

# How do I calculate the standard enthalpy change for the following reaction at 25 °C ? $\text{MgCl}_2(\text{s}) + \text{H}_2\text{O}(\text{l}) \rightarrow \text{MgO}(\text{s}) + 2\text{HCl}(\text{g})$

The right response is H, S8(monoclinic), and Methane (g).

The enthalpy of production for these three substances is non-zero.

How do I calculate the standard enthalpy change for the following reaction at 25 °C ?

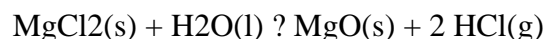
- Start by calculating the volume change of your substance. Find the change in the substance's intrinsic energy. Calculate the atmospheric pressure there.
- To calculate the change in enthalpy, plug in all of the following quantities to the equation  $H = Q + p \cdot V$ :
- Enthalpy change that occurs in a system when matter undergoes a certain chemical reaction when all of the reactants and products are in their standard states is known as the standard enthalpy of reaction ( $H_r$ ).
- The equation  $q = mcT$ , where  $m$  is the mass of the sample,  $c$  is the specific heat, and  $T$  is the temperature change, can be used to determine how much heat is gained or lost by a sample ( $q$ ).
- In order to calculate the heat of a reaction (enthalpy change of a reaction,  $H$ ), bond energies and bond enthalpies can be used.
- $H(\text{reaction}) = \text{total bond energies of broken and formed bonds} - \text{total bond energies of newly formed bonds}$ .  $\text{MgCl}_2(\text{aq}) + \text{H}_2\text{O} = \text{MgO}(\text{s}) + 2\text{HCl}(\text{aq})$
- $\text{MgO}(\text{s}) + 2\text{HCl}(\text{aq}) \rightarrow \text{MgCl}_2(\text{aq}) + \text{H}_2\text{O}(\text{l})$  will have an absolute neutralization enthalpy of  $-57.33 \text{ kJ mol}^{-2}$ . Answer and justification
- $\text{HCl}$  is an acid, while  $\text{MgO}$  is a metal oxide, a form of basic oxide. When bases and acids interact, they produce water and the salt ( $\text{MgCl}_2$ ) ( $\text{H}_2\text{O}$   $\text{H}_2\text{O}$ ).
- This is a neutralization reaction, also referred to as an acid-base reaction. Magnesium chloride and water are produced when magnesium oxide and hydrochloric acid interact. It goes like this:  $\text{MgO}(\text{s}) + 2\text{HCl}(\text{aq}) \rightarrow \text{MgCl}_2(\text{aq}) + \text{H}_2\text{O}(\text{l})$
- The amount of heat, or  $Q$ , is what we want to know. To do this, we would apply the formula  $Q = m \cdot C \cdot T$ . The beginning and final temperatures can be used to calculate the  $m$ ,  $C$ , and  $T$ . It's not a redox reaction, though.

- An acid-base neutralization reaction is taking place. All of the reaction's participants' oxidation numbers remain unchanged. Hope this was useful.

To learn more about enthalpy change refer

[brainly.com/question/16387742](https://brainly.com/question/16387742)

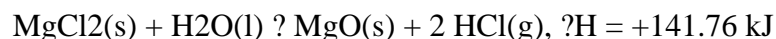
#SPJ2



Using the standard enthalpies of formation given in the source below:

$$(-601.24 \text{ kJ}) + (2 \times -92.30 \text{ kJ}) - (-641.8 \text{ kJ}) - (-285.8 \text{ kJ}) = +141.76 \text{ kJ}$$

So:



Find the sum.

negative 8 plus left parenthesis negative 14 right parenthesis

$X^2 + x = 2$ ? how would i solve this??

how is nitrogen from the atmosphere, the abiotic part of the ecosystem, converted into the biotic part of the ecosystem in organisms

What strategy did Churchill suggest for keeping peace and stopping the growth of nazi power? Who is responsible for these lost opportunities?

What two key changes did the emperor Constantine make during his reign?

The best way of successfully acting a part is to be it in what way was shlock homes being it

1. All were new inventions that explorers used to discover new trade routes EXCEPT the: A. compass.

B. square sail.

C. caravel

D. astrolabe.

an experiment is broken up into two parts in the first part of the experiment a penny is tossed in the air if the coin lands on heads then the coin is flipped a

second time if the coin lands on Tails then a six-sided die is rolled what is the probability of getting a tail and a 5

Which statement best characterizes animism? A. It's a religion that maintains the futility of human existence.

B. It's the basis of social status within a tribe.

C. It combines natural, human, and spiritual forces.

D. It's composed of irrational superstitions that arise in underdeveloped rural communities.

How did the social order shift, humanism, and the printing press allowed the Renaissance to succeed?

How do I solve  $-3x = 9$

Eric's income increased from \$40,000 to \$50,000 per year. Eric's consumption of tickets to pro football games increased from two to four per year. By the midpoint formula, his income elasticity of demand for pro football game tickets is equal to \_\_\_\_\_, and football game tickets are \_\_\_\_\_ goods. a. -3; inferior  
b. +3; normal  
c. -0.33; inferior  
d. +0.67; normal

Life-course-persistent offenders \_\_\_\_\_. may show signs of neurological impairment have after-school jobs they dislike tend to be involved in school activities are unlikely to end up in prison

54750 divided by 365

Why is the Preamble an important part of the Constitution? It declares that the Constitution has been democratically ratified

It abolishes the Articles of Confederation

It establishes the three branches of the government

It affirms the people's right to self-governance

How and why did the meiji government modernize japan?

Under which theme of geography does humans' use of Earth's natural resources fall? A) Environment

B) Uses of geography

C) World in spatial terms

D) Place and Region

In October 2009, there were approximately  $5 \times 10^7$  members of a website. In January 2013, there were approximately  $2 \times 10^8$  members. How many more members were there in January 2013 than in October 2009? Write your answer in scientific notation. There were \_\_\_\_\_ more members in January 2013 than in October 2009.

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