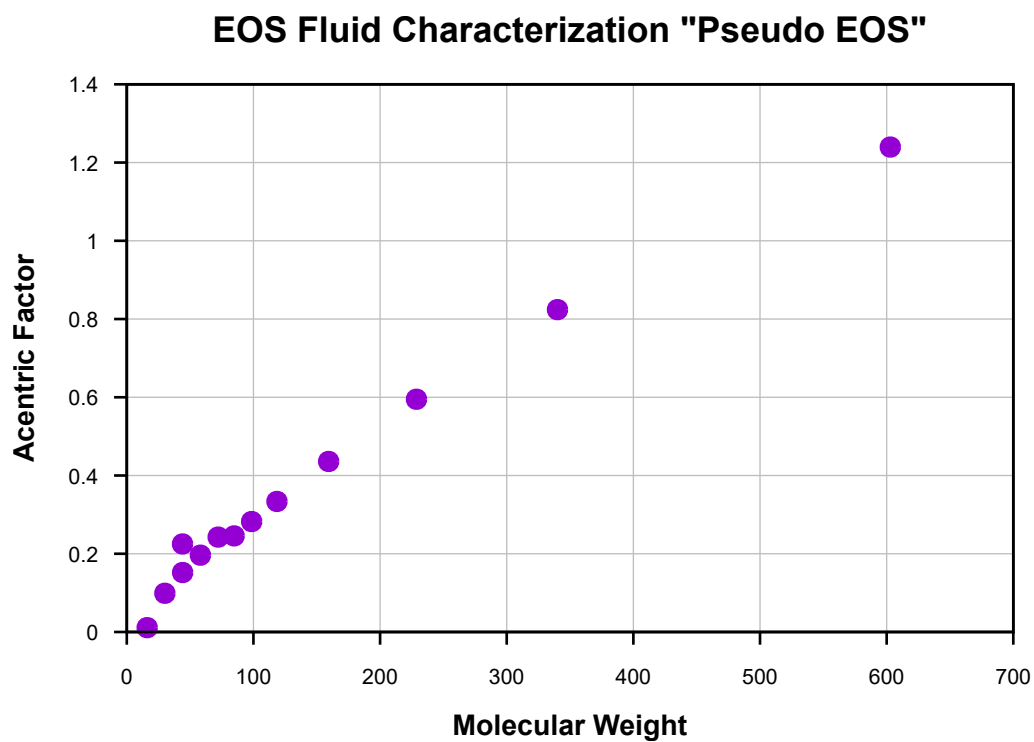


Figure 22: Acentric Factor vs. Molecular Weight for EOS Fluid Characterization "Pseudo EOS."

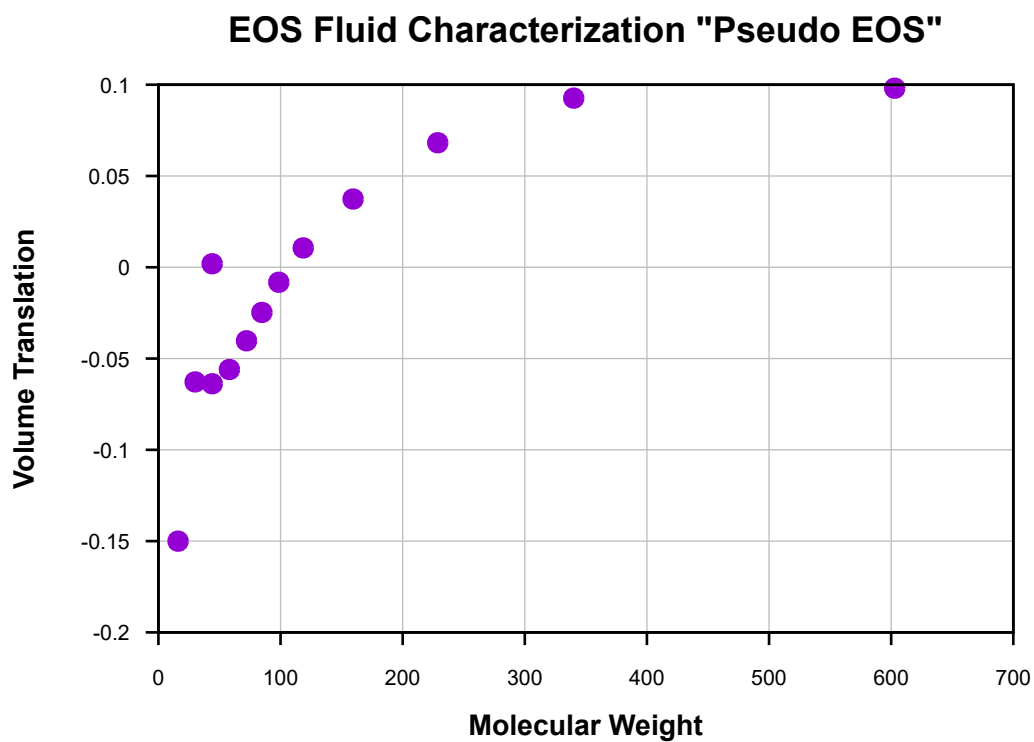


Figure 23: Volume Translation vs. Molecular Weight for EOS Fluid Characterization "Pseudo EOS."

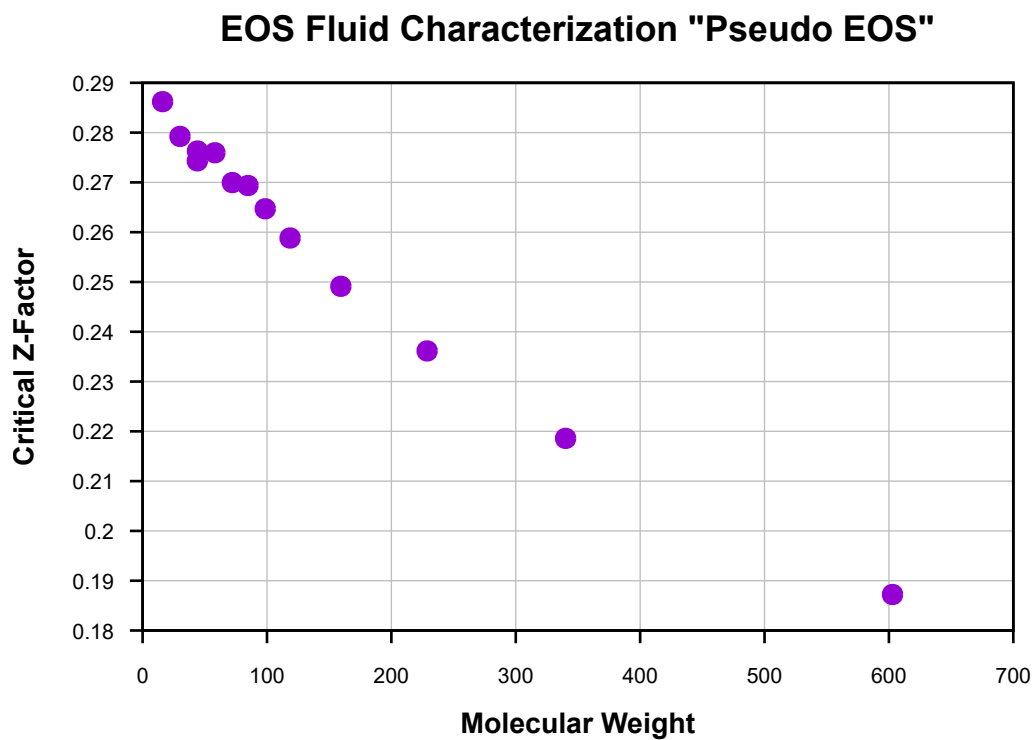


Figure 24: Critical Z-Factor vs. Molecular Weight for EOS Fluid Characterization “Pseudo EOS.”

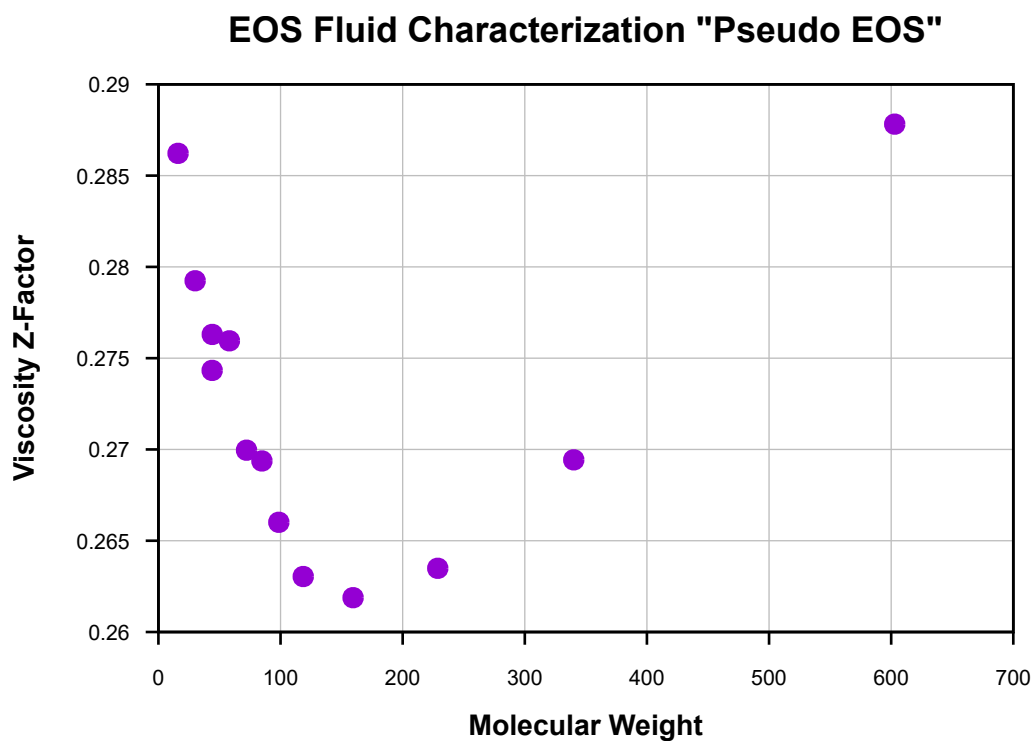


Figure 25: Viscosity Z-Factor vs. Molecular Weight for EOS Fluid Characterization “Pseudo EOS.”

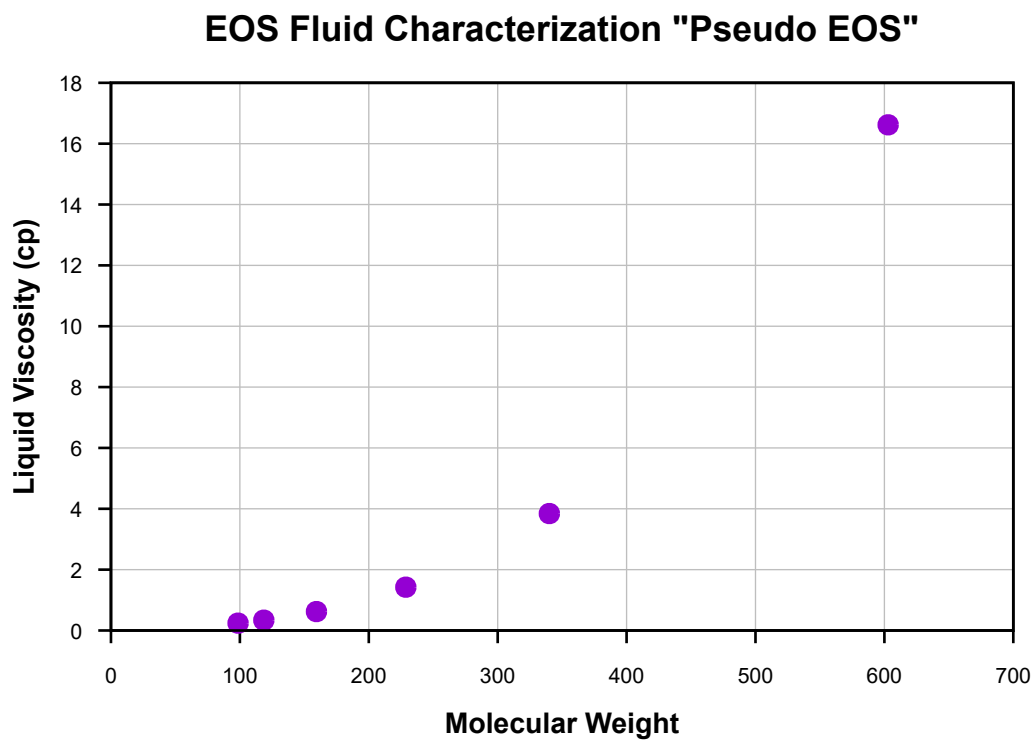


Figure 26: Liquid Viscosity vs. Molecular Weight for EOS Fluid Characterization "Pseudo EOS."

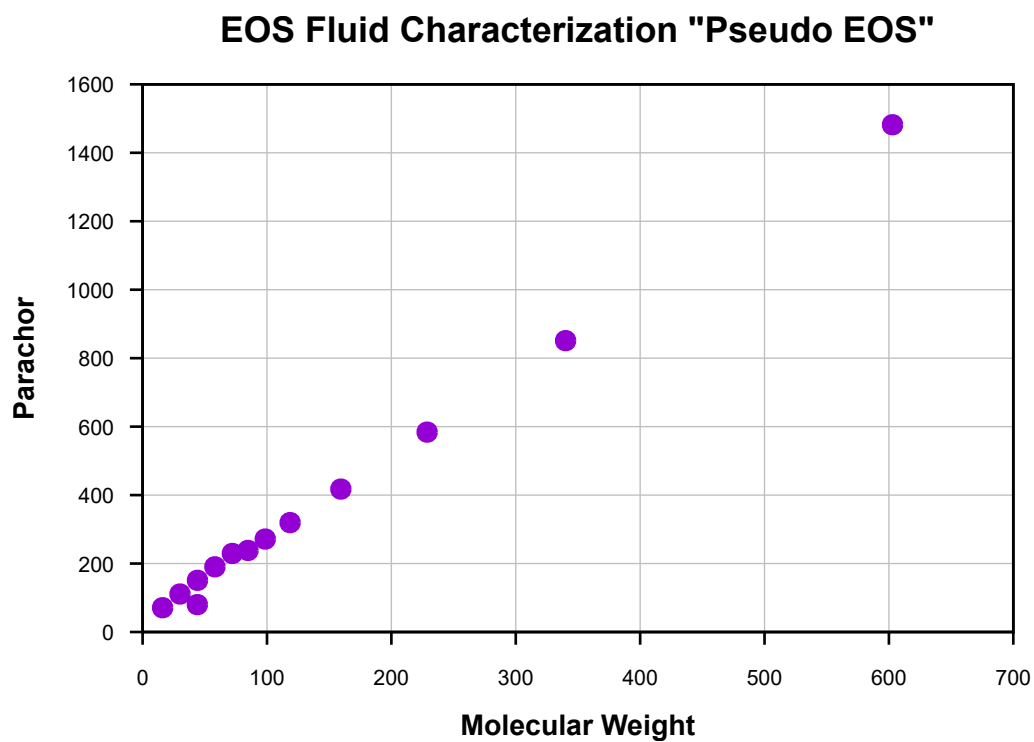


Figure 27: Parachor vs. Molecular Weight for EOS Fluid Characterization "Pseudo EOS."

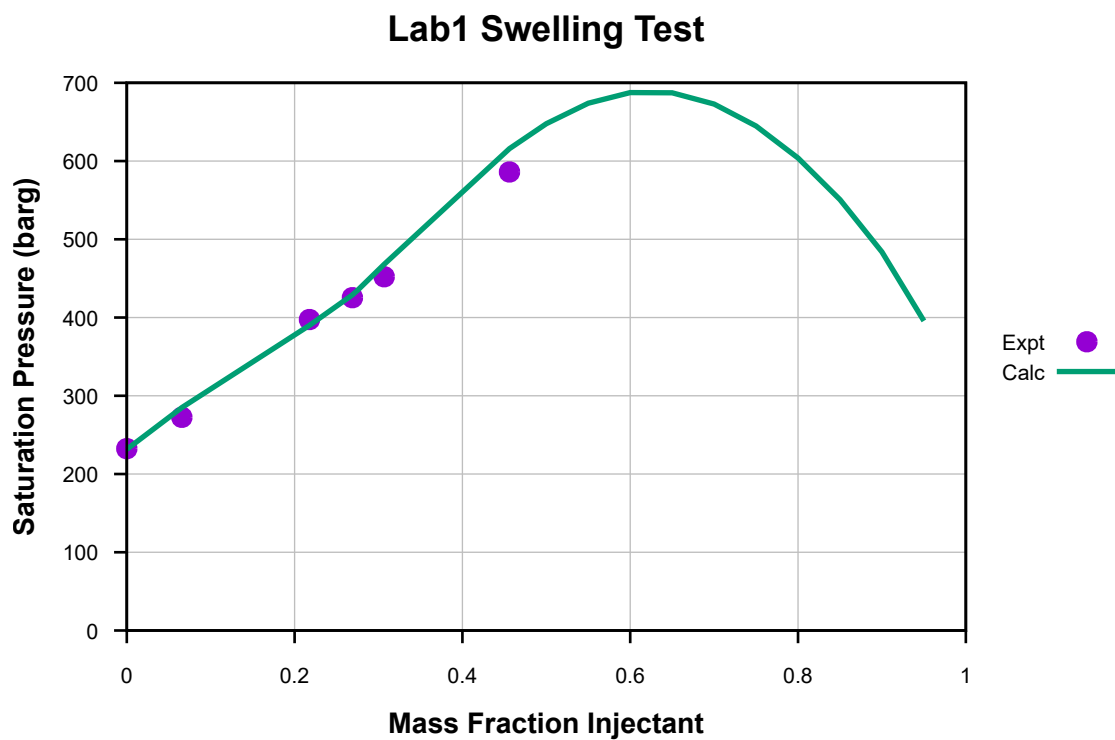


Figure 28: Saturation Pressure vs. Mass Fraction Injectant for Lab1 Swelling Test.

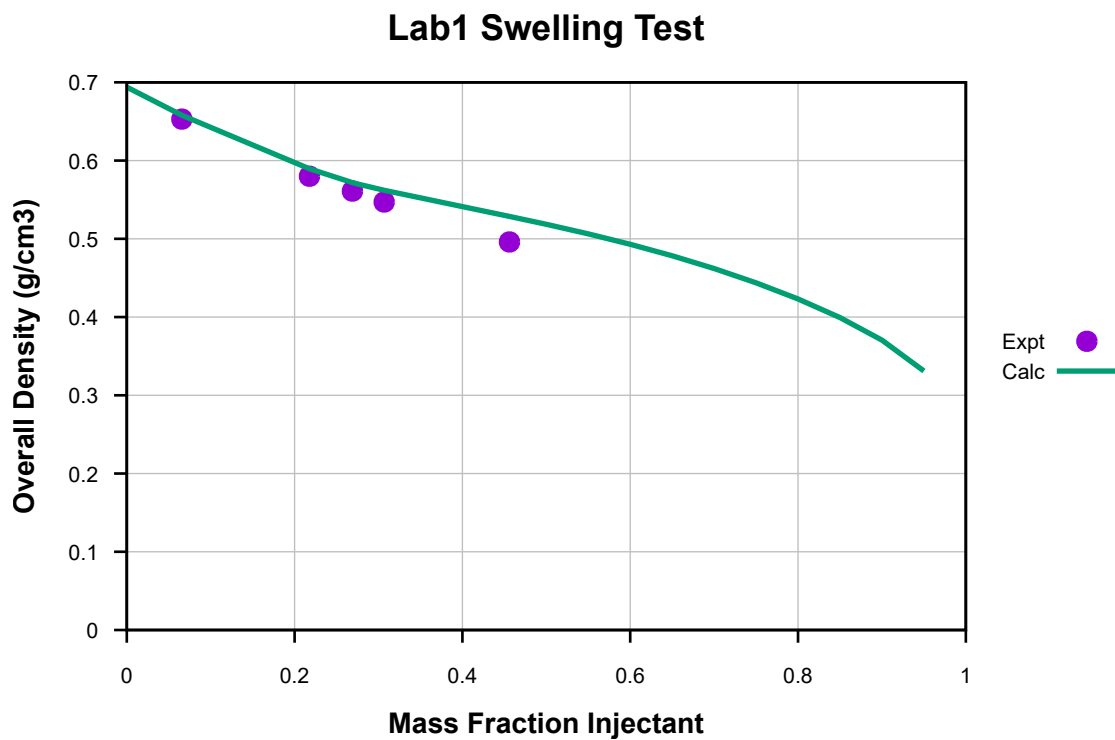


Figure 29: Overall Density vs. Mass Fraction Injectant for Lab1 Swelling Test.

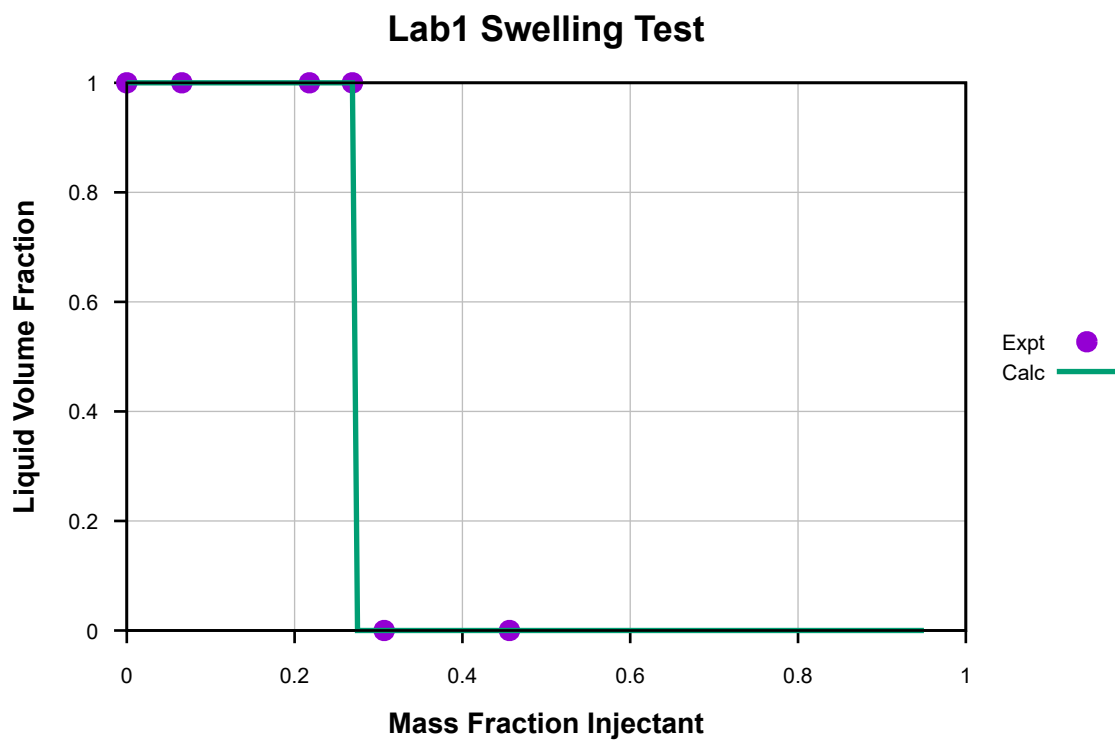


Figure 30: Liquid Volume Fraction vs. Mass Fraction Injectant for Lab1 Swelling Test.

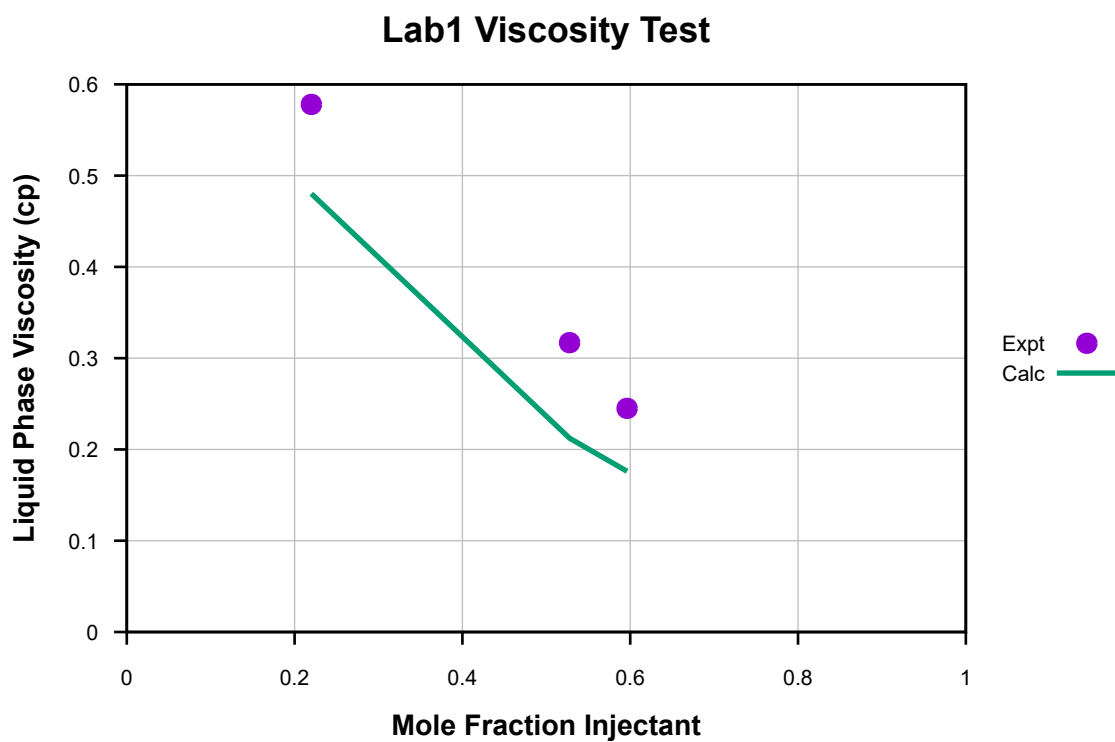


Figure 31: Liquid Phase Viscosity vs. Mole Fraction Injectant for Lab1 Viscosity Test.

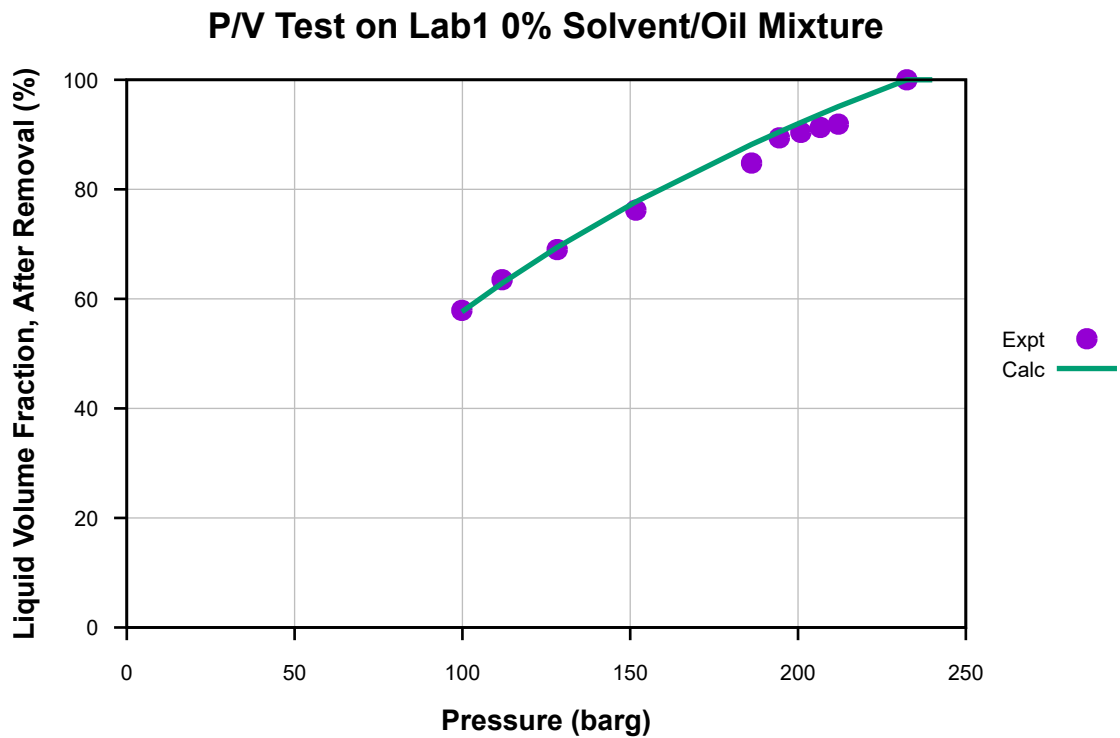


Figure 32: Liquid Volume Fraction, After Removal, vs. Pressure for P/V Test on Lab1 0% Solvent/Oil Mixture.

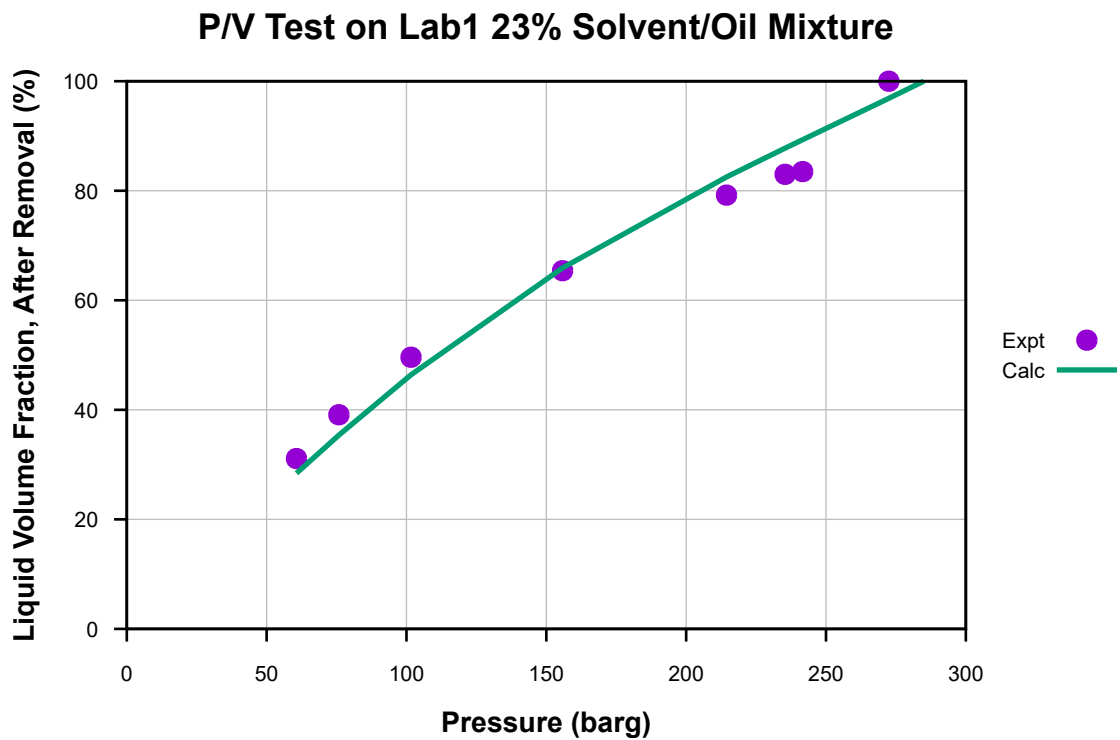


Figure 33: Liquid Volume Fraction, After Removal, vs. Pressure for P/V Test on Lab1 23% Solvent/Oil Mixture.

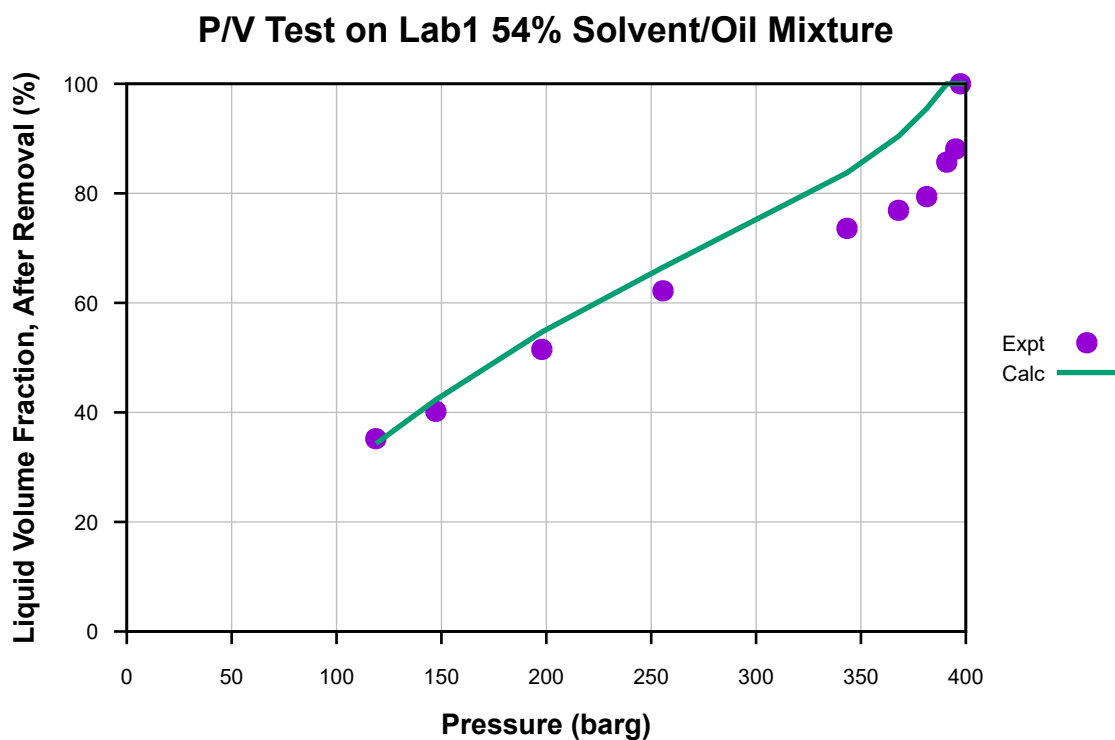


Figure 34: Liquid Volume Fraction, After Removal, vs. Pressure for P/V Test on Lab1 54% Solvent/Oil Mixture.

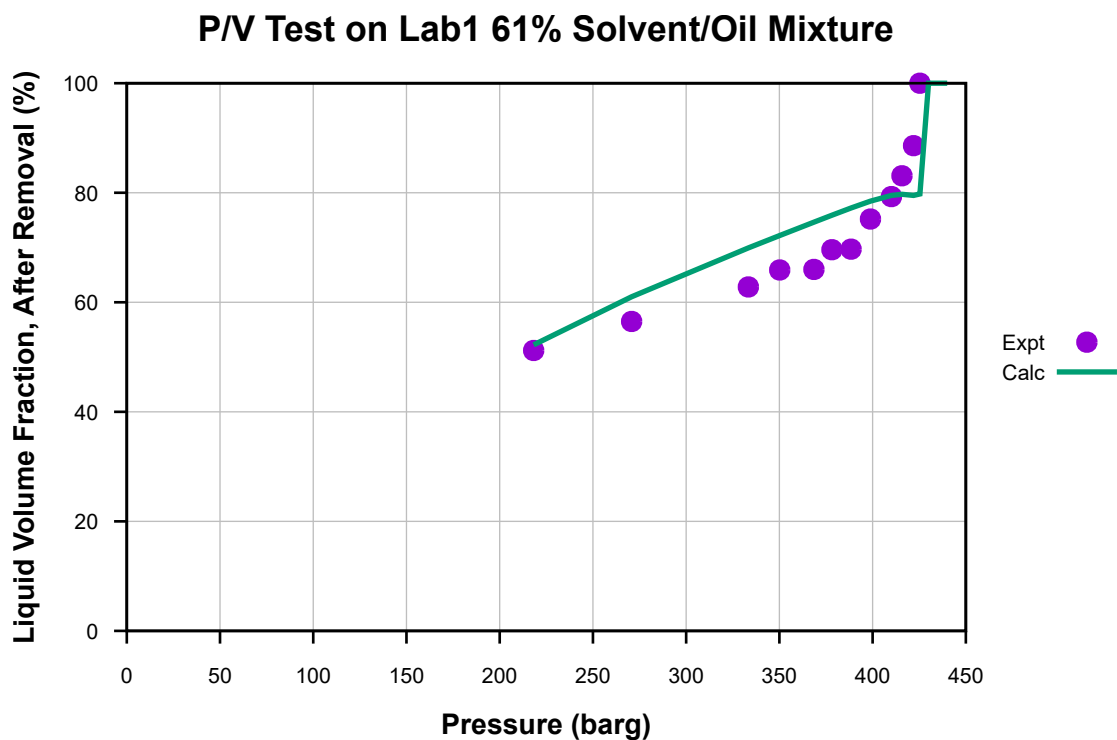


Figure 35: Liquid Volume Fraction, After Removal, vs. Pressure for P/V Test on Lab1 61% Solvent/Oil Mixture.

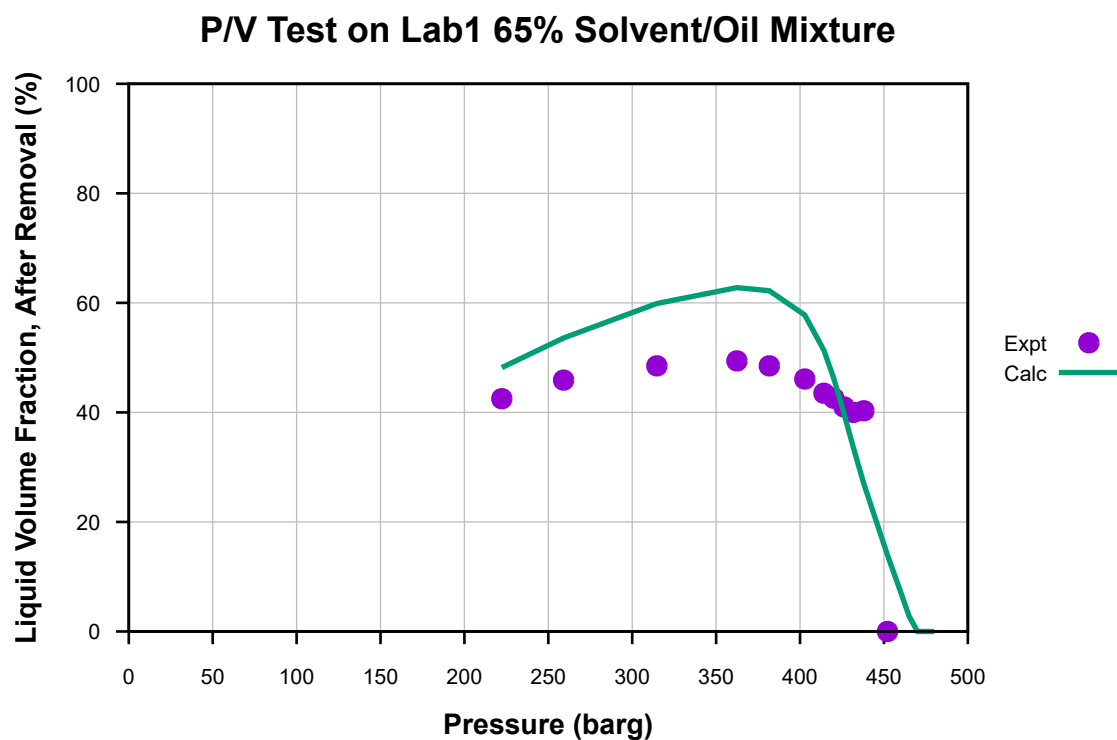


Figure 36: Liquid Volume Fraction, After Removal, vs. Pressure for P/V Test on Lab1 65% Solvent/Oil Mixture.

