4.3g of copper is heated strongly in a crucible attached to a bunsen burner, causing it to react with oxygen to form copper oxide (CuO). It is heated until its mass stops changing.

$2Cu + O_2 \rightarrow 2CuO$

Ar
Cu 64
O 16

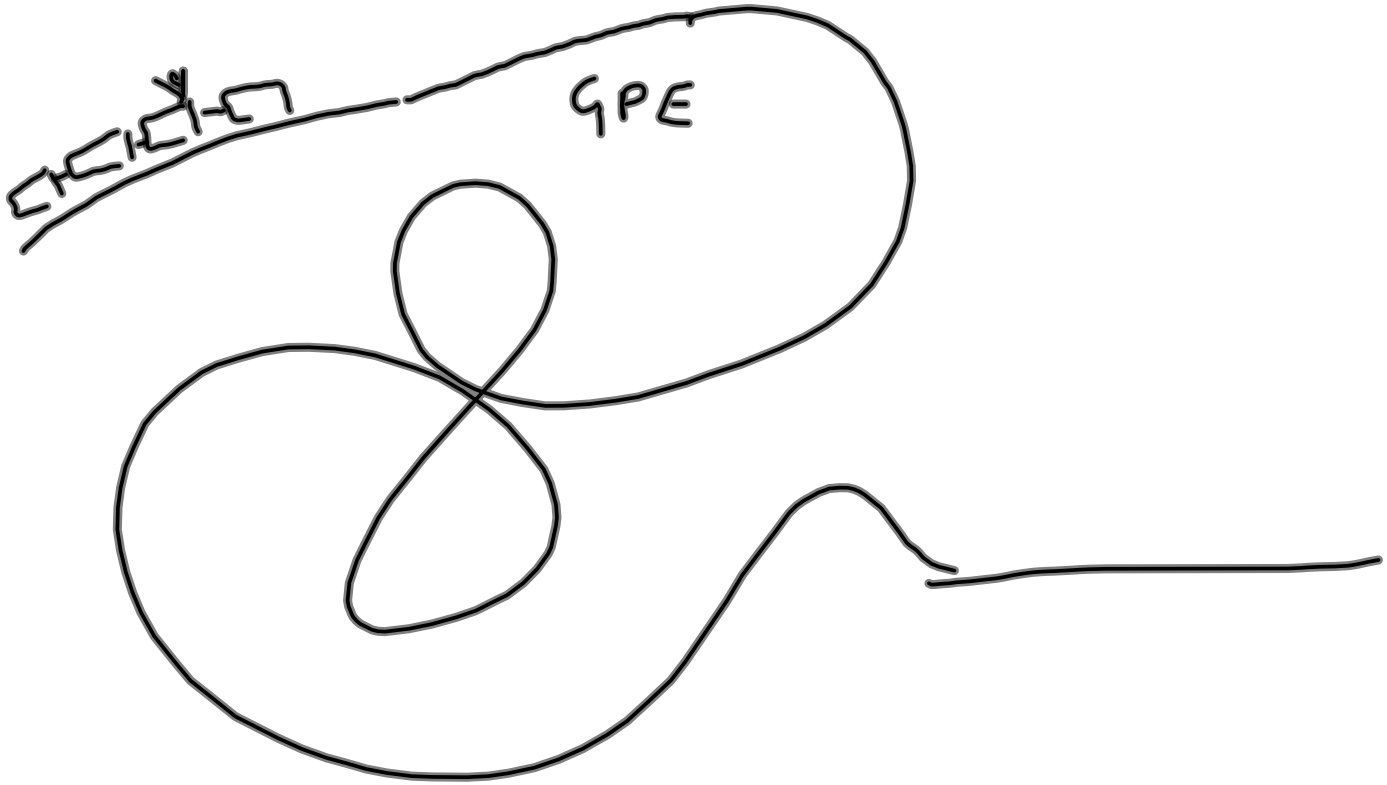
1. What mass of copper oxide is formed?

