

Sample abstract (Thermochemistry Coolant Problem)

Abstract:

The experiment describes the determination of the **Specific Heat Capacity** of an unknown compound. The experiment is useful in designing the more effective engine coolant in comparison to the traditional coolant like ethylene glycol. For a compound to be an efficient engine cooler it should have higher heat capacity, which means it should dissipate heat much faster when compared to ethylene glycol.

The required chemicals and problem statement are provided in the ChemCollective virtual lab interface **File>>Load Homework>>Thermochemistry>>Coolant1**

The methodology uses the method of mixtures to determine the Specific Heat Capacity of the unknown compound provided in the interface. Density of unknown compound Y is provided in the problem description. Distilled water is also provided in the **Stockroom Explorer**.

The following formula will be used for calculations.

$$M_Y \times C_Y \times (T_f - T_1) = M_W \times C_W \times (T_f - T_2)$$

M = Mass of the compound (W = water, Y = Unknown Compound)

C_{sp} = Specific Heat Capacity (W = water, Y = Unknown Compound)

(T_f-T_i) = Temperature difference

Using the data available in ChemCollective virtual lab we will determine the specific heat capacity of unknown compound and compare it with ethylene glycol.