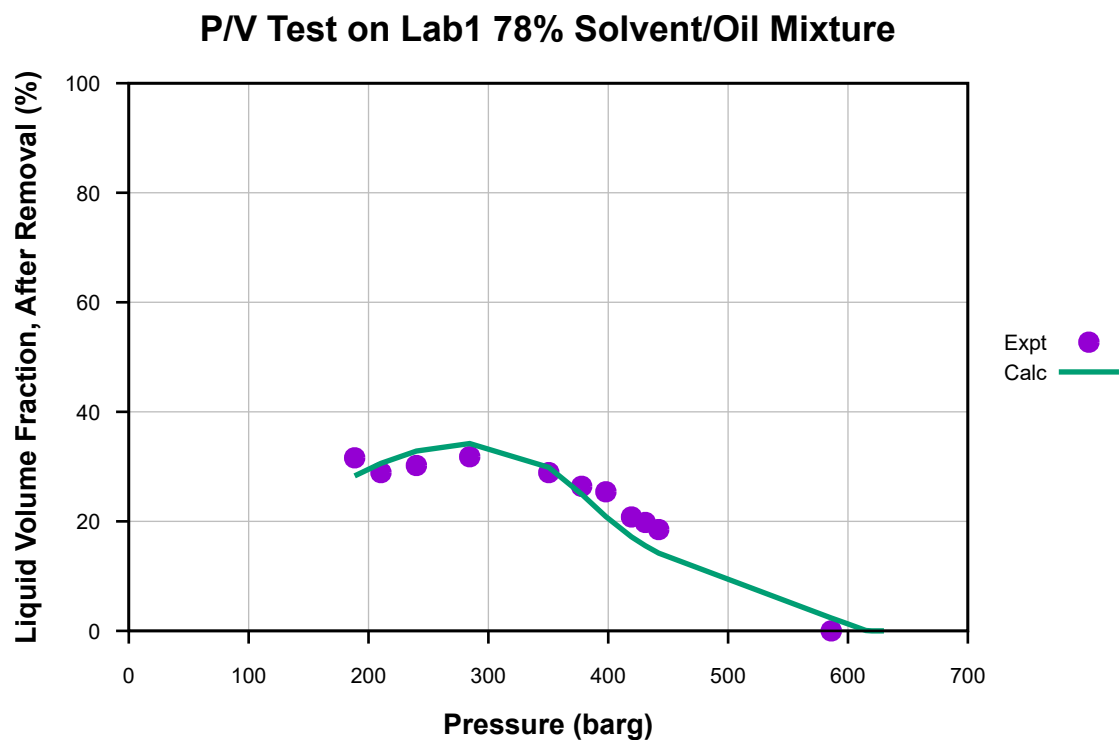


Figure 37: Liquid Volume Fraction, After Removal, vs. Pressure for P/V Test on Lab1 78% Solvent/Oil Mixture.

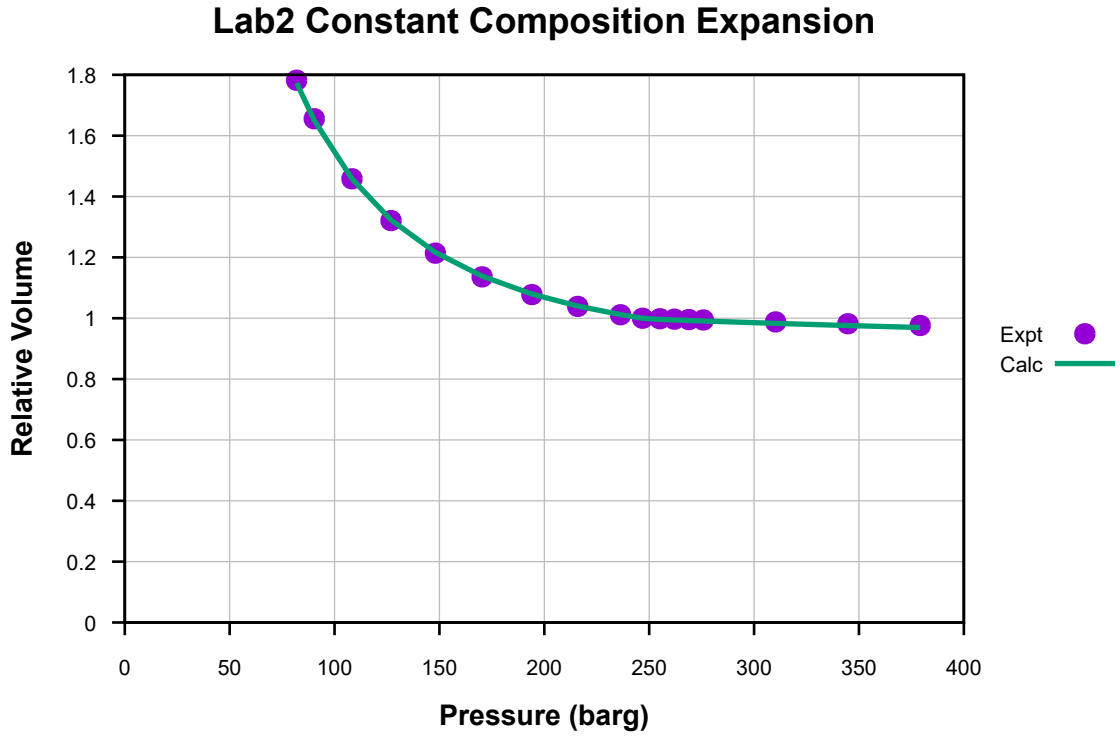


Figure 38: Relative Volume vs. Pressure for Lab2 Constant Composition Expansion.

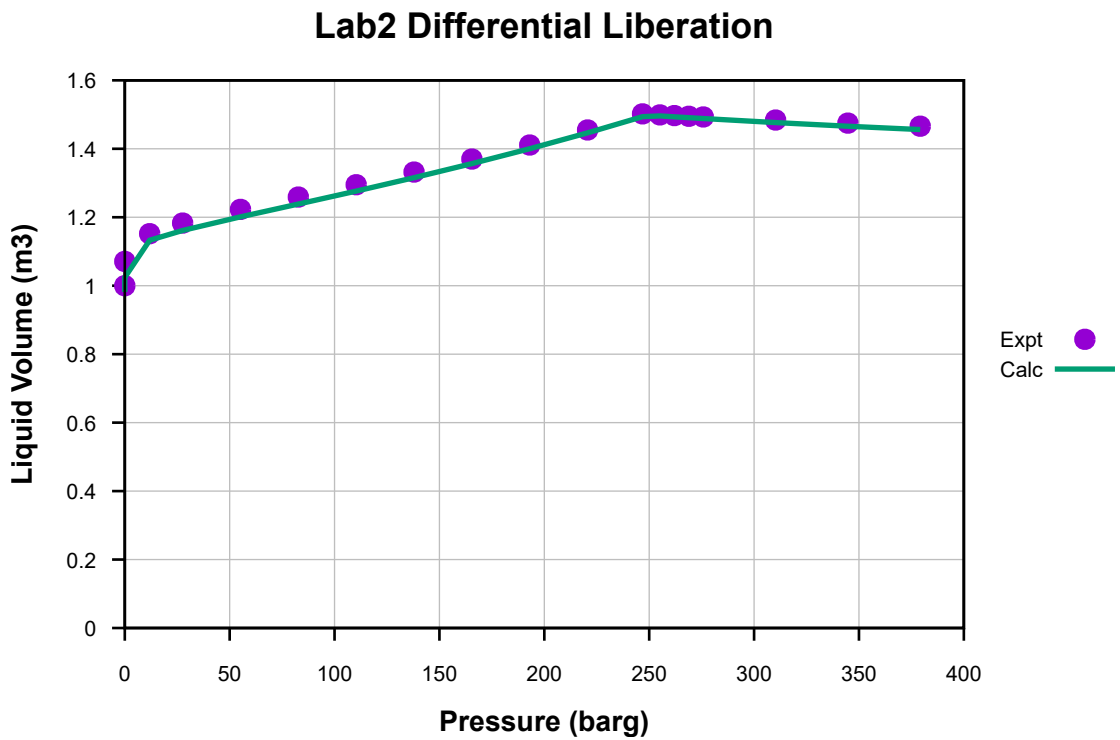


Figure 39: Liquid Volume vs. Pressure for Lab2 Differential Liberation.

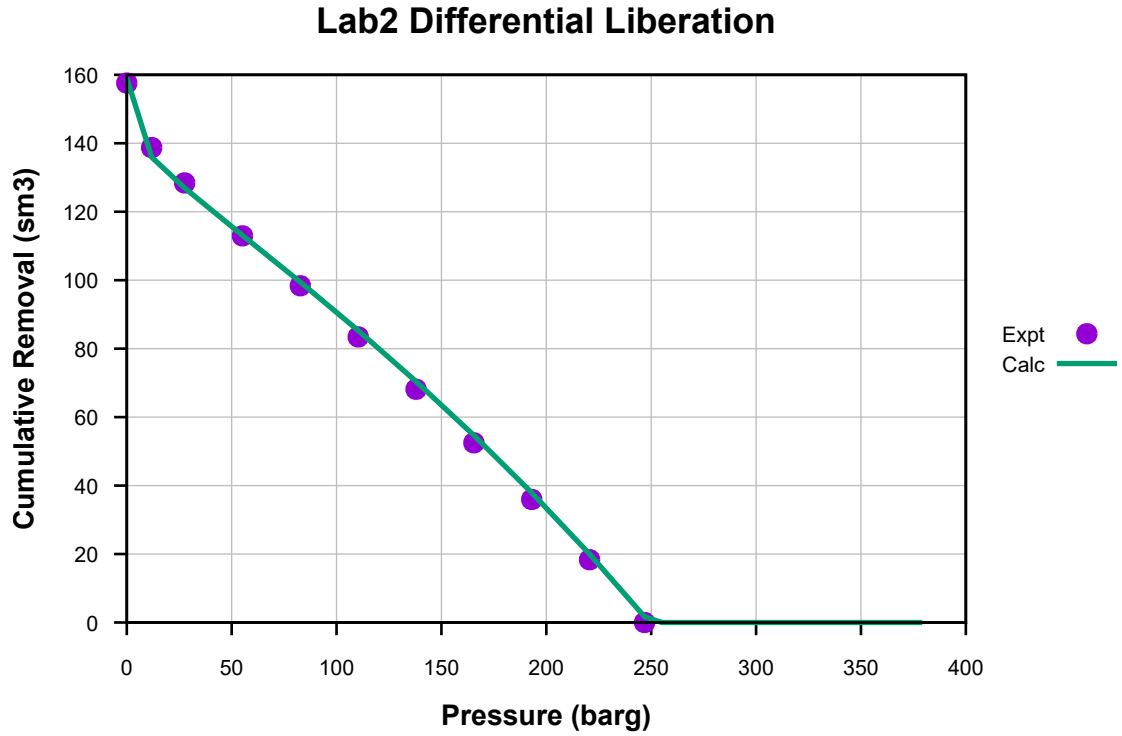


Figure 40: Cumulative Removal vs. Pressure for Lab2 Differential Liberation.

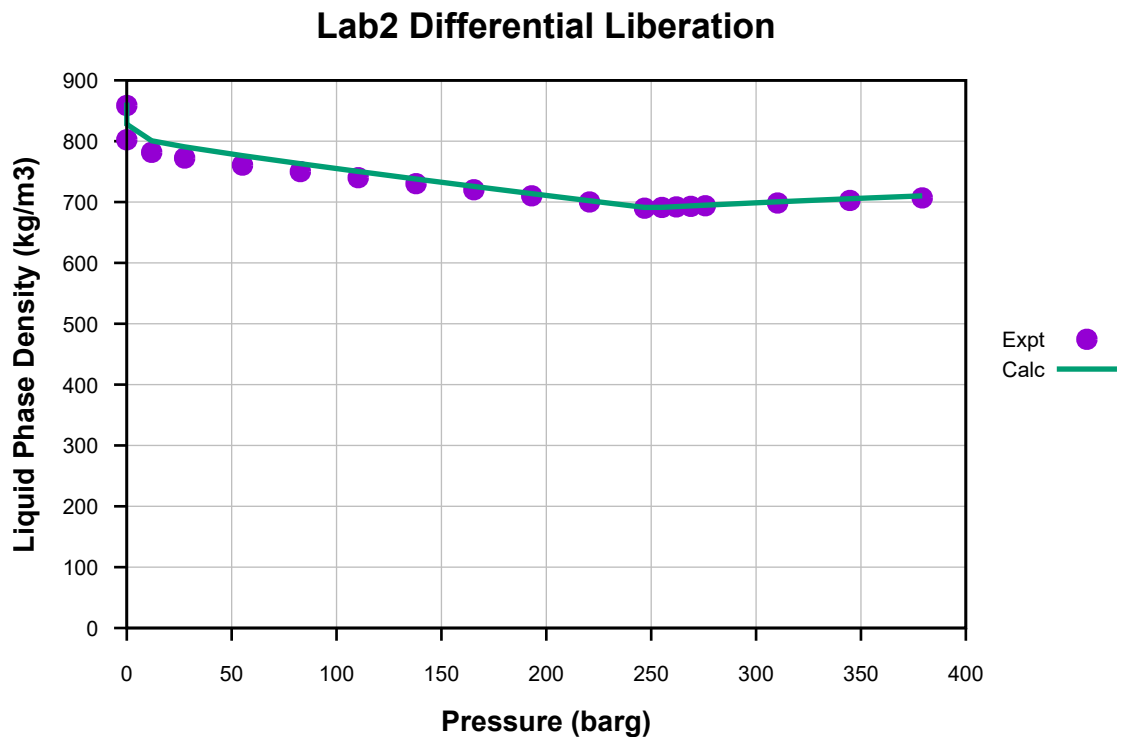


Figure 41: Liquid Phase Density vs. Pressure for Lab2 Differential Liberation.

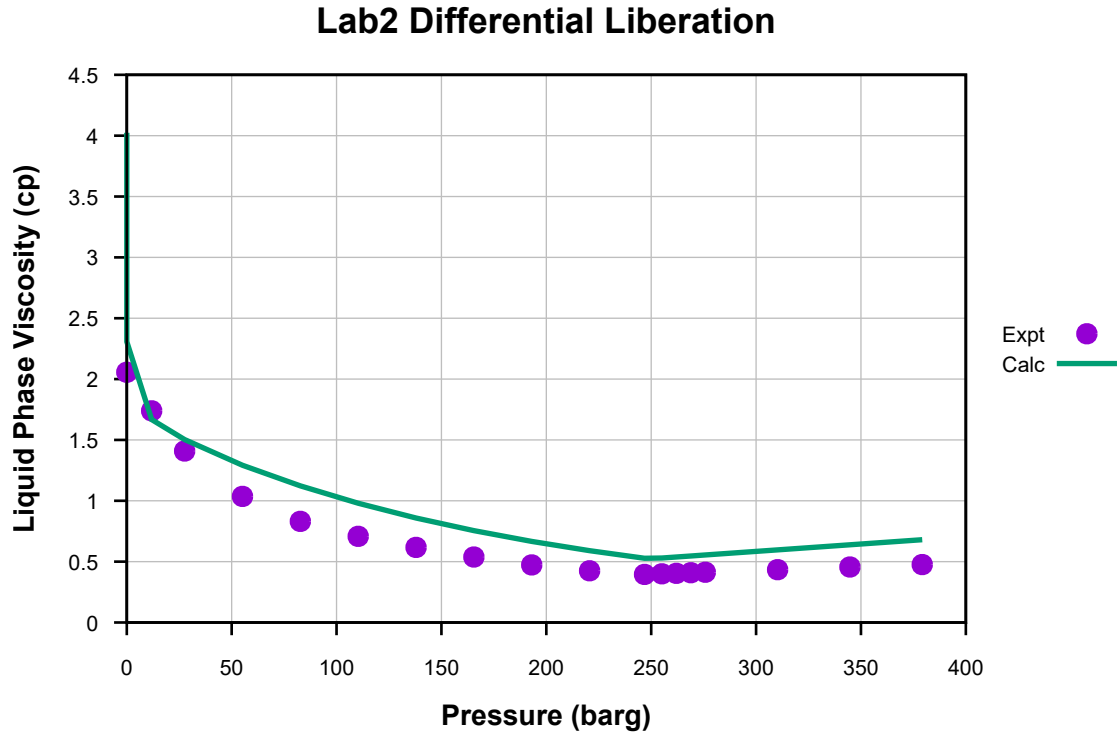


Figure 42: Liquid Phase Viscosity vs. Pressure for Lab2 Differential Liberation.

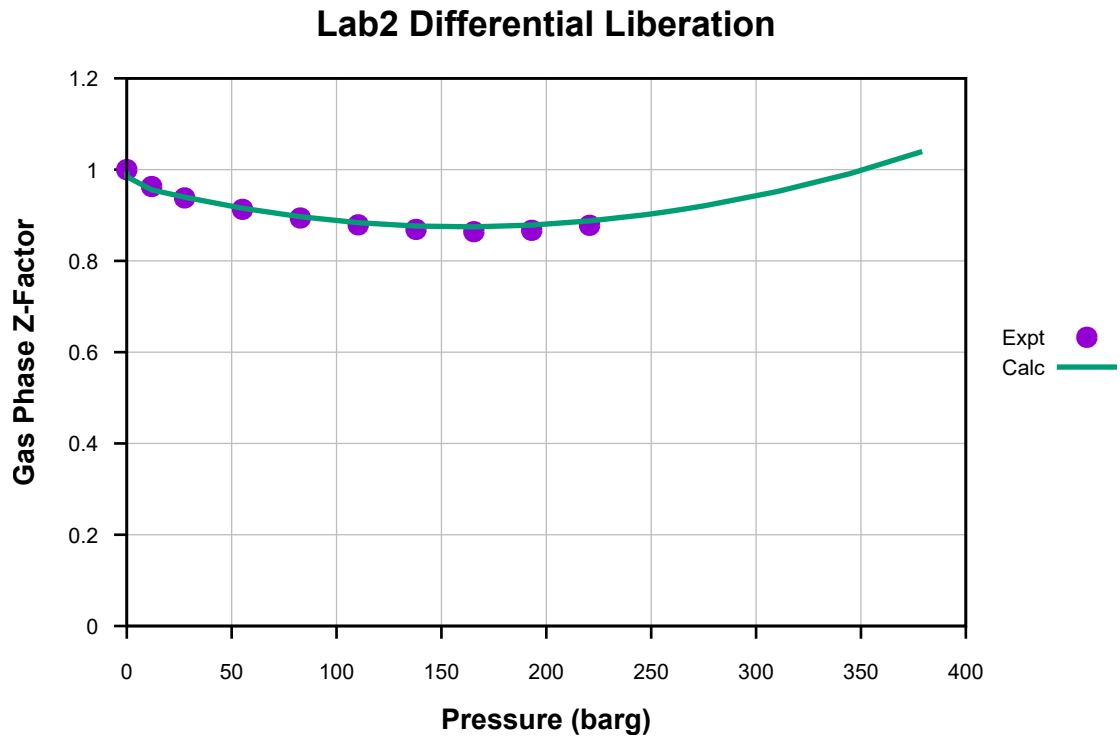


Figure 43: Gas Phase Z-Factor vs. Pressure for Lab2 Differential Liberation.

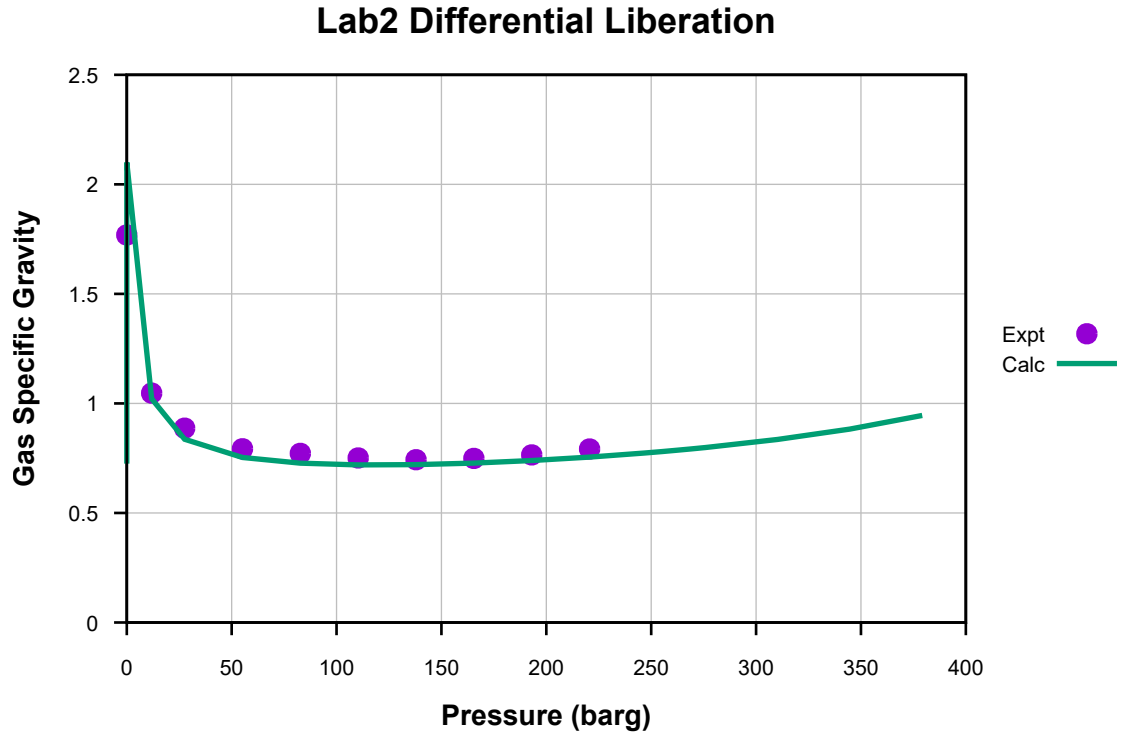


Figure 44: Gas Specific Gravity vs. Pressure for Lab2 Differential Liberation.

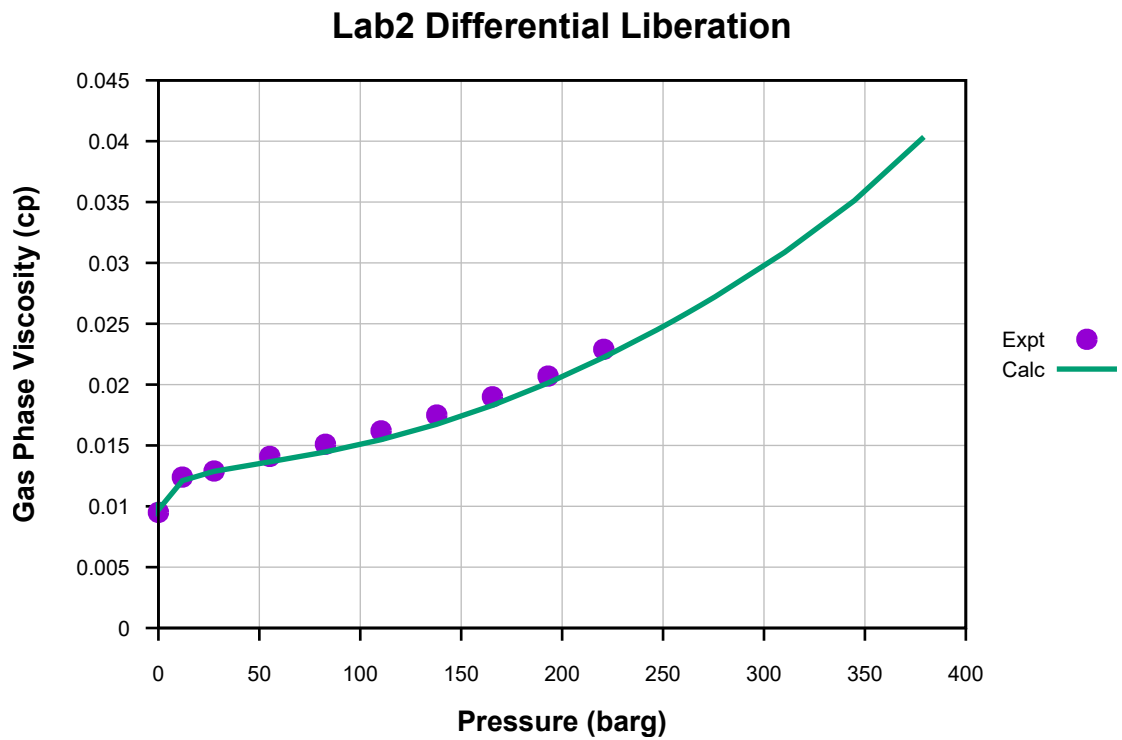


Figure 45: Gas Phase Viscosity vs. Pressure for Lab2 Differential Liberation.

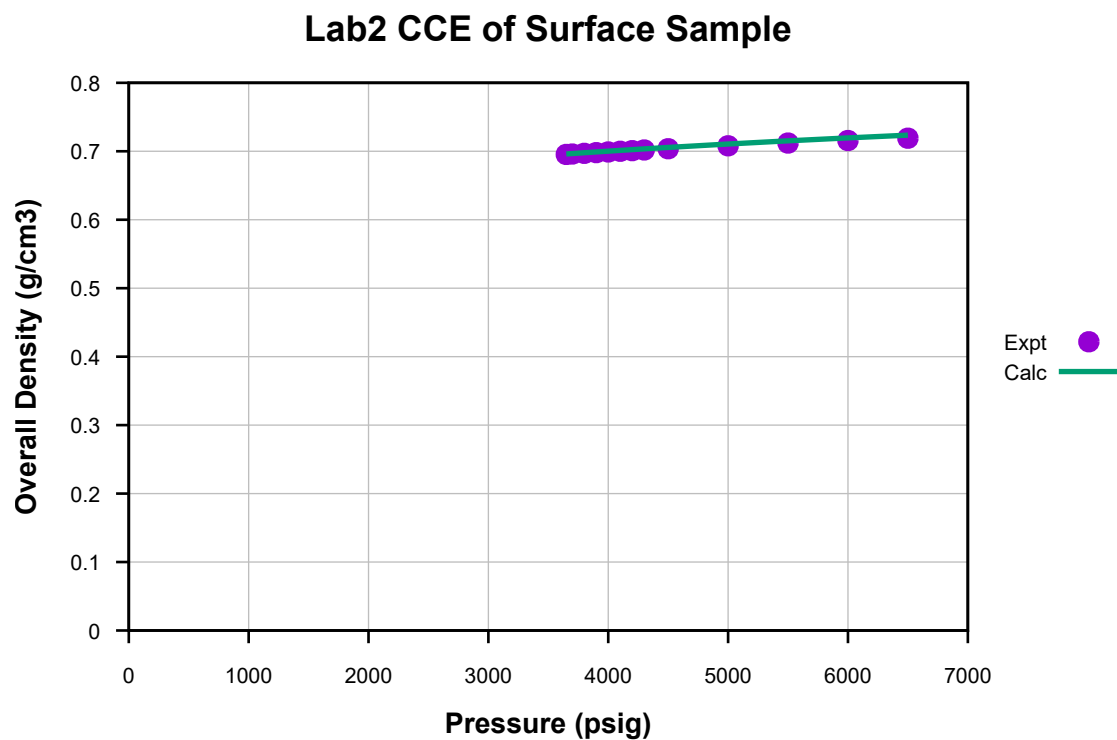


Figure 46: Overall Density vs. Pressure for Lab2 CCE of Surface Sample.

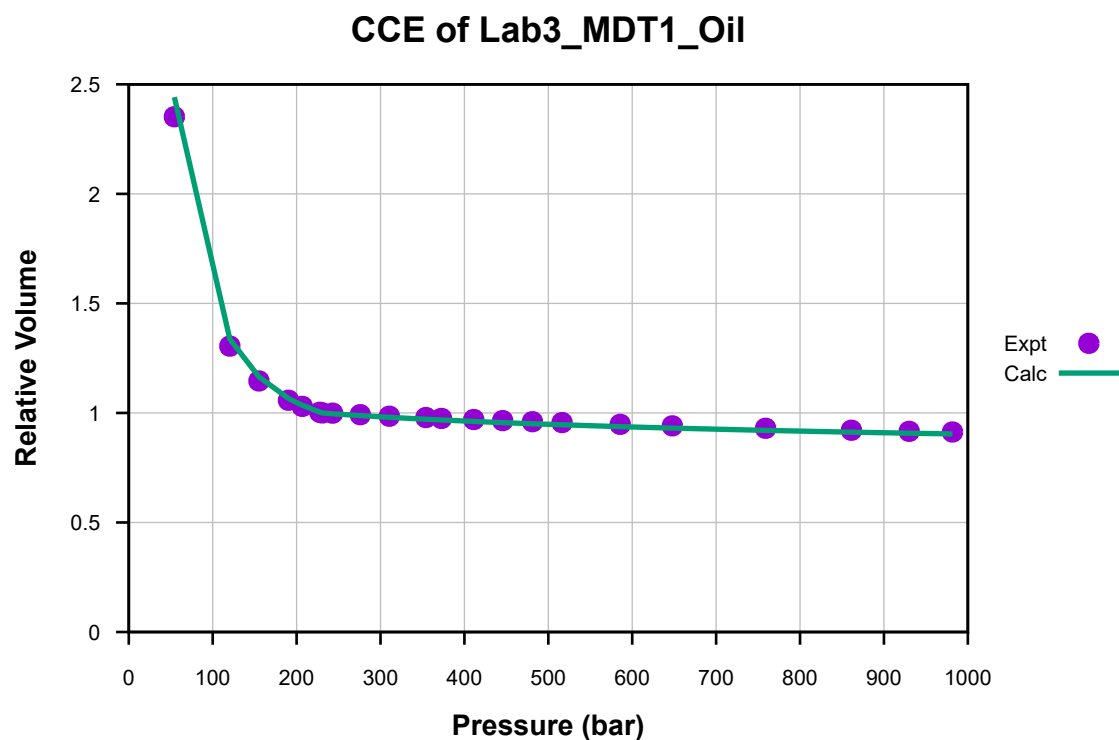


Figure 47: Relative Volume vs. Pressure for CCE of Lab3_MDT1_Oil.

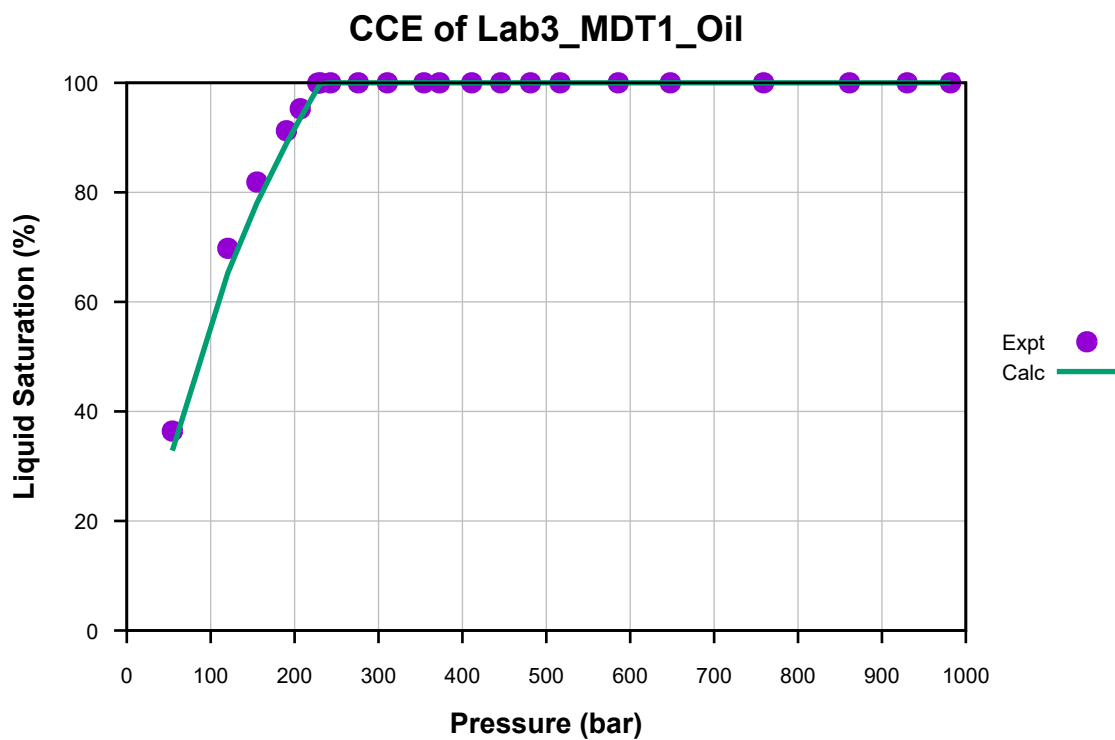


Figure 48: Liquid Saturation vs. Pressure for CCE of Lab3_MDT1_Oil.

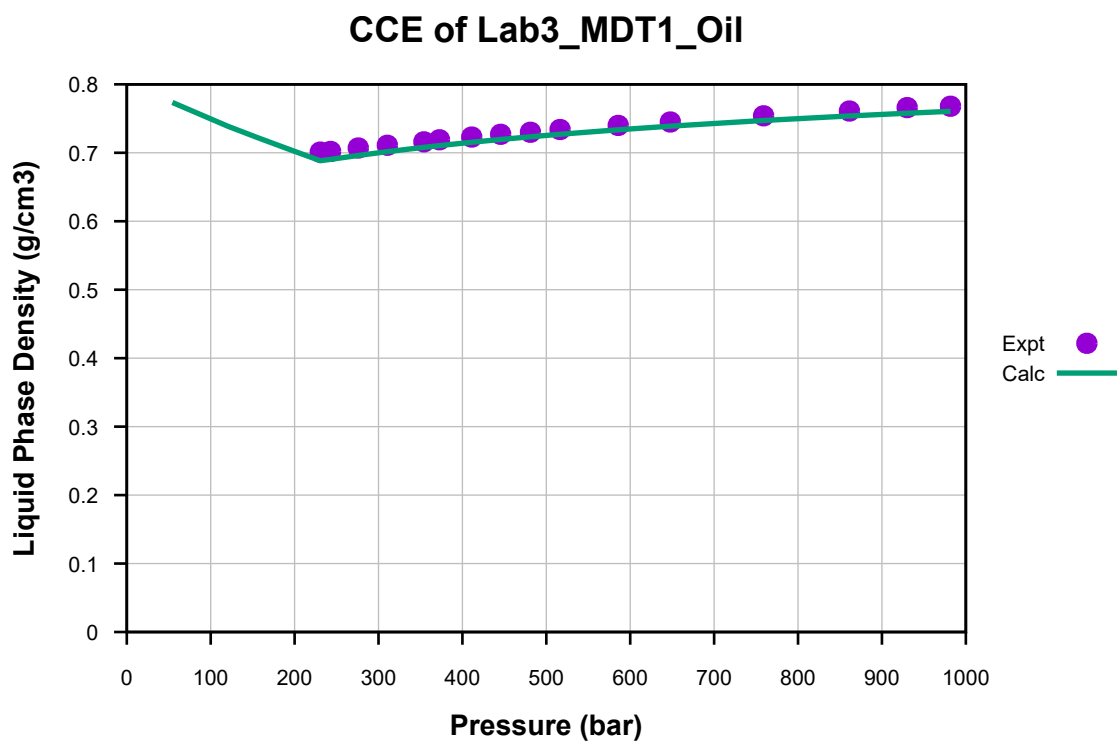


Figure 49: Liquid Phase Density vs. Pressure for CCE of Lab3_MDT1_Oil.

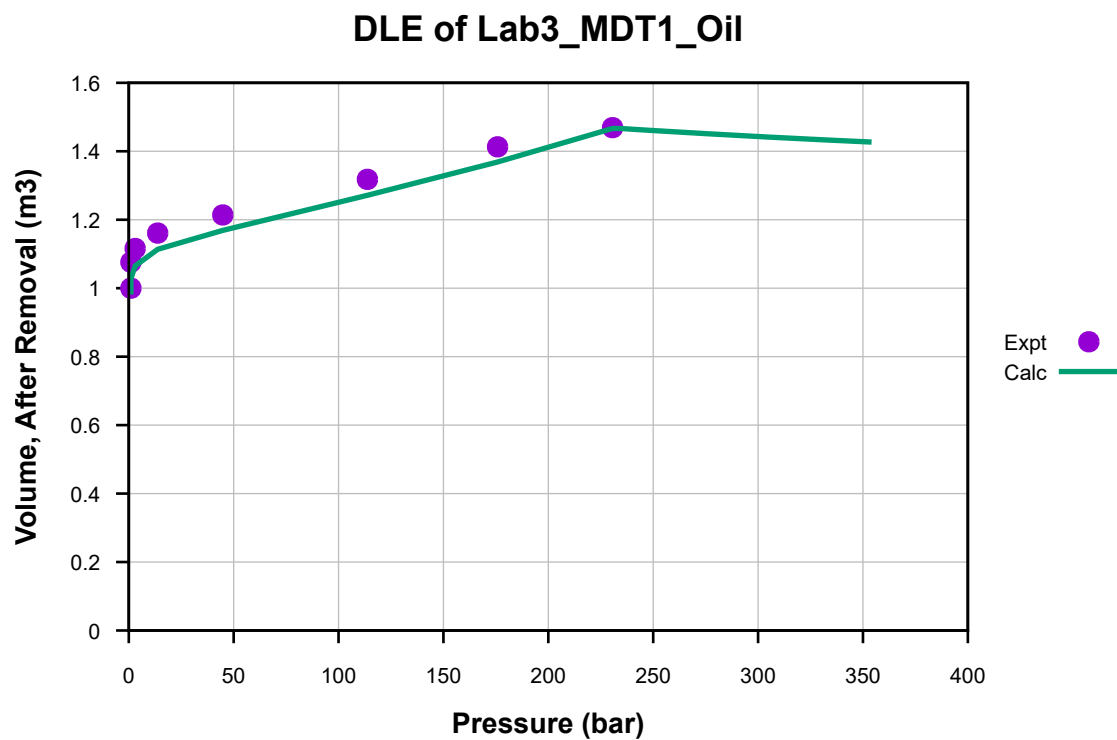


Figure 50: Volume, After Removal, vs. Pressure for DLE of Lab3_MDT1_Oil.

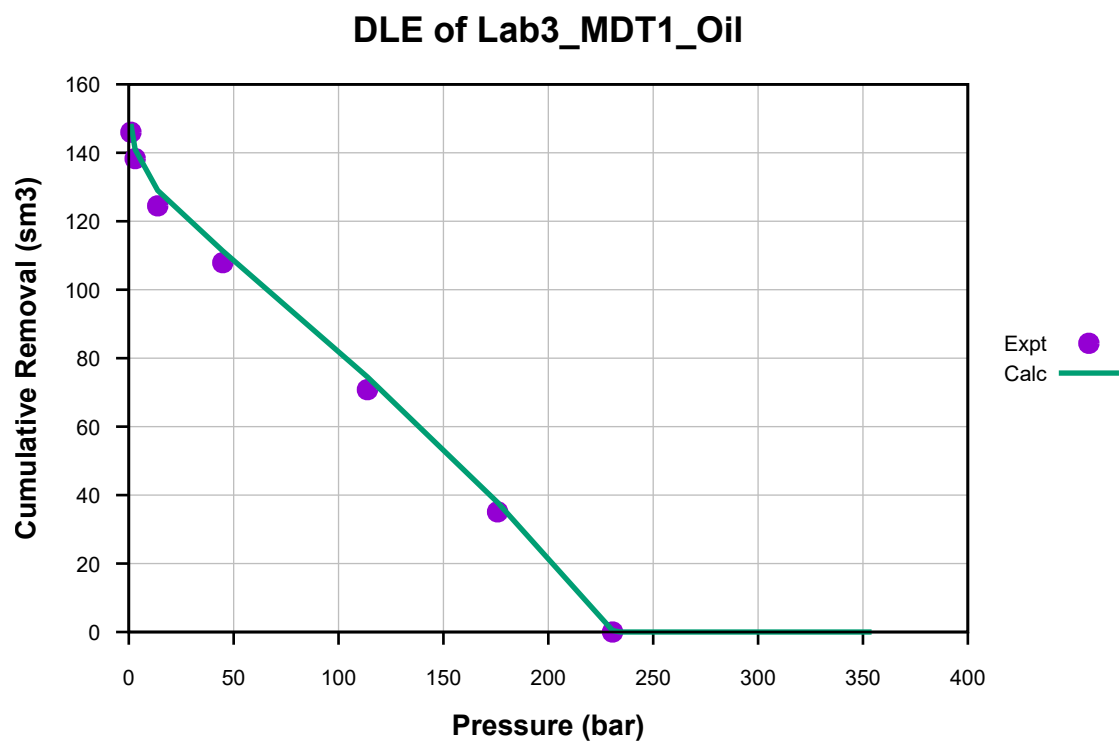


Figure 51: Cumulative Removal vs. Pressure for DLE of Lab3_MDT1_Oil.

