## Conclusion

During the investigation, various characteristics of the different chemicals such as boiling point, specific gravity and many other ones were compared. The investigation shows sodium chloride was more similar to the mysterious chemical than octane, many of their characteristics appeared similar but much different from characteristics of octane.

Because of that the mystery chemical share many characteristics with ionic compounds, such as high boiling point and high solubility in water, the chemical is likely going to be ionic bonded. The high boiling point indicates that there are strong inter/intramolecular forces resisting the separation, and the high solubility in water indicates that the chemical has strongly charged ends to interact with water. These are all key features of ionic compounds, and will not simultaneously appear on any other bond type. The results should be reliable, since it is an only fit based on data that comes from a reliable data base.

The boiling temperature of the mysterious chemical is high, this means that the intra/inter molecular force is strong, which resists separation. Since the chemical is also highly soluble in water, this means the particle have strong charged ends that can interact and be attracted to the charged ends of the water molecule. With these characteristics, the mysterious chemical is likely to be ionic. Since the chemical’s strongly charged ends interact with water, they form a charged particle, which then forms a charged path for electricity to flow through. Thus, the chemical should be conductive in water.