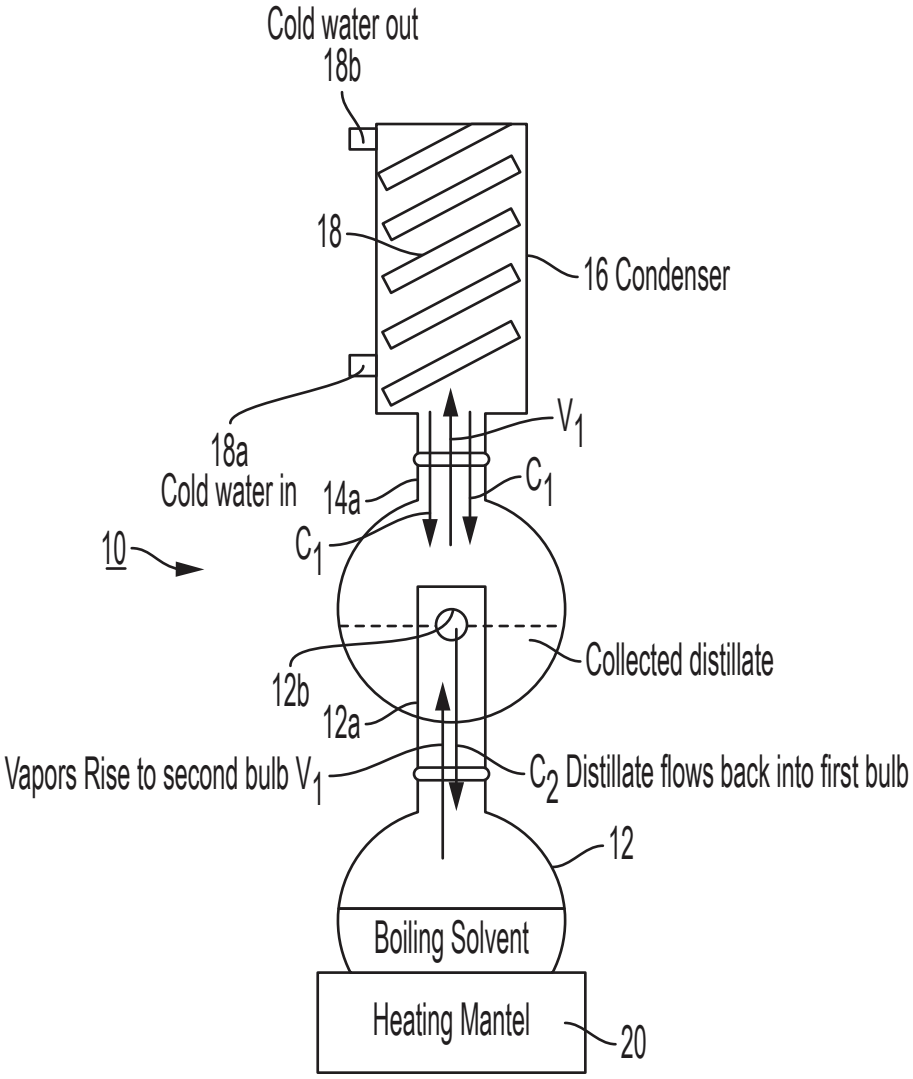
FIG. 1


Cold water out
18b
18
16 Condenser
18a
Cold water in
14a
V_1
C_1
C_1
10
Collected distillate
12b
12a
Vapors Rise to second bulb V_1
C_2 Distillate flows back into first bulb
12
Boiling Solvent
Heating Mantel
20