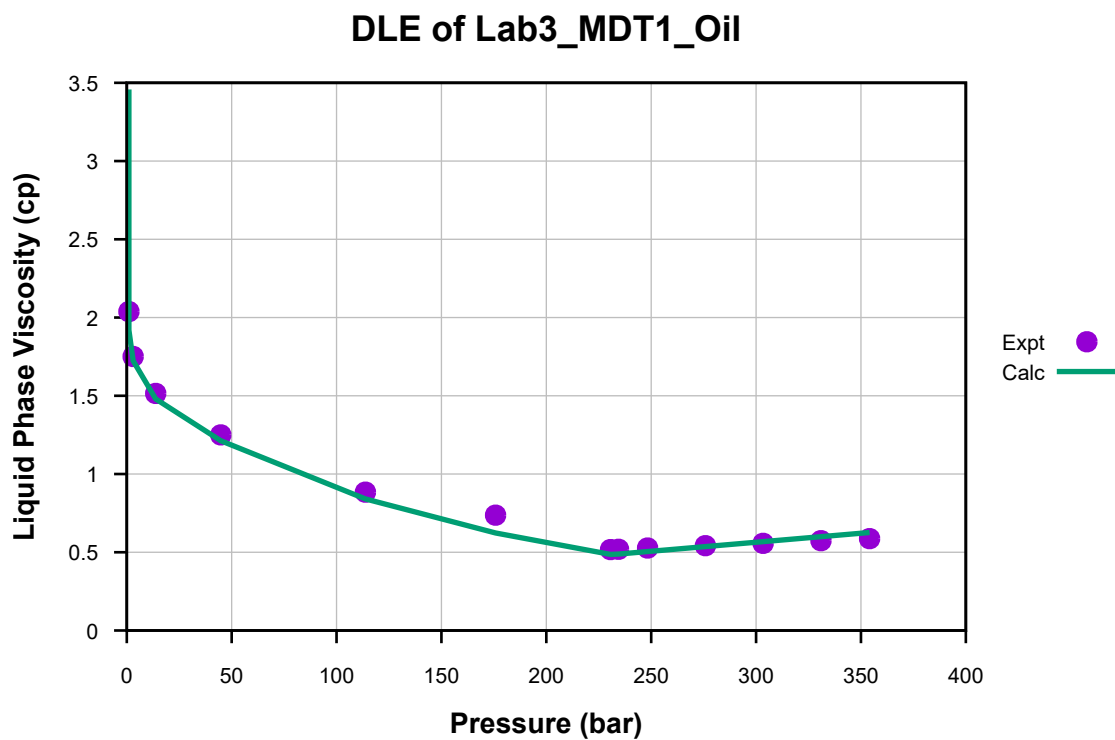


Figure 52: Liquid Phase Viscosity vs. Pressure for DLE of Lab3_MDT1_Oil.

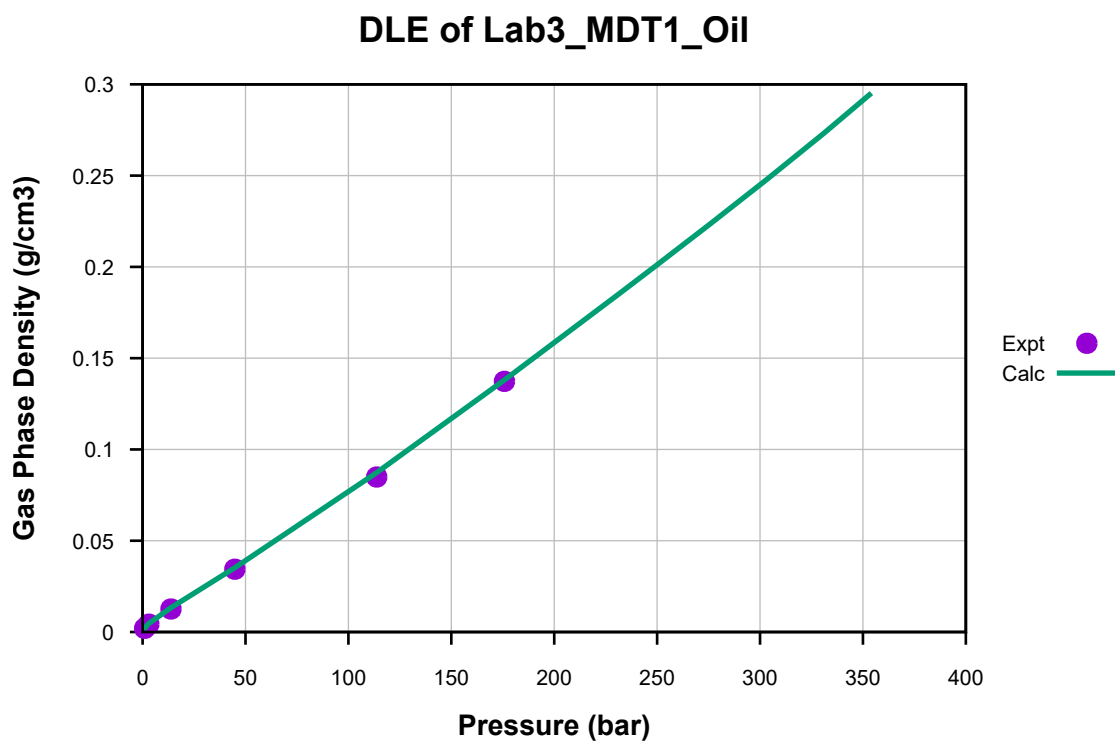


Figure 53: Gas Phase Density vs. Pressure for DLE of Lab3_MDT1_Oil.

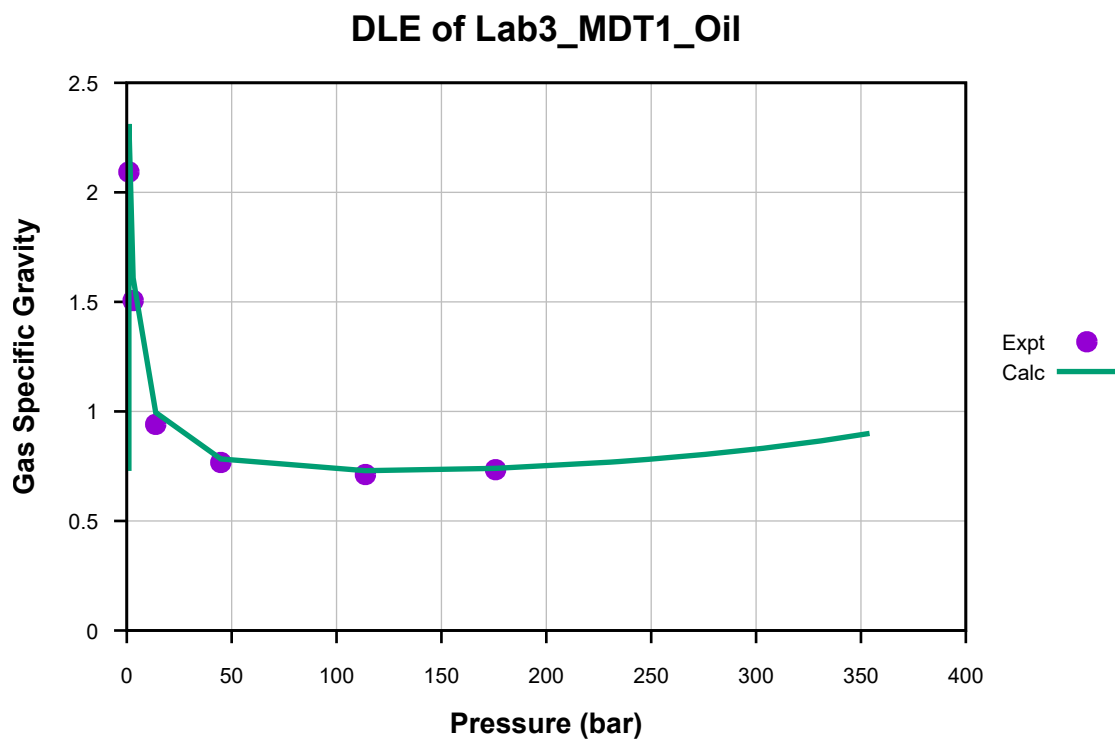


Figure 54: Gas Specific Gravity vs. Pressure for DLE of Lab3_MDT1_Oil.

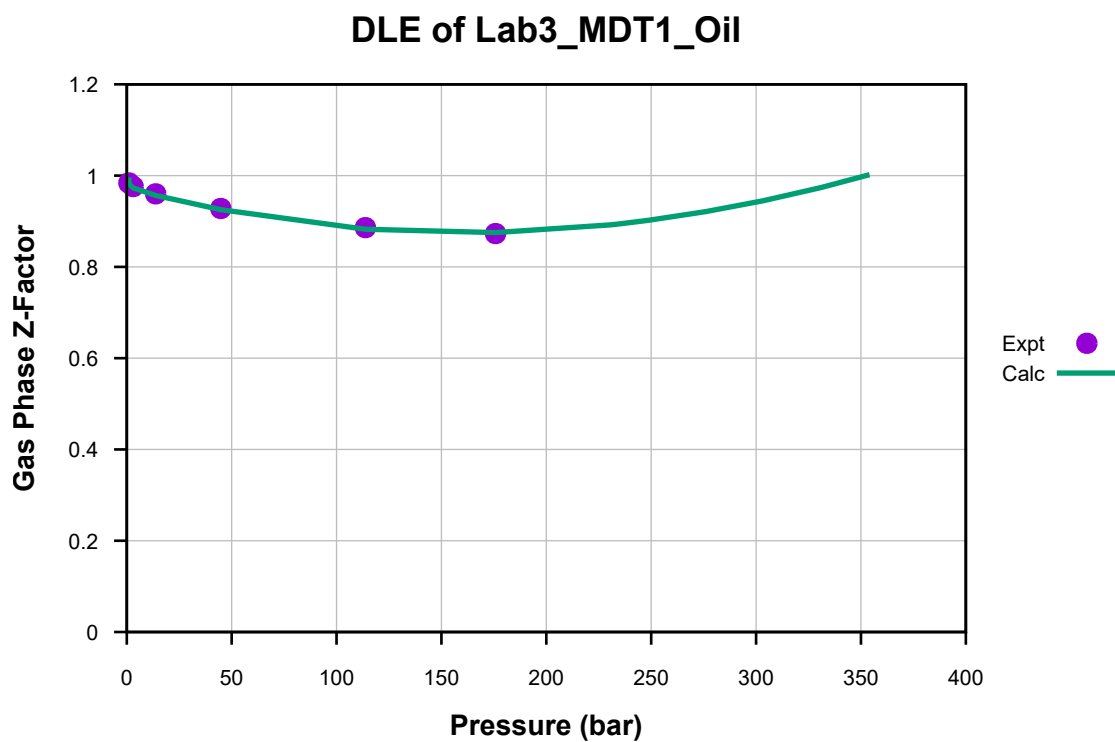


Figure 55: Gas Phase Z-Factor vs. Pressure for DLE of Lab3_MDT1_Oil.

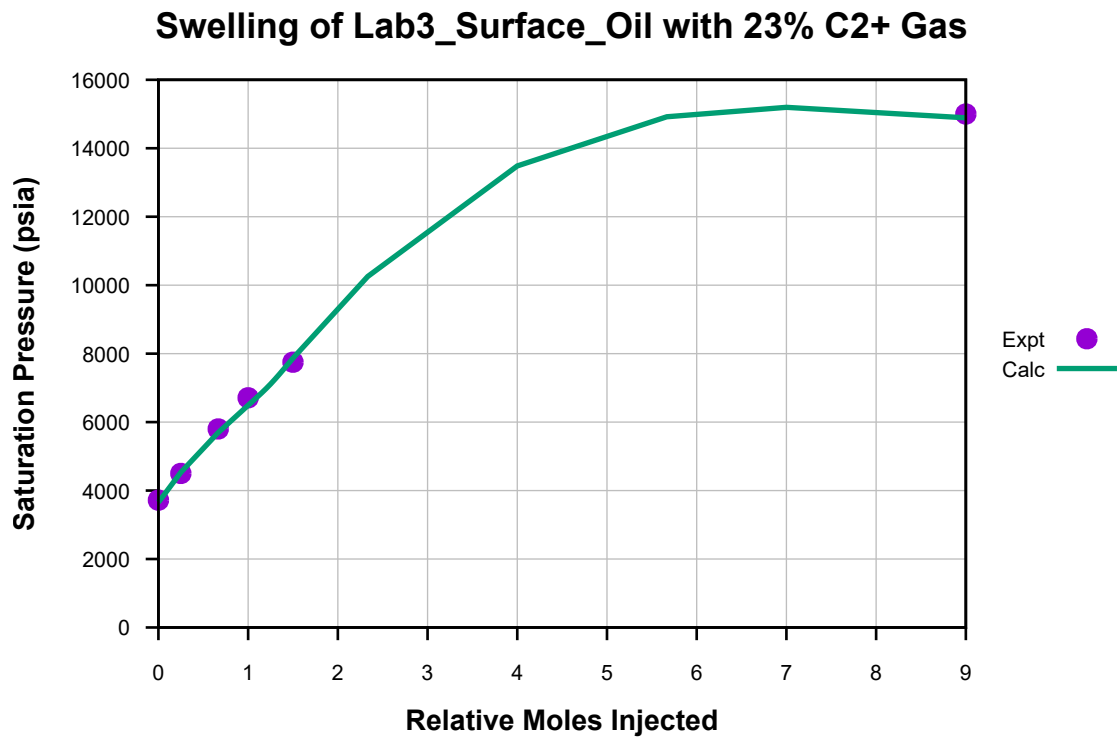


Figure 56: Saturation Pressure vs. Relative Moles Injected for Swelling of Lab3_Surface_Oil with 23% C2+ Gas.

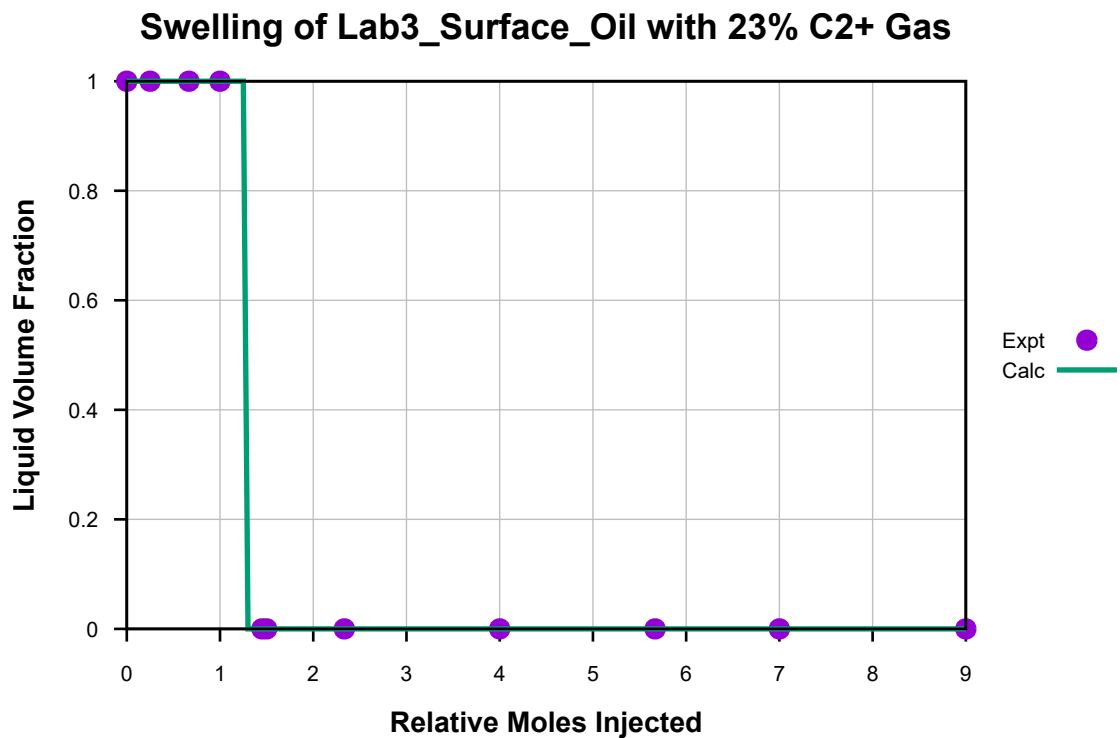


Figure 57: Liquid Volume Fraction vs. Relative Moles Injected for Swelling of Lab3_Surface_Oil with 23% C2+ Gas.

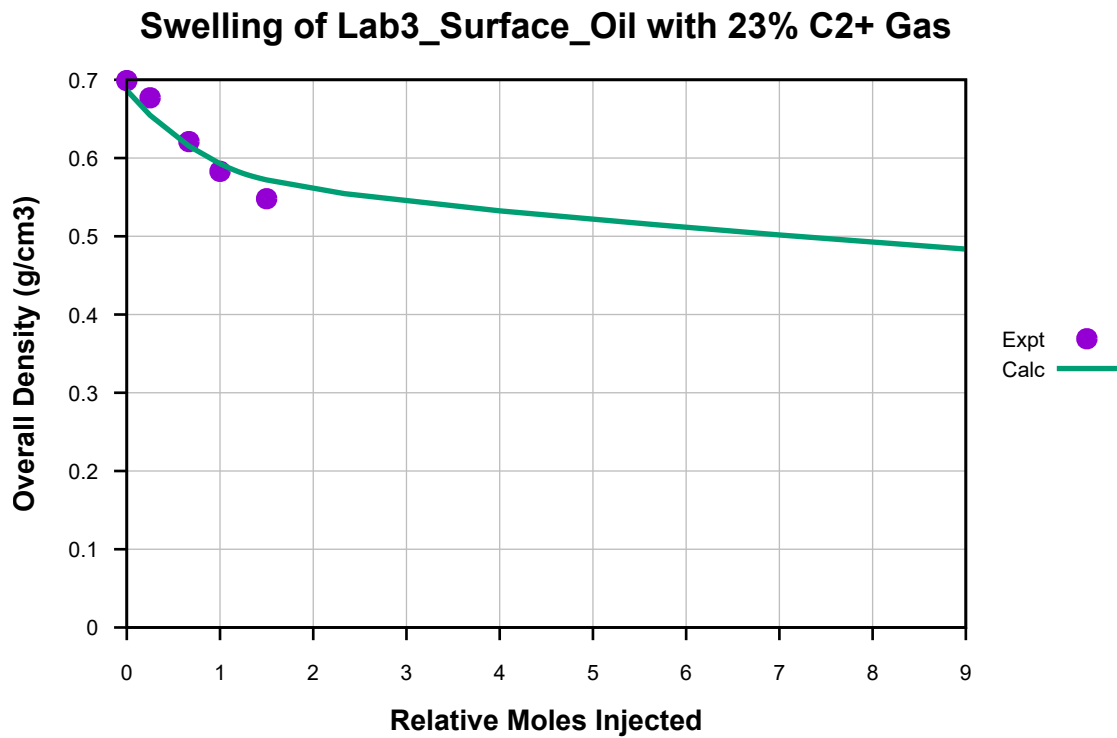


Figure 58: Overall Density vs. Relative Moles Injected for Swelling of Lab3_Surface_Oil with 23% C2+ Gas.

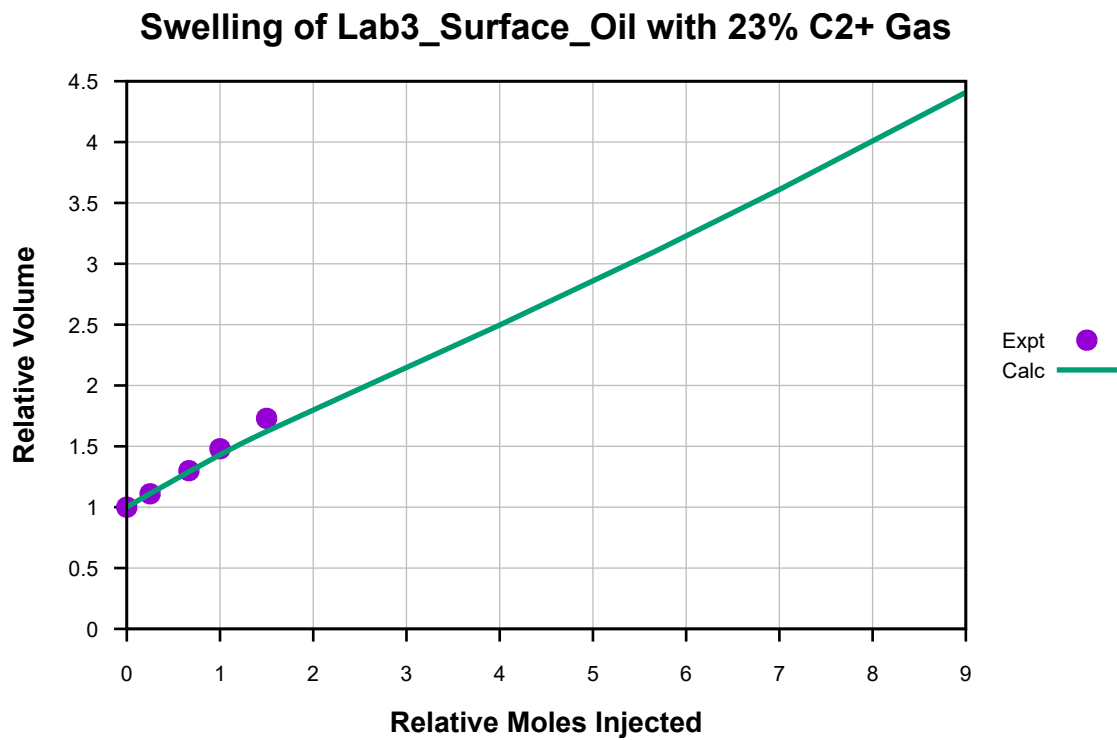


Figure 59: Relative Volume vs. Relative Moles Injected for Swelling of Lab3_Surface_Oil with 23% C2+ Gas.

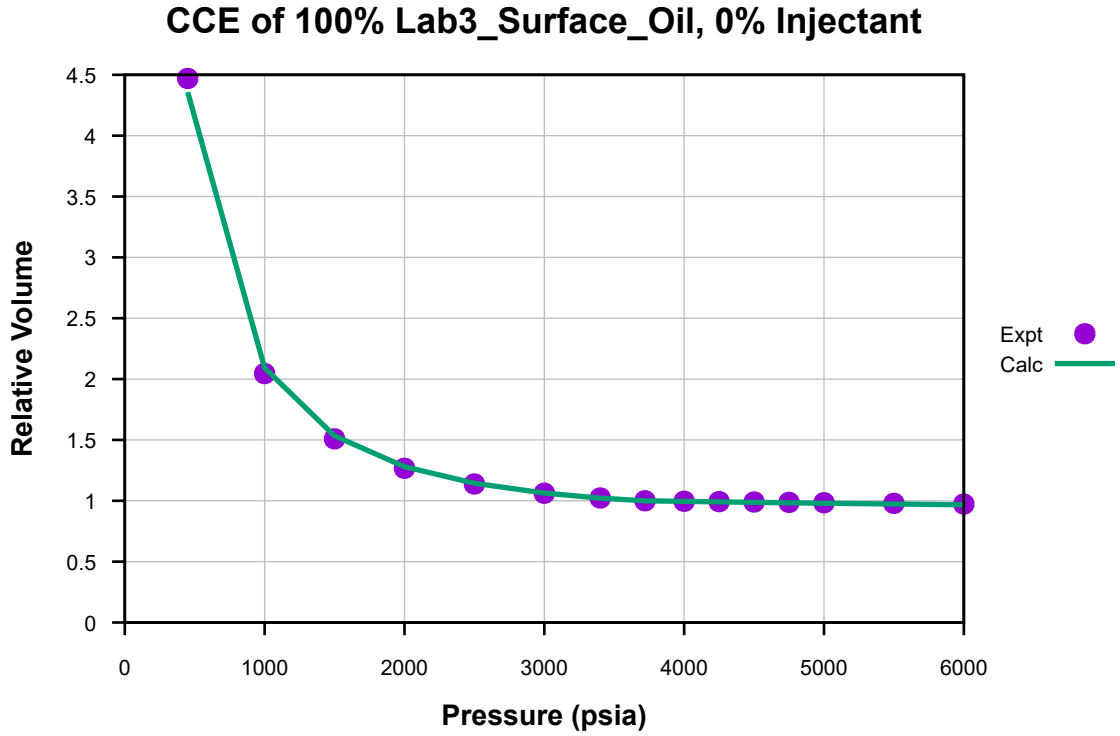


Figure 60: Relative Volume vs. Pressure for CCE of 100% Lab3_Surface_Oil, 0% Injectant.

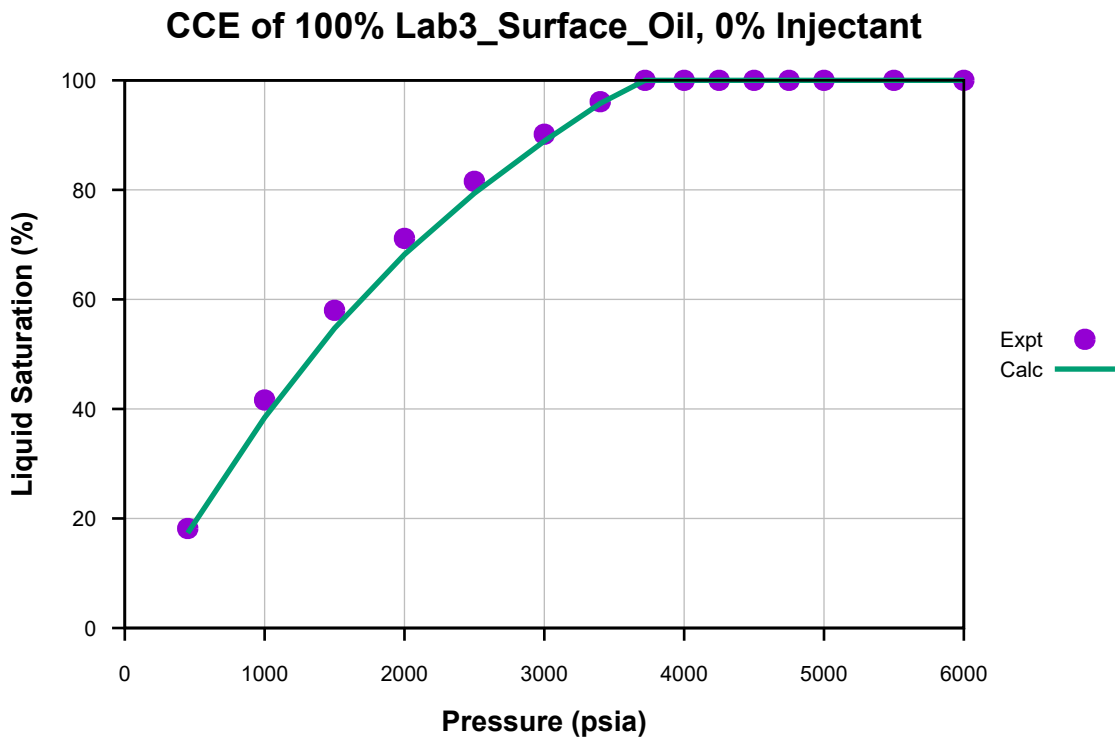


Figure 61: Liquid Saturation vs. Pressure for CCE of 100% Lab3_Surface_Oil, 0% Injectant.

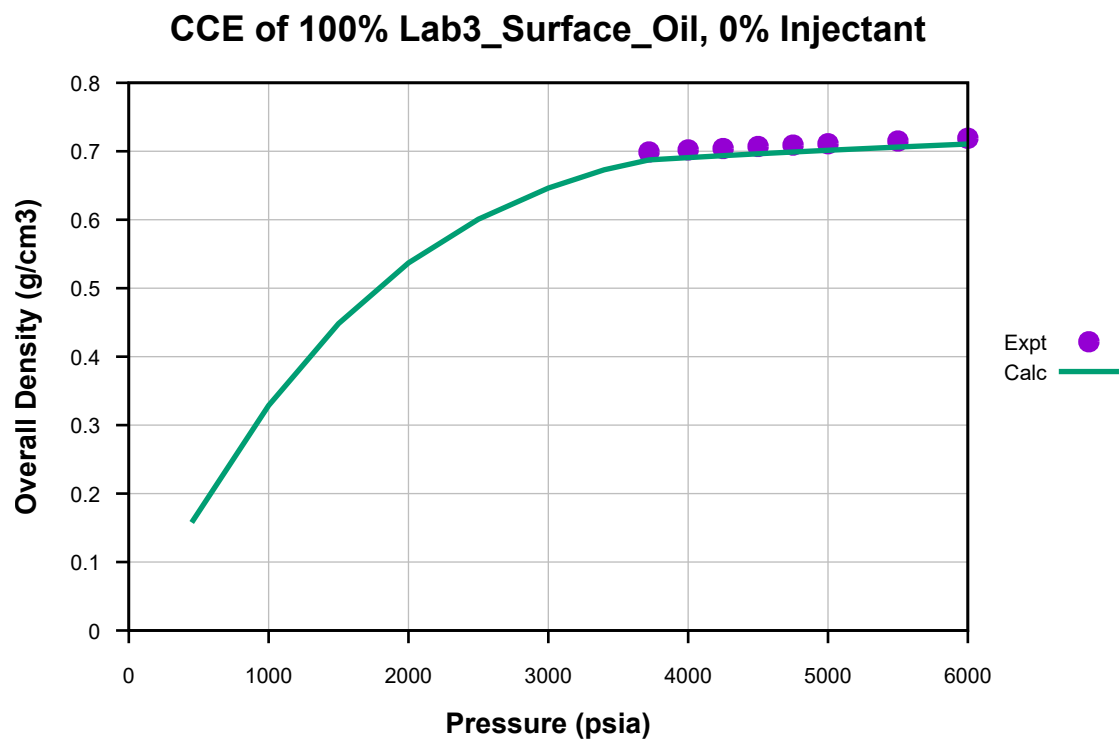


Figure 62: Overall Density vs. Pressure for CCE of 100% Lab3_Surface_Oil, 0% Injectant.

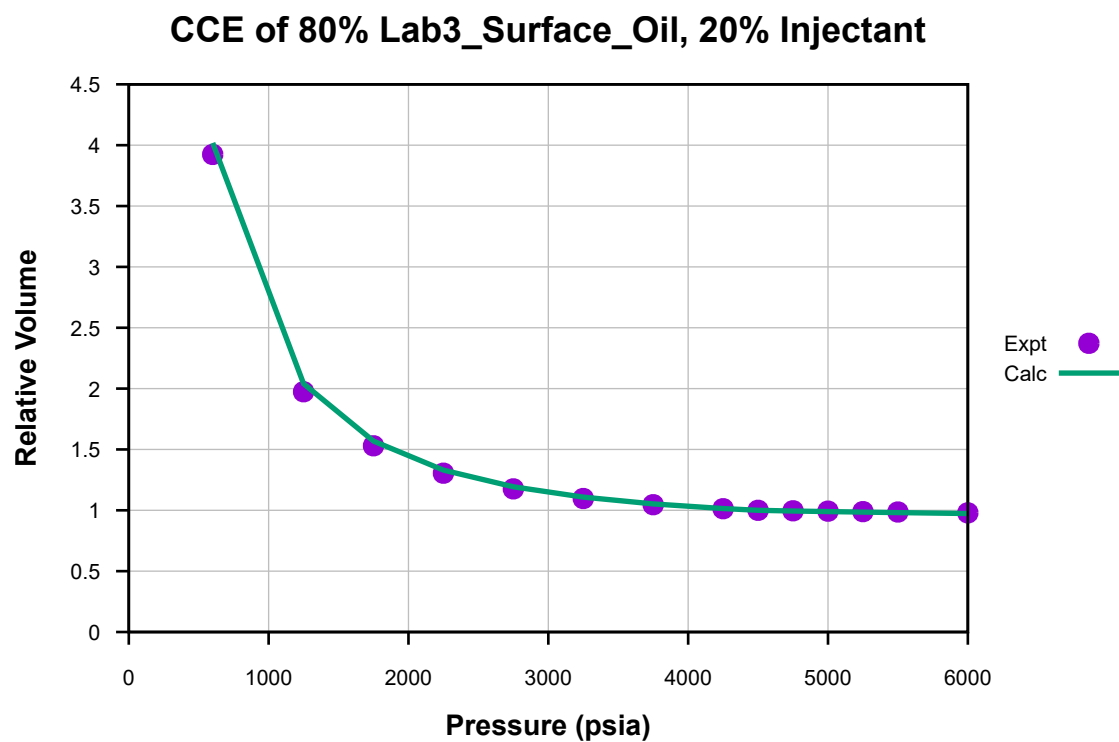


Figure 63: Relative Volume vs. Pressure for CCE of 80% Lab3_Surface_Oil, 20% Injectant.

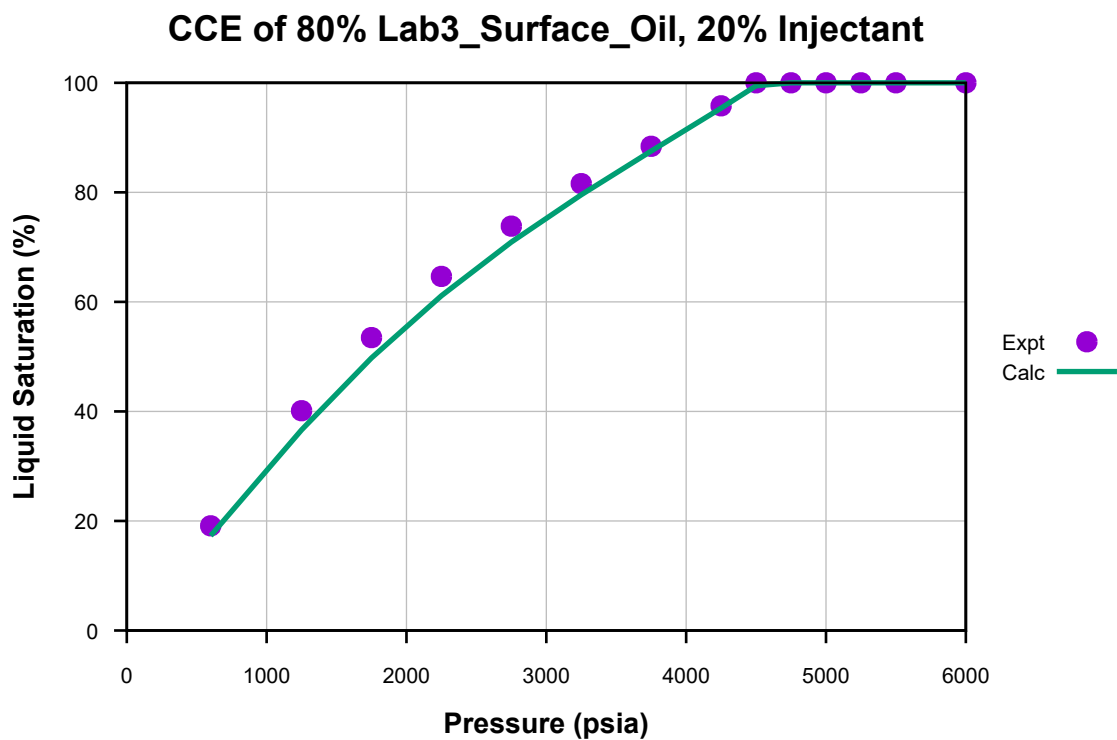


Figure 64: Liquid Saturation vs. Pressure for CCE of 80% Lab3_Surface_Oil, 20% Injectant.

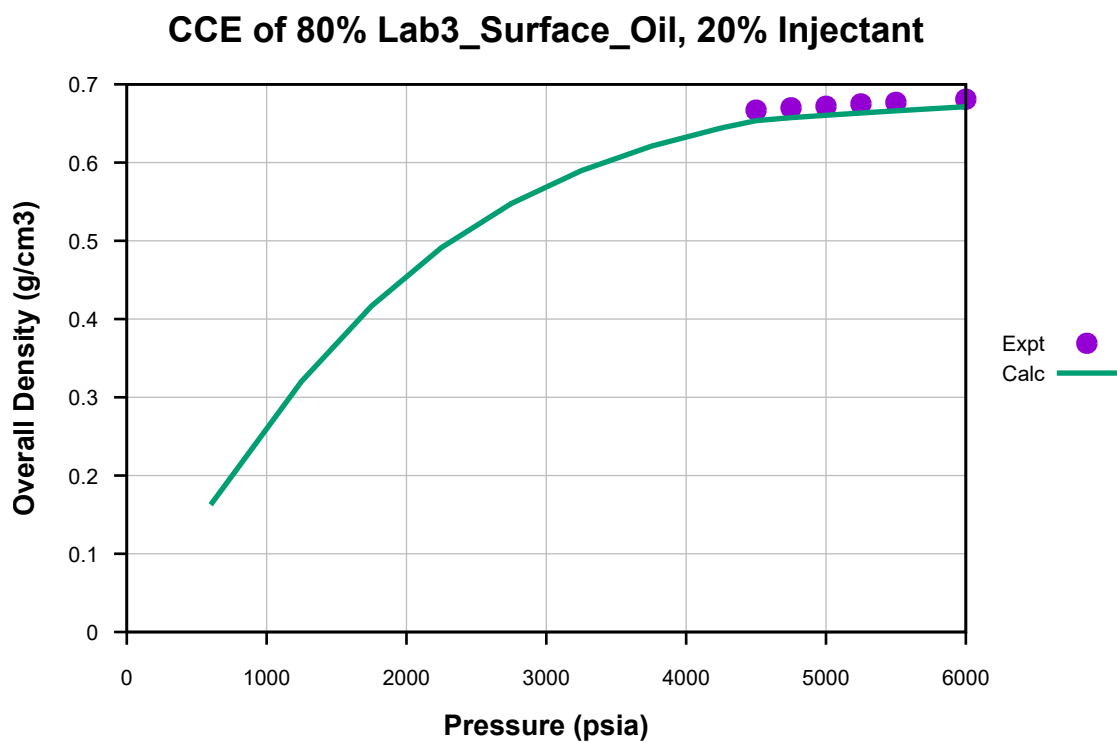


Figure 65: Overall Density vs. Pressure for CCE of 80% Lab3_Surface_Oil, 20% Injectant.

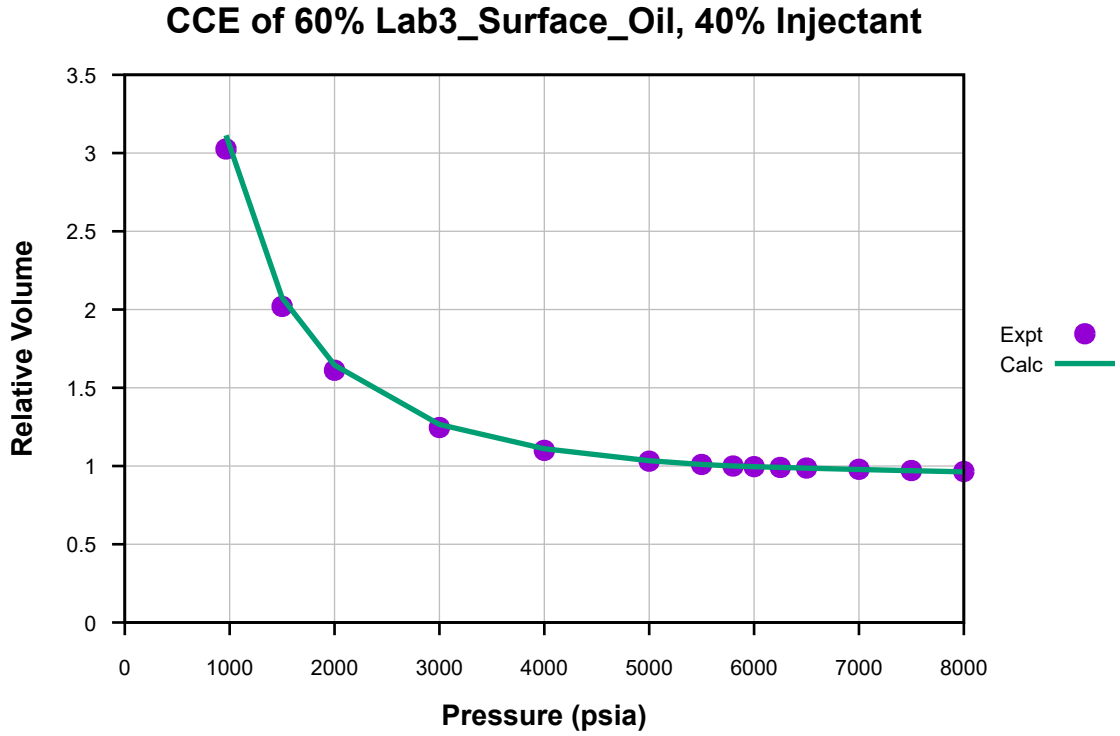


Figure 66: Relative Volume vs. Pressure for CCE of 60% Lab3_Surface_Oil, 40% Injectant.

