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Problem 9.7

Self check

9.7 6.9g/mol 28.0g/mol 34.7g/mol



56.0g 56.0g ?g

∴ Limiting Reagent - Need to Calculate Twice

Molar Mass Li_3N

Li: $3 \times 6.9 = 20.7$

N: $1 \times 14.0 = 14.0$

34.7g/mol

1st for

Li

$$\frac{56.0\text{g Li/mol}}{6.9\text{g}} \div \frac{2\text{mol Li}_3\text{N}}{6\text{mol Li}} \times \frac{34.7\text{g}}{\text{mol}} = 93.9\text{g Li}_3\text{N}$$

then for

N_2

$$\frac{56.0\text{g N}_2/\text{mol}}{28.0\text{g}} \div \frac{2\text{mol Li}_3\text{N}}{1\text{mol N}_2} \times \frac{34.7\text{g}}{\text{mol}} = 138.8\text{g Li}_3\text{N}$$

ANS! 93.9g Li_3N (smallest amount of)
 Li_3N