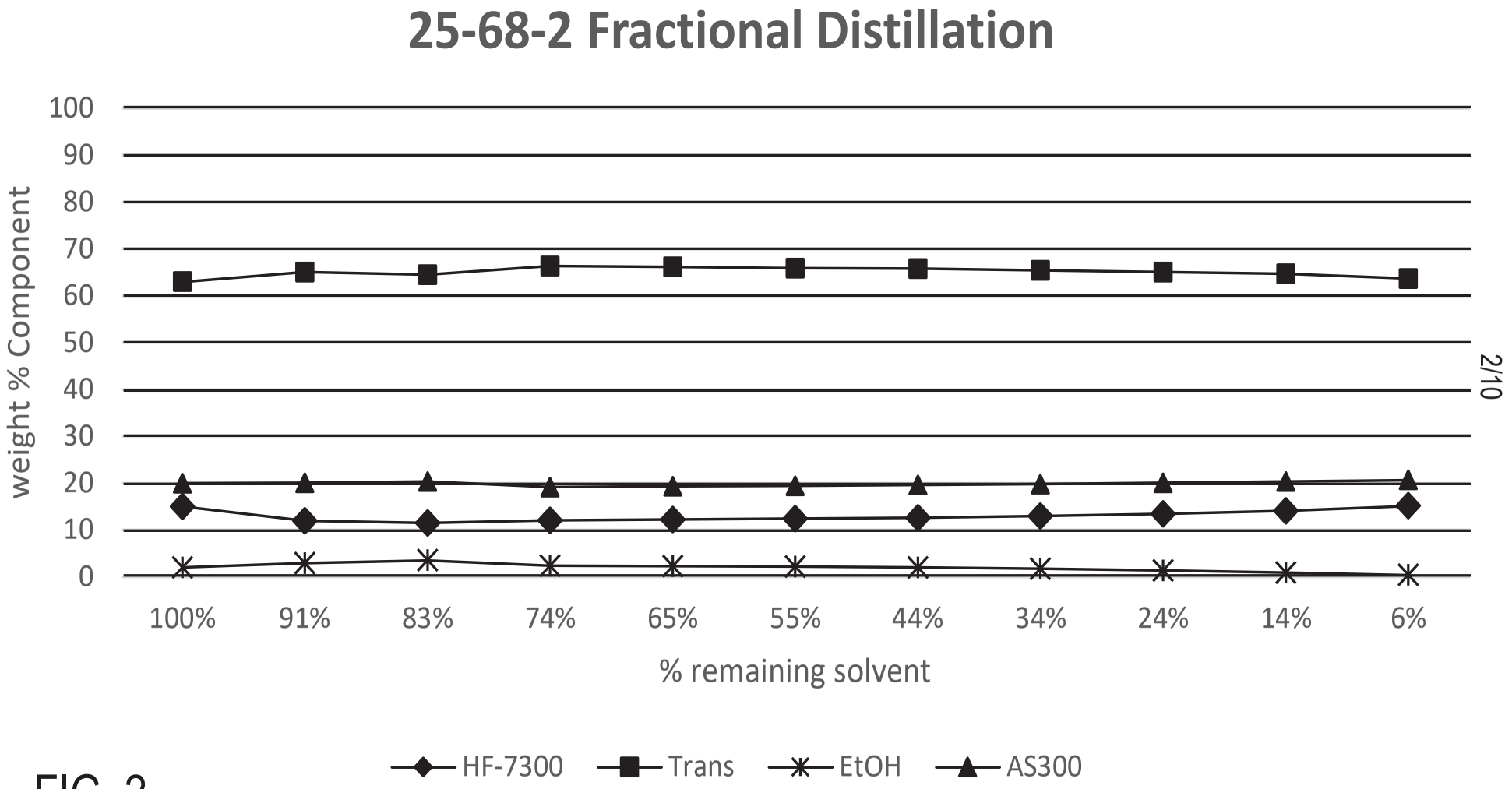

25-68-2 Fractional Distillation
100
90
80
70
60
50
40
30
20
10
0
weight % Component
100%
91%
83%
74%
65%
55%
44%
34%
24%
14%
6%
% remaining solvent
HF-7300
Trans
EtOH
AS300
2/10