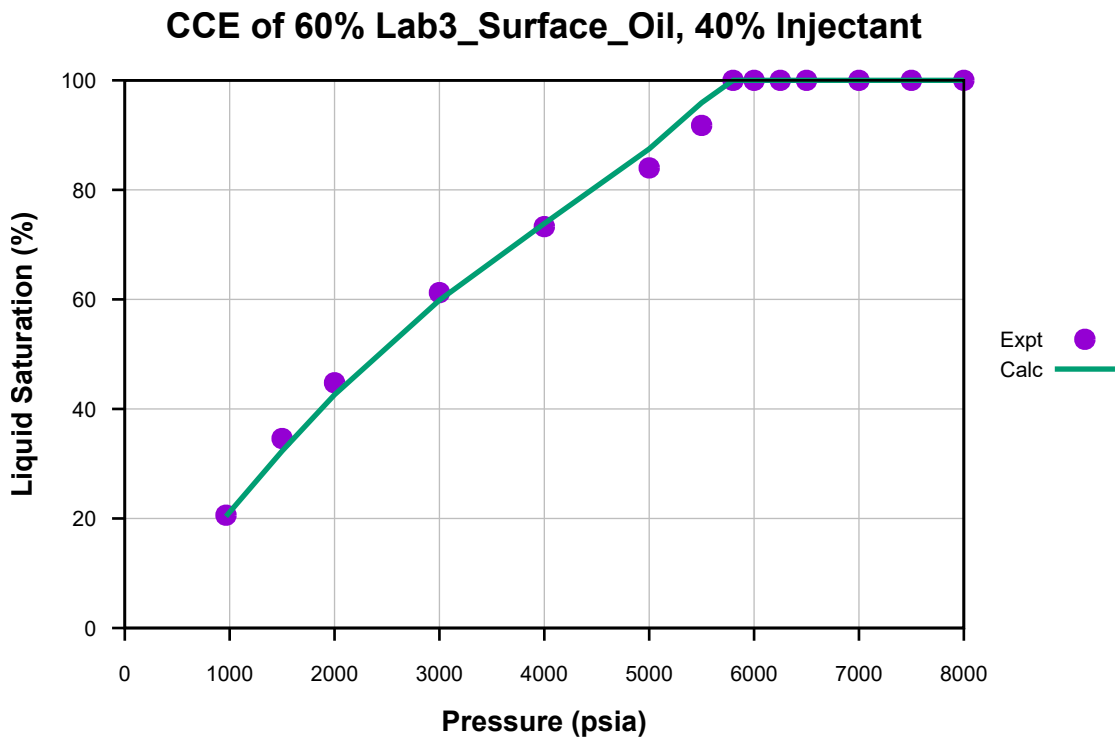


Figure 67: Liquid Saturation vs. Pressure for CCE of 60% Lab3_Surface_Oil, 40% Injectant.

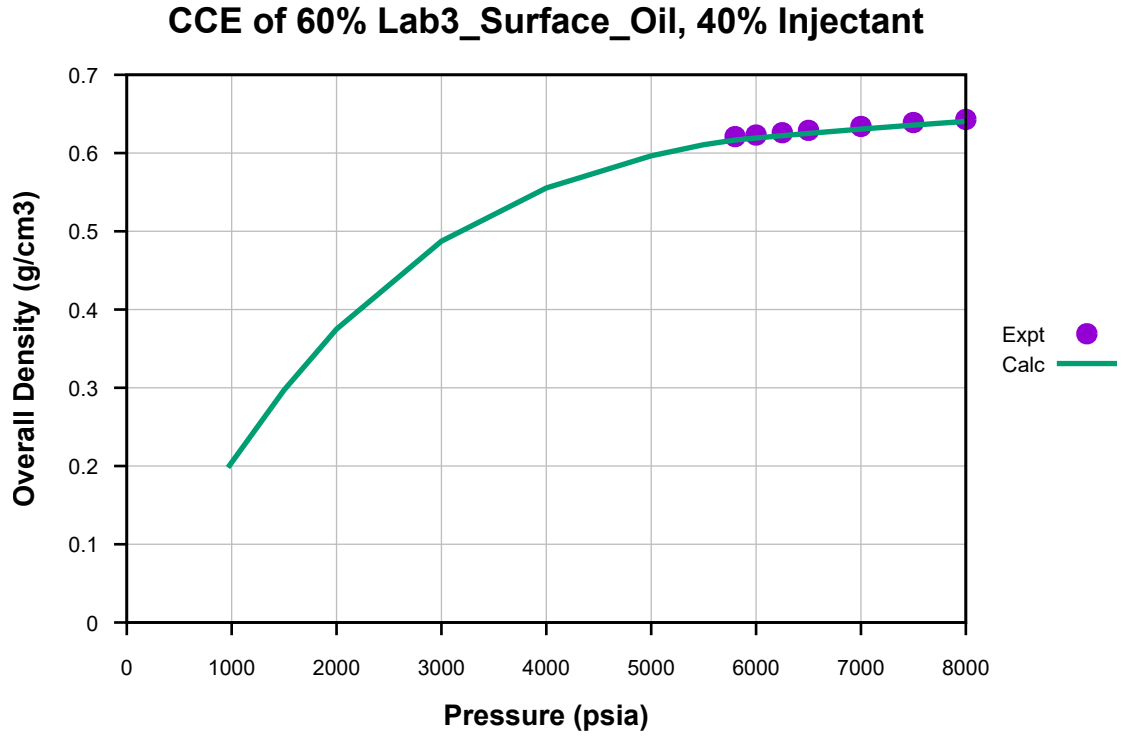


Figure 68: Overall Density vs. Pressure for CCE of 60% Lab3_Surface_Oil, 40% Injectant.

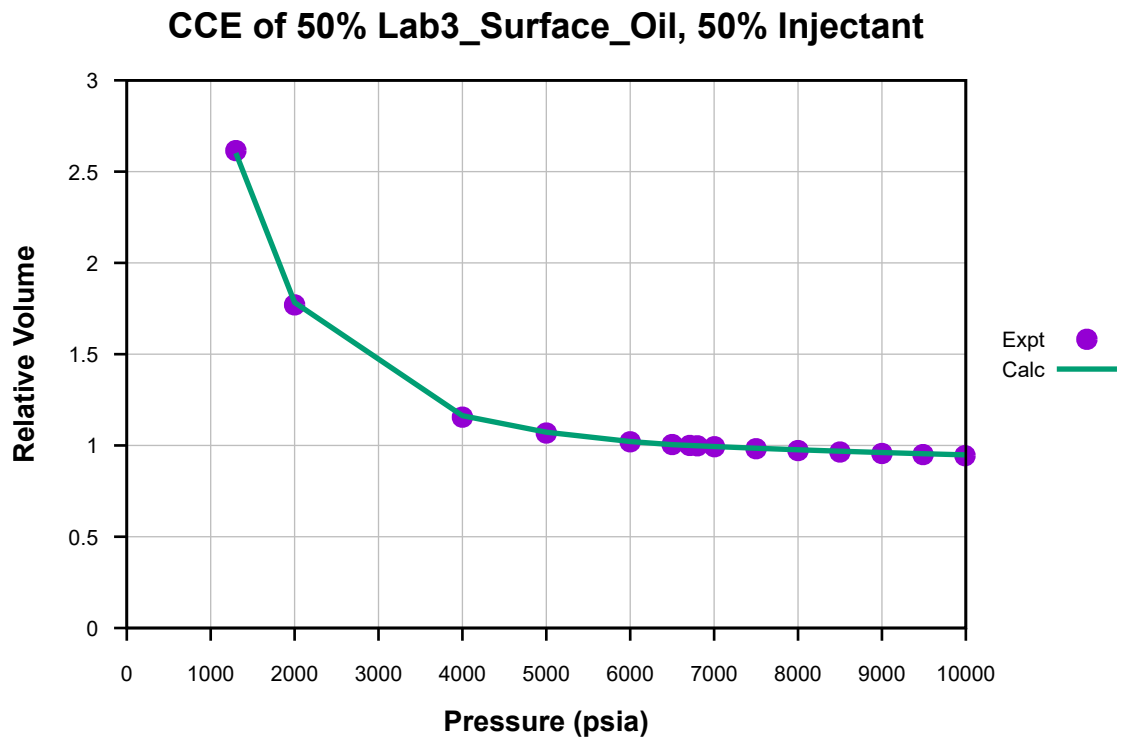


Figure 69: Relative Volume vs. Pressure for CCE of 50% Lab3_Surface_Oil, 50% Injectant.

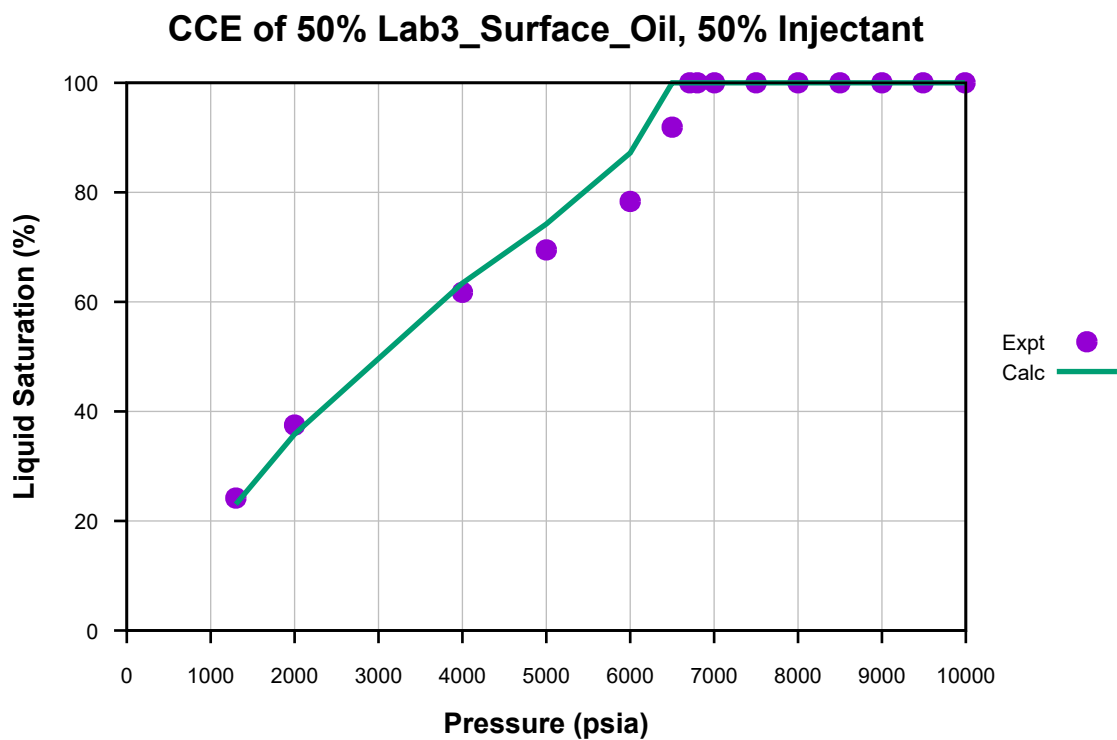


Figure 70: Liquid Saturation vs. Pressure for CCE of 50% Lab3_Surface_Oil, 50% Injectant.

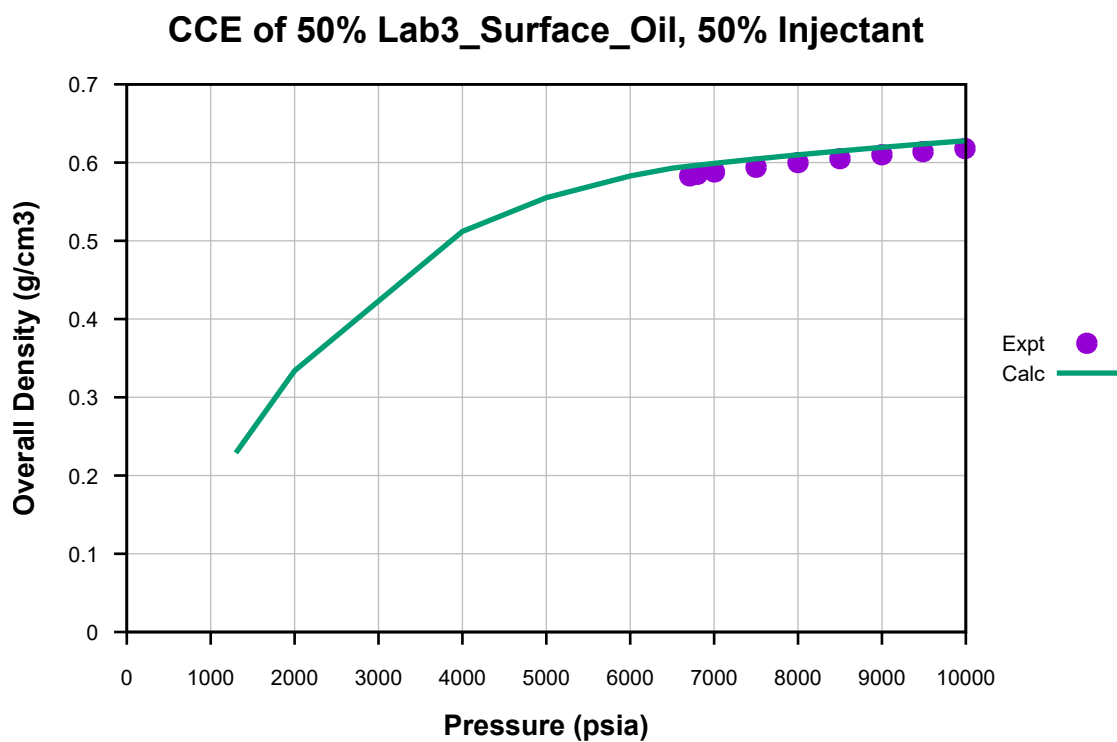


Figure 71: Overall Density vs. Pressure for CCE of 50% Lab3_Surface_Oil, 50% Injectant.

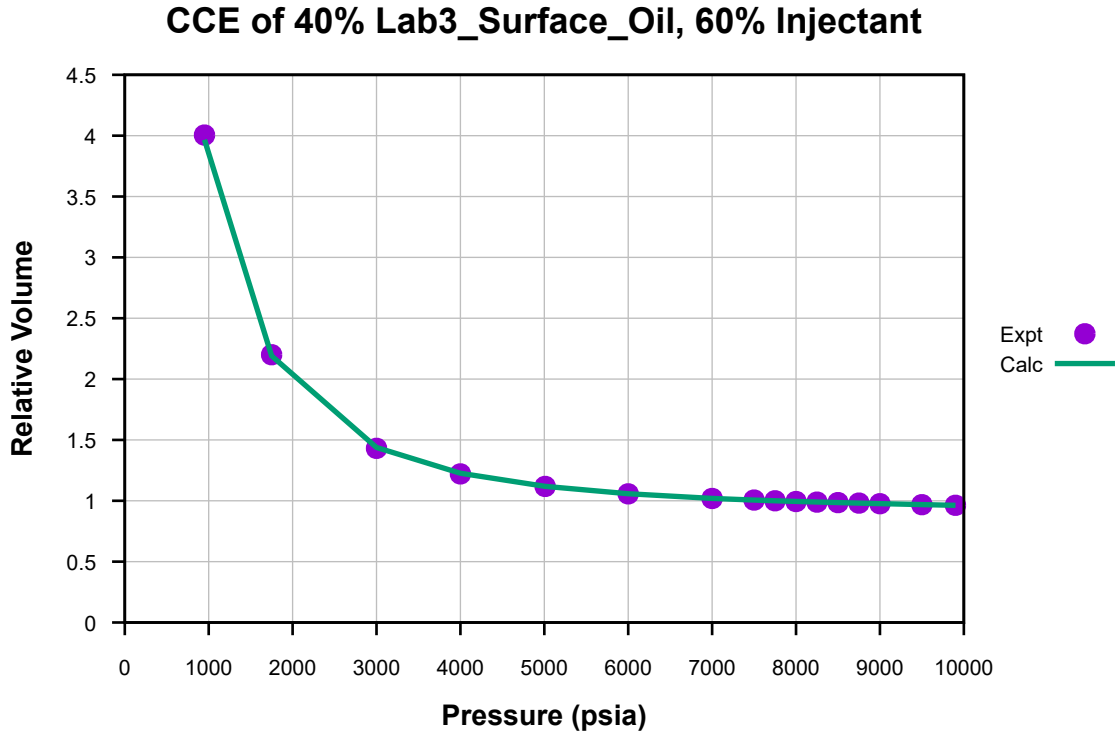


Figure 72: Relative Volume vs. Pressure for CCE of 40% Lab3_Surface_Oil, 60% Injectant.

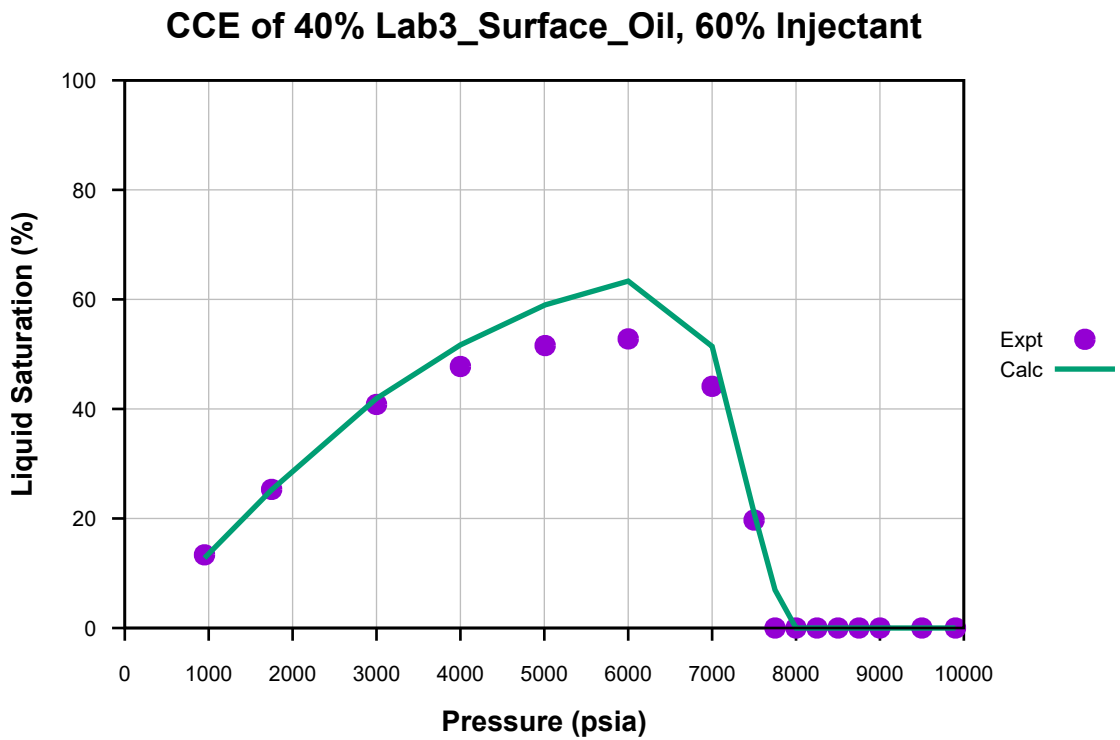


Figure 73: Liquid Saturation vs. Pressure for CCE of 40% Lab3_Surface_Oil, 60% Injectant.

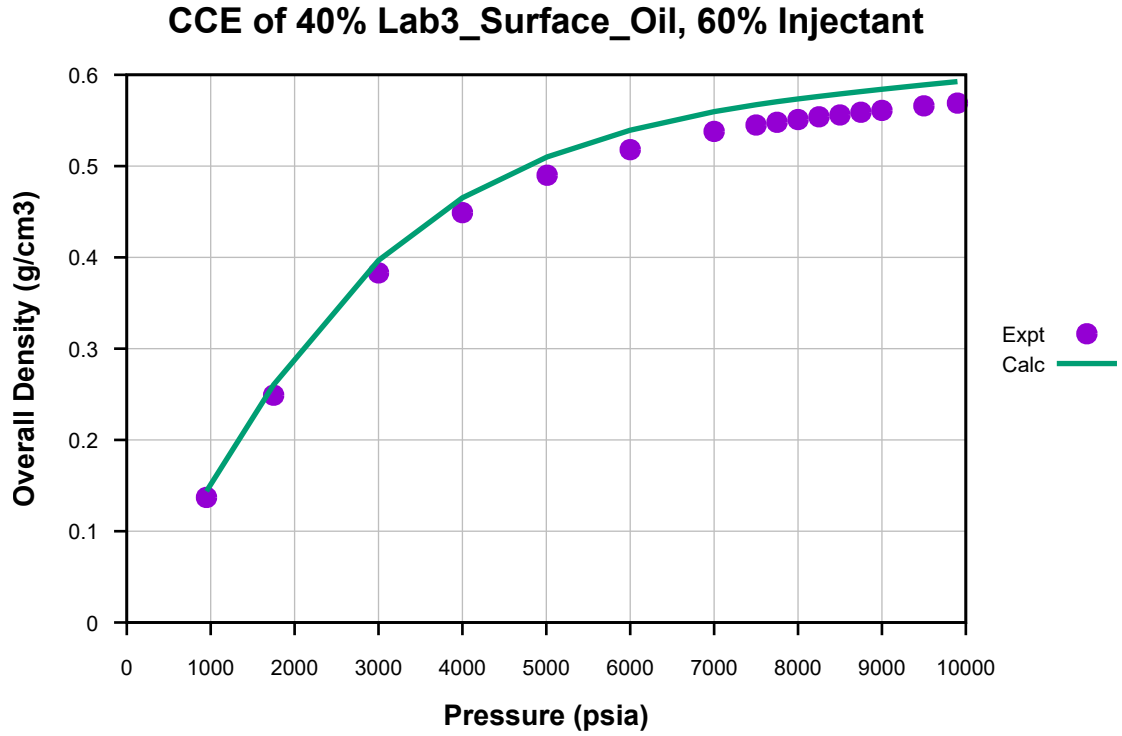


Figure 74: Overall Density vs. Pressure for CCE of 40% Lab3_Surface_Oil, 60% Injectant.

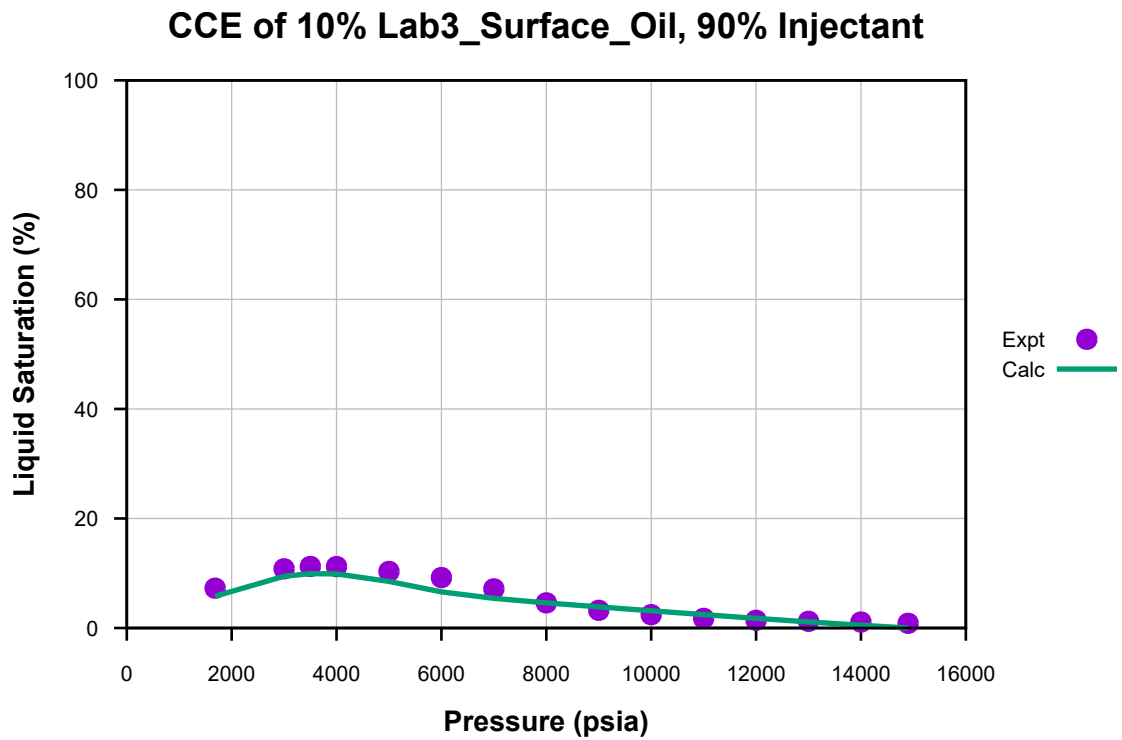


Figure 75: Liquid Saturation vs. Pressure for CCE of 10% Lab3_Surface_Oil, 90% Injectant.

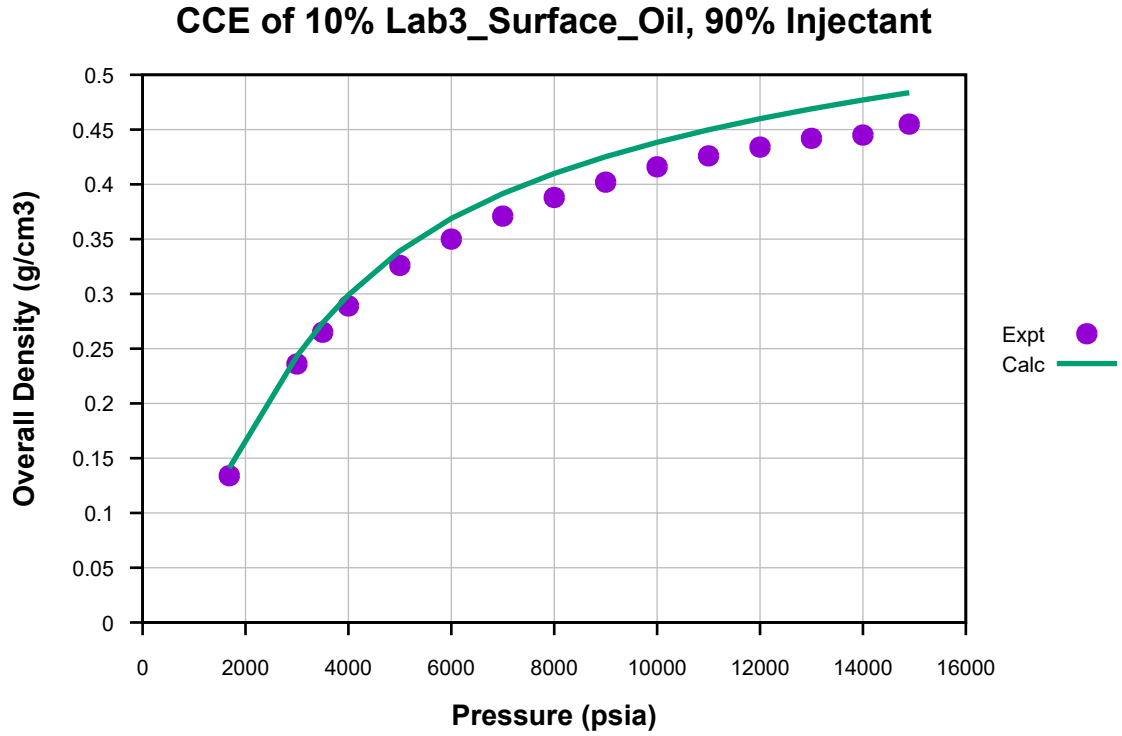


Figure 76: Overall Density vs. Pressure for CCE of 10% Lab3_Surface_Oil, 90% Injectant.

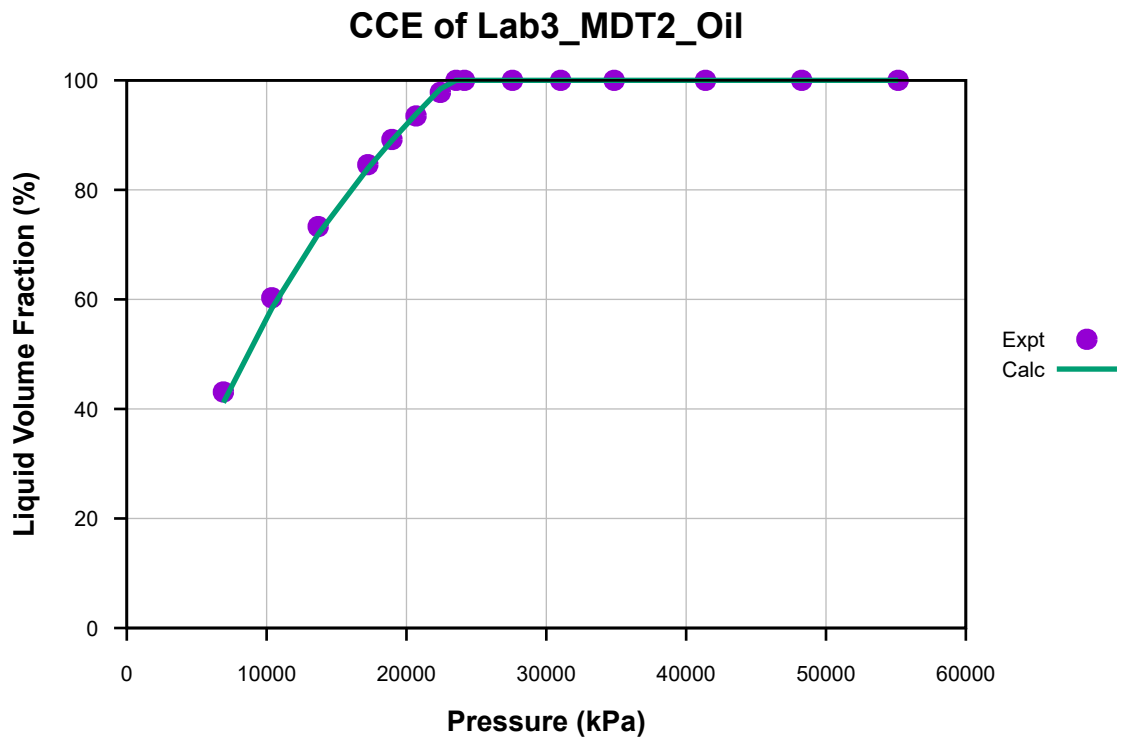


Figure 77: Liquid Volume Fraction vs. Pressure for CCE of Lab3_MDT2_Oil.

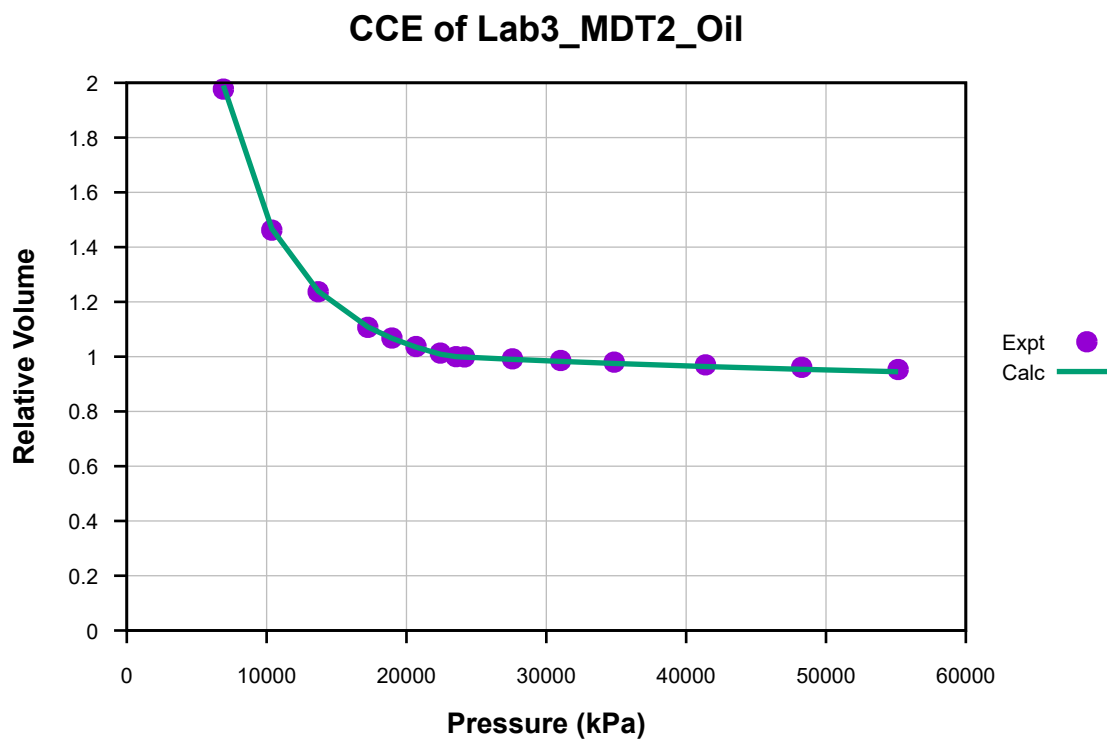


Figure 78: Relative Volume vs. Pressure for CCE of Lab3_MDT2_Oil.

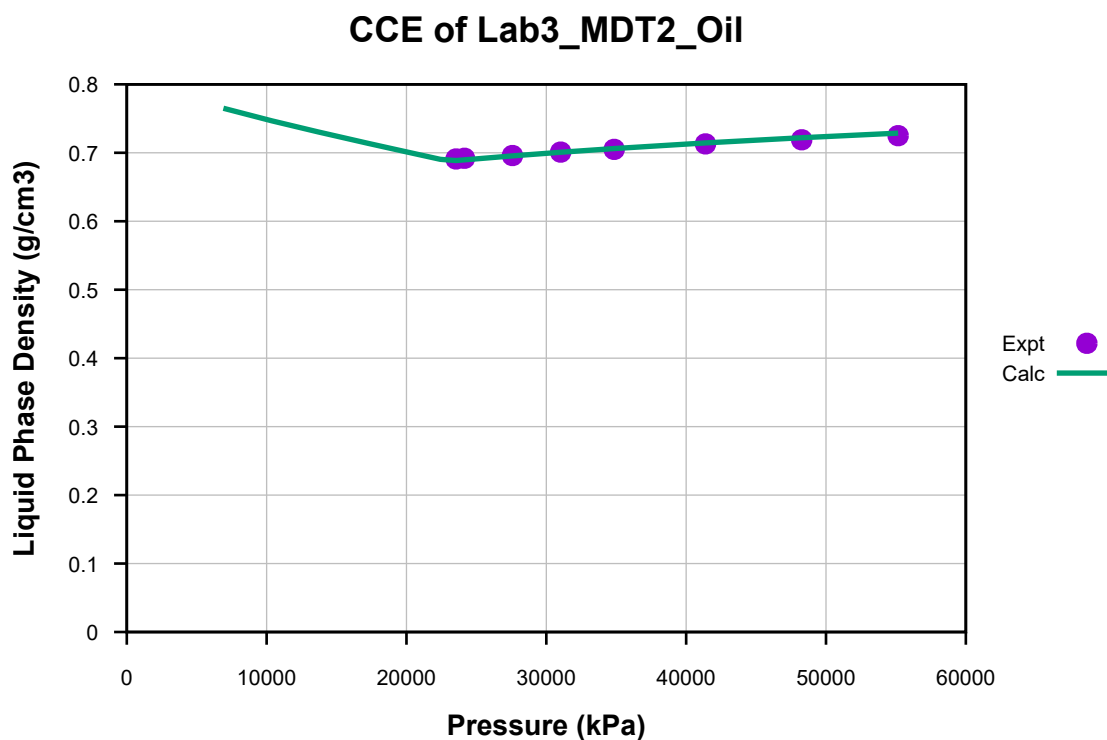


Figure 79: Liquid Phase Density vs. Pressure for CCE of Lab3_MDT2_Oil.

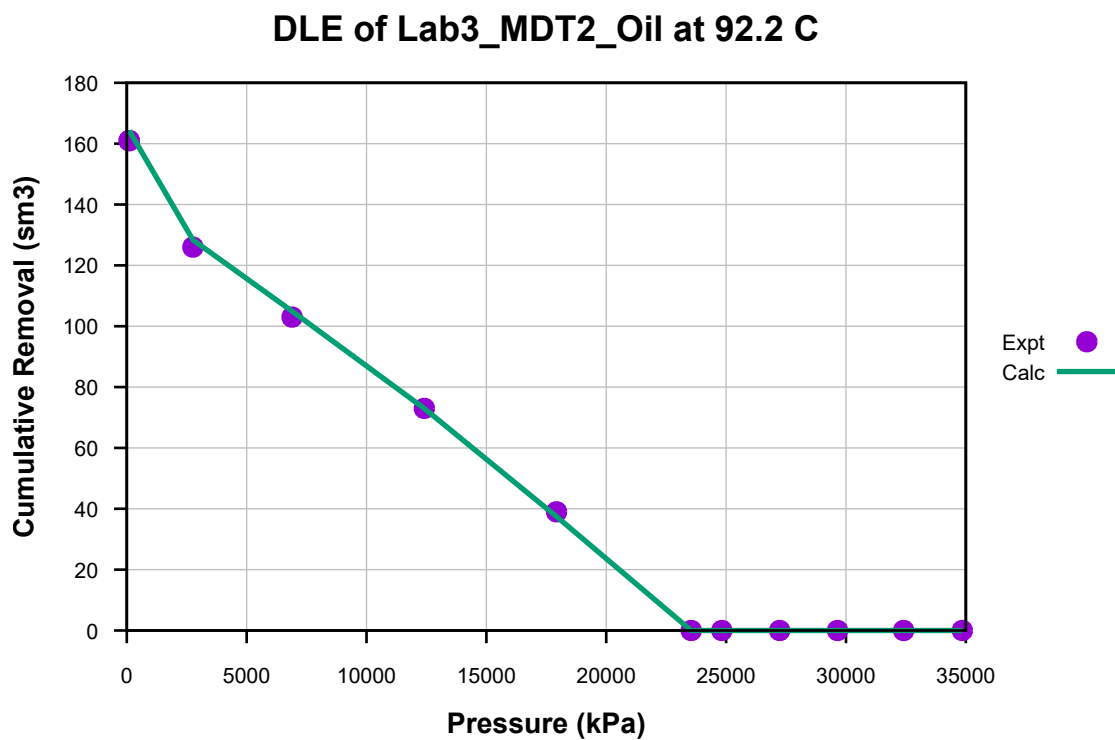


Figure 80: Cumulative Removal vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.

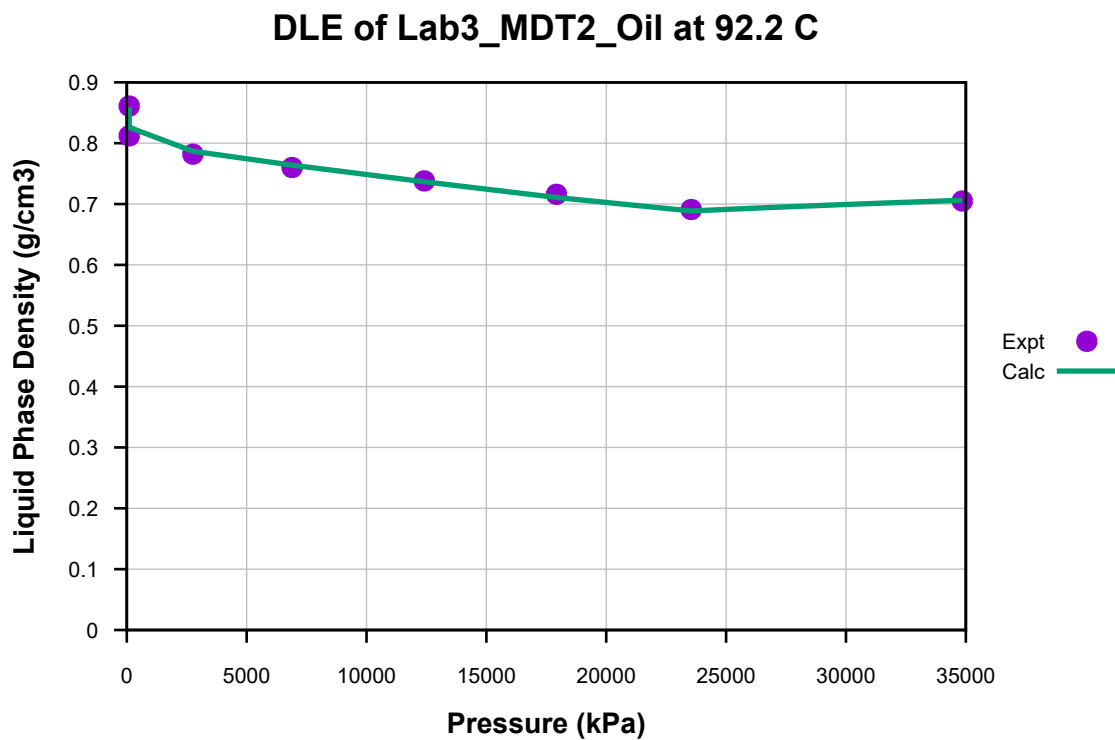


Figure 81: Liquid Phase Density vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.

