



Review: Salt and ice

Geo Kalfov, Team Bulgaria

Problem 9: Salt and ice

Study the **effectiveness** of **salt** to **melt ice** cubes.



Overview

- Theory
- Experiment
- Results
- Agreement between theory and experiment
- Conclusions

Green = very good

Yellow = average

Red = needs improvement



Reporter



1. Including some definitions about the water and the salts
2. Using bar graphs for data representation
3. Visual aids to prove experimental results



1. Definition of effectiveness
2. Various definitions of salt exist, not clear why they used that exact one.
3. Lack of explanation for the limit of the melting point of NaCl
4. Cannot prove the hypothesis of the CaCl₂ (mentioned some reference)
5. Low variation of salts used
6. The freezing point is not a constant
7. Didn't define the size of the salt (medium, thin, large in quantitative measurements)
8. The dimensions of the ice cubes
9. How they measured the error?

Opponent



1. Relevant parameters as the mass of the cubes and the surface between the salt and ice
2. Asked about the size of the salt



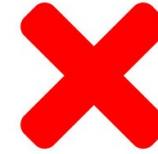
1. The salts are actually dissolving exothermically.
2. Missing definition of effectiveness of melting
3. **Implied salt could be endothermic or exothermic.**
4. **Implied calcium chloride dissolves endothermically**
5. Makes no difference between heat effects and temperature (according to their definition of the exothermic salt)

DISCUSSION

h



1. Mentioned the quantities of the salt
2. Definition of slush



1. There is nothing like endothermic nor exothermic salt (they can dissolve exothermically and that's the case with CaCl_2)
2. The quantities of the salt were not same (according to the visual aids used in the reporter's presentation).

Missed points

What is the difference between the salts and how they affect the melting time

The reporter didn't measure the volume of the ice.

How is the difference in melting time of the different types of salts explained.



Clash 1

Point of discussion: Endothermic and exothermic salts

Reporter: Salts based on chloride is endothermic reaction

Opponent: exothermical reaction



Thank you!