

## Chemistry: Article – *Hot and Cold Packs*

1. List two good qualities of the “instant cold pack.”
2. What is in the outer bag?
3. What is in the inner bag?
4. What happens when the trainer punches the pack?
5. What is the chemical name of the powder?
6. Name two other substances that get cold when dissolved in water.
7. Name one substance that gives off heat when it dissolves.
8. A reaction that absorbs heat is an \_\_\_\_\_ reaction, and one that releases heat is an \_\_\_\_\_ reaction.
9. When a lighted match gives off heat, where did the energy come from?
10. In the Heat Factory hot pack, list the five substances that are in the paper bag.
11. Why don't we notice the heat when an iron shovel rusts?
12. The heat in the Heat Factory pack is the result of \_\_\_\_\_.
13. The Heat Solution contains a liquid that is the consistency of what?
14. For what length of time does the Heat Solution give off heat?
15. Instead of using a chemical reaction, the Heat Solution uses a \_\_\_\_\_.
16. What do we call a chemical that remains a liquid at temperatures below its normal freezing point?
17. What does the liquid in the Heat Solution contain?
18. What is needed to make a supercooled liquid solidify?
19. What happens as the sodium thiosulfate solidifies?
20. List two advantages of “phase change” heat packs.
21. What do chemical processes always involve?
22. What determines whether the overall process feels hot or cold?