Medium LO3 WA

Lanen 3e: Chapter 8 Process Costing Practice Quiz

91. The Clarke Chemical Company produces a special kind of body oil that is widely used by professional sports trainers. The oil is produced in three processes: Refining, Blending, and Mixing. Raw oil materials are introduced at the beginning of the refining process. A "mountain-air scent" material is added in the blending process when processing is 50% completed.
The following Work-in-Process account for the Refining Department is available for the month of July. The July 1 Work-in-Process Inventory contains $1,500 in material costs.

Work-in-Process: Refining	
Beginning balance (5,000 gal, 80% complete)	$6,500
Materials (30,000 gal.)	12,300
Direct labor	14,500
Overhead	21,750
Ending balance (6,000 gal., 2/3 complete)	

The Clarke Chemical Company uses weighted-average costing.
Required (use 4 decimal places for computations):
(a) Compute the equivalent units of production for Refining for July.
(b) Compute the material cost per unit and the conversion cost per unit for July.
(c) Compute the costs transferred to the Blending Department for July.
(d) Compute the July 31 Work-in-Process Inventory balance.

#91 Clarke Chemical (WA Method) – Medium

PROCESS COSTING

Refining WIP, Inv

Effort % Last Period				Effort % This Period			Equivalent Units		
DM	DL	MOH	Physical Units	DM	DL	MOH	DM	DL	MOH
~~100%~~		~~80%~~	7/1 5,000 gal						
Started in July			30,000 gal	29,000 S+C	100%	100%	29,000	29,000	
			7/31 6,000 gal		100%	2/3	6000	4000	
							35,000 EU DM (a)	33,000 EU conv	

Refining WIP, Inv

DM	DL	MOH	WIP Costs $
$1,500	$5000		7/1 $6,500
$12,300	+ $14,500	+ $21,750 = $48,550	$55,050
			7/31 $7,365 (d)

$47,685 Transferred (c) to Blending

$13,800 / 35,000 = $0.3943 per EU DM (b)

$41,250 / 33,000 = $1.25 per EU conv

(6000 EU DM × $0.3943 per EU DM) + (4000 EU conv × $1.25 per EU conv) = $7,365

= 29,000 S+C × $1.6443 per EU

#91

(a) Mat EUP: 35,000; Conv EUP: 33,000
(b) Mat: $0.3943; Conv: $1.25
(c) $47,685
(d) $7,366

Feedback: transferred out: 5,000 + 30,000 - 6,000 = 29,000
(a) Mat EUP = (100% × 29,000) + (100% × 6,000) = 35,000
Conv EUP: (100% × 29,000) + (2/3 × 6,000) = 33,000
(b) Mat: ($1,500 + 12,300)/35,000 = $0.3943; Conv: [($6,500 - 1,500) + $14,500+ 21,750]/33,000 = $1.25
(c) 29,000 × ($0.3943 = 1.25) = $47,685
(d) Ending WIP

Mat (6,000 x .3943)	2,366	
Conv: (4,000 x 1.25)	5,000	7,366

AACSB: Analytic
AICPA: FN-Measurement
Bloom's: Application
Difficulty: Medium
Learning Objective: 3
Topic Area: Using Product Costing in a Process Industry

Med LOS FIFO

90. The Clarke Chemical Company produces a special kind of body oil that is widely used by professional sports trainers. The oil is produced in three processes: Refining, Blending, and Mixing. Raw oil materials are introduced at the beginning of the refining process. A "mountain-air scent" material is added in the blending process when processing is 50% completed.
The following Work-in-Process account for the Refining Department is available for the month of July. The July 1 Work-in-Process Inventory contains $1,500 in material costs.

Work-in-Process: Refining	
Beginning balance (5,000 gal, 80% complete)	$7,500
Materials (30,000 gal.)	12,300
Direct labor	14,500
Overhead	21,750
Ending balance (6,000 gal., 2/3 complete)	

The Clarke Chemical Company uses first-in, first-out (FIFO) costing.
Required (use 4 decimal places for computations):
(a) Compute the equivalent units of production for Refining for July.
(b) Compute the material cost per unit and the conversion cost per unit for July.
(c) Compute the costs transferred to the Blending Department for July.
(d) Compute the July 31 Work-in-Process Inventory balance.

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#90 Clarke Chemical — Medium
(FIFO)

PROCESS COSTING

Refining, WIP, Inv.

Effort % Last Period				Effort % This Period			Equivalent Units		
DM	DL	MOH	Physical Units	DM	DL	MOH	DM	DL	MOH
100%	80%		7/1 5,000 gal	0%	20%		0	1,000	
			5,000	100%	100%		24,000	24,000	
			started in July → 30,000 gal						
			24,000 (S+C)						
			7/31 6,000 gal	100%	2/3		6,000	4,000	

30,000 (a) DM | 29,000 conv.

Refining, WIP, Inv.

DM	DL	MOH	WIP Costs $
$1,500	+ $6,000	=	7/1 $7,500
$12,300	+ $36,250	=	$48,550
13,800	+ 42,250	=	$56,050
			7/31 $7460 (d)

$7,500
1000 EU × $1.25 conv. = $1,250 (c)
39,840
Transferred to Blending

$48,590

$12,300 / 30,000 DM
$36,250 / 29,000 conv.

$0.41 per EU DM (b)
$1.25 per EU conv.

