

## Overview

Taking an IR spectrum using the ATR accessory can be divided into 4 general steps:

Setting up the experiment: This tells the instrument the parameters it should use to collect data. This will usually have been done for you.

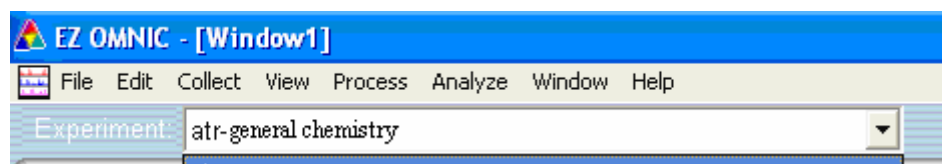
Collecting a background spectrum: This is collected with the crystal in place but with no sample present. It accounts for any absorption by moisture and carbon dioxide in the air and the absorption of the crystal itself.

Collecting a sample spectrum: This is collected with the sample in place. The background spectrum is automatically subtracted from this spectrum before it is displayed.

Cleaning the Accessory: Follow the directions for cleaning the ATR accessory. Failure to do so may damage the crystal.

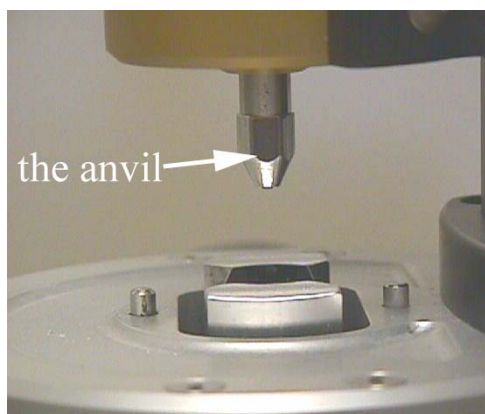
### Set up experiment: This will usually be completed for you.

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1. Start EZ OMNIC program by double clicking on the FTIR icon on the desktop
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2. Set the experiment to "atr-general chemistry"
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### Cleaning the Accessory:

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1. Turn the black knob counterclockwise to raise the anvil. Use a Kimwipe wipe wetted with ethanol or an isopropyl alcohol prep pad to gently wipe the tip of the anvil clean.



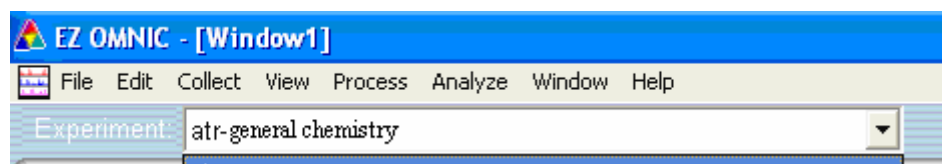
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2. Remove the crystal. Use a wash bottle of ethanol to wash the sample from the crystal. Use a ethanol wetted Q-tip or isopropyl alcohol prep pad to gently wipe any adhering sample away. Do not use anything else.



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3. If necessary, use a bottle of compressed air to dry the crystal. It will not take much at all. A couple of seconds at most.
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## Collect a BACKGROUND spectrum:

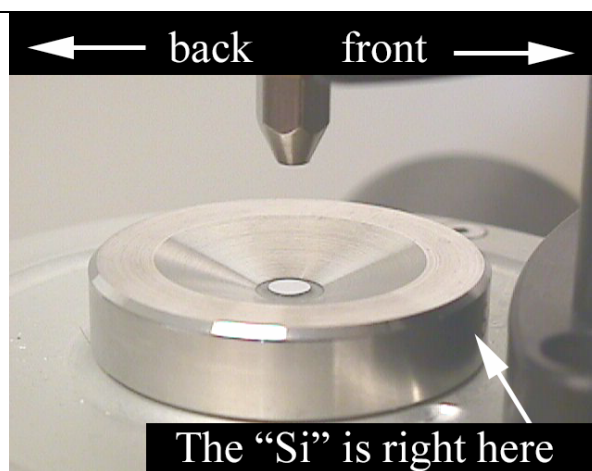
1. Ensure that the experiment is set as “atr- general chemistry”



2. Make sure the crystal is clean and dry. Use the crystal with no tape on it. You must use the same crystal for both the background and the sample.