FIG. 2

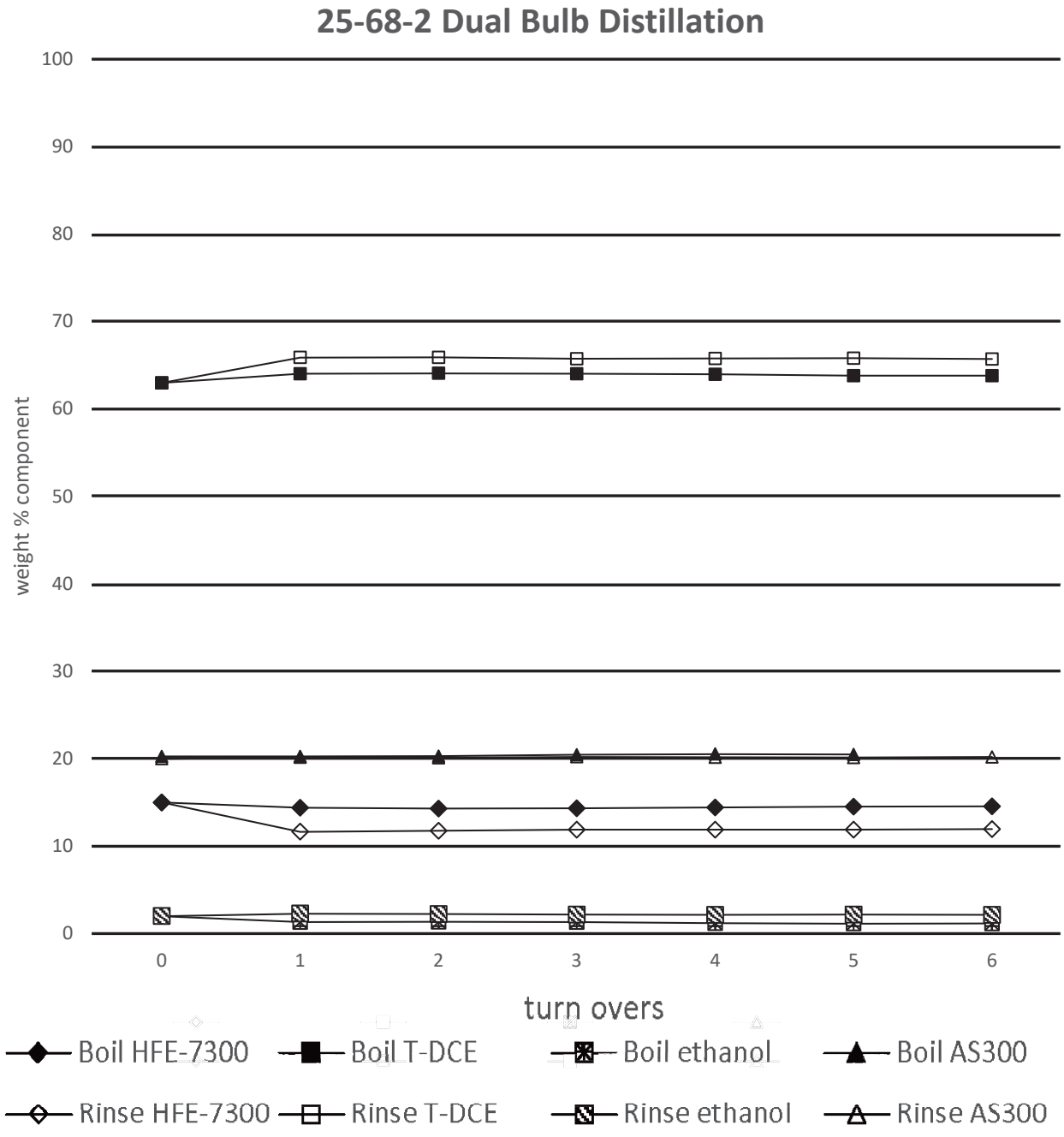

25-68-2 Dual Bulb Distillation
100
90
80
70
60
50
40
30
20
10
0
weight % component
0
1
2
3
4
5
6
turn overs
Boil HFE-7300
Boil T-DCE
Boil ethanol
Boil AS300
Rinse HFE-7300
Rinse T-DCE
Rinse ethanol
Rinse AS300

FIG. 3

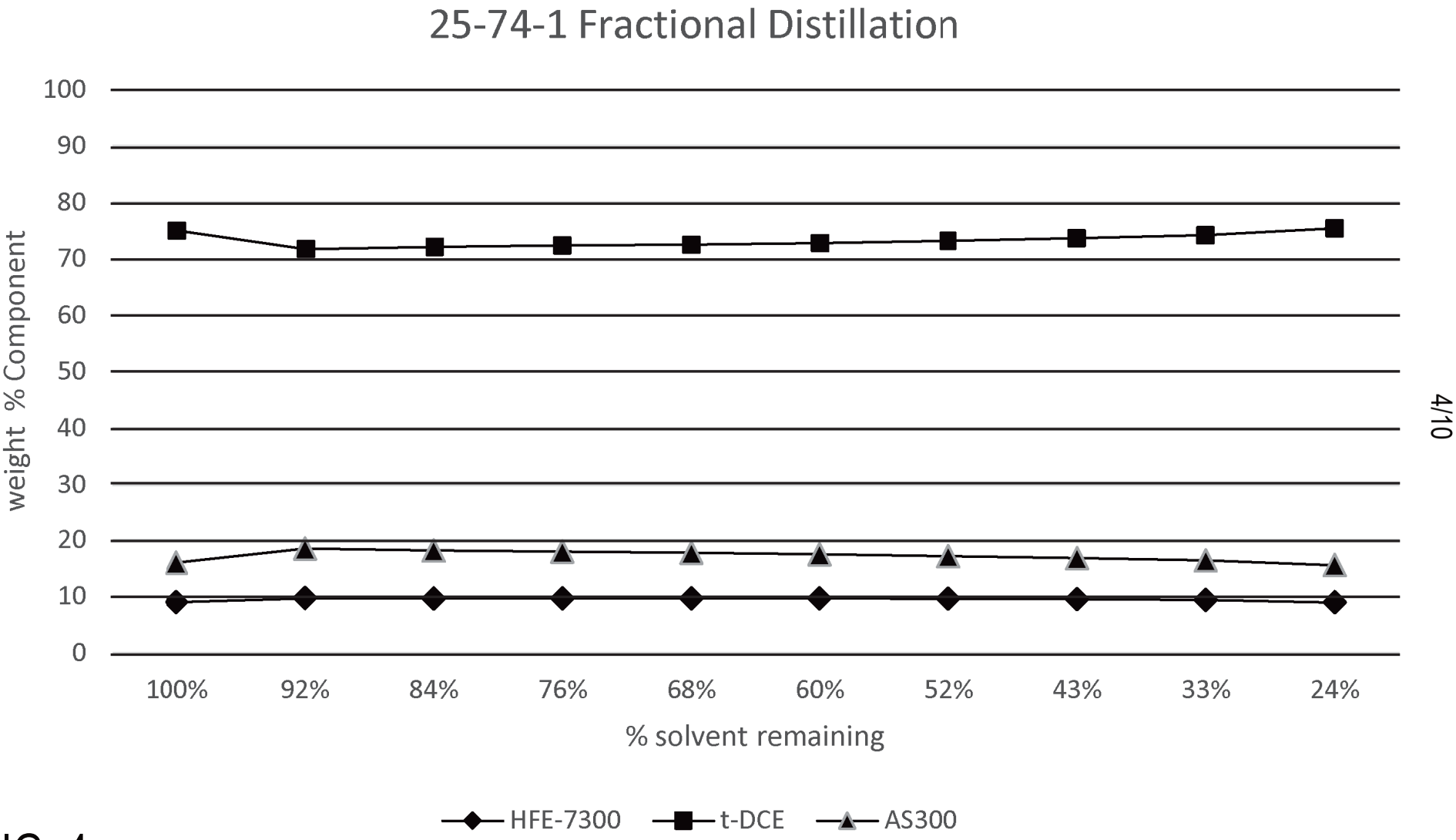

25-74-1 Fractional Distillation
100
90
80
70
60
50
40
30
20
10
0
weight % Component
100%
92%
84%
76%
68%
60%
52%
43%
33%
24%
% solvent remaining
HFE-7300
t-DCE
AS300

