

Question #80190, Chemistry / General Chemistry

Question:

How much ammonium sulfate is produced from 100.0 kg of ammonia?

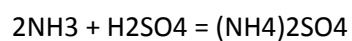
Select one:

- a. 775.4 kg
- b. 193.8 kg
- c. 200.0 kg
- d. 387.7 kg

$$m(\text{NH}_3) = 100 \text{ kg}$$

$$m((\text{NH}_4)_2\text{SO}_4) = ?$$

Solution:



$$M(\text{NH}_3) = 17 \text{ g/mol}$$

$$M((\text{NH}_4)_2\text{SO}_4) = 132 \text{ g/mol}$$

$$m((\text{NH}_4)_2\text{SO}_4) = x$$

$$100000 / (17 * 2) = x / 132, x = 388235 \text{ g} = 388 \text{ kg}$$

Answer: d. 387.7 kg