3. Insert the crystal with Si *toward the front* of the instrument.

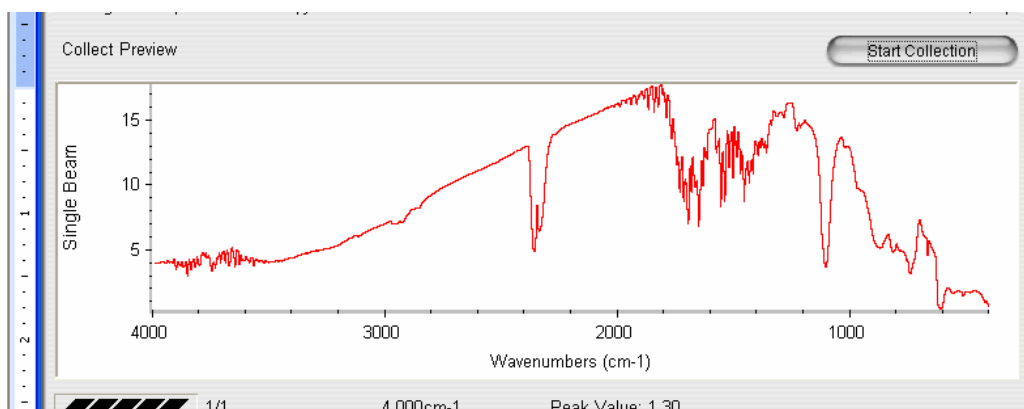


4. Start collection by clicking on the **Col Bkg** button



5. Answer **OK** when asked to confirm background collection

6. If your background looks like this, press **Start Collection**

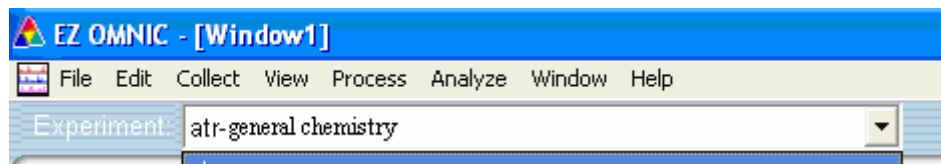


It will take several moments for the instrument to collect the background. Be patient. You can watch the progress in the bottom left corner of the screen.

7. When asked, “Add to Window1?” click **No**

## Collect a **SAMPLE** spectrum:

1. Ensure that the experiment is set as “atr-general chemistry”

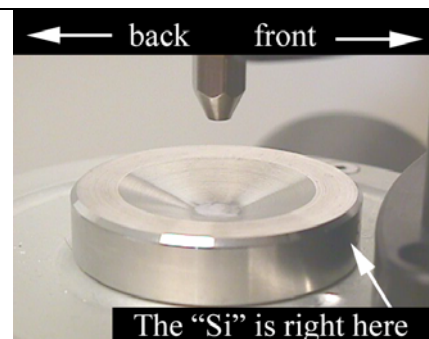


2. Remove the crystal and place a small amount of your sample on the crystal (the same one you ran the background with). Completely cover the round spot in the middle, but do not pile the sample on. Do NOT use your spatula to move the sample around on the crystal. It could scratch it.

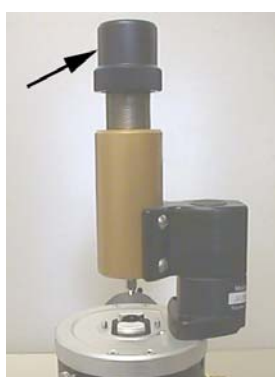


If your sample is crystalline (like table salt is), grind it using an agate mortar and pestle.

3. Insert the crystal with Si *toward the front* of the instrument.



4. Rotate the black screw at the top of the ATR accessory clockwise until you feel resistance and then one click. The anvil should lower and press your sample against the crystal.



4. Start sample collection by clicking on the **Col Smp** button.



5. Enter the spectrum title; click **OK**.

6. Answer **OK** when asked to confirm the sample collection. When your spectrum appears in the window, press **Start Collection**.

It will take several moments for the instrument to collect the background. Be patient. You can watch the progress in the bottom left corner of the screen.

7. When asked, “Add to Window1?” click **Yes**.

8. Switch to % Transmittance by clicking the **% Trans** button



9. Print the spectrum.

10. Clean up following the directions for “Cleaning the Accessory”.