FIG. 4

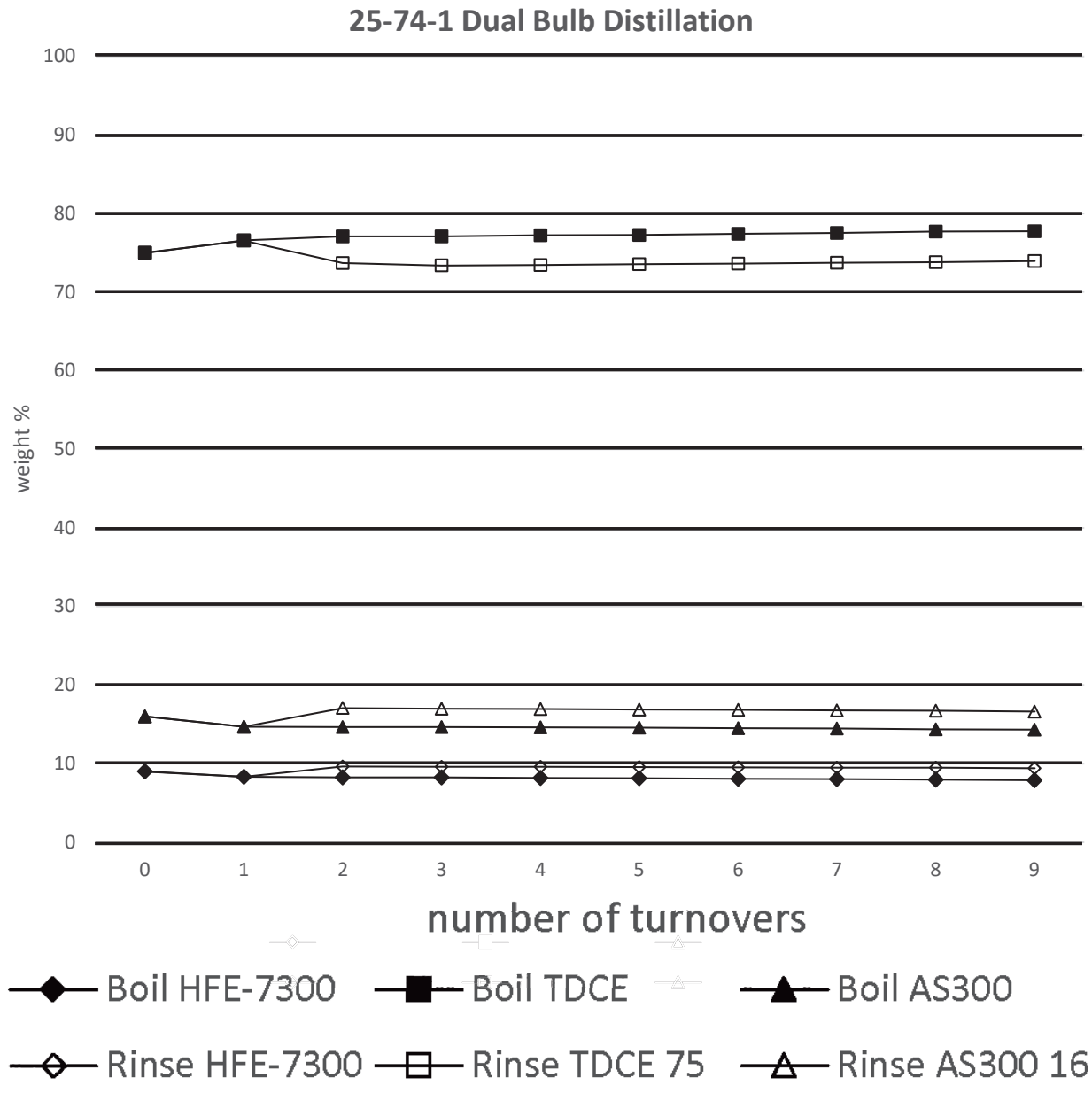

25-74-1 Dual Bulb Distillation
100
90
80
70
60
50
40
30
20
10
0
weight %
0
1
2
3
4
5
6
7
8
9
number of turnovers
Boil HFE-7300
Boil TDCE
Boil AS300
Rinse HFE-7300
Rinse TDCE 75
Rinse AS300 16

