

Introduction to Limiting Reactant



Above is a picture of a summer camping favourite. To make 1 **s'mores** you need 3 ingredients:

2 graham crackers + **1 marshmallow** + **1 piece of chocolate** → **1 s'mores**

Three students attempt to make s'mores. Complete the chart below.

Student	# crackers	# marshmallows	# chocolate pieces	# s'mores made	# of crackers not used	# of marshmallows not used	# of chocolate pieces not used
Hafsa	4	2	3				
Jordan	10	10	10				
Cree	7	3	2				

For each student determine:

1. Which ingredient(s) they were given too much of? These ingredients are "in excess".

Hafsa:

Jordan:

Cree:

2. Which ingredient(s) were used to determine how many s'mores that could be made? These ingredients are called "limiting" since they limit the amount of s'mores that can be made.

Hafsa:

Jordan:

Cree:

On Friday we reacted a piece of aluminum metal (grey) with a solution of copper (II) chloride (blue) to produce copper metal (brown) and a solution of colourless aluminum chloride.



What colours were present at the end of the reaction?

Which reactant was “in excess”? What evidence do you have that this is true?

Which reactant was completely used up? What evidence do you have that this is true?

Which reactant was the “limiting reactant”? What did it “limit”?

