Answer on Question #40470 - Chemistry - Other

Iodine is prepared both in the laboratory and commercially by adding Cl2(g) to an aqueous solution containing sodium iodide:

How many grams of sodium iodide, NaI, must be used to produce 40.4 g of iodine, I2?

Solution

x g
$$40.4 \text{ g}$$

2NaI(aq) + Cl₂(g) \rightarrow I₂(s) + 2NaCI(aq)
300 g 254 g

$$X = 40.4g \cdot 300g/254g = 47.7g$$

Answer: 47.7 g of sodium iodide