$1.66 per EU

6000 EU DM × $0.41 = $2460
4000 EU conv × $1.25 = $5000
$2460 + $5000 = $7460 (d)

= 24,000 S+C × $1.66 per EU

#90

(a) Mat EUP: 30,000; Conv EUP: 29,000
(b) Mat: $0.41; Conv: $1.25
(c) $48,590
(d) $7,460

Feedback: started & completed: 30,000 - 6,000 = 24,000; transferred out: 5,000 + 30,000 - 6,000 = 29,000
(a) Mat EUP = (0% × 5,000) + (100% × 24,000) + (100% × 6,000) = 30,000
Conv EUP: (20% × 5,000) + (100% × 24,000) + (2/3 × 6,000) = 29,000
(b) Mat: $12,300/30,000 = $0.41; Conv: ($14,500+ 21,750)/29,000 = $1.25

(c) Beginning WIP	$ 7,500		
Conversion cost to complete (1,000 x $1.25)	1,250	$ 8,750	
Started & completed (24,000 x ($0.41 + 1.25)		39,840	
Total transferred out			$48,590
(d) Ending WIP			
Mat (6,000 x .41)		2,460	
Conv: (4,000 x 1.25)		5,000	7,460

AACSB: Analytic
AICPA: FN-Measurement
Bloom's: Application
Difficulty: Medium
Learning Objective: 5
Topic Area: Assigning Costs Using FIFO

Hand LO3 WA

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93. The Clarke Chemical Company produces a special kind of body oil that is widely used by professional sports trainers. The oil is produced in three processes: Refining, Blending, and Mixing. Raw oil materials are introduced at the beginning of the refining process. A "mountain-air scent" material is added in the blending process when processing is 50% completed.

The following Work-in-Process account for the Blending Department is available for the month of July. The July 1 Work-in-Process inventory contains $5,920 in material costs, and $1.56/unit in costs transferred in from the Refining Department.

Weighted Averaged-in

× 8000 gal = $12,480

Work-in-Process: Blending	
Beginning balance (8,000 gal, 30% complete)	$22,850
Costs transferred in from Refining (29,000 gal.)	48,200
Materials	20,810
Direct labor	5,748
Overhead	11,600
Ending balance (4,000 gal., 40% complete)	

$38,158

The Clarke Chemical Company uses weighted average costing.

Required (use 4 decimal places for computations):

(a) Compute the equivalent units of production for Blending.

(b) Compute the unit costs in the Blending Department for the month of July. (HINT: There are three!!)

(c) Compute the costs transferred out to the Mixing Department for July.

(d) Compute the July 31 Work-in-Process Inventory balance.

#93 Clarke Chemical (WA Method) — Hard

PROCESS COSTING

Blending WIP, Inv.

Effort % Last Period				Physical Units		Effort % This Period			Equivalent Units		
	DM	DL	MOH			DM	DL	MOH	DM	DL	MOH
	~~100%~~	~~30%~~		7/1	8,000 gal						
Transferred in from Refining Dept.					29,000 gal						
					37,000 gal						
				WA	33,000 S+C	100%	100%		33,000	33,000	
				7/31	4000 gal	0%	40%		0	1,600	

8000 × $1.56 = $(12,480 + $48,200) / 37,000 TI = $1.64 (b) TI

33,000 EU$_{DM}$ (a) 34,600 EU$_{conv.}$ (4,450 + 5,748 + 11,600)

($5,920 + $20,810) / 33,000 = $26,730 / 33,000

$21,798 / 34,600

0.81 per EU$_{DM}$ (b) $0.63 per EU$_{conv.}$

Blending WIP, Inv.

DM	DL	MOH	WIP Costs $		
$5,920	(1.56 TI × 8,000)	4,450 plug.	7/1	$22,850	
Costs transf. in from Refining ⟹				48,200	
			WA	$101,640	(c)
				Transferred out	
$20,810	5,748	11,600	=	$38,158	
$26,730					
			7/31	7,568	(d)

TI	DM	conv
4000		1600
× 1.64		× 0.63
6560	+ 0	+ 1,008 =

33,000 S+C × $3.08 ⟸ $1.64 per EU TI + $1.44 per EU

#93 Hard (WA)

(a) Trans-in EUP: 37,000; Mat EUP: 33,000; Conv EUP: 34,600
(b) Trans-in: $1.64; Mat: $0.81; Conv: $0.63
(c) $101,640
(d) $7,568
Feedback: transferred out: 8,000 + 29,000 - 4,000 = 33,000
(a) Trans-in EUP: (100% × 33,000) + (100% × 4,000) = 37,000
Mat EUP: (100% × 33,000) + (0% × 4,000) = 33,000
Conv EUP: (100% × 33,000) + (40% × 4,000) = 34,600
(b) Trans-in: [($1.56 × 8,000) + 48,200]/37,000 = $1.64
Mat: ($5,920 + 20,810)/33,000 = $0.81
Conv: [($22,850 - 5,920 - 12,480) + 5,748 + 11,600]/34,600 = $0.63
(c) 33,000 × ($1.64 + .81 + .63) = $101,640
(d) EWIP:

Trans-in: (4,000 x $1.64)	$6,560	
Mat:	- 0 –	
Conv: (1,600 x $0.63)	1,008	$7,568

AACSB: Analytic
AICPA: FN-Measurement
Bloom's: Application
Difficulty: Hard
Learning Objective: 3
Topic Area: Using Product Costing in a Process Industry