

## Video tutorial – calcite chemical reaction

NAME: \_\_\_\_\_ Section: \_\_\_\_\_

Purpose(s) of video(s): make observations, take notes, think-pair-share, assemble a concept

Calcite in the lab: [https://www.youtube.com/watch?v=-7X\\_v4Q\\_3VI](https://www.youtube.com/watch?v=-7X_v4Q_3VI)

When HCl (hydrochloric acid) is dropped onto a crystal of calcite ( $\text{CaCO}_3$ ), a chemical reaction occurs. A typical solution used in this "acid test" is about 10% HCl, which means that about 90% of the solution is water, and the solution is at room temperature. We refer to this solution as "cold, dilute" HCl.

Watch the video, record observations, then speak with your nearby buddies to discuss the following questions. Record answers to the following instructions in the space below.

1. Observe and describe evidence of the chemical reaction.
2. Describe the pattern (or change, if any) of intensity of the chemical reaction during the video. Does the intensity of reaction remain about the same throughout? Increasing? Decreasing? Some other pattern of change?
3. Interpret the change of intensity you observed and described in #2. Can we tell when the chemical reaction ends? Why would the reaction "end"? What causes the rate of chemical reaction, as observed, to change during the time of the video?
4. The bubbles contain molecules in the gas (or vapor) phase of matter. Identify the source of the molecules in the bubbles. Interpret the pathway by which these molecules travel from their source into the bubbles.
5. If you had a 55 gallon drum of acid, what do you think would happen if you tossed this crystal of calcite into it? Support your inference with reasoning and evidence.

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Write your answers in number order below.

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1.