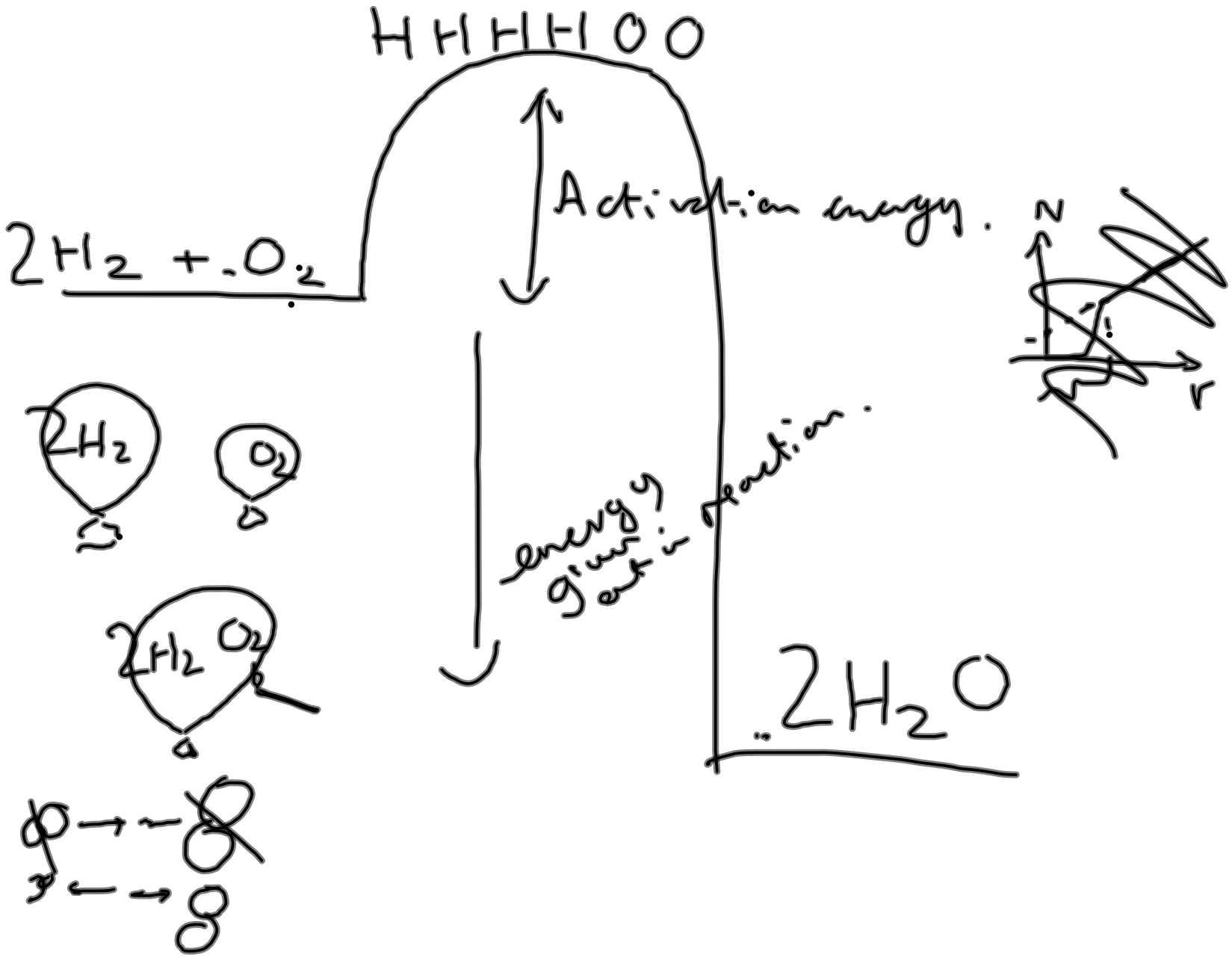
Moles Copper = $\frac{4.3}{64}$ = 0.671 mol

