chemDAQ INCORPORATED

SafeCide 2.0 User Manual

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Safety and Legal Notices

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Overview

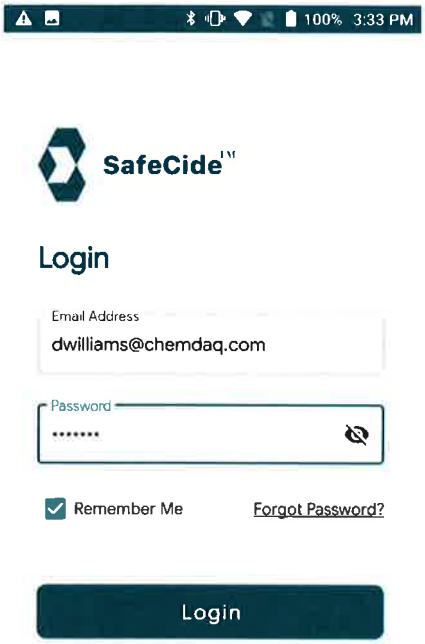
SafeCide™ 2.0 is a portable gas monitoring system designed for use with a ChemDAQ E-Cell® Sensor to provide a simple way to monitor gas in an area, sample locations or perform personal monitoring, like the SafeCide™. It also comes with new features such as an internet feature (https://safecidedashboard.com/dashboard) that allows users to download and view reports from both the Industrial and Sampling modes.

The ChemDAQ SafeCide software is installed on a portable Android tablet (we are no longer using the Windows tablet) which collects, displays, and stores gas exposure readings. The SafeCide system can be used in a hands-free mode with the use of a waterproof carry pouch.

Note: The SafeCide™ is not compatible with all Android devices besides the ChemDAQ issued tablets.

The sensor is connected to the tablet by wireless Bluetooth, allowing the sensor to be placed several yards/meters from the tablet. The distance that the connection can be maintained depends on what else is in the environment that may affect the signal.

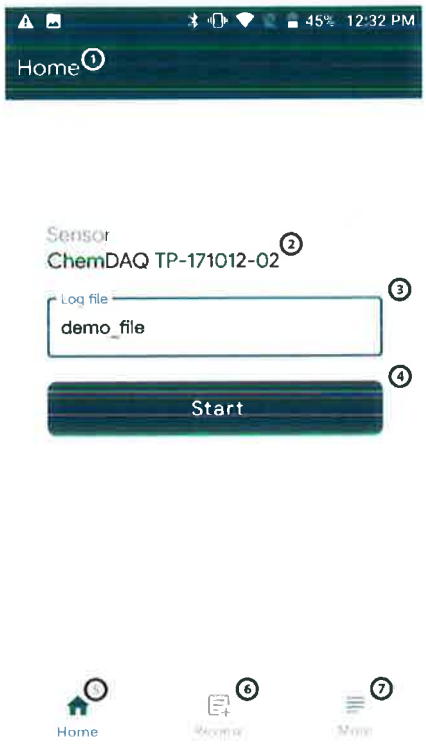
Login



In order to use the SafeCide 2.0 App, you must first login with your Email and Password that were created through the SafeCide Dashboard. If you do not have a User Login, contact your designated Company Admin to create an account for you.

Please reference the SafeCide Dashboard User Manual for more detailed instructions on Users and Login.

Home Screen



1) Screen Name – The Name of the Current Screen
2) Serial Number – The Serial Number of the Sensor that is currently paired with SafeCide
3) Log File Name – The name of the file where Data will be saved to
4) Start Button – Begins Data Collection
5) Home Button – Switches to the Home Screen
6) Review Button – Switches to the Data Review Screen
7) More Button – Switches to the Settings Screen

Program Modes

SafeCide has 2 modes of operation, Sampling Mode and Industrial Hygiene Mode. The modes can be easily toggled by:

1. Press the More Button to bring up the Settings Menu
2. Select the Radio Button of the desired mode
3. Press the Back Button to return to the Home Screen.

Sampling Mode

This mode is designed for use where multiple locations need to be tested for exposure levels and where continuous monitoring is not practical, as is the case in many areas of industrial plants. It's important to regularly measure the air concentration of the chemicals in use where workers are routinely in close proximity to the chemicals being applied. Regular measurements provide peace of mind regarding worker safety and can also be a valuable process monitoring tool.