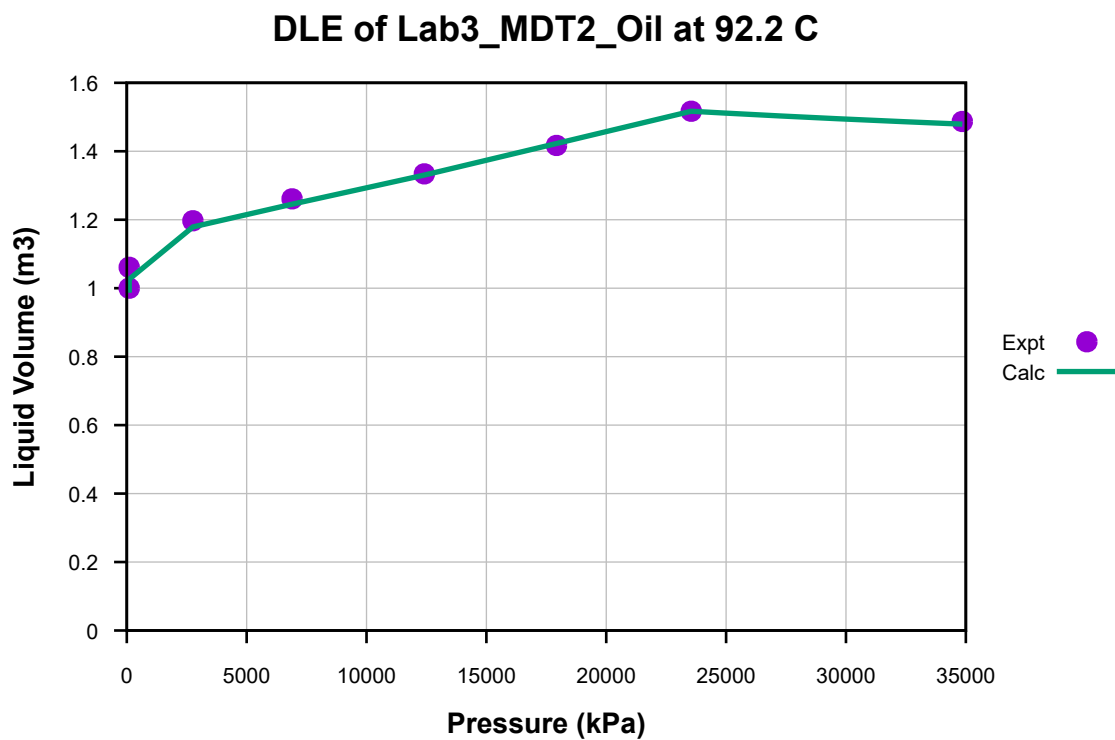


Figure 82: Liquid Volume vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.

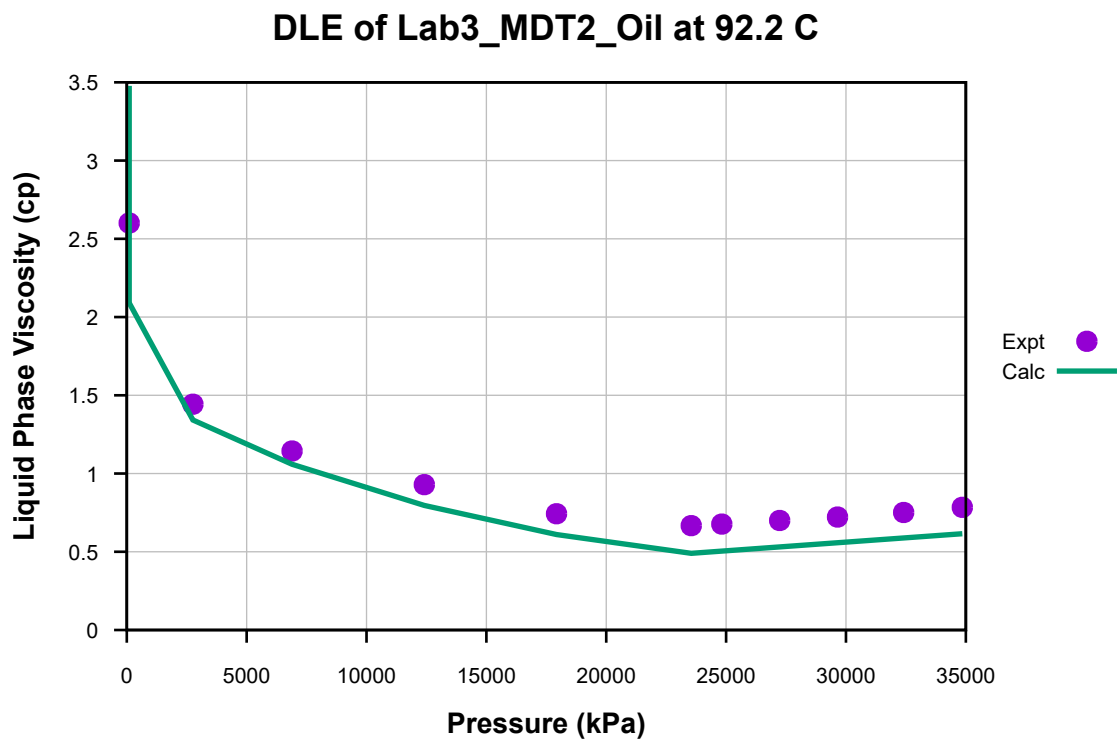


Figure 83: Liquid Phase Viscosity vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.

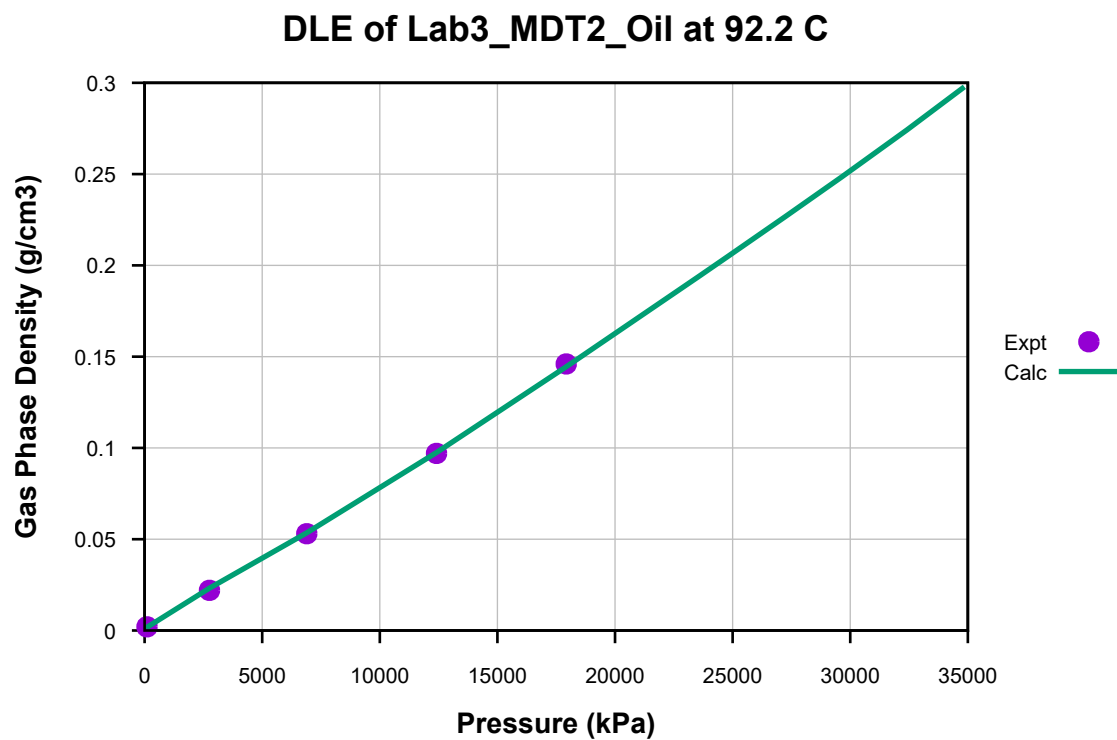


Figure 84: Gas Phase Density vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.

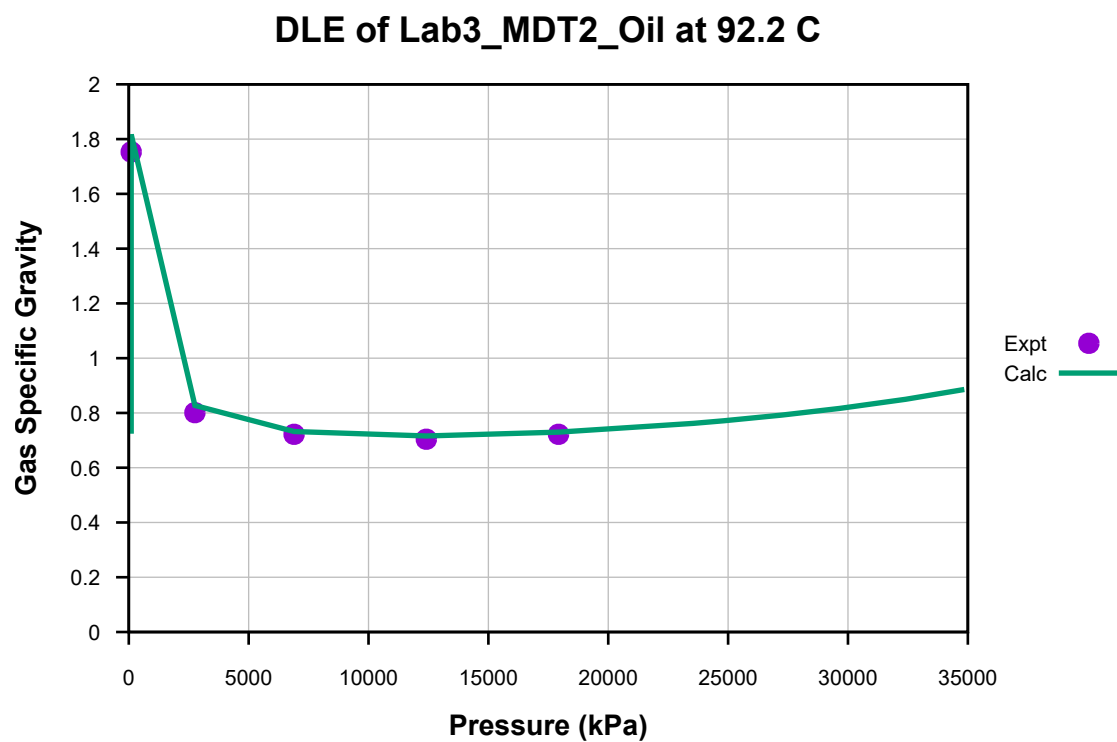


Figure 85: Gas Specific Gravity vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.

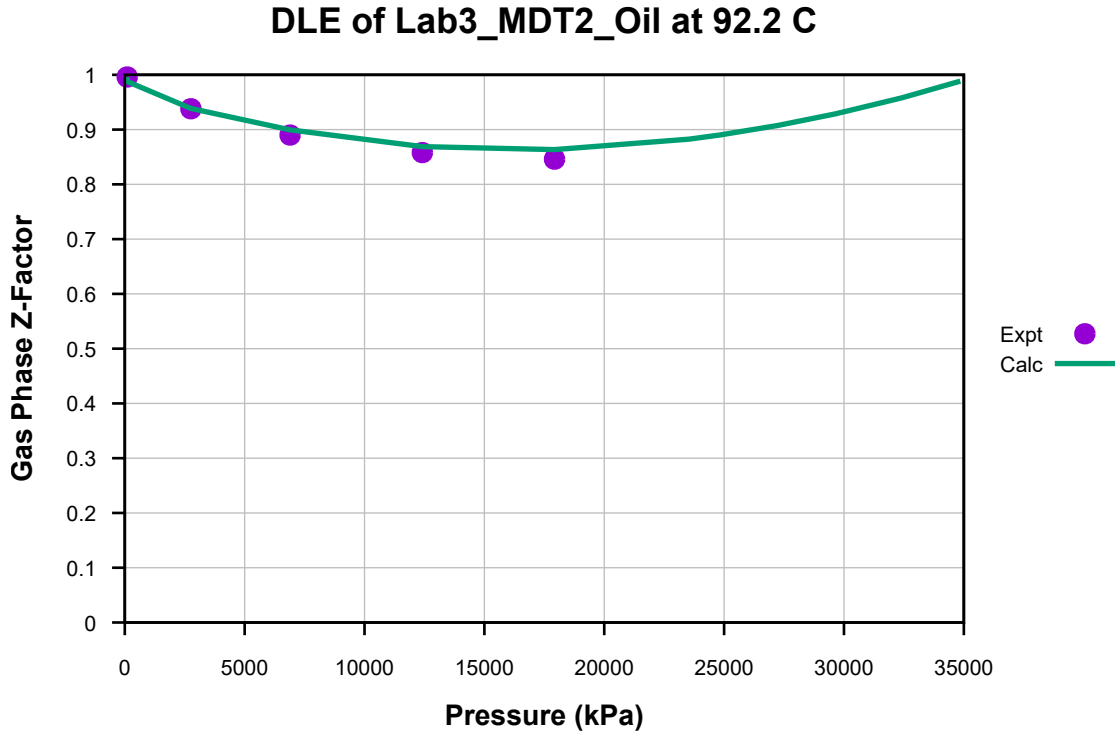


Figure 86: Gas Phase Z-Factor vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.

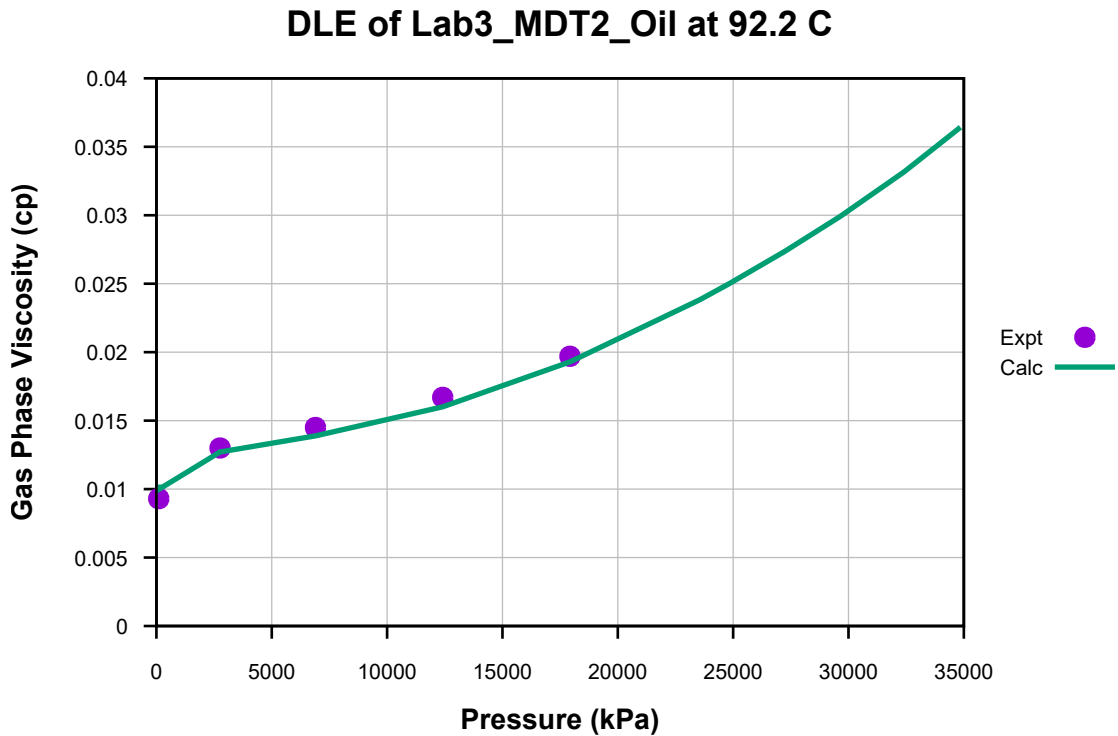


Figure 87: Gas Phase Viscosity vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.

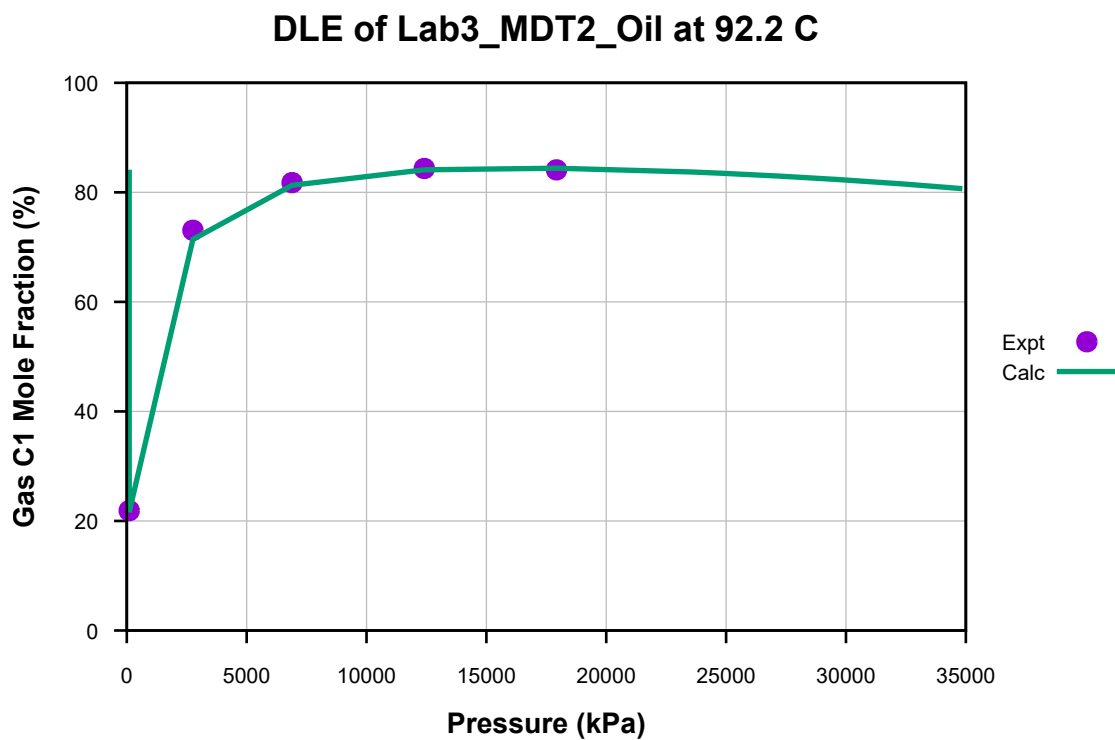


Figure 88: Gas C1 Mole Fraction vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.

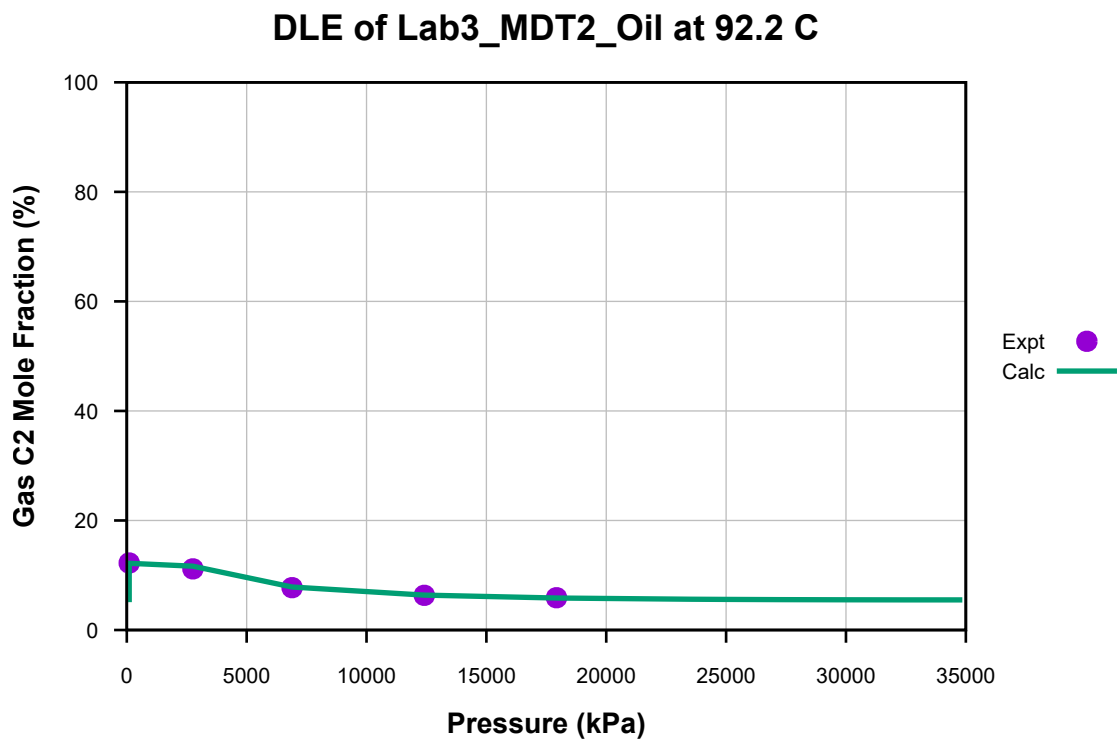


Figure 89: Gas C2 Mole Fraction vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.

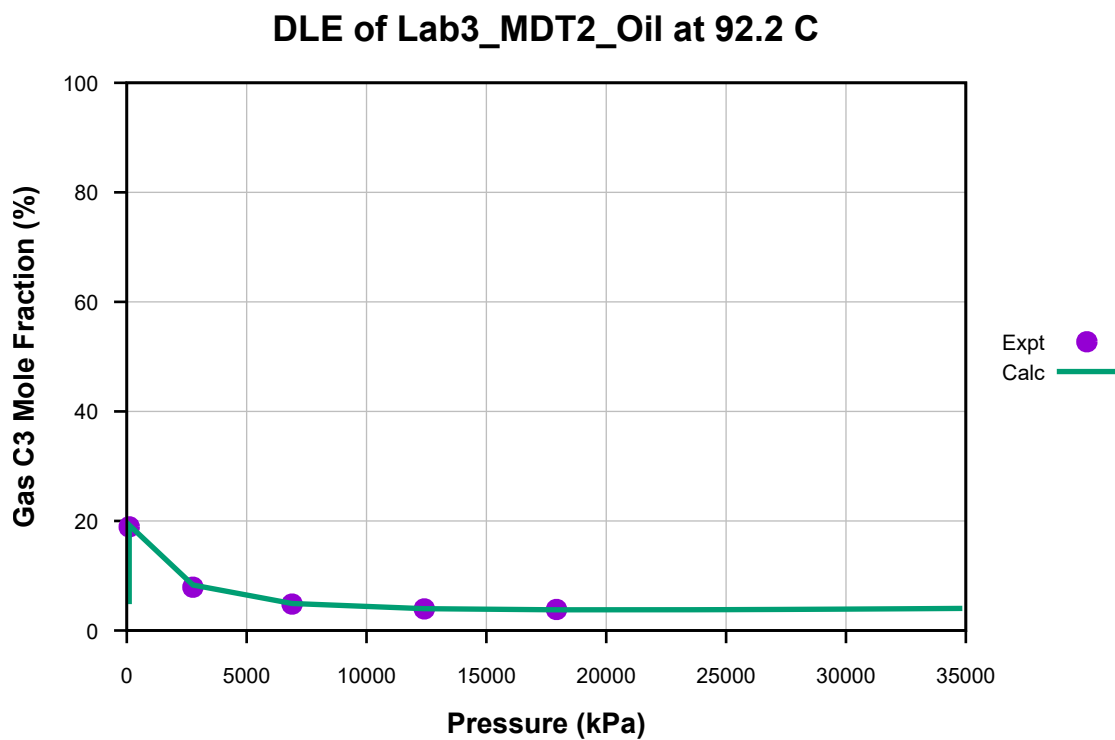


Figure 90: Gas C3 Mole Fraction vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.

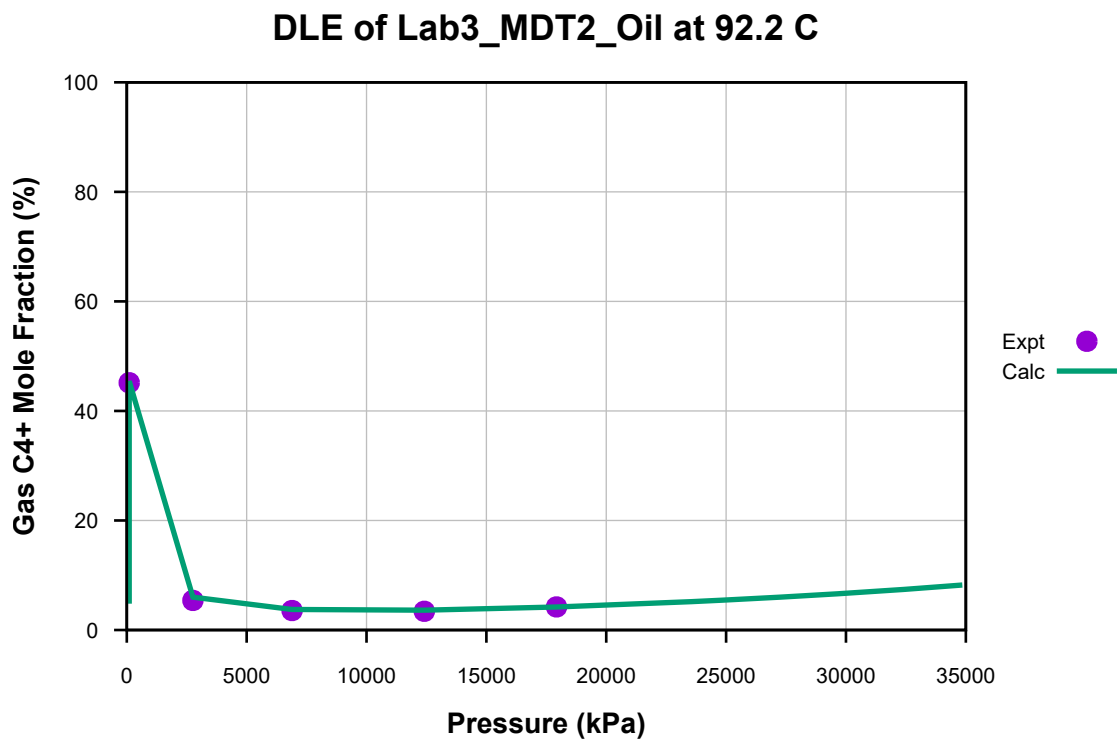


Figure 91: Gas C4+ Mole Fraction vs. Pressure for DLE of Lab3_MDT2_Oil at 92.2 C.

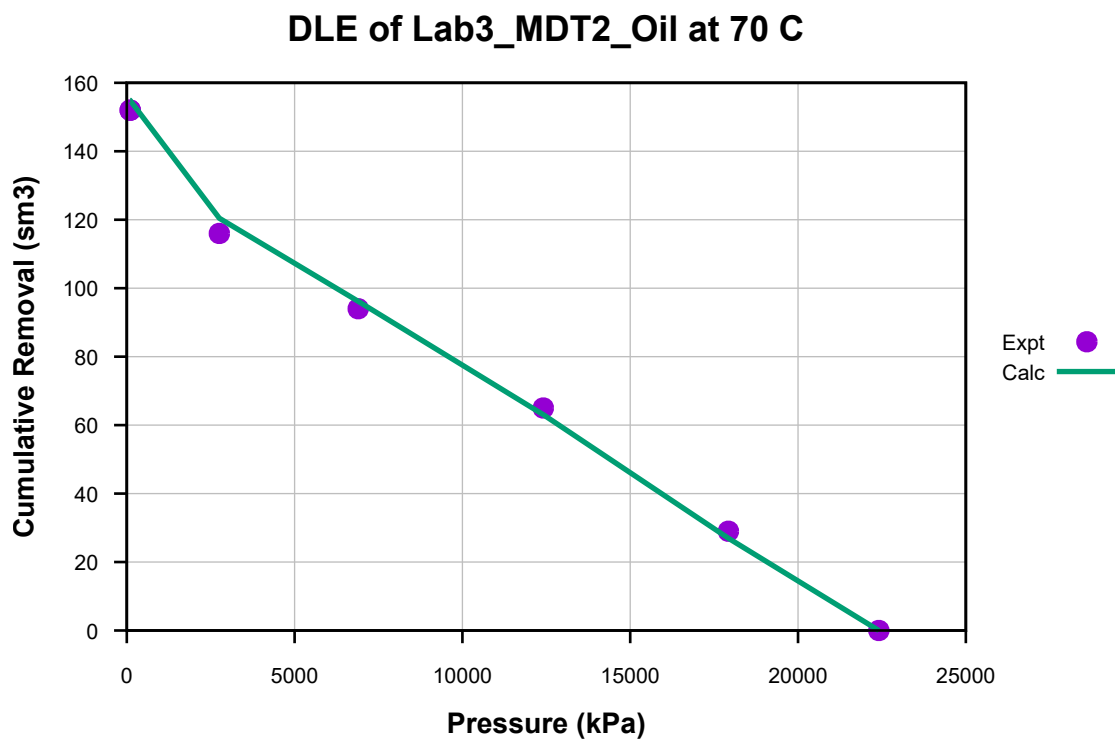


Figure 92: Cumulative Removal vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.

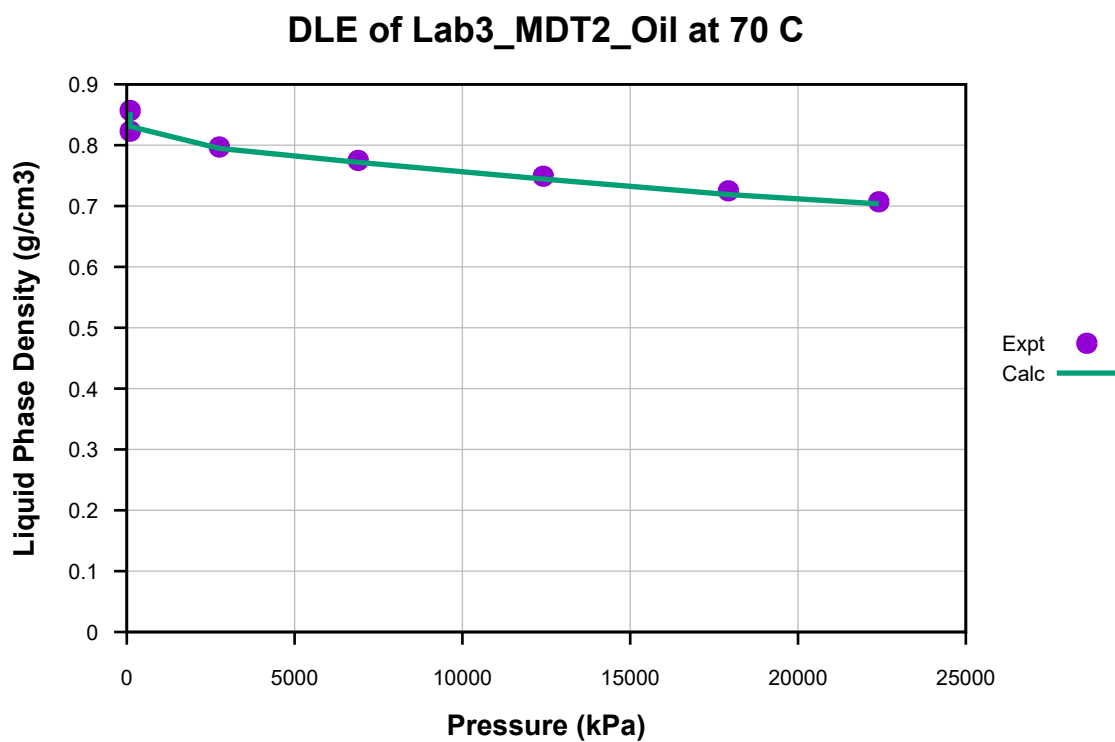


Figure 93: Liquid Phase Density vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.

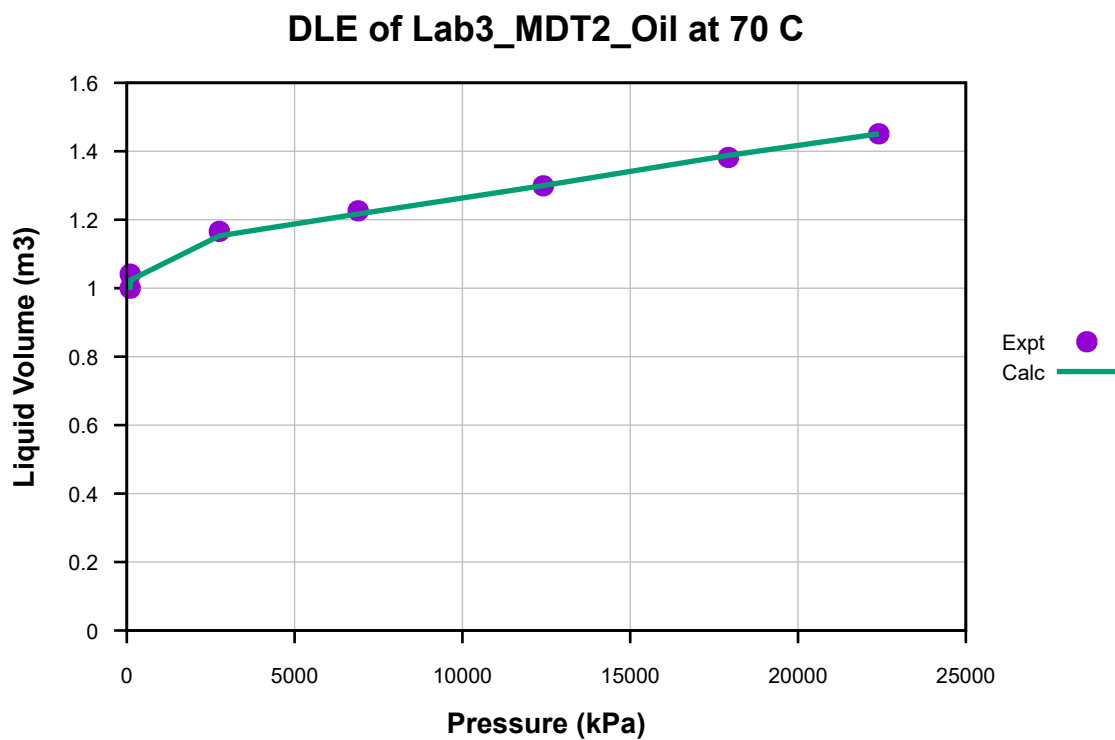


Figure 94: Liquid Volume vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.

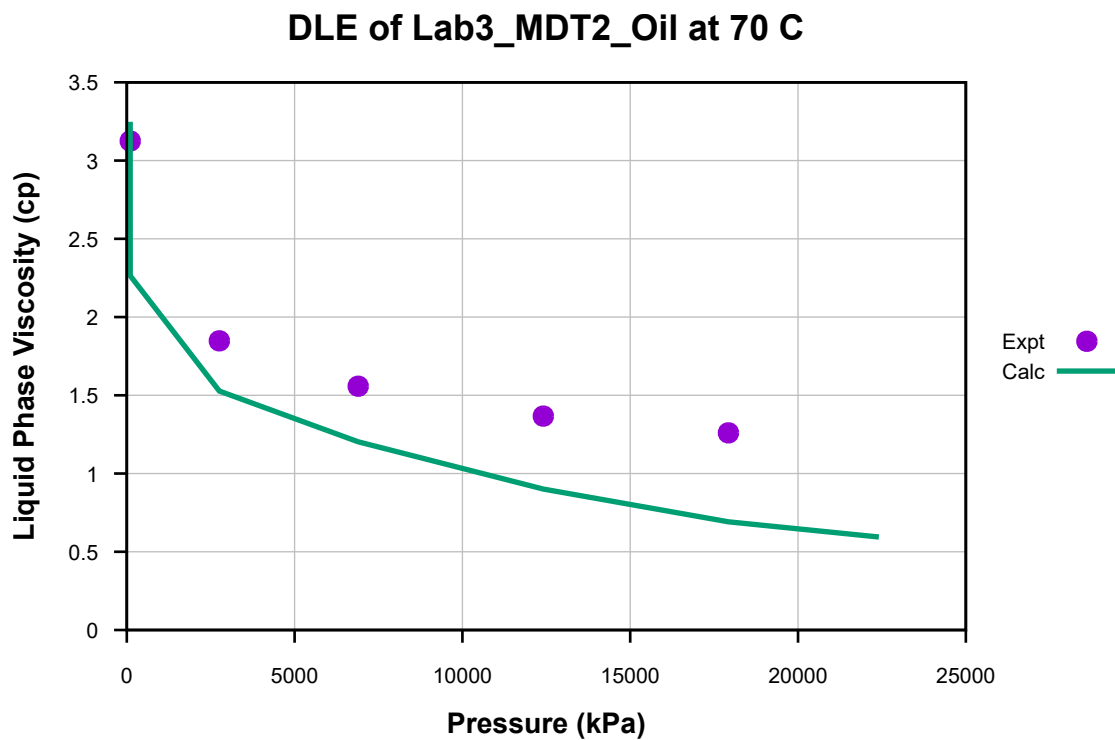


Figure 95: Liquid Phase Viscosity vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.

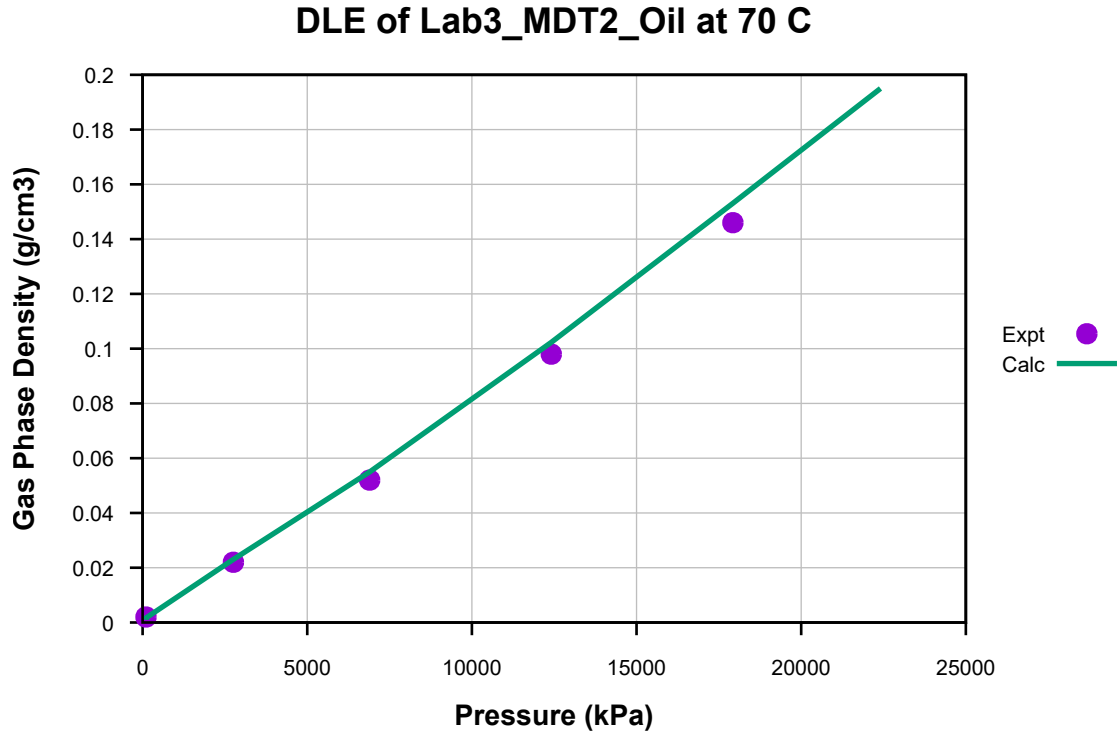


Figure 96: Gas Phase Density vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.