FIG. 5

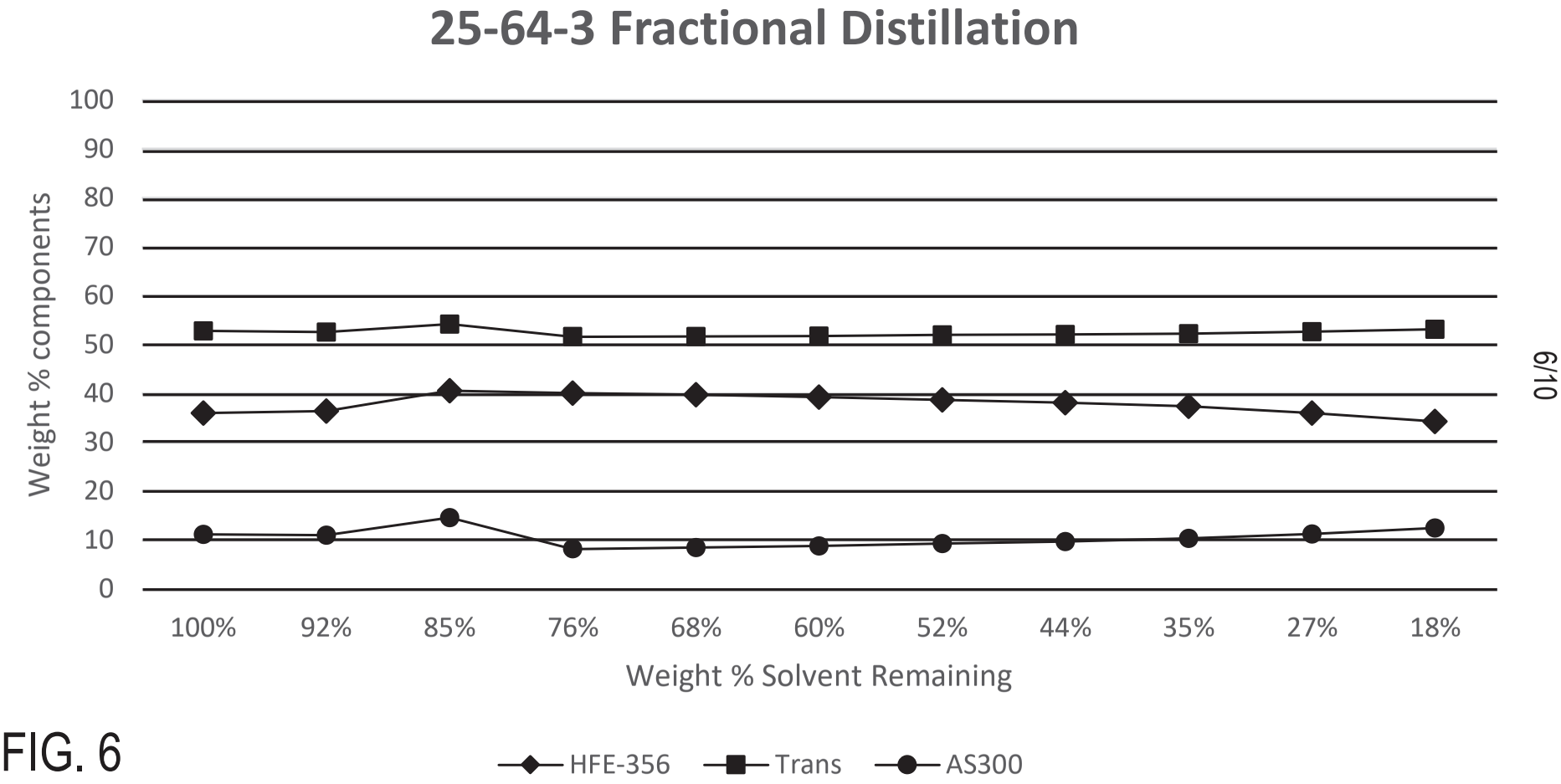

25-64-3 Fractional Distillation
Weight % components
100
90
80
70
60
50
40
30
20
10
0
100%
92%
85%
76%
68%
60%
52%
44%
35%
27%
18%
Weight % Solvent Remaining
HFE-356
Trans
AS300