1) Sensor Type
2) Location
3) Current Gas Reading (PPM)
4) Sensor Serial Number
5) Current Date & Time
6) Comment Button
7) End Data Collection Button

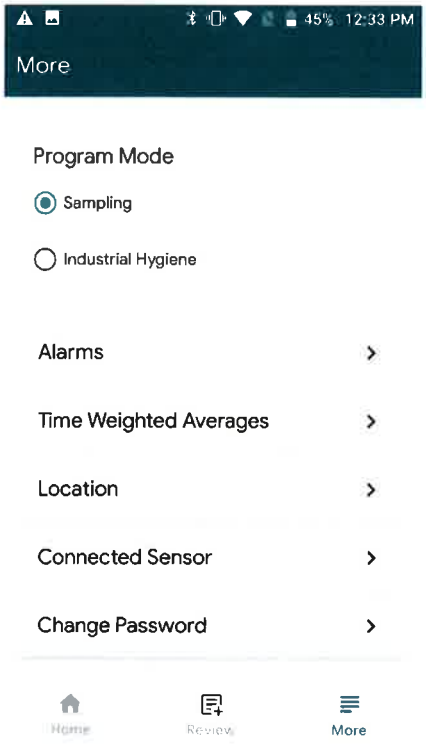
Industrial Hygiene Mode

This mode collects readings over an extended period and calculates a Time Weighted Average (TWA) over a time interval, typically 15 Minutes and 8 Hours. The TWAs are average readings, updated in real time, displayed independently of the current reading. Both TWA readings come with additional alarms and alerts to provide exposure data over longer data collection.

1) Sensor Type
2) Current Date & Time
3) Sensor Serial Number
4) Current Gas Reading (PPM)
5) Current 15 Minute TWA Value (PPM)
6) Current 8 Hour TWA Value (PPM)
7) Comment Button
8) End Button

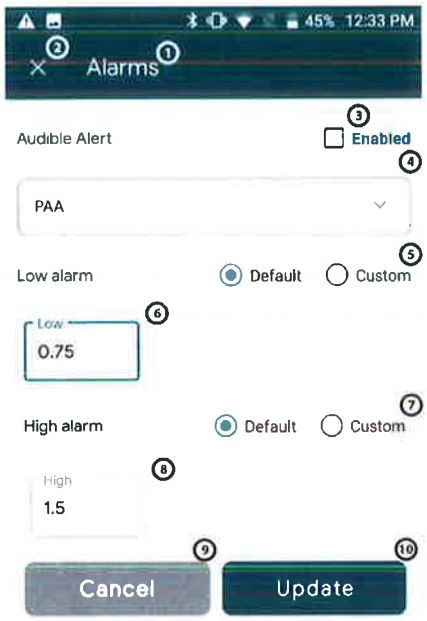
Settings

Press the Menu Button in the Toolbar to switch to the Settings Screen.



Instantaneous Alarms

When the Sensor's PPM reading exceeds the exposure threshold, an Alarm will be triggered. There are 2 Instantaneous Alarm Levels: Low Alarm and High Alarm. For each Alarm there is the default exposure threshold or the option to set a custom exposure threshold. When an alarm is triggered, the background color of the PPM reading will change. In addition to the Visual indicator, if the Audible Alert option is enabled, then an Alarm will sound as well.



1) Screen Name
2) Return to Previous Screen Button
3) Audible Alerts Toggle
4) Gas Type Drop Down Menu
5) Low Alarm Default/Custom Settings Toggle
6) Low Alarm Threshold Value
7) High Alarm Default/Custom Settings Toggle
8) High Alarm Threshold Value
9) Cancel Button
10) Update Button

Customize Alarm Threshold

Both the Low and High Alarm Thresholds can be customized by:

- Navigating to More > Alarms
- Check the Custom Radio Button of the desired Alarm
- Tap the Text Entry Box to bring up the keyboard and enter the desired value
- Press the Android Back Button to dismiss the keyboard
- Scroll to the bottom of the Screen and press the Update Button
- A prompt will briefly appear confirming the changes were saved

Visual Alerts

1. When the PPM reading is below the Low Alarm Threshold, the background color will be Green.
2. When the PPM reading exceeds the Low Alarm Threshold, the background color will change to Yellow.
3. When the PPM reading exceeds the High Alarm Threshold, the background color will change to Red.

Audible Alerts

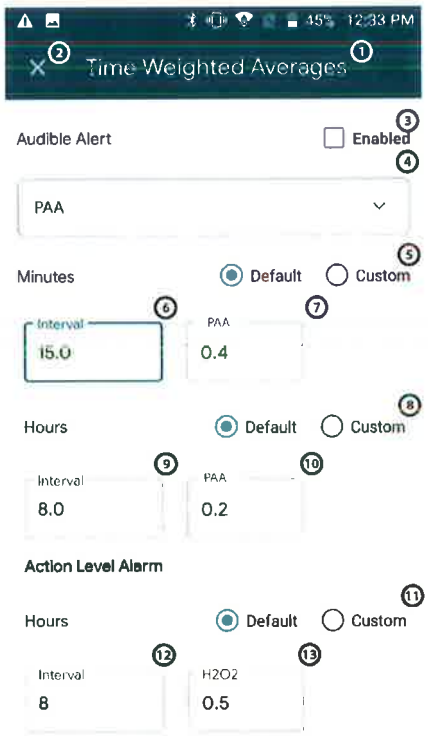
1. An Alarm will sound from the Handheld Device when the either the Low Alarm or High Alarm PPM Threshold is exceeded.
2. There will be a Volume Icon in the top left of the screen, pressing this will put a slash through the icon and mute the Audible Alert.

