**Melting Ice Lab** Name:

Period:

Date:

**Background: Every winter we watch road crews put salt on the roads when it is icy, or to prevent icy conditions. But why do they do this? Why does laying salt prevent roads from icing?** In this lab you will investigate the effect of salt on ice and see why this simple “chemical” is used to make our roads safer.

**Materials:**

* Thermometer
* Beaker
* Ice
* Salt
* Stopwatch
* Safety Glasses on at all times!

**Procedures:**

1. Fill a 400 mL beaker half full with ice.
2. Take the temperature of the ice in the beaker. Record in data table #1.
3. Add 5 spoonful’s of salt to the beaker and gently stir with a spoon.
4. After 30 seconds, take the temperature of the ice -salt mixture and record in data table #1.
5. Record the temperature of the ice-salt mixture every 30 seconds and record your temperatures in data table #2.
6. While collecting data continue to stir the ice mixture in the beaker.
7. Continue collecting data for 15 minutes.
8. Record the final temperature in data table #1.
9. When you are finished, rinse the mixture down the sink and completely rinse out your beaker.
10. Clean up your area!! Areas left messy will lose points!!
11. Graph the data (time on x-axis and temperature on y-axis). Instead of using a best fit line, connect your dots.

**Data Table #1:**

|  |  |  |
| --- | --- | --- |
| **BEAKER** | Initial temperature of ice |  |
| Initial temperature of ice + salt |  |
|  | Final temperature of ice + salt |  |

**Data Table #2:**

|  |  |
| --- | --- |
| **Time (min)** | **Temp. °C** |
| 0:30 |  |
| 1:00 |  |
| 1:30 |  |
| 2:00 |  |
| 2:30 |  |
| 3:00 |  |
| 3:30 |  |
| 4:00 |  |
| 4:30 |  |
| 5:00 |  |
| 5:30 |  |
| 6:00 |  |
| 6:30 |  |
| 7:00 |  |
| 7:30 |  |
| 8:00 |  |
| 8:30 |  |
| 9:00 |  |
| 9:30 |  |
| 10:00 |  |
| 10:30 |  |
| 11:00 |  |
| 11:30 |  |
| 12:00 |  |
| 12:30 |  |
| 13:00 |  |
| 13:30 |  |
| 14:00 |  |
| 14:30 |  |
| 15:00 |  |

**Summary:** Explain in your own words why the ice melted once it was mixed with salt. Was this an endothermic or exothermic reaction? How can you tell?

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