FIG. 6

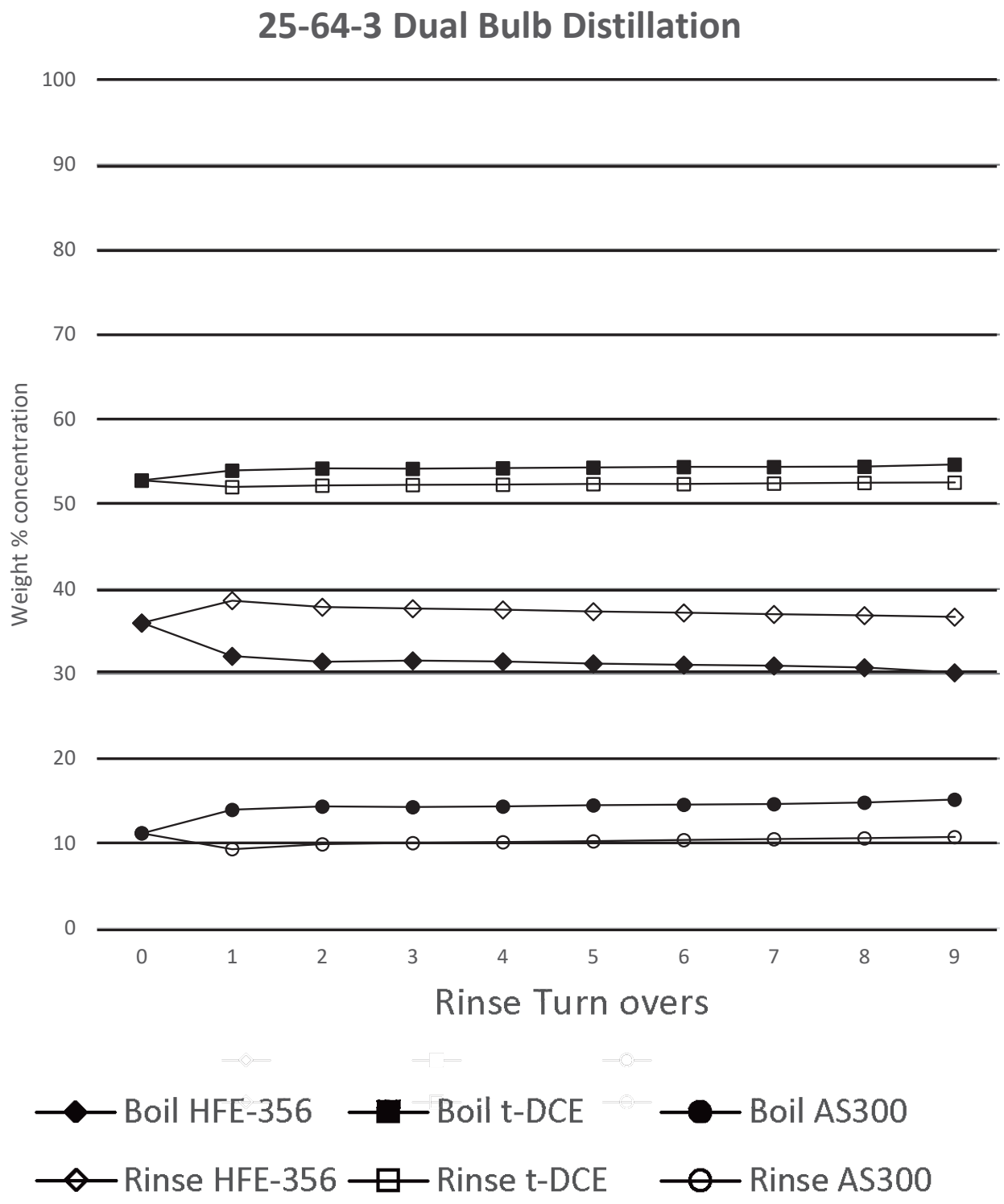

25-64-3 Dual Bulb Distillation
Weight % concentration
100
90
80
70
60
50
40
30
20
10
0
0
1
2
3
4
5
6
7
8
9
Rinse Turn overs
Boil HFE-356
Boil t-DCE
Boil AS300
Rinse HFE-356
Rinse t-DCE
Rinse AS300

FIG. 7

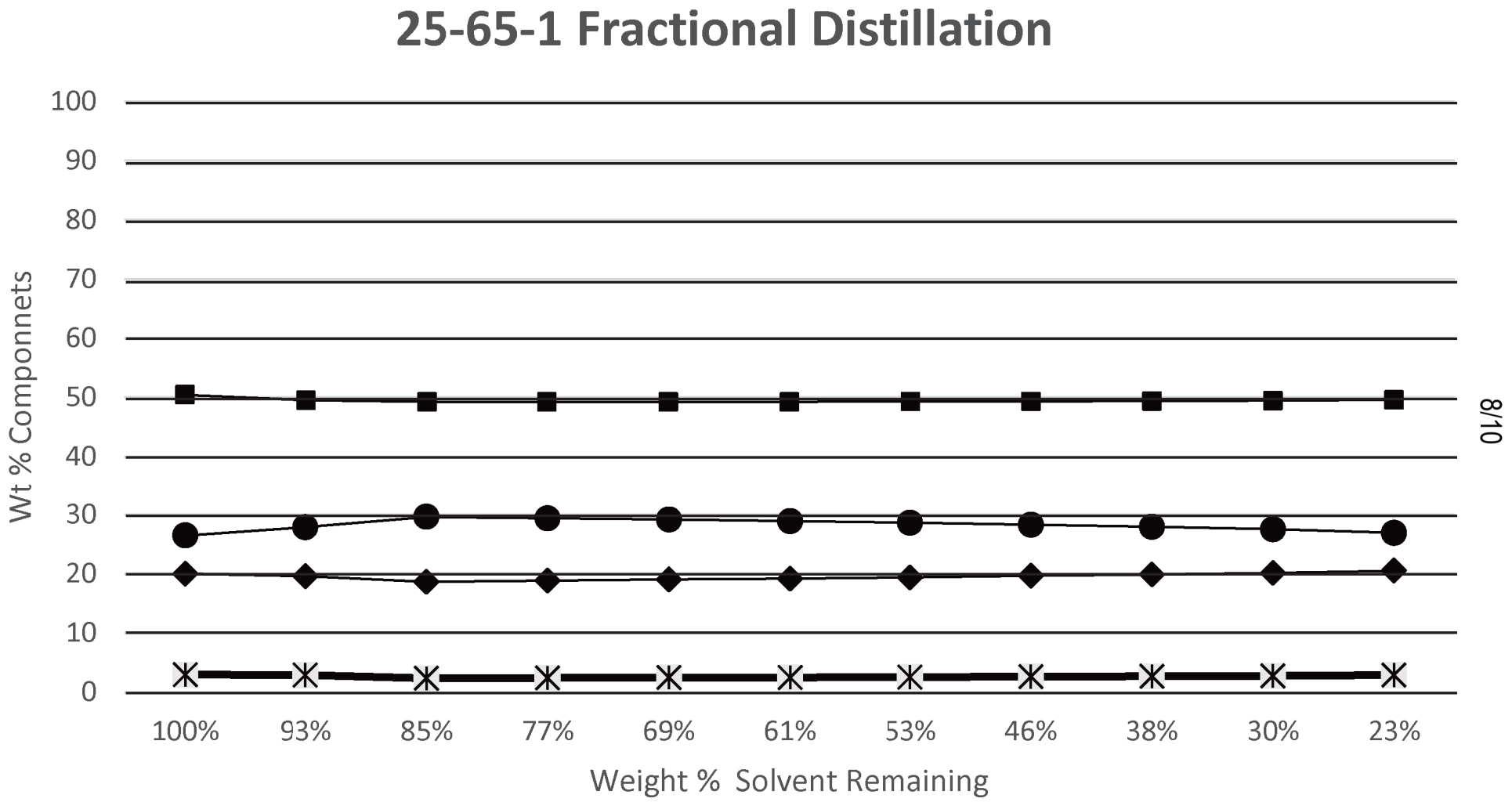

25-65-1 Fractional Distillation
100
90
80
70
60
50
40
30
20
10
0
Wt % Componnets
100%
93%
85%
77%
69%
61%
53%
46%
38%
30%
23%
Weight % Solvent Remaining
HFE356
AE3000
t-DCE
Ethanol
8/10

