

NUCLEAR REACTIONS

--When the nucleus of an atom is unstable, it will **spontaneously decay** and the nucleus will emit particles

--A change like this in the nucleus of an atom is called a **nuclear reaction**.

Sep 14-11:35 AM

Types of Decay

There are two types of decay that we will talk about:

alpha decay

beta decay

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Alpha Decay

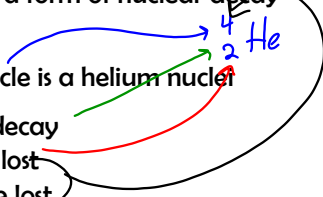
-- Alpha decay is a form of nuclear decay radioactivity

-- An alpha particle is a helium nuclei

-- During alpha decay

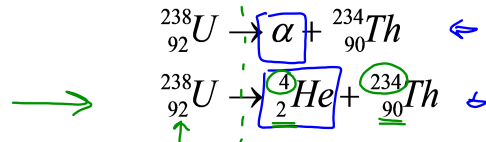
* 2 protons are lost

* 2 neutrons are lost

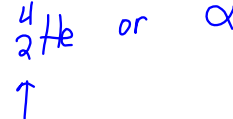


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Alpha Decay

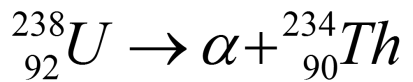


Two ways to write alpha decay:



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Parts of Alpha Decay



Parent Atom

Alpha particle

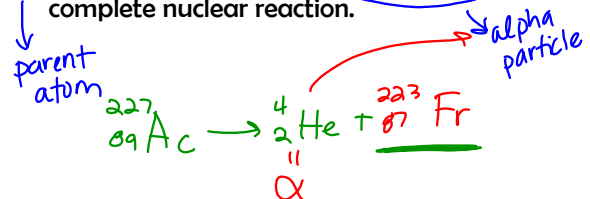
Daughter Isotope

↑
type of decay

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Example: Alpha Decay

What products do you expect if an atom of actinium-227 undergoes alpha decay? Write the complete nuclear reaction.



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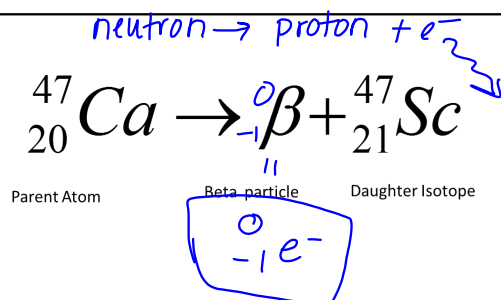
Beta Decay

-- During beta decay, a **neutron** inside the nucleus of the atom **changed** into an **electron** and a **proton**.

-- The **proton** stays inside the nucleus and an **electron is emitted**.

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Example: Beta Decay



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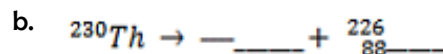
Practice

1. What is an alpha particle?
2. Where do you think the electron comes from in beta decay?
3. ~~What do you think is happening in this equation?~~

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Practice

4. Complete the reactions and determine if it is alpha decay or beta decay.



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Thursday September 15th

Objective: Students will be able to write nuclear reactions.

1. Daily Question
2. Finish Nuclear Reaction Notes
3. Nuclear Reaction Practice

HW: Decay of Uranium

DUE: nothing

Materials: writing utensil, calculator,
chrome book

Sep 7-7:59 AM

Joke of the Day

Did you hear that potassium and oxygen went on a date?

-- It went OK!

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Daily Question 9/7

google classroom

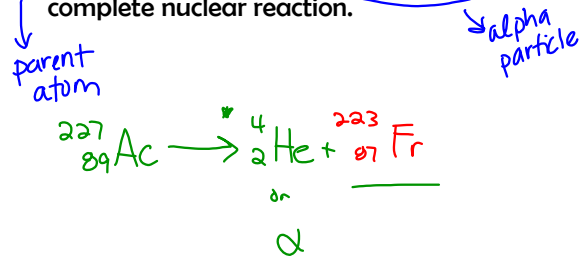
Period #5: d4f6hy0

Period #6: top15vd

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Example: Alpha Decay

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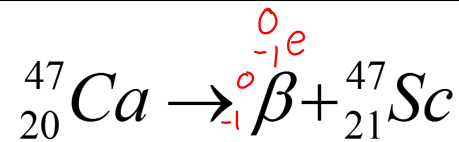
Beta Decay

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Example: Beta Decay



Parent Atom

Beta particle

Daughter Isotope

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Practice

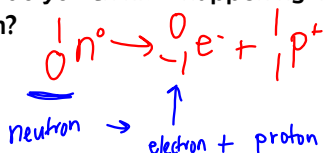
1. What is an alpha particle?

helium nuclei

2. Where do you think the electron comes from in beta decay?

from the neutron in the nucleus

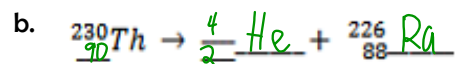
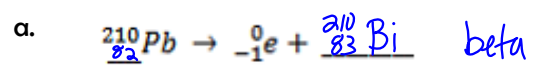
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Practice

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