# Answer on Question #74455 - Chemistry - General Chemistry

**Question**:

Electrolytic reactions, like other chemical reactions, are not 100% efficient. In a copper purification apparatus depositing Cu from a $CuSO_4$ solution, operation for 5.44 hours at a constant current of 6.74 A deposits 38.8 g of Cu metal. What is the percent efficiency?

**Solution:**

$$m_{teor} = \frac{I \cdot t \cdot M}{z \cdot F} = \frac{6.74 \cdot (5.44 \cdot 3600) \cdot 63.546}{2 \cdot 96500} = 43.46 \ (g)$$

$$\eta = \frac{m_{obs}}{m_{teor}} = \frac{38.8}{43.46} = 0.893 \ or \ 89.3\%$$

**Answer:** 89.3%

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