

Question #78480

_____ has a ΔH_f of zero.

- A.Br⁻
- B.Na⁺
- C.H₂O
- D.CO₂
- E. None of the Above

The right answer is E. None of the Above. (In case of standard conditions(T=298.15 K, P=1 bar)).

Why? Because standard enthalpy of formation is equal to 0 only in the most stable allotropes such as O₂, H₂, Cl₂, Na or He (examples). All answers (except E) contains compounds or ions, which isn't the most stable allotropes of elements. So, the right answer is E.

Prove from Internet source:

All elements in their standard states (oxygen gas, solid carbon in the form of graphite, etc.) have a standard enthalpy of formation of zero, as there is no change involved in their formation. [1]

Reference:

[1] https://en.wikipedia.org/wiki/Standard_enthalpy_of_formation

Answer provided by AssignmentExpert.com