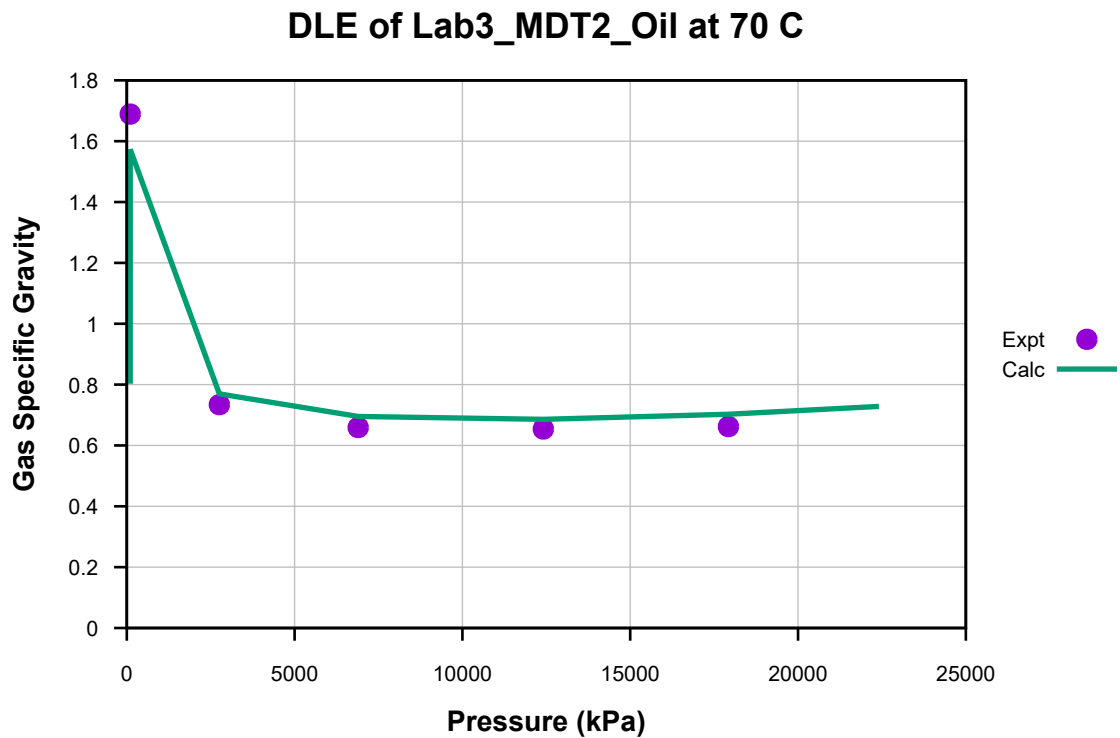


Figure 97: Gas Specific Gravity vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.

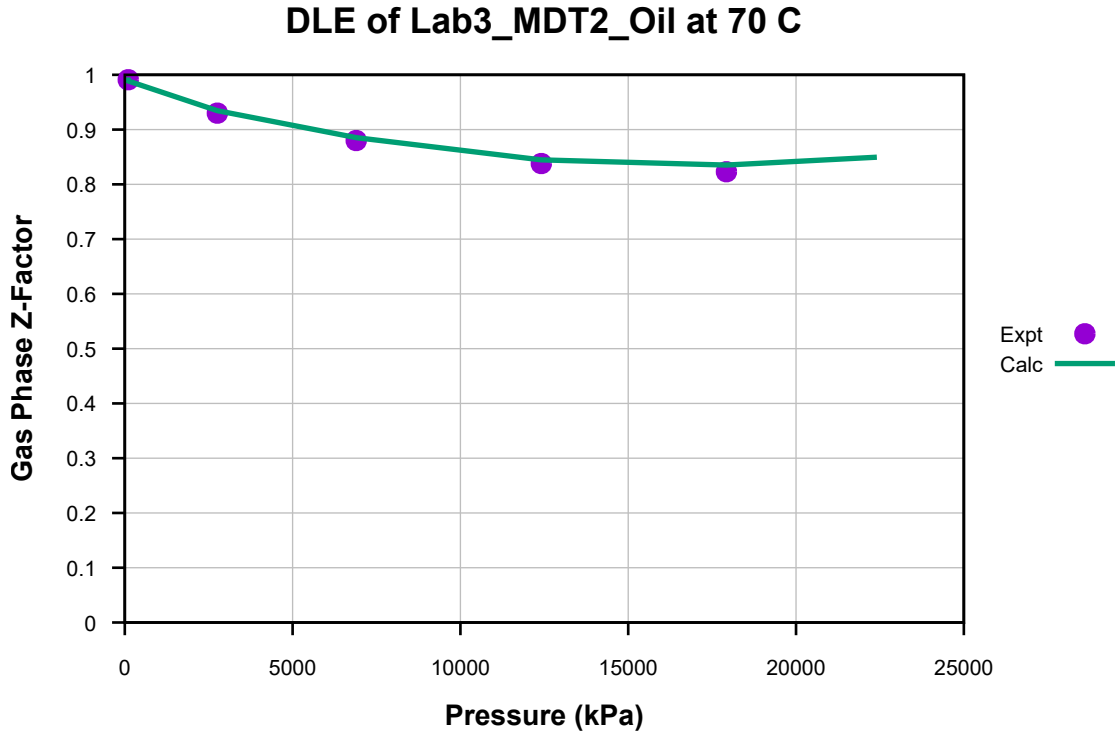


Figure 98: Gas Phase Z-Factor vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.

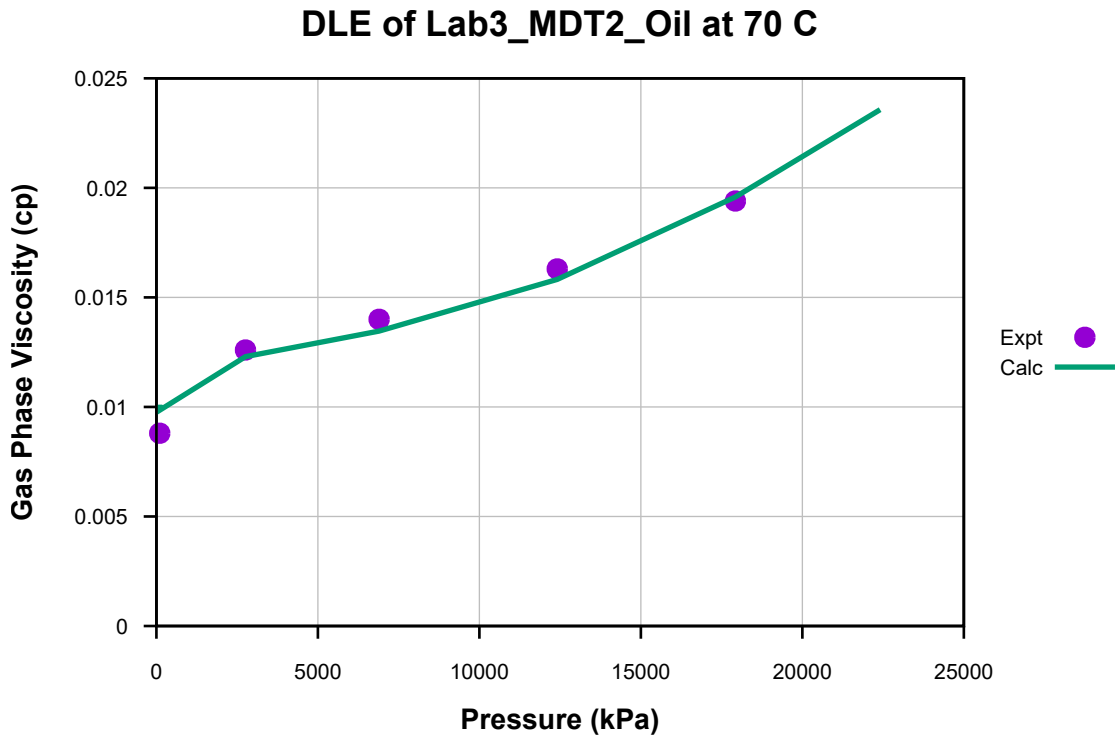


Figure 99: Gas Phase Viscosity vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.

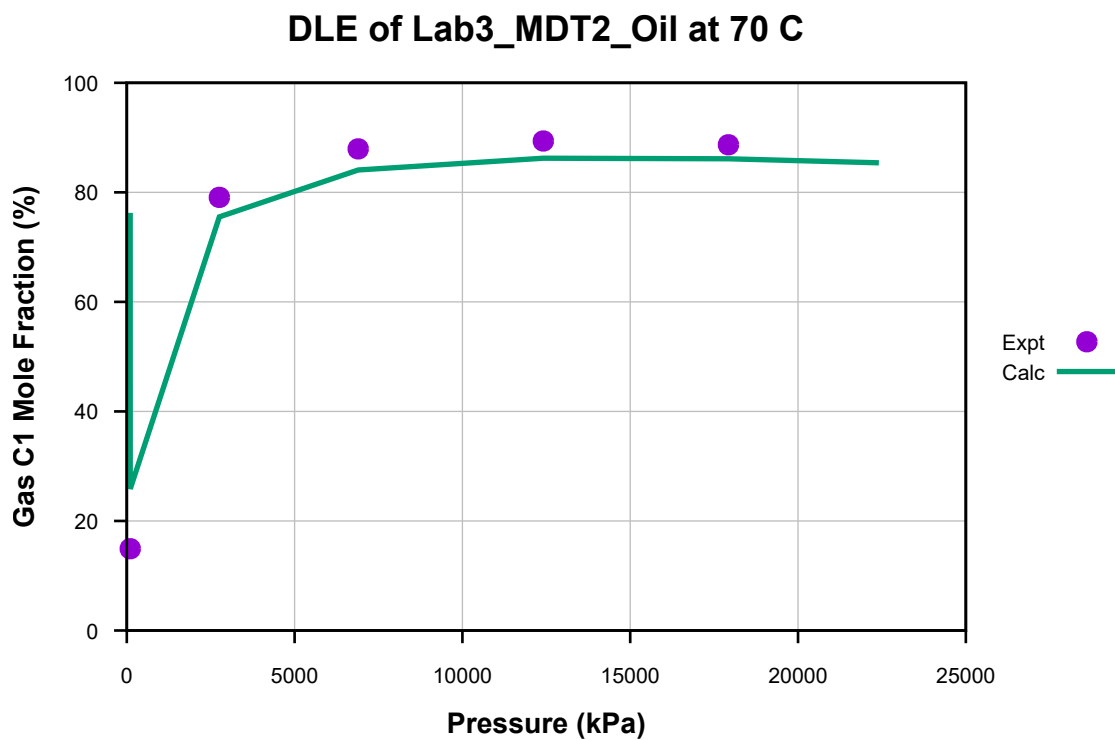


Figure 100: Gas C1 Mole Fraction vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.

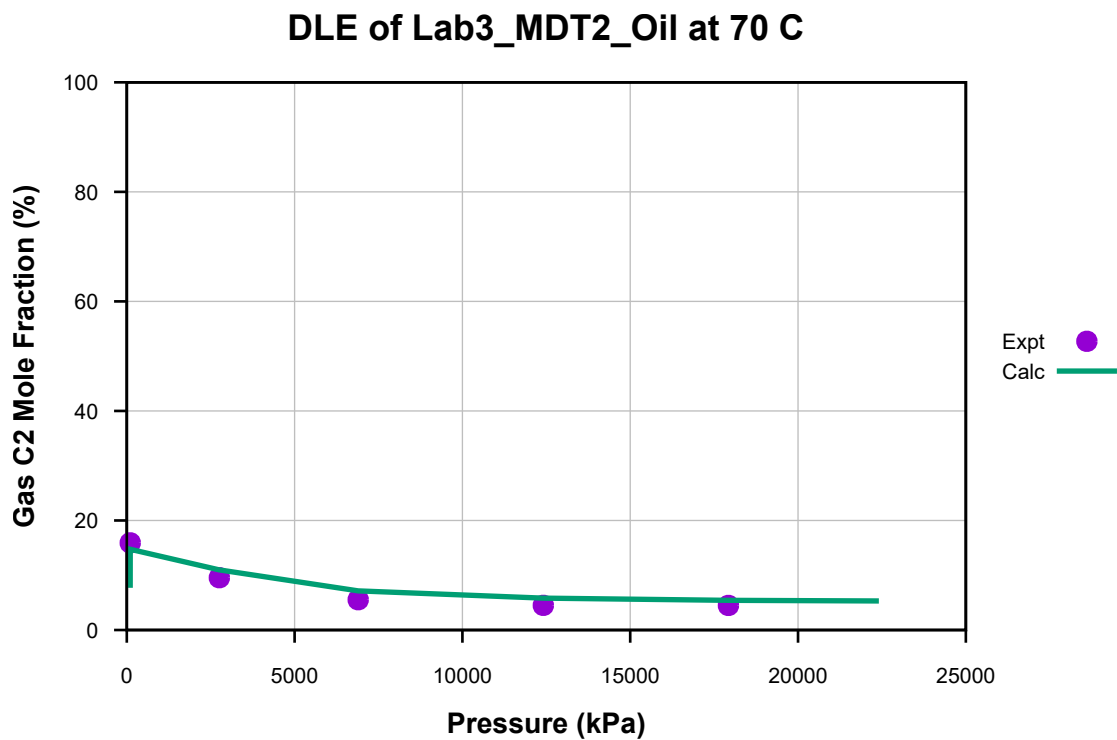


Figure 101: Gas C2 Mole Fraction vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.

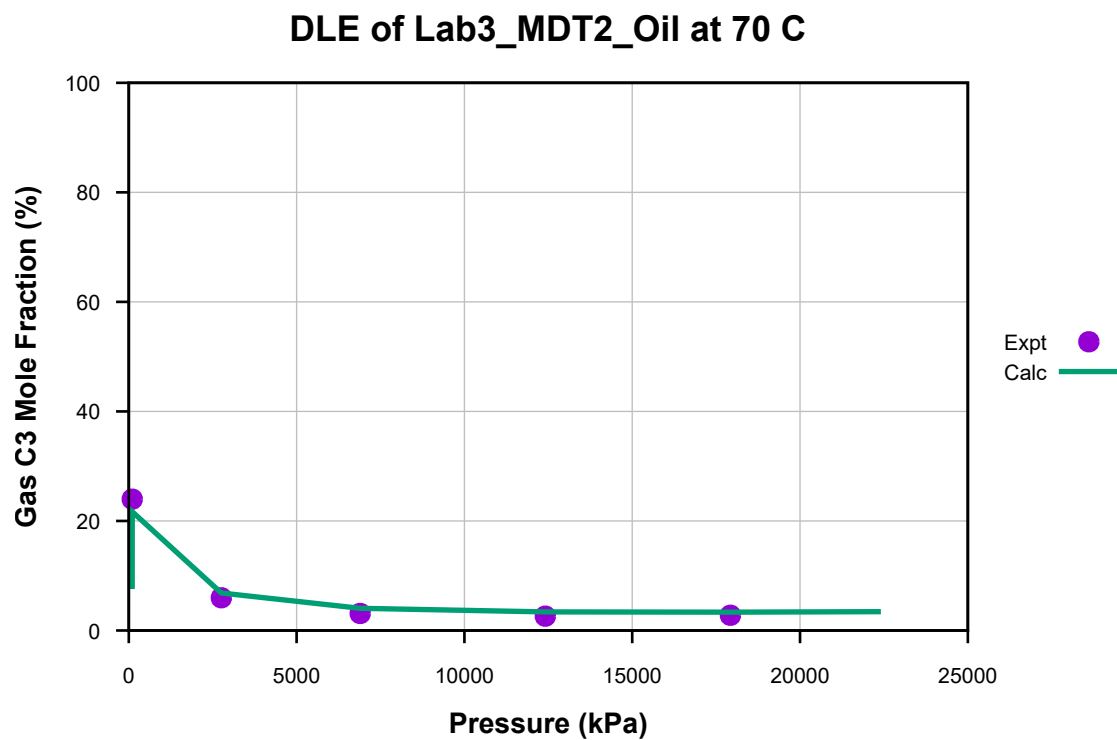


Figure 102: Gas C3 Mole Fraction vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.

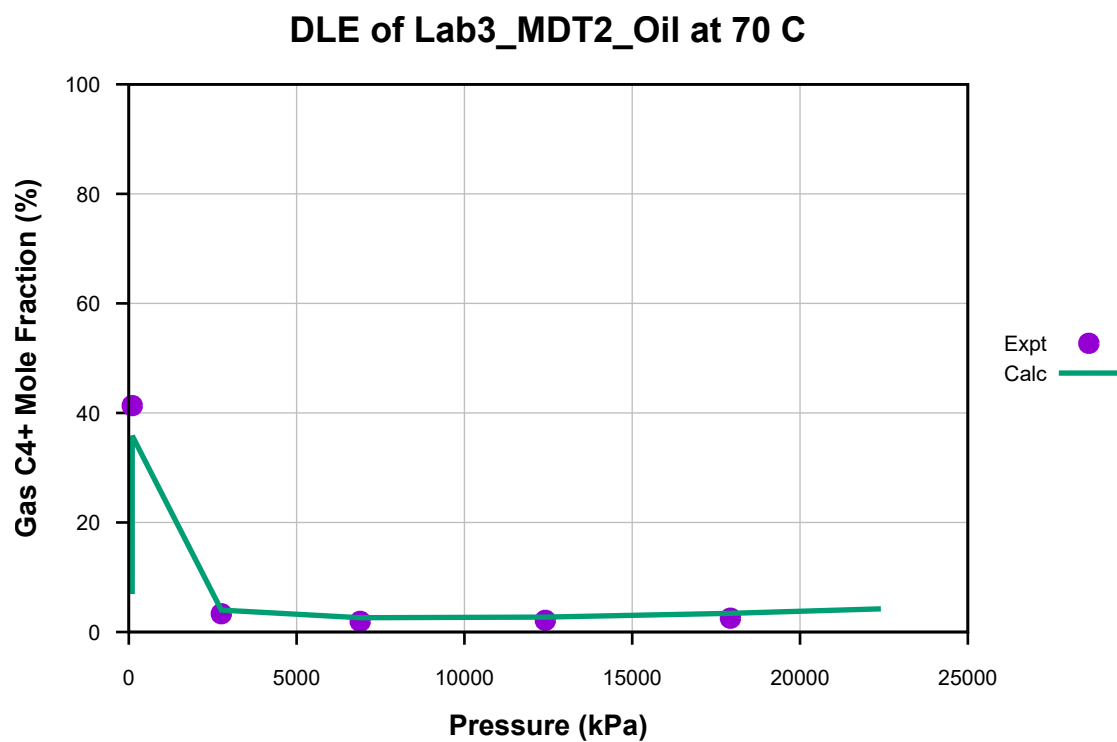


Figure 103: Gas C4+ Mole Fraction vs. Pressure for DLE of Lab3_MDT2_Oil at 70 C.

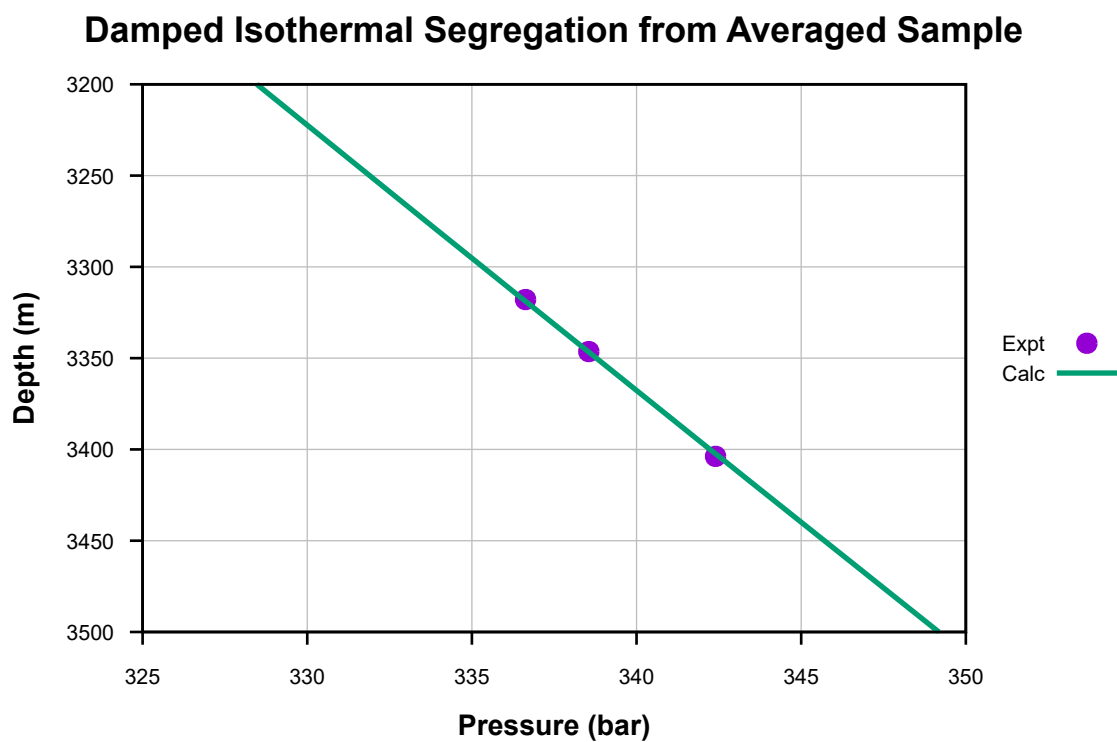


Figure 104: Depth vs. Pressure for Damped Isothermal Segregation from Averaged Sample.

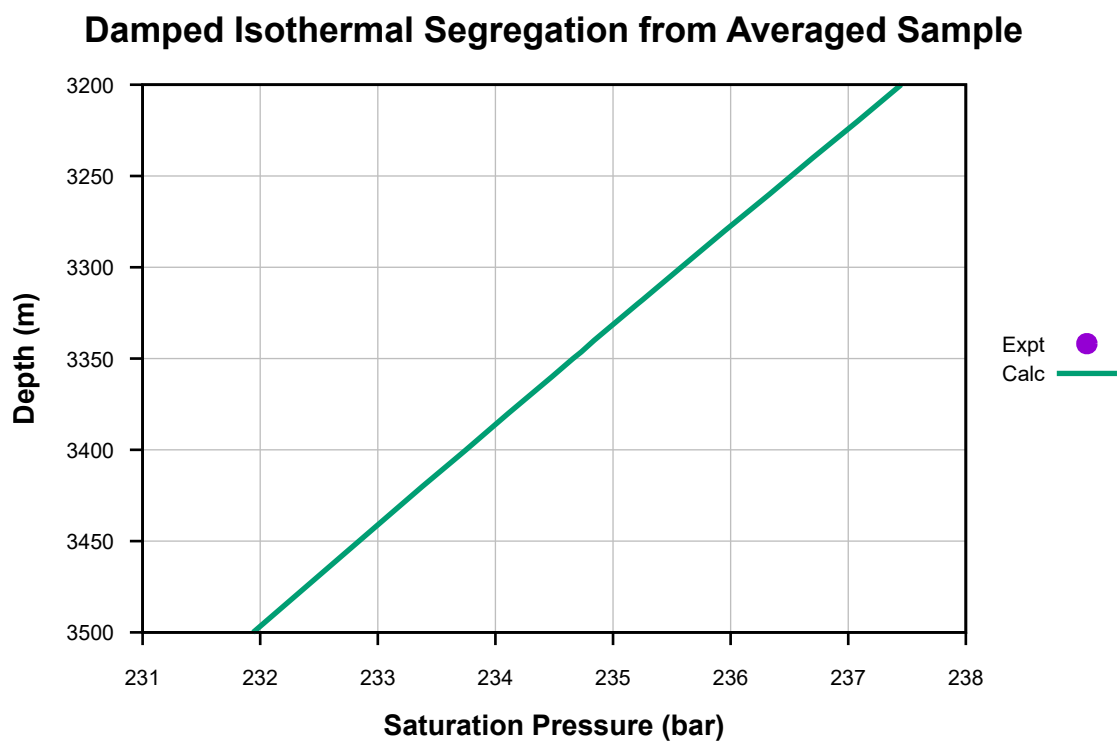


Figure 105: Depth vs. Saturation Pressure for Damped Isothermal Segregation from Averaged Sample.

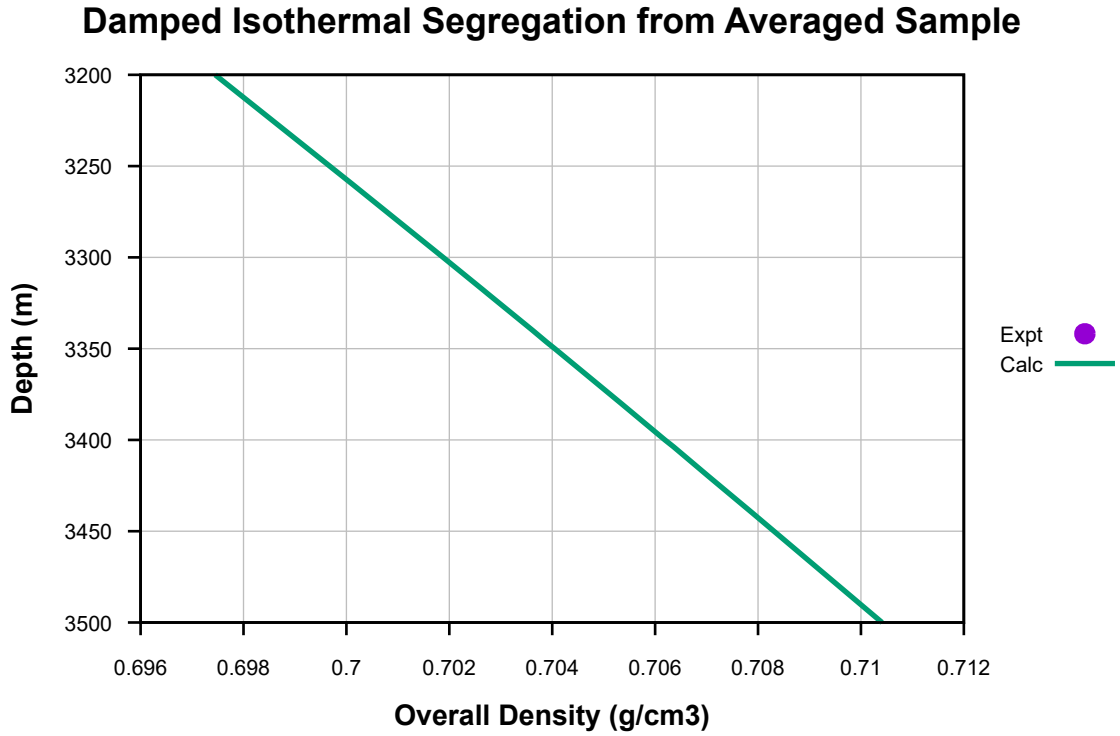


Figure 106: Depth vs. Overall Density for Damped Isothermal Segregation from Averaged Sample.

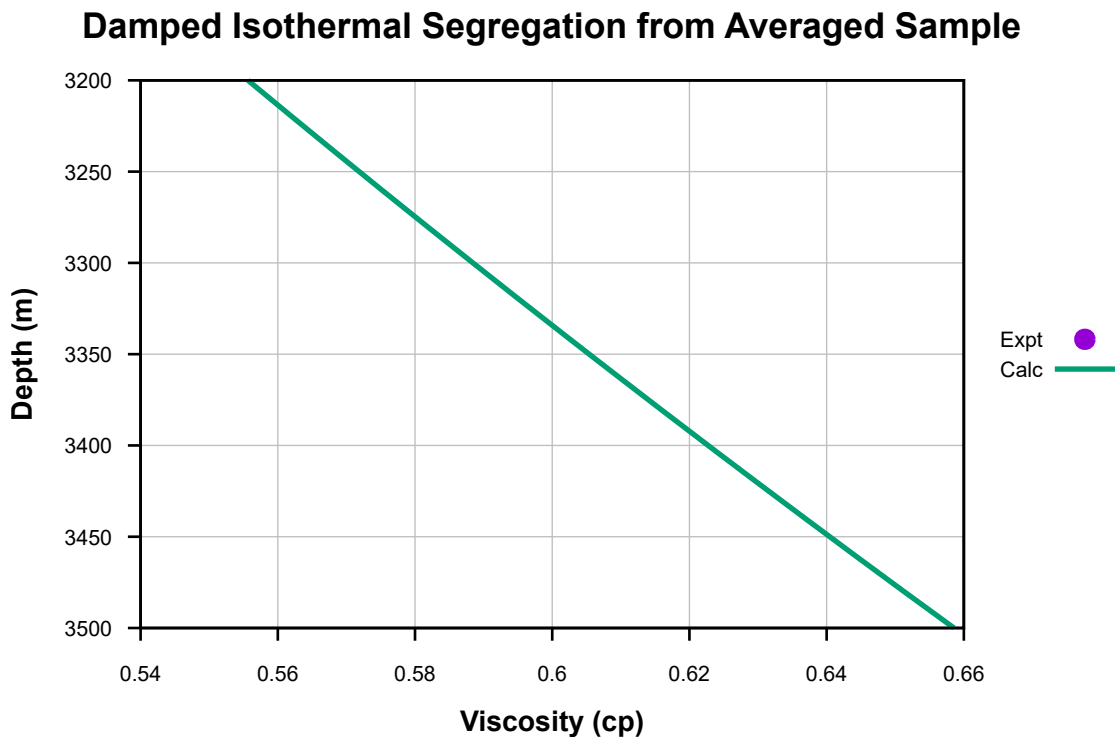


Figure 107: Depth vs. Viscosity for Damped Isothermal Segregation from Averaged Sample.

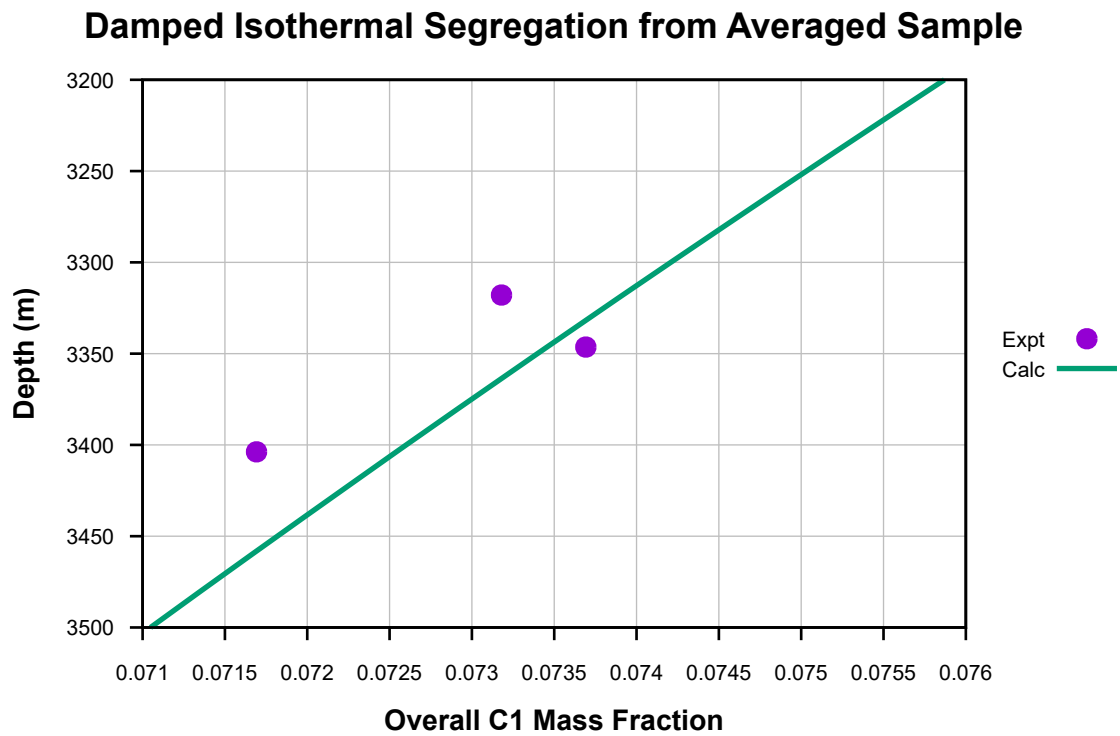


Figure 108: Depth vs. Overall C1 Mass Fraction for Damped Isothermal Segregation from Averaged Sample.

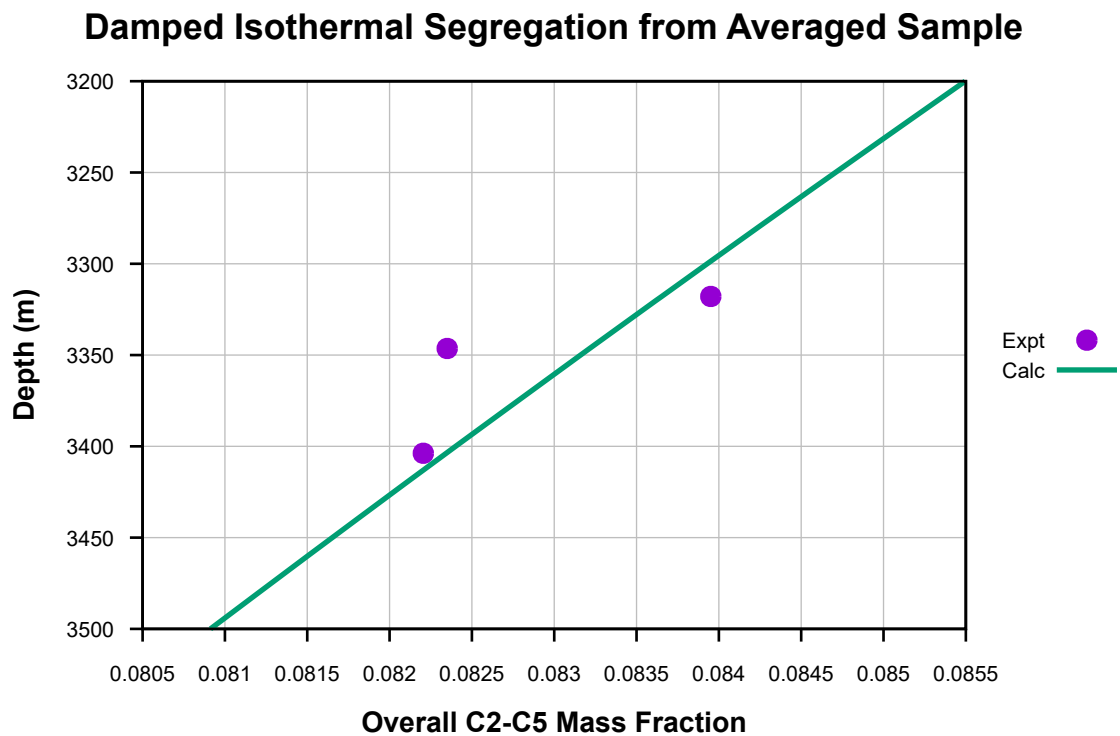


Figure 109: Depth vs. Overall C2-C5 Mass Fraction for Damped Isothermal Segregation from Averaged Sample.

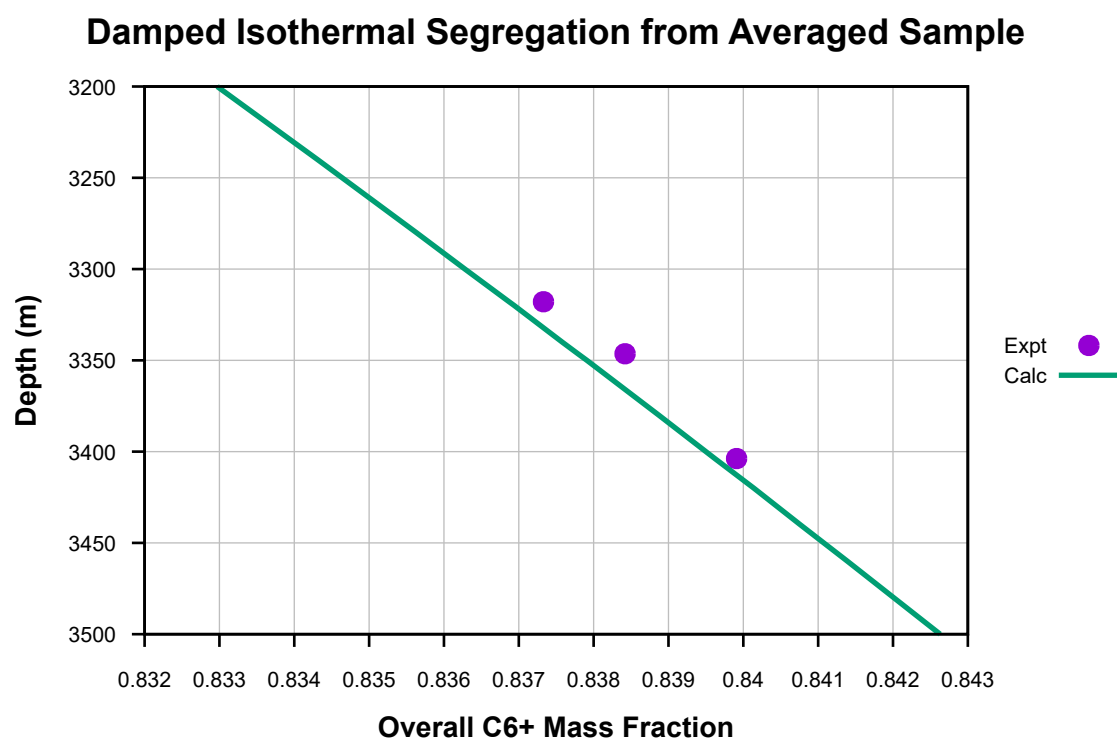


Figure 110: Depth vs. Overall C6+ Mass Fraction for Damped Isothermal Segregation from Averaged Sample.

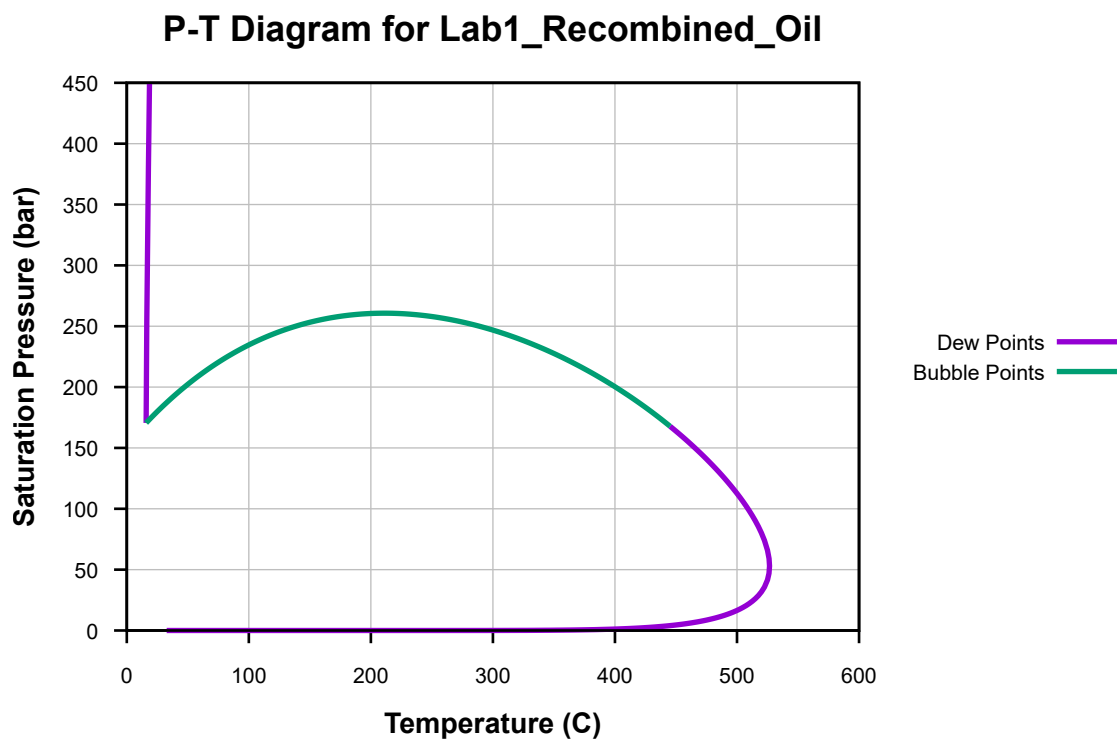


Figure 111: Saturation Pressure vs. Temperature, P-T Diagram for Lab1_Recombined_Oil.