FIG. 8

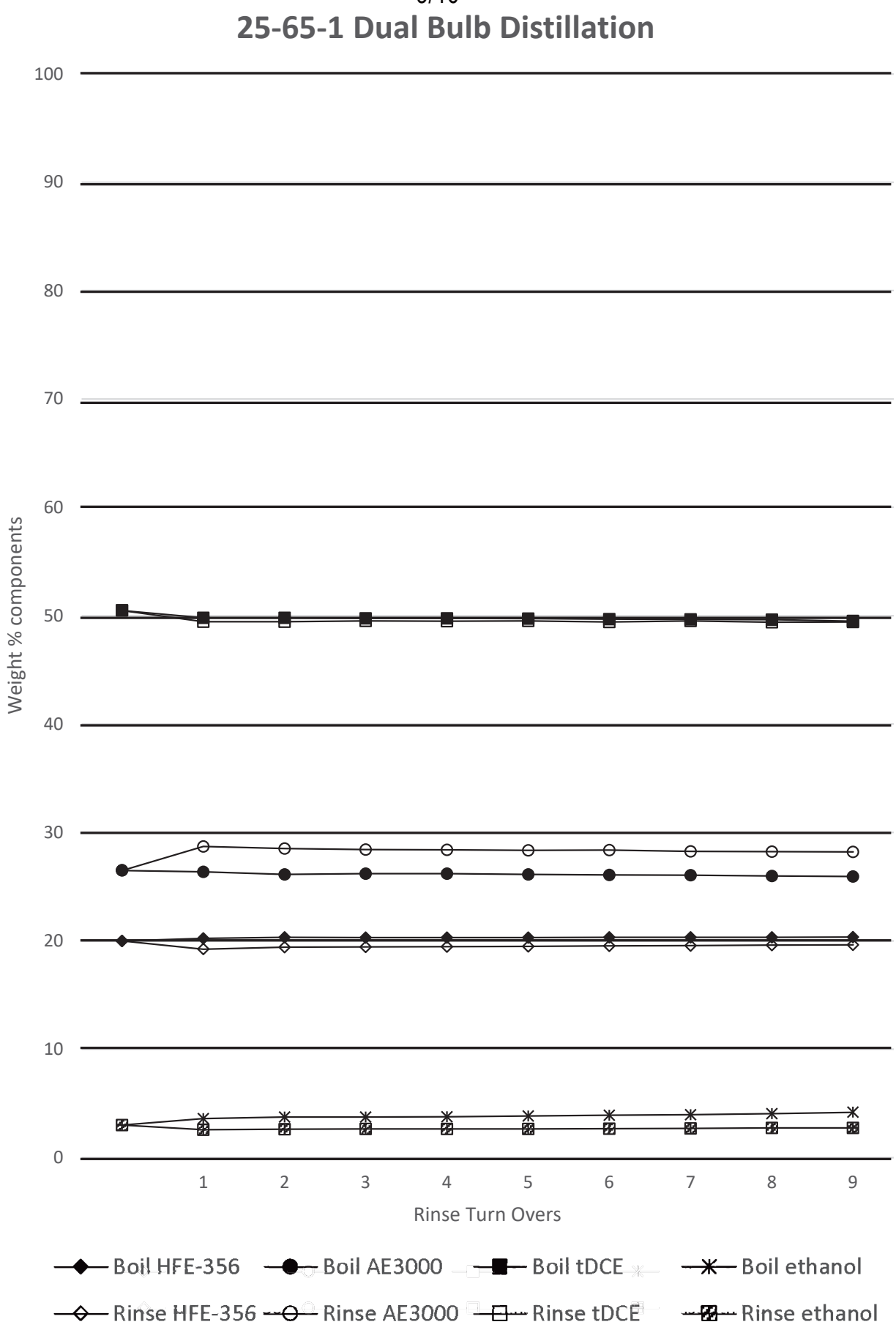

25-65-1 Dual Bulb Distillation
100
90
80
70
60
50
40
30
20
10
0
Weight % components
1
2
3
4
5
6
7
8
9
Rinse Turn Overs
Boil HFE-356
Boil AE3000
Boil tDCE
Boil ethanol
Rinse HFE-356
Rinse AE3000
Rinse tDCE
Rinse ethanol

