



Endothermic Reaction for Veerya Analysis of Shyonaka (Oroxylum Indicum Vent.) - an Experimental Study

KEYWORDS

Shyonaka, Veerya, Endothermic.

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ABSTRACT The potency by which a drug acts is known as Veerya. Actually it is the ultra chemical action of the drugs. It may be of two types Ushna (hot) Shita (cold) their translation as hot or cold is not appropriate as these denotes only to the temperature status, while the veerya is something more than that. Ayurveda's treatment modalities are based on Rasapanchak (Rasa, Guna, Veerya, Vipak and Prabhav). So veerya (potency) of drug plays vital role in treatment principles. So to scrutinize the potency of the drug exothermic and endothermic reactions plays imperative role.

Introduction:

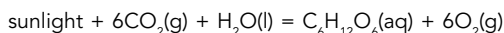
Many chemical reactions release energy in the form of heat, light, or sound. These are exothermic reactions. Exothermic reactions may occur spontaneously and result in higher randomness or entropy ($\Delta S > 0$) of the system. They are denoted by a negative heat flow (heat is lost to the surroundings) and decrease in enthalpy ($\Delta H < 0$). In the lab, exothermic reactions produce heat or may even be explosive.

There are other chemical reactions that must absorb energy in order to proceed. These are endothermic reactions. Endothermic reactions cannot occur spontaneously. Work must be done in order to get these reactions to occur. When endothermic reactions absorb energy, a temperature drop is measured during the reaction. Endothermic reactions are characterized by positive heat flow (into the reaction) and an increase in enthalpy ($+\Delta H$).

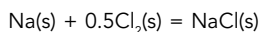
Examples of Endothermic and Exothermic Processes:

Photosynthesis is an example of an endothermic chemical reaction. In this process, plants use the energy from the sun to convert carbon dioxide and water into glucose and oxygen. This reaction requires

15MJ of energy (sunlight) for every kilogram of glucose that is produced:



An example of an exothermic reaction is the mixture of sodium and chlorine to yield table salt. This reaction produces 411 kJ of energy for each mole of salt that is produced:



Demonstrations You Can Perform:

Many exothermic and endothermic reactions involve toxic chemicals, extreme heat or cold, or messy disposal methods. These demonstrations are safe and easy.¹

MATERIALS AND METHODS:

EXOTHERMIC REACTION FOR VEERYA ANALYSIS:

Procedure:

10 ml of water taken in a beaker and temperature were

noted down for three times, then 10 grams of Shyonaka churna is added in water and changes in the temperature were noted down after 1 minute, 3 minutes and 5 minutes and a hour.²



Fig. 1: Stem bark of Oroxylum indicum Vent. Fig.2: Leaves of Oroxylum indicum Vent.



Fig. 3: Stem along with leaves of Shyonaka Fig. 4: Root bark powder of Shyonaka

Table No.1: Endothermic reaction of Oroxylum indicum Vent.

Media			Duration		
Water	Water	Water	After 1 minute (Oroxylum indicum Vent.)	After 3 minutes (Oroxylum indicum Vent.)	After 5 minutes (Oroxylum indicum Vent.)
75.6°f	75.6°f	75.6°f	75.0°f	74.8°f	75.4°f



Image 1: After 1 minute
Image 3: After 5 minutes

Image 2: After 3 minutes

RESULT AND CONCLUSION:

From above said result it is clear that Shyonaka (*Oroxylum indicum* Vent.) as Sheet veerya dravya showed endothermic reaction and rise in the temperature were vary from $0.2 - 2^{\circ}\text{f}$. Temperature of water remains constant as 75.6°f , then readings were 75°f , 74.8°f and 75.4°f respectively. From above said results it is prove that shyonaka is having sheetaveerya action.

REFERENCE

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