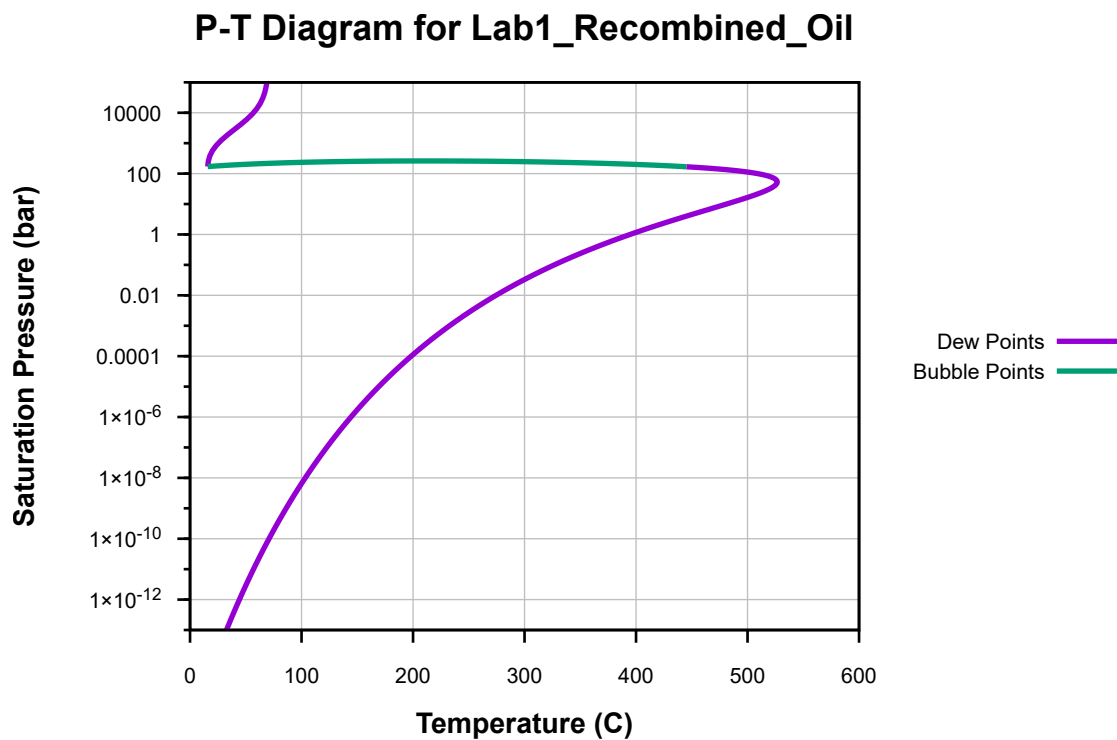


Figure 112: Log of Saturation Pressure vs. Temperature, P-T Diagram for Lab1_Recombined_Oil.

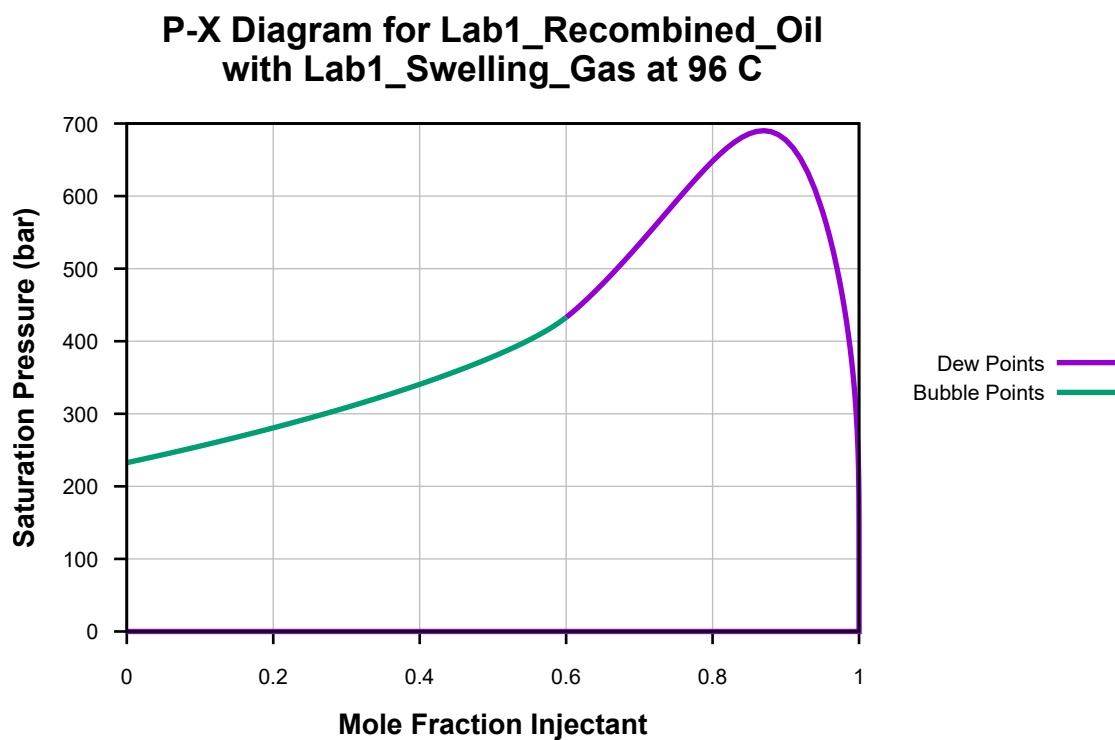


Figure 113: Saturation Pressure vs. Mole Fraction Injectant at 96 C, P-X Diagram for Lab1_Recombined_Oil, with Lab1_Swelling_Gas at 96 C .

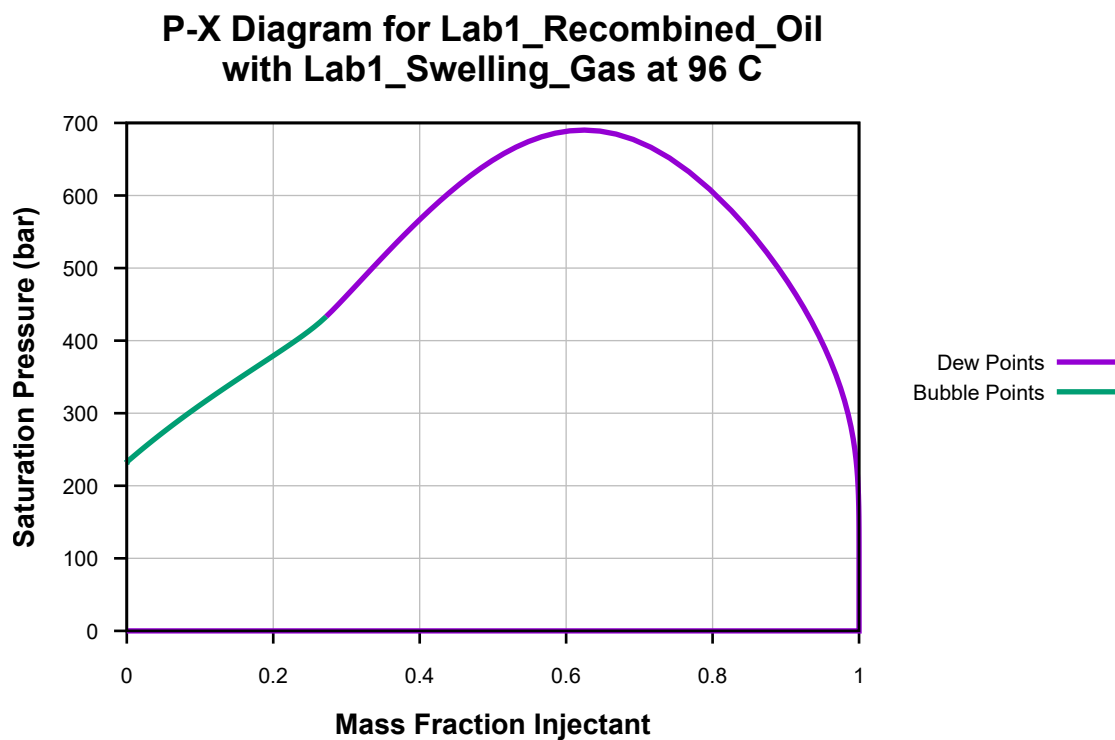


Figure 114: Saturation Pressure vs. Mass Fraction Injectant at 96 C, P-X Diagram for Lab1_Recombined_Oil, with Lab1_Swelling_Gas at 96 C .

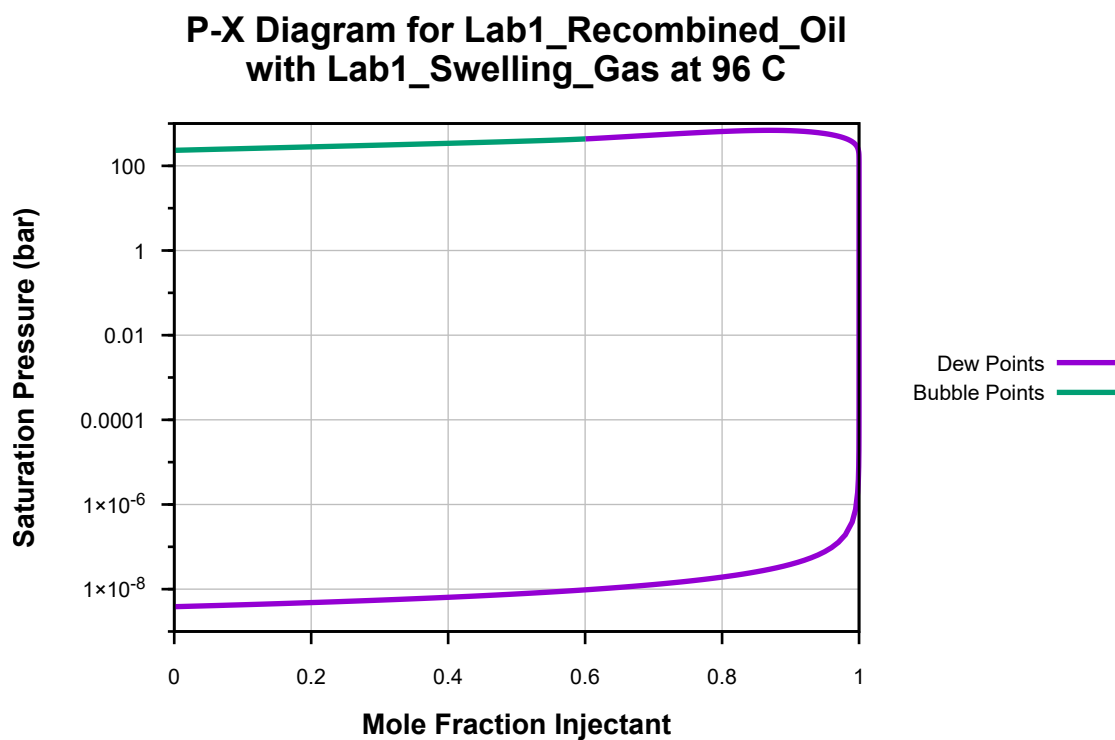


Figure 115: Log of Saturation Pressure vs. Mole Fraction Injectant at 96 C, P-X Diagram for Lab1_Recombined_Oil, with Lab1_Swelling_Gas at 96 C .

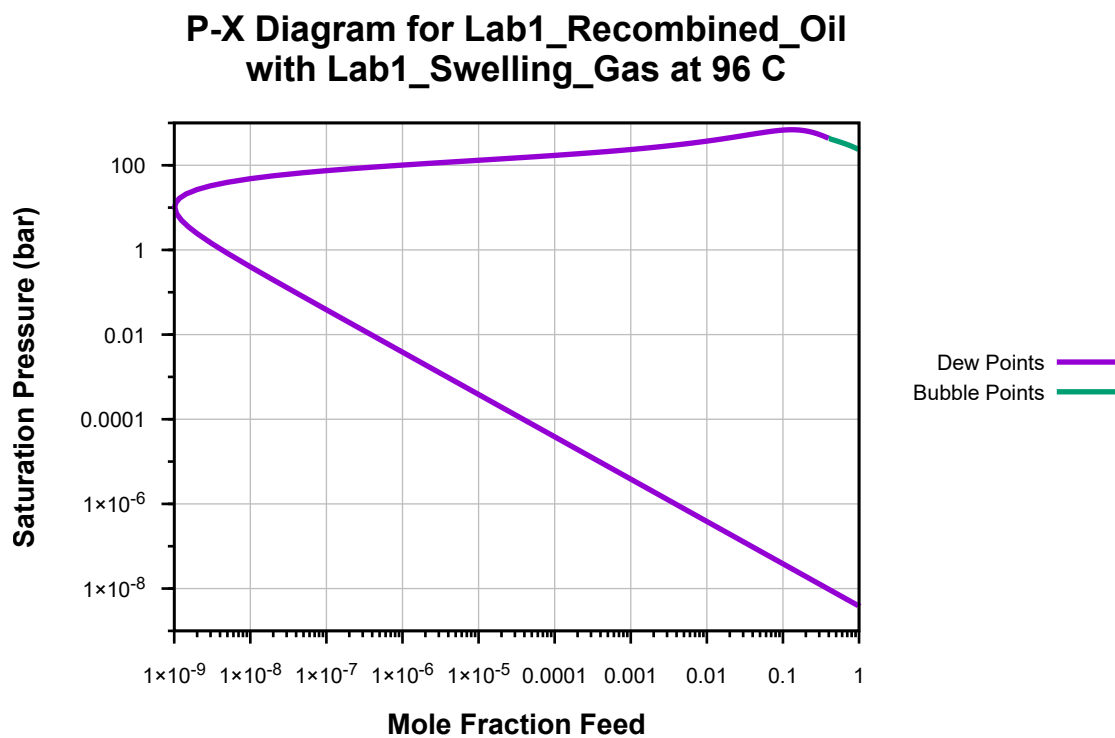


Figure 116: Log of Saturation Pressure vs. Log of Mole Fraction Feed at 96 C, P-X Diagram for Lab1_Recombined_Oil, with Lab1_Swelling_Gas at 96 C .

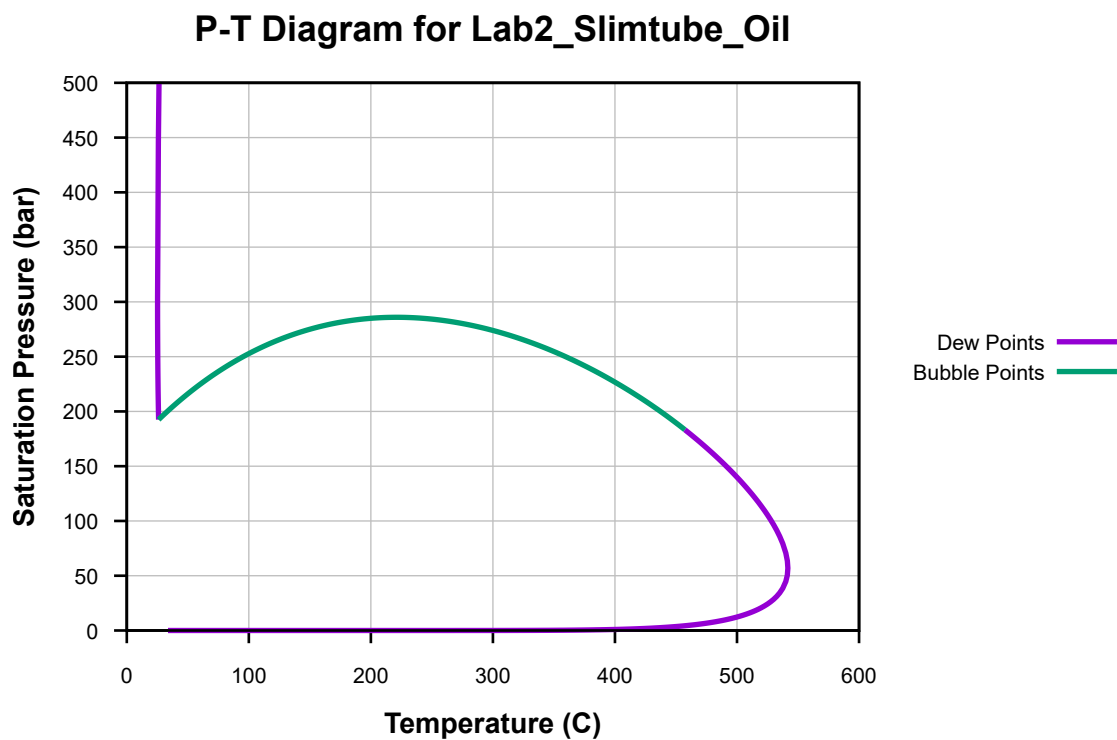


Figure 117: Saturation Pressure vs. Temperature, P-T Diagram for Lab2_Slimtube_Oil.

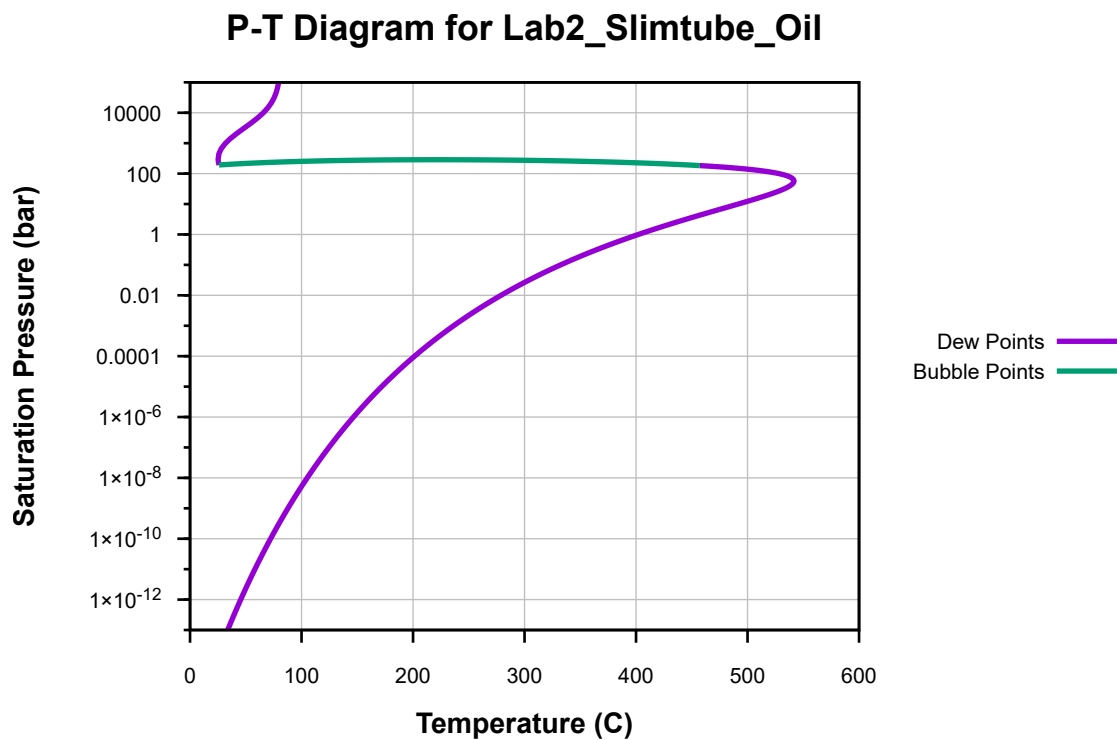


Figure 118: Log of Saturation Pressure vs. Temperature, P-T Diagram for Lab2_Slimtube_Oil.

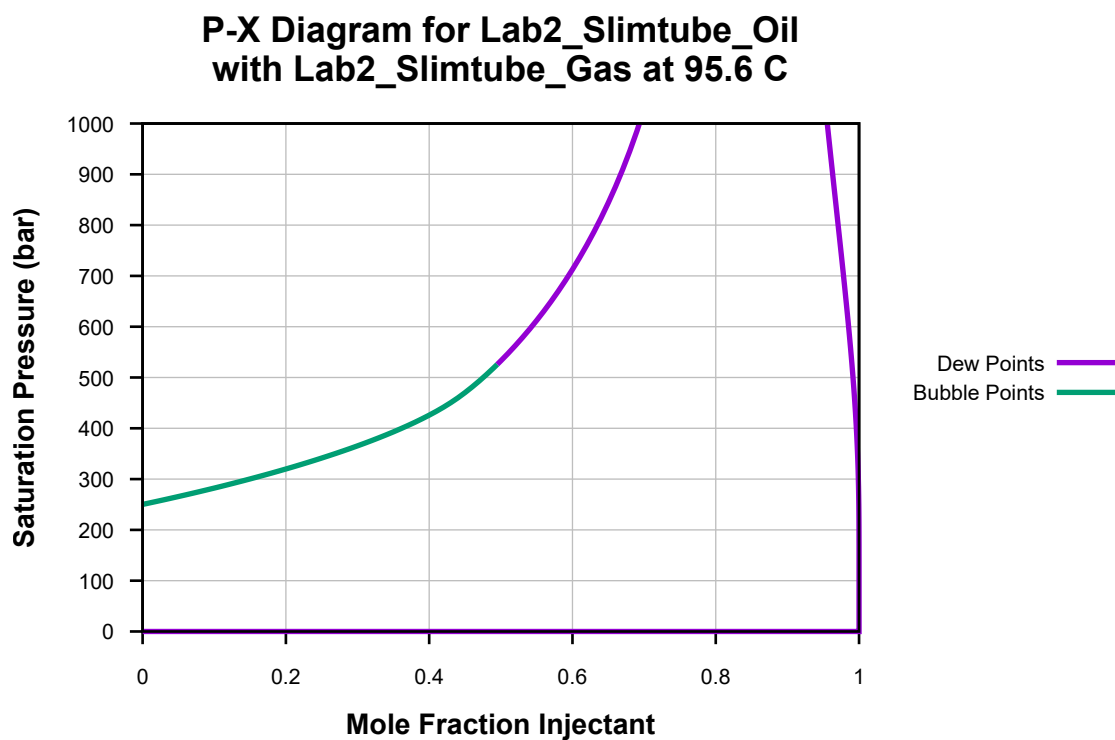


Figure 119: Saturation Pressure vs. Mole Fraction Injectant at 95.5556 C, P-X Diagram for Lab2_Slimtube_Oil, with Lab2_Slimtube_Gas at 95.6 C .

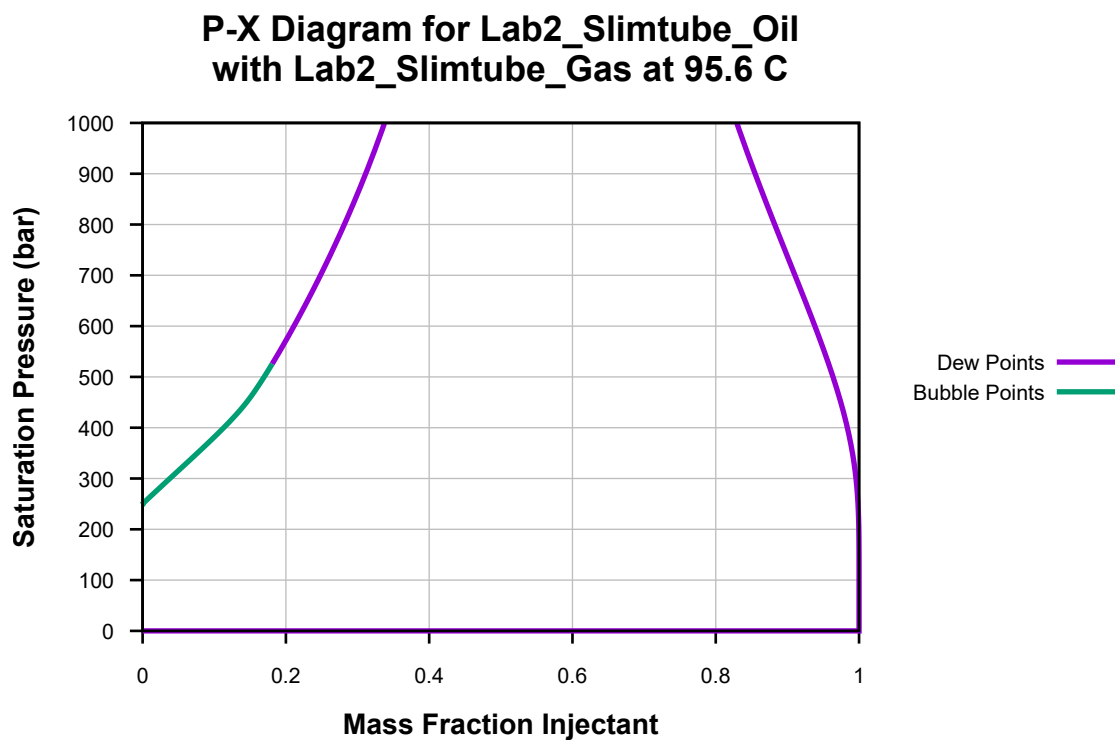


Figure 120: Saturation Pressure vs. Mass Fraction Injectant at 95.5556 C, P-X Diagram for Lab2_Slimtube_Oil, with Lab2_Slimtube_Gas at 95.6 C .

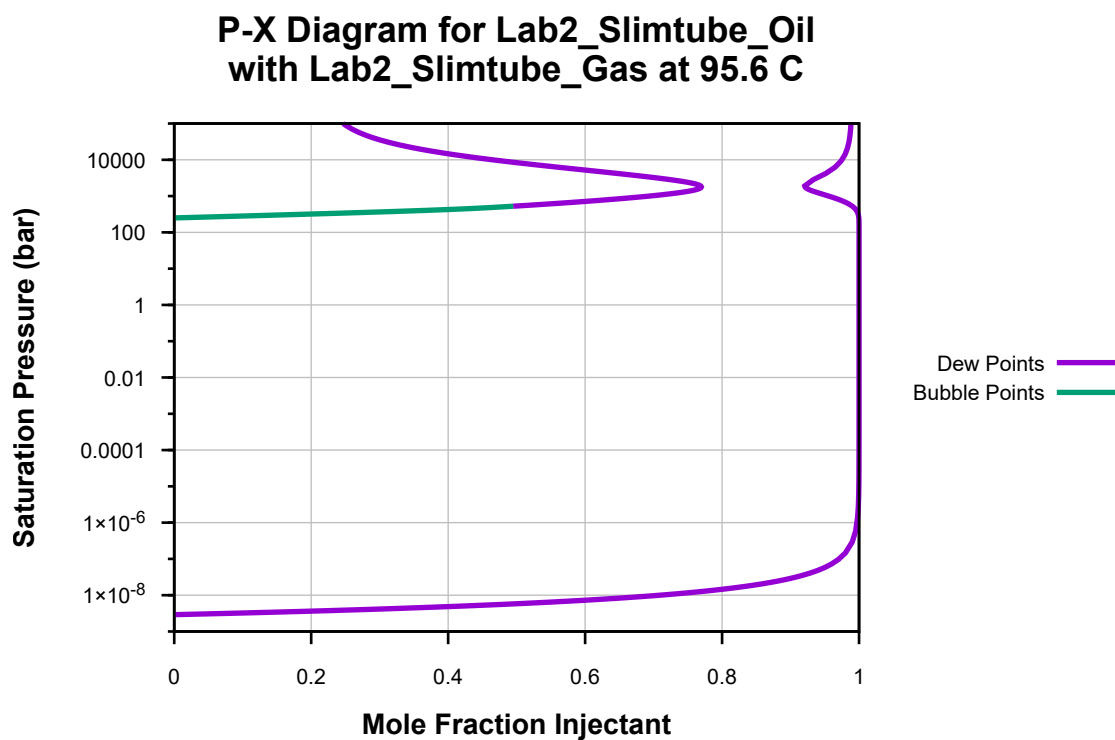


Figure 121: Log of Saturation Pressure vs. Mole Fraction Injectant at 95.5556 C, P-X Diagram for Lab2_Slimtube_Oil, with Lab2_Slimtube_Gas at 95.6 C .

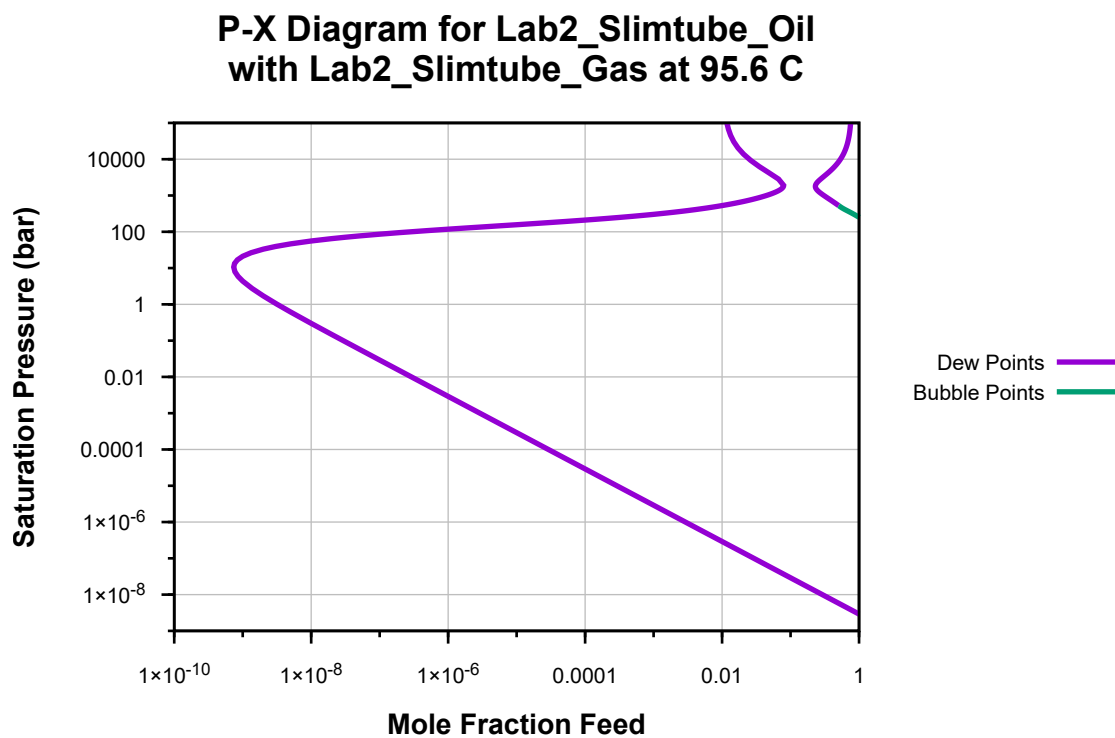


Figure 122: Log of Saturation Pressure vs. Log of Mole Fraction Feed at 95.5556 C, P-X Diagram for Lab2_Slimtube_Oil, with Lab2_Slimtube_Gas at 95.6 C .

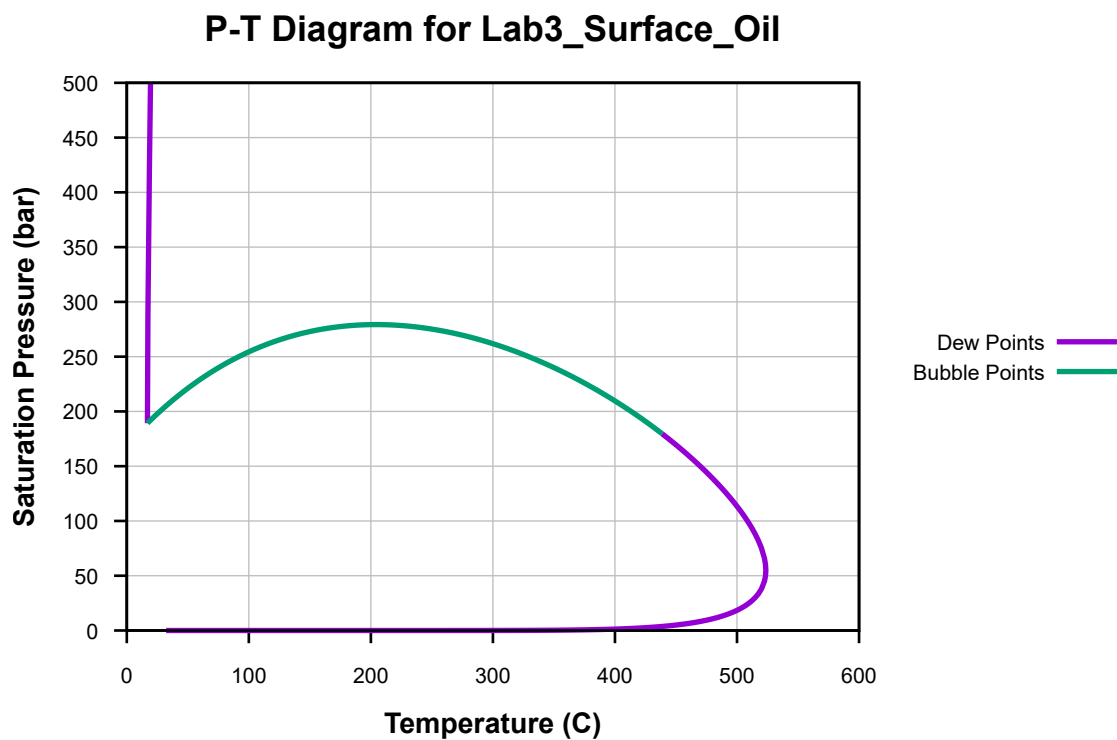


Figure 123: Saturation Pressure vs. Temperature, P-T Diagram for Lab3_Surface_Oil.

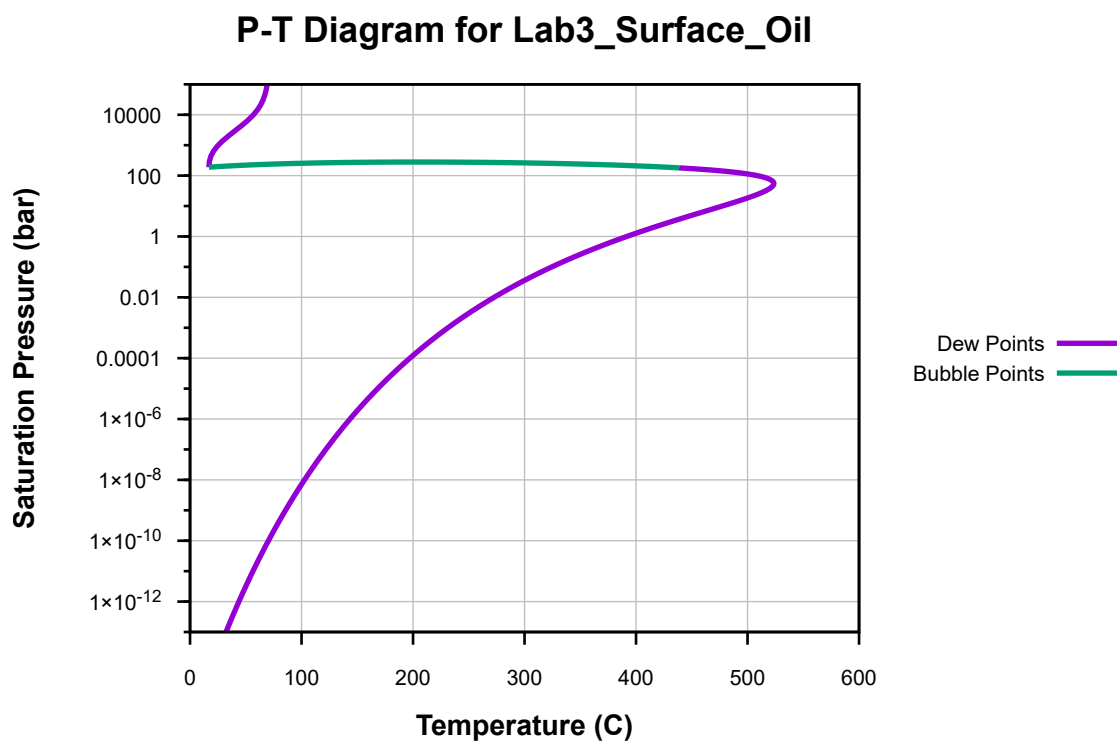


Figure 124: Log of Saturation Pressure vs. Temperature, P-T Diagram for Lab3_Surface_Oil.

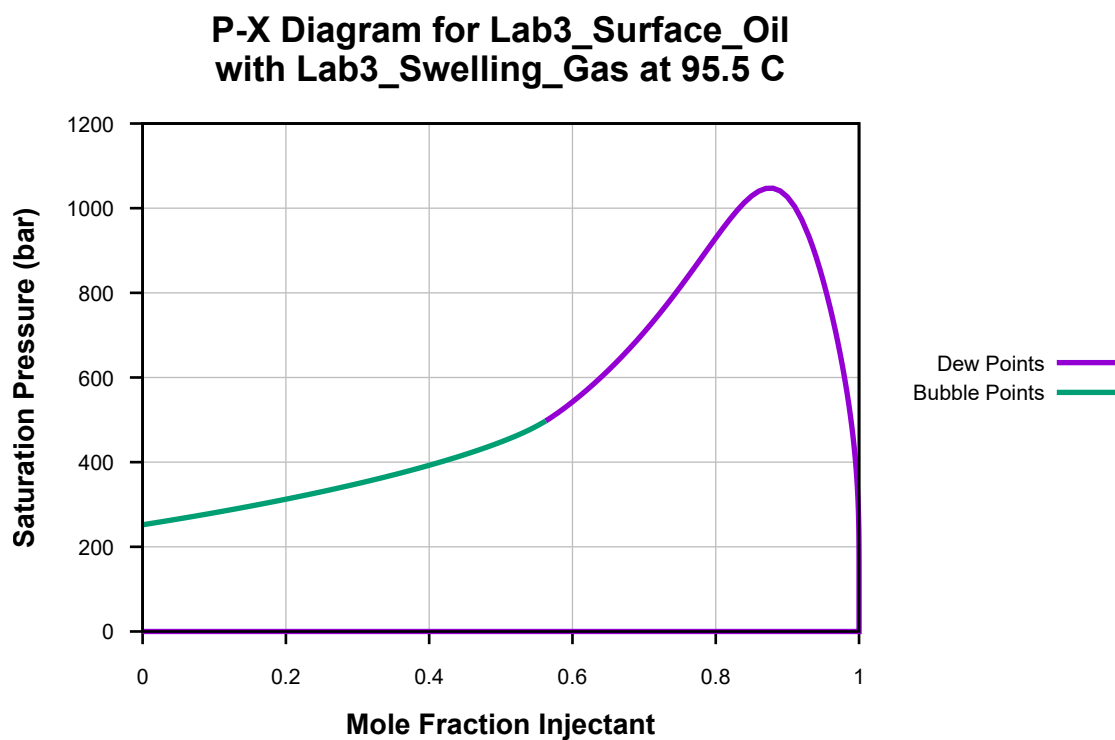


Figure 125: Saturation Pressure vs. Mole Fraction Injectant at 95.5 C, P-X Diagram for Lab3-Surface-Oil, with Lab3.Swelling_Gas at 95.5 C .

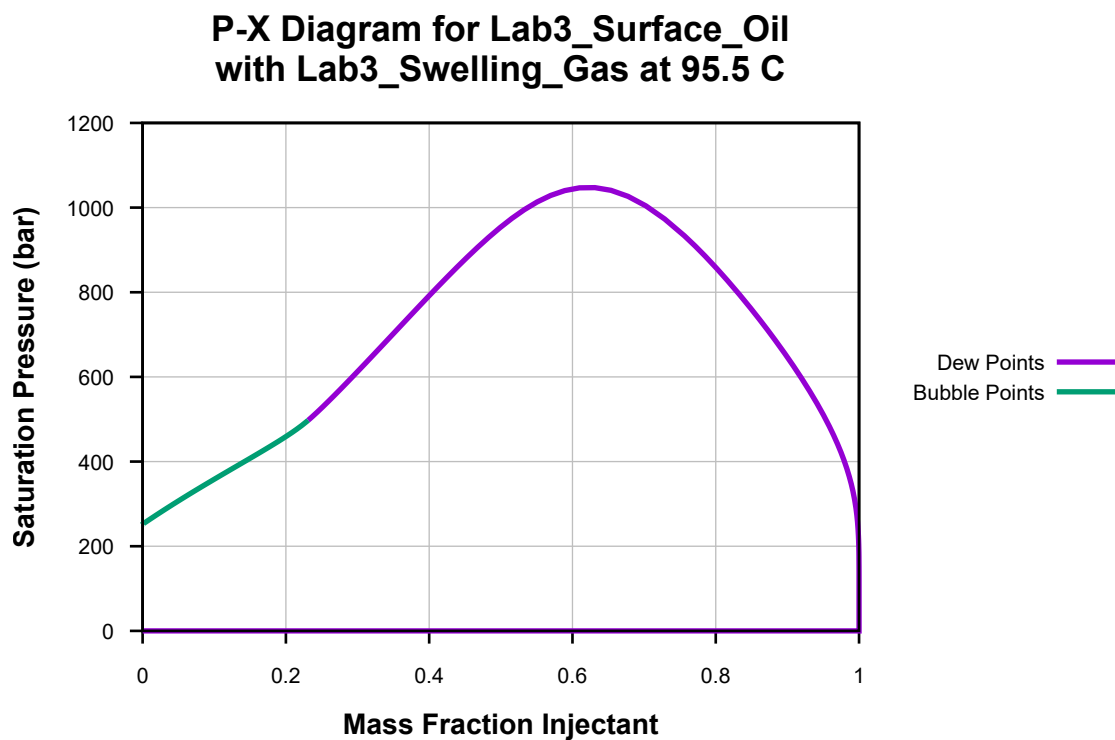


Figure 126: Saturation Pressure vs. Mass Fraction Injectant at 95.5 C, P-X Diagram for Lab3-Surface-Oil, with Lab3.Swelling_Gas at 95.5 C .