FIG. 9

FIG. 10

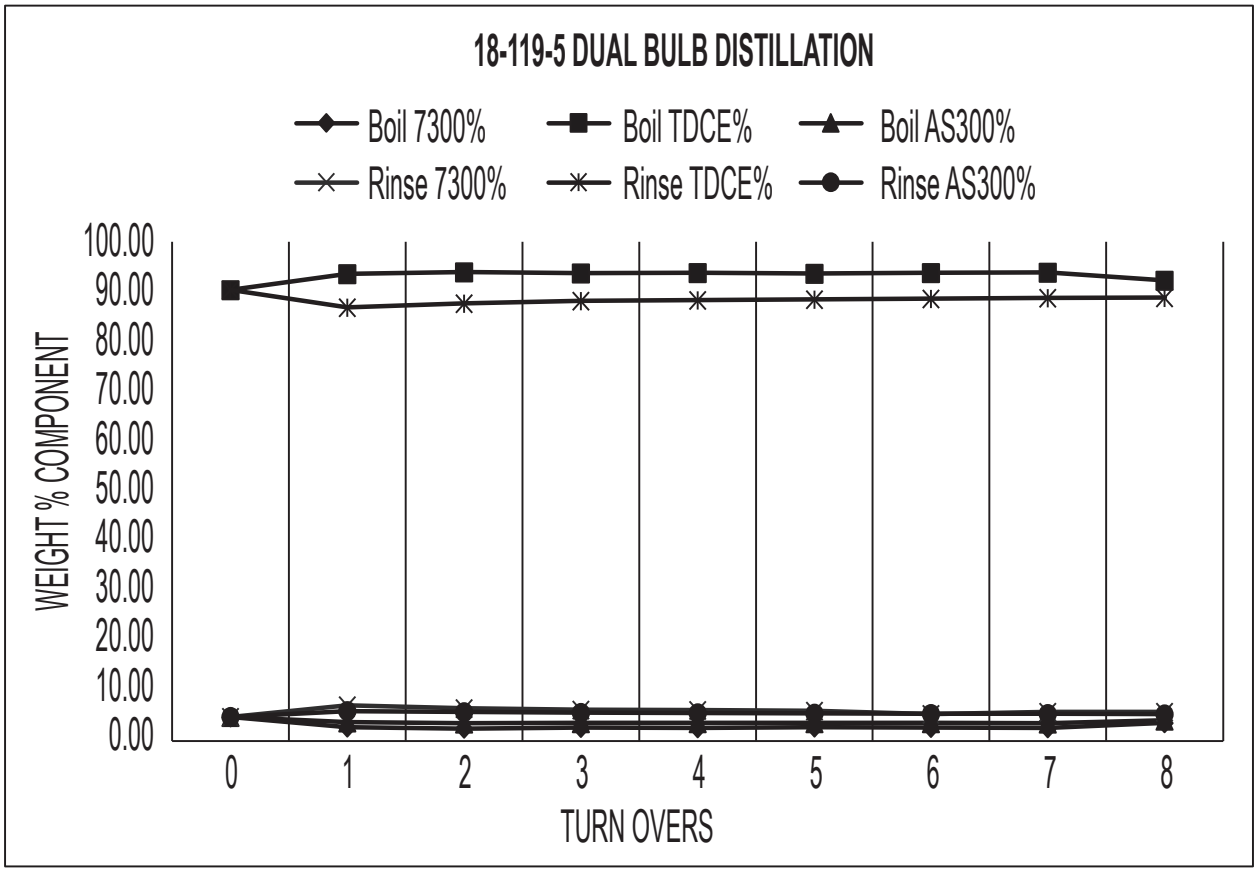
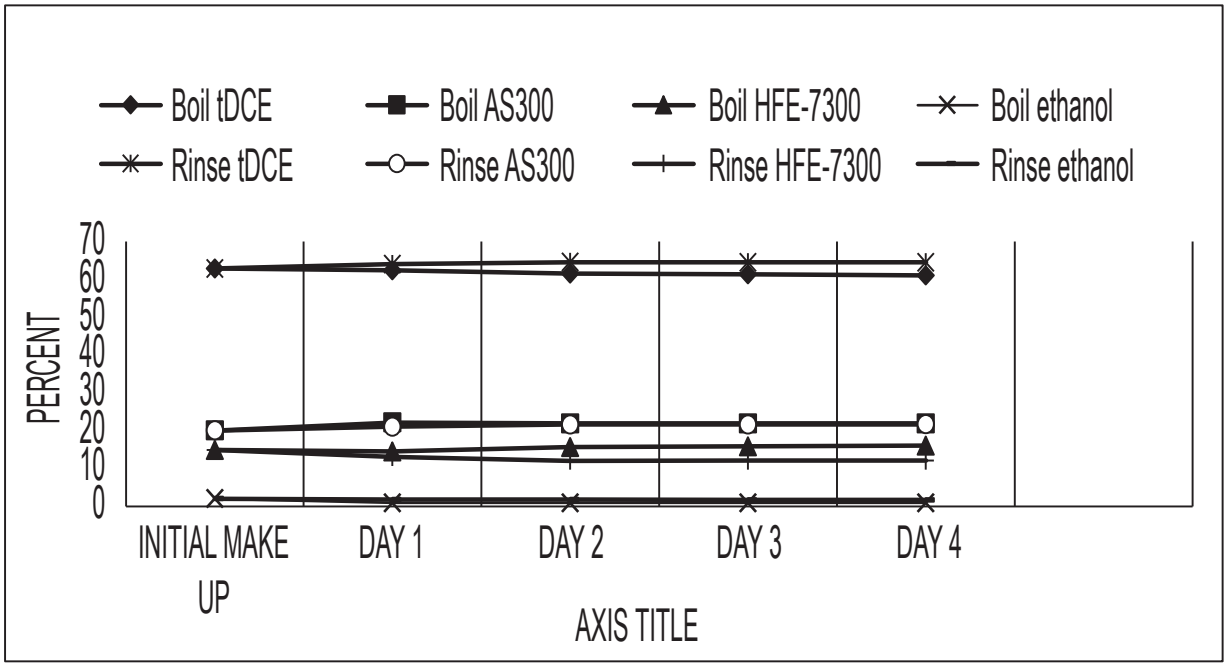

18-119-5 DUAL BULB DISTILLATION
Boil 7300%
Boil TDCE%
Boil AS300%
Rinse 7300%
Rinse TDCE%
Rinse AS300%
WEIGHT % COMPONENT
100.00
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
0
1
2
3
4
5
6
7
8
TURN OVERS

FIG. 11


25-68-2 VAPOR DEGREASER DISTILLATION
Boil tDCE
Boil AS300
Boil HFE-7300
Boil ethanol
Rinse tDCE
Rinse AS300
Rinse HFE-7300
Rinse ethanol
PERCENT
70
60
50
40
30
20
10
0
INITIAL MAKE UP
DAY 1
DAY 2
DAY 3
DAY 4
AXIS TITLE