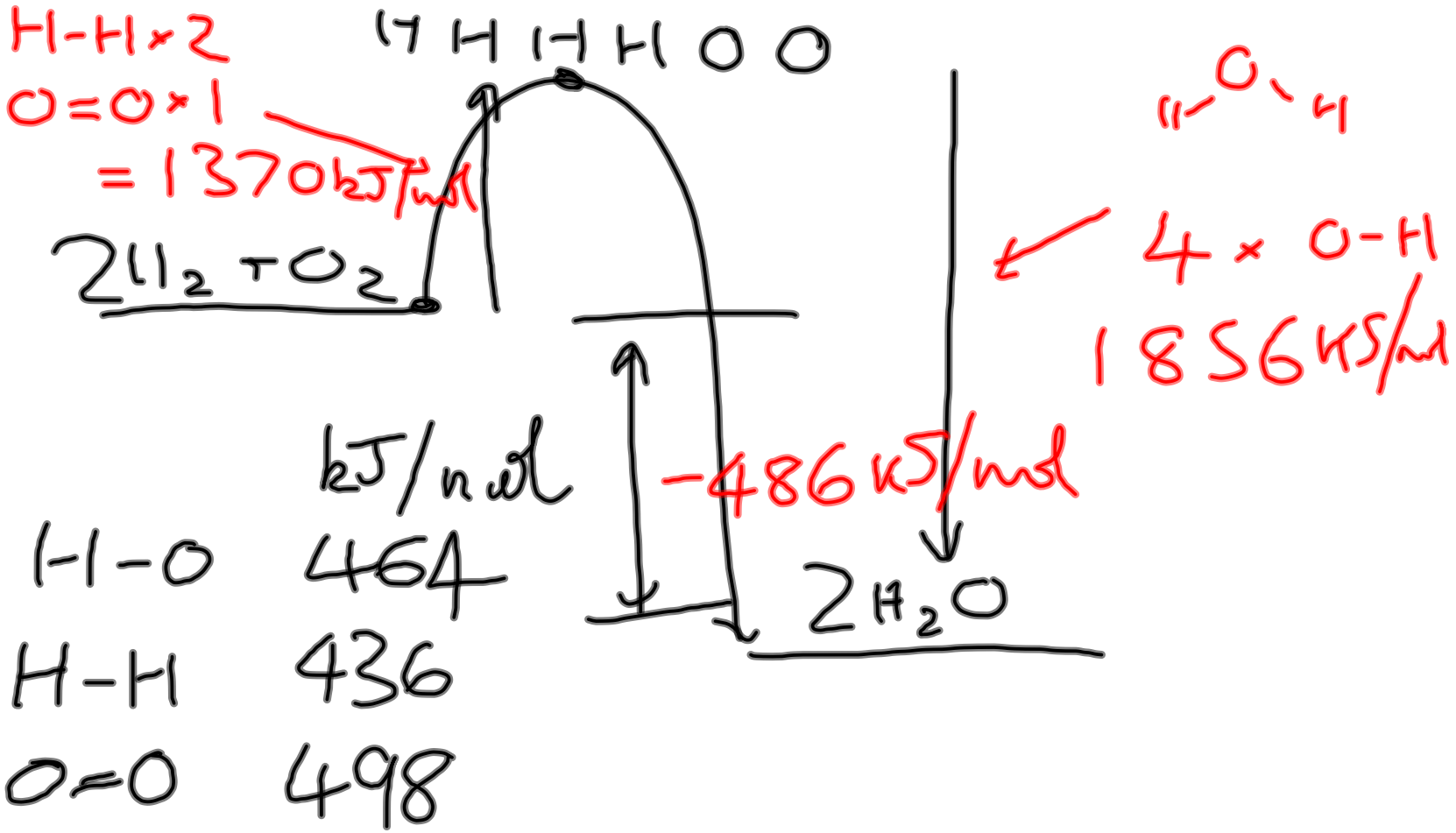
$0.671 \times 80 = 53.7$ g

2. Why is it heated until mass stops changing?

Energy in Chemistry




H H H H H O O
Activation energy.
$2H_2 + O_2$
$2H_2$
O_2
$2H_2$ O_2
energy given out in reaction.
$2H_2O$
N
r



	kJ/mol
H-H-O	464
H-H	436
O=O	498

$N_2 + 3H_2 \rightleftharpoons 2NH_3$

bonds	kJ/mol
N≡N	945
H-H	436
N-H	391

N N H H H H H H

N≡N × 1

H-H × 3

= 2253 kJ/mol

N-H × 6

2346 kJ/mol

$N_2 + 3H_2$

−93 kJ/mol

$2NH_3$

Hydrogen + Chlorine → Hydrogen Chloride

Bond	kJ/mol
H – H	436
Cl – Cl	243
H – Cl	432