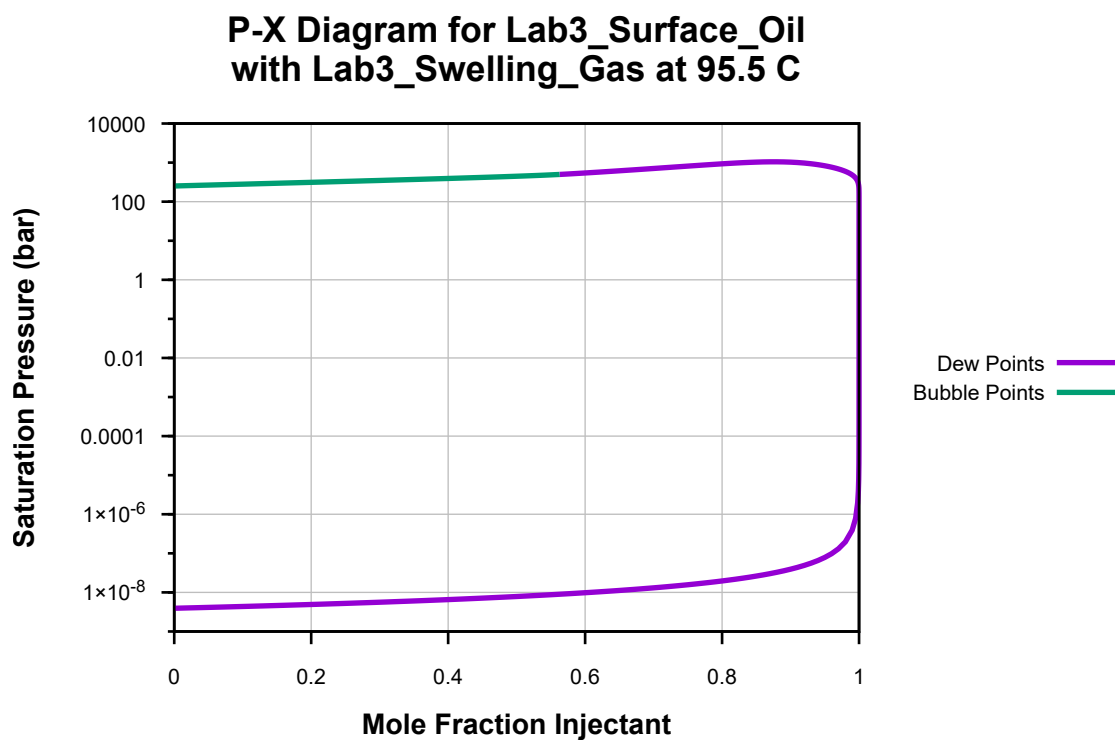


Figure 127: Log of Saturation Pressure vs. Mole Fraction Injectant at 95.5 C, P-X Diagram for Lab3_Surface_Oil, with Lab3_Swelling_Gas at 95.5 C .

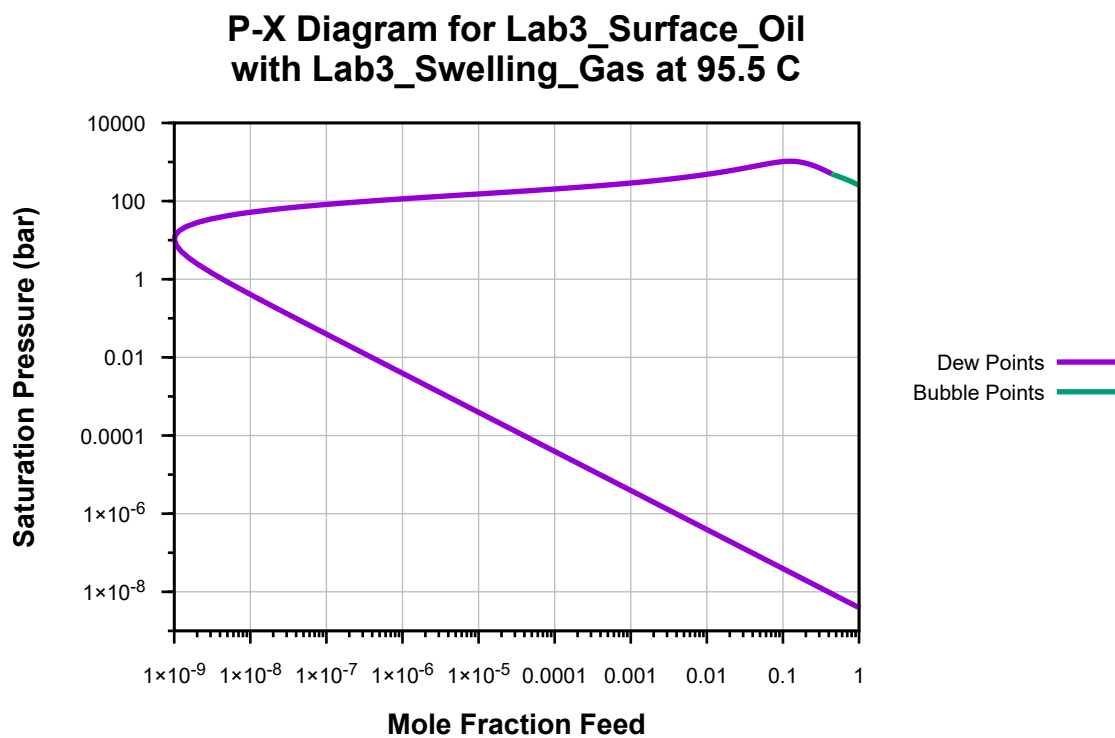


Figure 128: Log of Saturation Pressure vs. Log of Mole Fraction Feed at 95.5 C, P-X Diagram for Lab3_Surface_Oil, with Lab3_Swelling_Gas at 95.5 C .

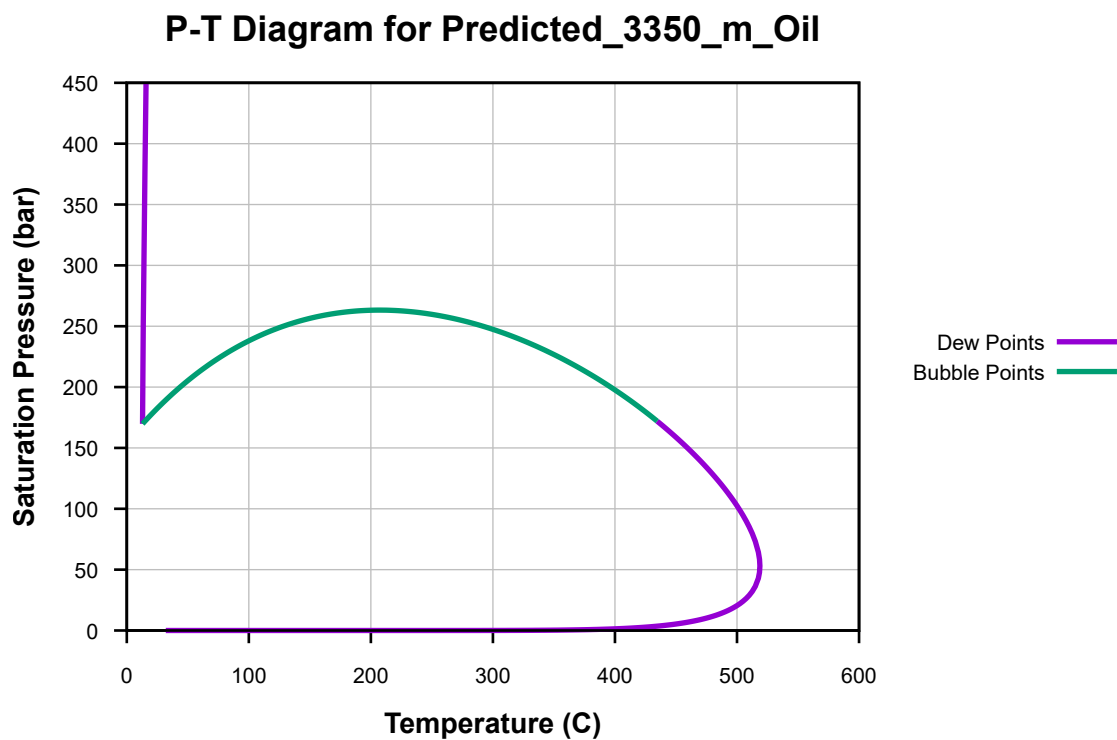


Figure 129: Saturation Pressure vs. Temperature, P-T Diagram for Predicted_3350_m_Oil.

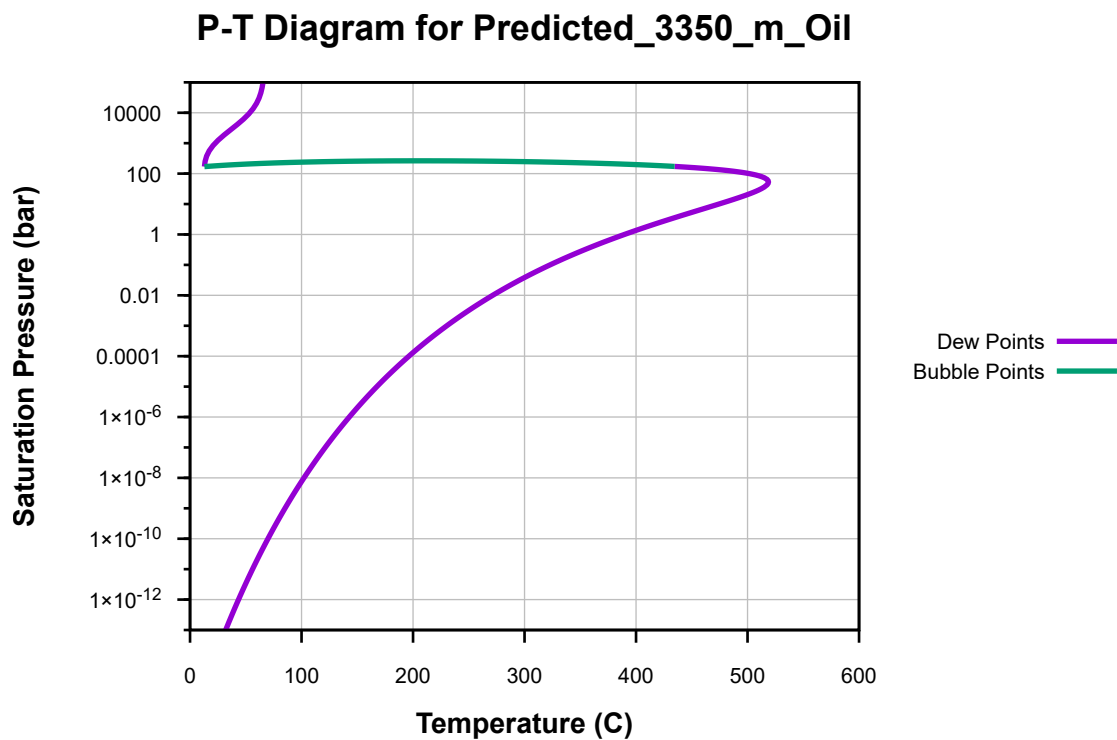


Figure 130: Log of Saturation Pressure vs. Temperature, P-T Diagram for Predicted_3350_m_Oil.

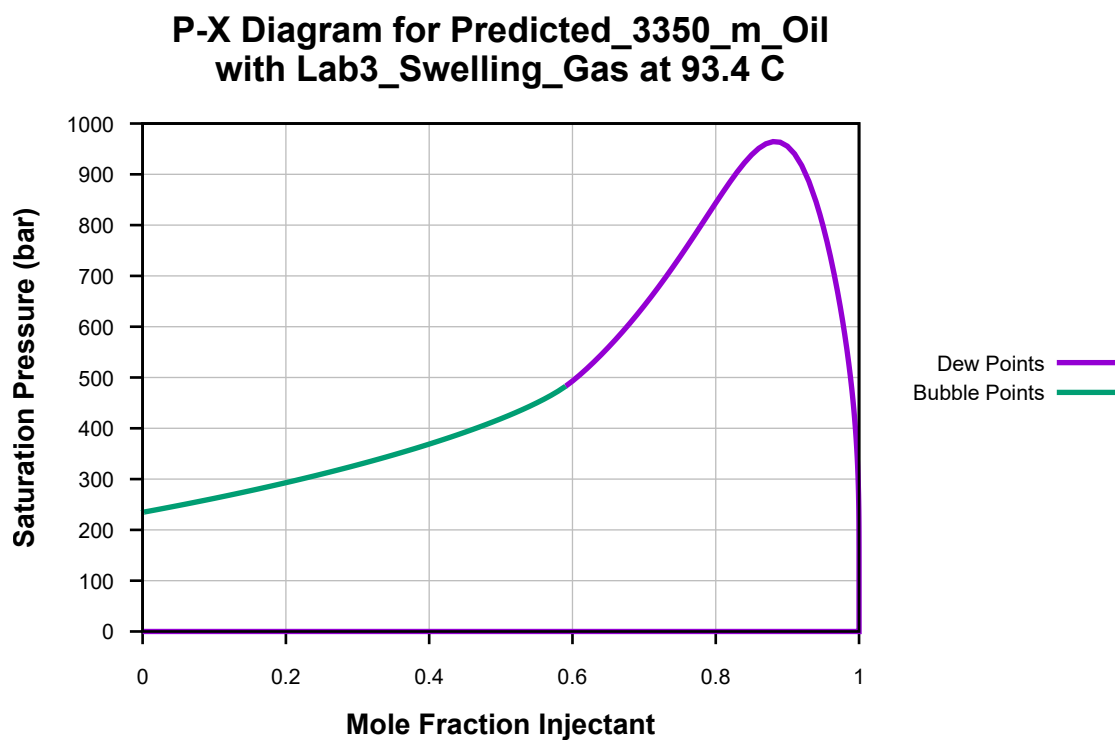


Figure 131: Saturation Pressure vs. Mole Fraction Injectant at 93.4 C, P-X Diagram for Predicted_3350_m_Oil, with Lab3_Swelling_Gas at 93.4 C .

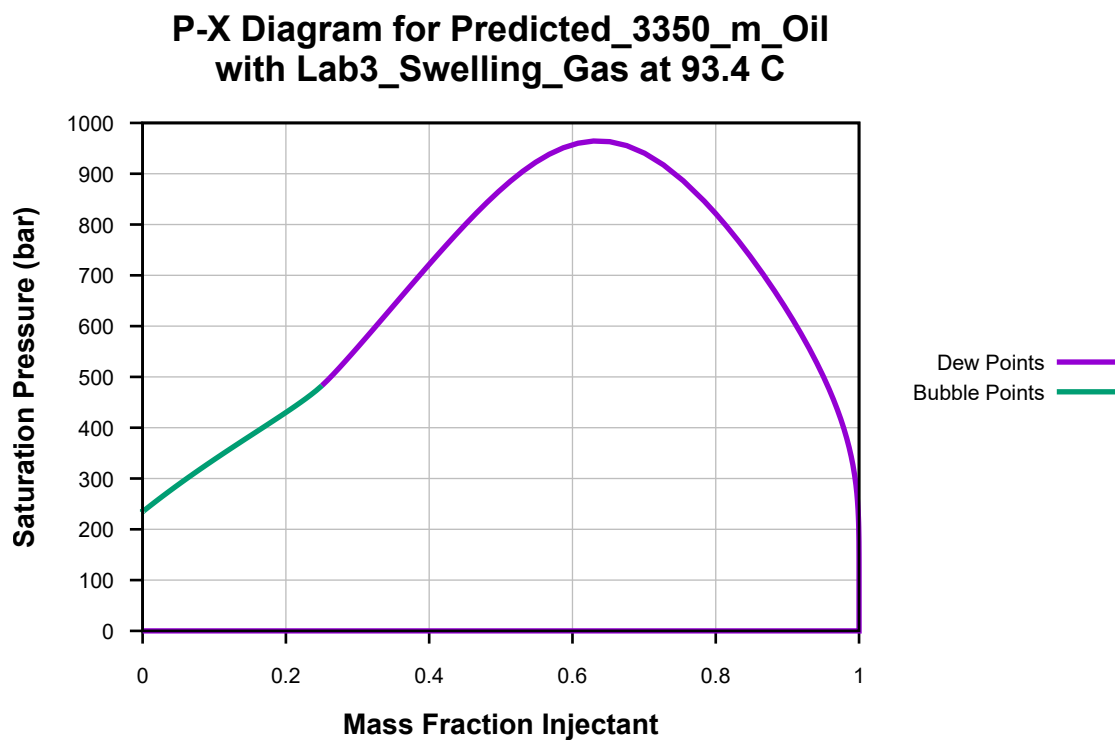


Figure 132: Saturation Pressure vs. Mass Fraction Injectant at 93.4 C, P-X Diagram for Predicted_3350_m_Oil, with Lab3_Swelling_Gas at 93.4 C .

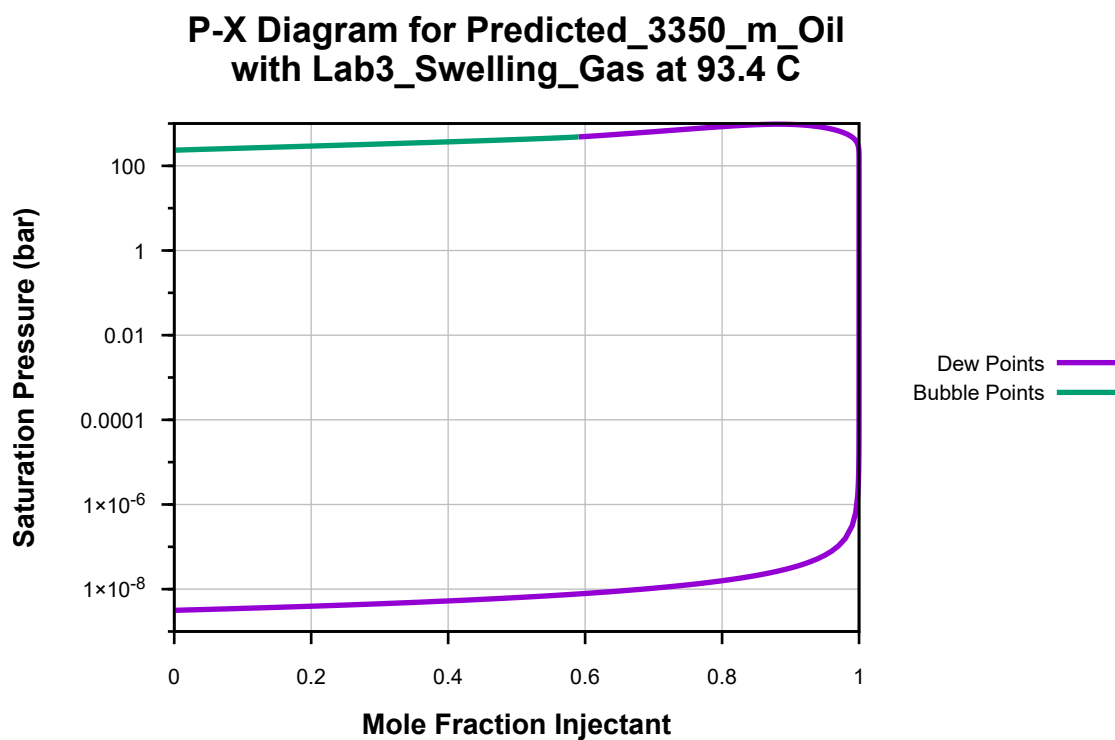


Figure 133: Log of Saturation Pressure vs. Mole Fraction Injectant at 93.4 C, P-X Diagram for Predicted_3350_m_Oil, with Lab3_Swelling_Gas at 93.4 C .

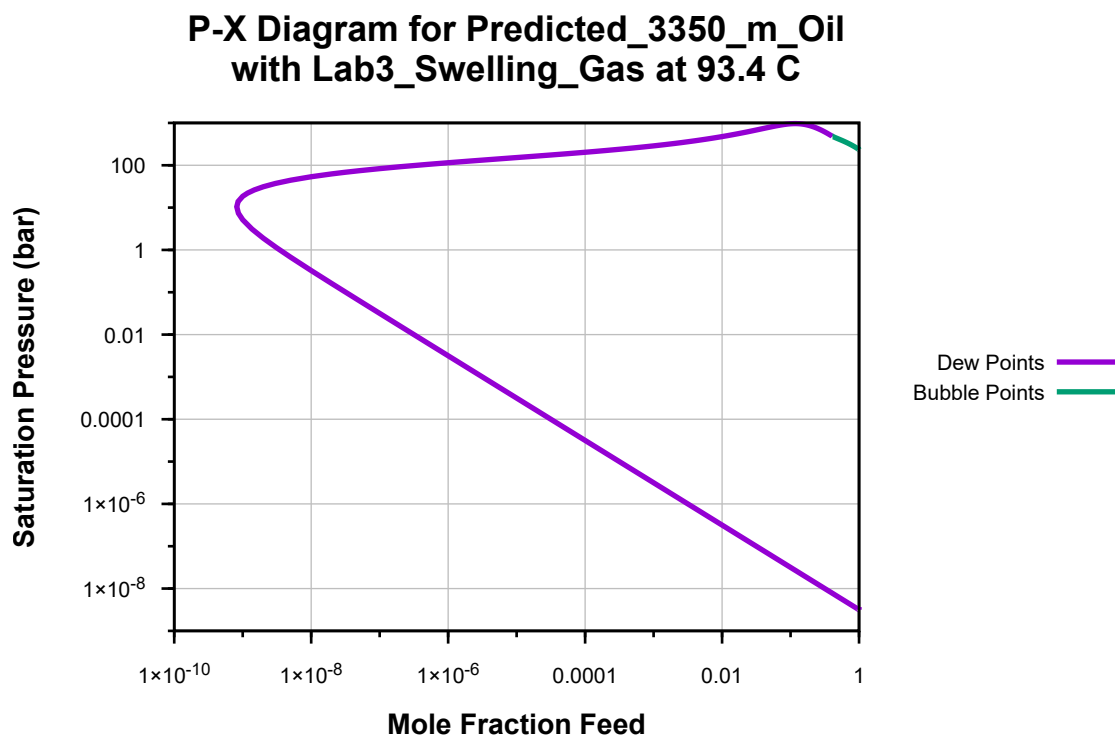


Figure 134: Log of Saturation Pressure vs. Log of Mole Fraction Feed at 93.4 C, P-X Diagram for Predicted_3350_m_Oil, with Lab3_Swelling_Gas at 93.4 C .

Black Oil Tables from Predicted_3350_m_Oil at 93.5 C Using Three-Stage Separation Process

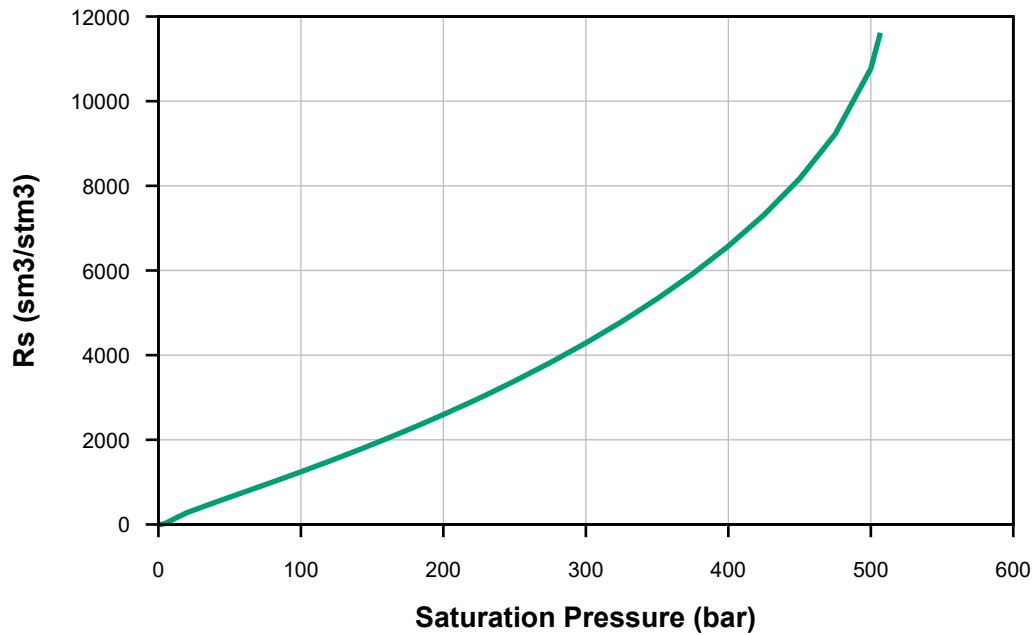


Figure 135: R_s vs. Saturation Pressure, Black Oil Tables from Predicted_3350_m_Oil at 93.5 C, Using Three-Stage Separation Process.

Black Oil Tables from Predicted_3350_m_Oil at 93.5 C Using Three-Stage Separation Process

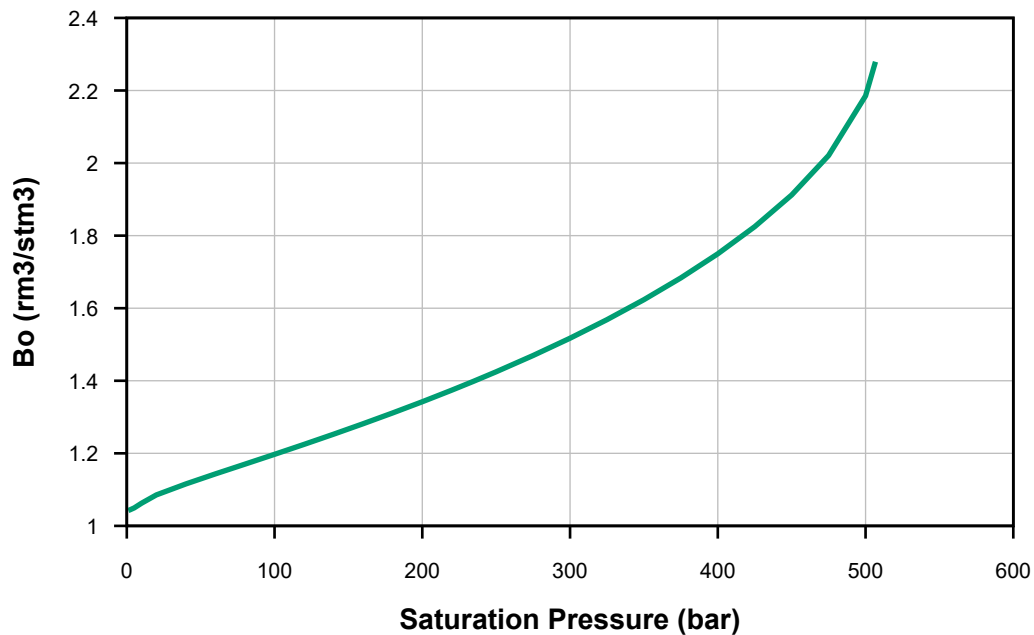


Figure 136: B_o vs. Saturation Pressure, Black Oil Tables from Predicted_3350_m_Oil at 93.5 C, Using Three-Stage Separation Process.

Black Oil Tables from Predicted_3350_m_Oil at 93.5 C Using Three-Stage Separation Process

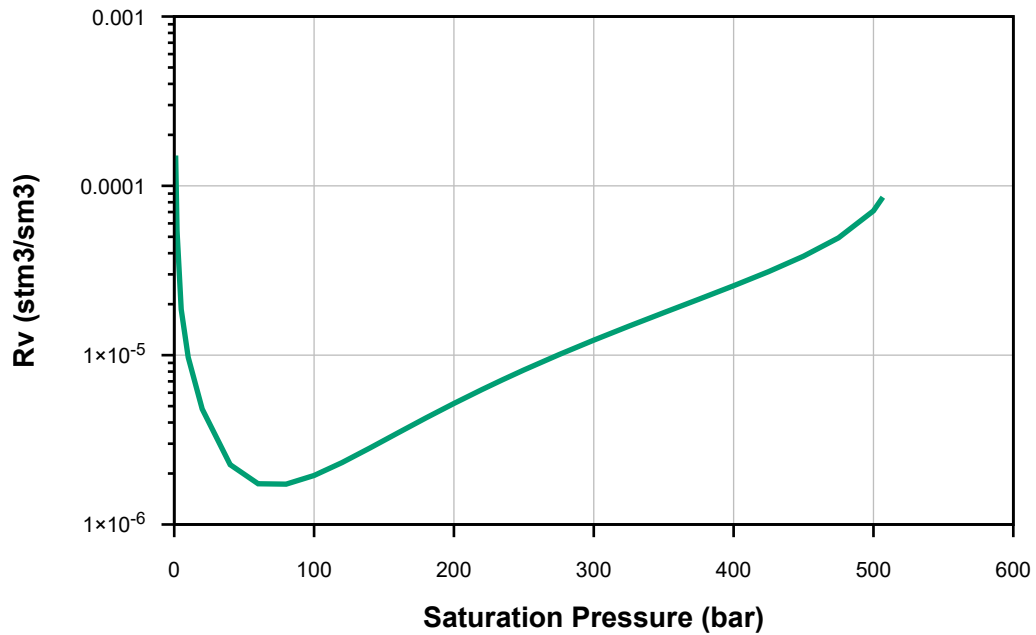


Figure 137: Rv vs. Saturation Pressure, Black Oil Tables from Predicted_3350_m_Oil at 93.5 C, Using Three-Stage Separation Process.

Black Oil Tables from Predicted_3350_m_Oil at 93.5 C Using Three-Stage Separation Process

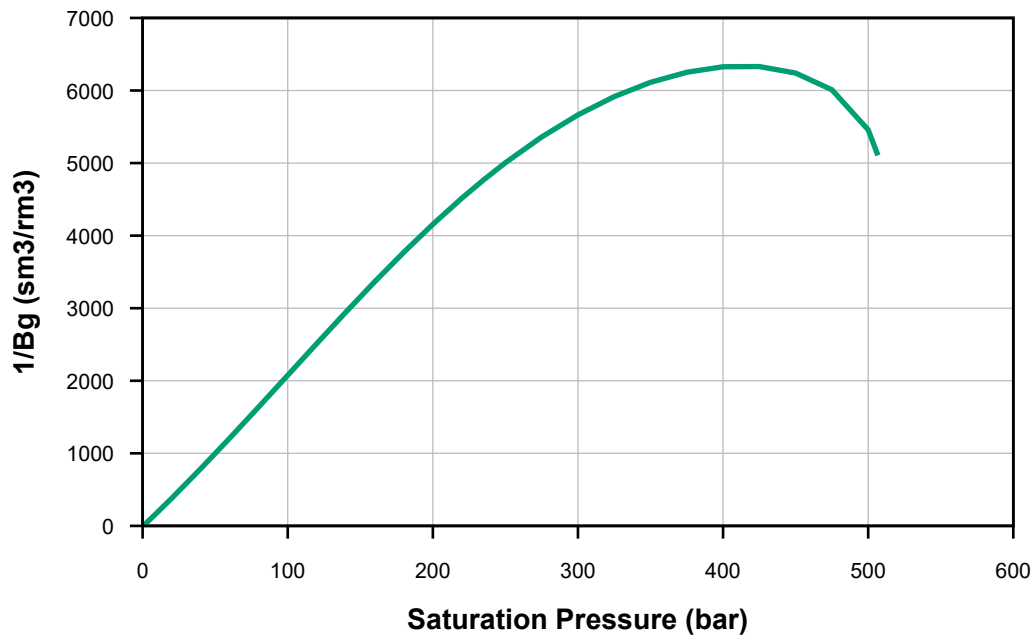


Figure 138: 1/Bg vs. Saturation Pressure, Black Oil Tables from Predicted_3350_m_Oil at 93.5 C, Using Three-Stage Separation Process.

Black Oil Tables from Predicted_3350_m_Oil at 93.5 C Using Three-Stage Separation Process

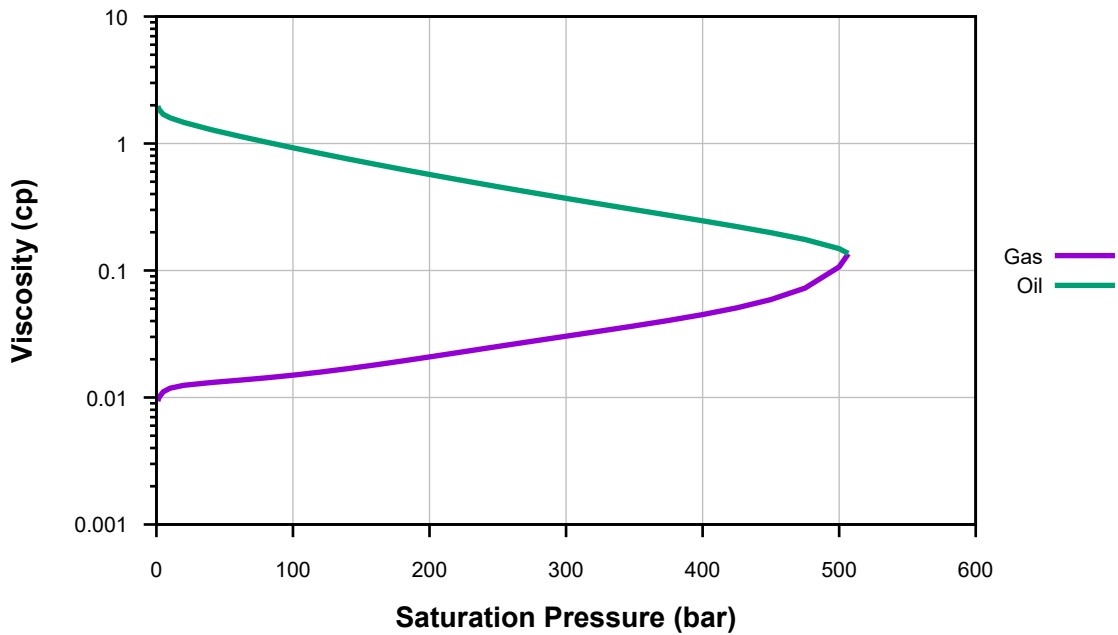


Figure 139: Viscosity vs. Saturation Pressure, Black Oil Tables from Predicted_3350_m_Oil at 93.5 C, Using Three-Stage Separation Process.

Black Oil Tables from Predicted_3350_m_Oil at 93.5 C Using Three-Stage Separation Process

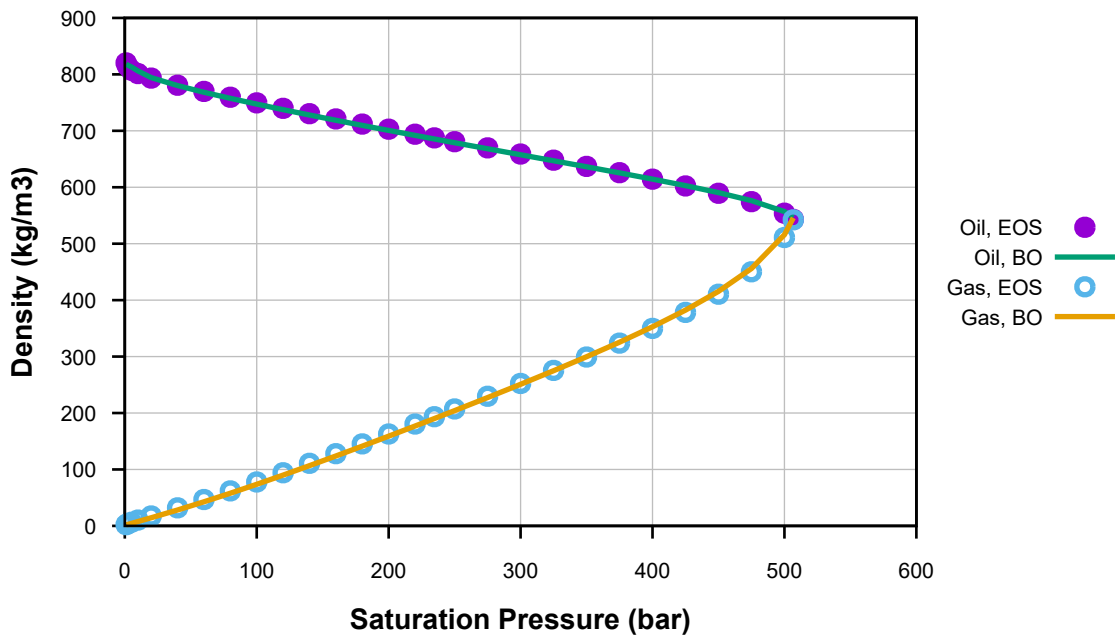


Figure 140: Density vs. Saturation Pressure, Black Oil Tables from Predicted_3350_m_Oil at 93.5 C, Using Three-Stage Separation Process.

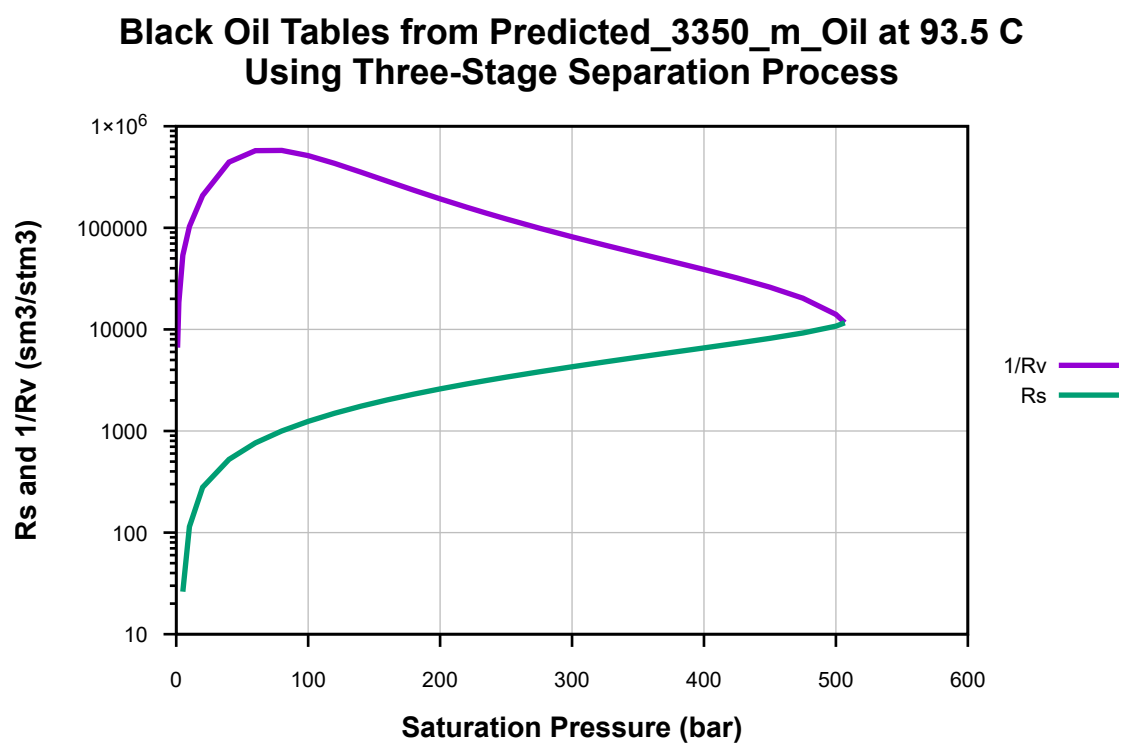


Figure 141: R_s and $1/R_v$ vs. Saturation Pressure, Black Oil Tables from Predicted_3350_m_Oil at 93.5 C, Using Three-Stage Separation Process.