Time Weighted Averages

Safety standards regarding chemical exposure are often stated in terms of average exposure levels or Time Weighted Averages (TWA). The Short-Term Exposure Limit (STEL) is the average exposure level over 15 Minutes. The Permissible Exposure Limit (PEL, sometimes called a Long Term Exposure Limit) is the average exposure level over 8 Hours.

The TWA calculation is based on a **"moving time-window."** So, the displayed 15-Minute TWA represents the average gas concentration during the last 15 Minutes, a window which began 15 Minutes ago and ends at the present moment (or began 8 Hours ago and ends at the present moment in the case of the 8 Hour TWA).

Whenever the TWA value reaches or exceeds the PPM Threshold, an Alarm will trigger.



1) Screen Name
2) Return to Previous Screen Button
3) Audible Alerts Toggle
4) Gas Type Drop Down Menu
5) Minutes TWA Default/Custom Settings Toggle
6) Minutes TWA Interval Value
7) Minutes TWA Threshold Value
8) Hours TWA Default/Custom Settings Toggle
9) Hours TWA Interval Value
10) Hours TWA Threshold Value
11) Cancel Button*
12) Update Button*

*** Not Pictured**

Customize Alarm Interval & Threshold

Both the 15 Minute and 8 Hour TWAs can have their Interval and Thresholds can be customized by:

- Navigating to More > Time Weighted Averages

- Check the Custom Radio of the desired Alarm
- Tap the Text Entry Box to bring up the keyboard and enter the desired value
- Press the Android Back Button to dismiss the keyboard
- Scroll to the bottom of the Screen and press the Update Button
- A prompt will briefly appear confirming the changes were Updated Successfully

Visual Alerts

1. During the first 15 Minutes (or 8 Hours) of Data Collection, asterisks will be displayed in lieu of a TWA value as not enough time has elapsed to have a TWA value.
2. When the TWA value is below the PPM Threshold, the background color will be Green of the TWA Section.
3. When the TWA value is exceeds the PPM Threshold, the background color of the TWA Section will change to Red.

Audible Alerts

1. An Alarm will sound when the either the Low Alarm or High Alarm PPM Threshold is exceeded.
2. There will be a Volume Icon in the top left of the screen, pressing this will put a slash through the icon and mute the Audible Alert.

Location Tagging

In Sampling Mode the User is able to add a descriptive label of the Location being monitored to the readings.

Location Management

Prior to beginning Data Collection, Locations can be added or deleted by navigating to the More > Locations

Applying a Location Tag

1. During Data Collection, at the top of the screen there will be a map pin icon that says "Location", pressing this will bring up the Locations sub-menu
2. A list of the pre-configured Locations will be displayed, if a new Location is desired while Data Collection is underway, tap the Text Entry Box, enter the name of the Location, and press the Add Button
3. Select a location and press the Set Button
4. The Locations sub-menu should close and at the top of the selected Location should be displayed at the top of the screen next to the map pin icon
5. Repeat the above steps to change to a different Location
6. If no specific Location Tag is desired, press the map pin icon and then press the Clear Button

7. The Locations sub-menu should close and "Location" should be displayed at the top of the screen next to the map pin icon like when Data Collection was initially started

Sensor Pairing

Previous versions of SafeCide required the ChemDAQ E-Cell Sensor to be paired with both the Tablet and again paired through the SafeCide application, but that is no longer the case. Additionally, SafeCide 2.0 allows for an E-Cell Sensor to connect to the Handheld Device via a USB Mini-To-USB Micro Cable.

Bluetooth Connection

1. Navigate to More > Connected Sensor
2. Check the Bluetooth Radio Button
3. Press the Scan Button
4. Select the Serial Number of the desired ChemDAQ E-Cell Sensor from the list of available sensors
5. Press the Pair Button
6. A Confirmation Prompt should appear upon successfully pairing with the sensor
7. Press the Home Button in the bottom toolbar
8. The Sensor Serial Number displayed should be one that corresponds to sensor that was just paired

USB Connection

1. Navigate to Settings > Connected Sensor
2. Check the USB Radio Button
3. Return to the Home Screen
4. No Sensor Serial Number will be displayed

Data Collection

Log File

SafeCide logs data from the Sensor in a Comma Separated Values (CSV) file. Press the Text Entry Box to bring up the keyboard and enter in the desired Filename. Filenames must be unique as data cannot be appended to an existing log file and log files cannot be overwritten.

The Data Fields of the log file are:

- Date
- Time
- PPM
- Voltage
- Temperature
- ADC
- Alarm Status
- Comment
- Low Alarm Threshold
- High Alarm Threshold
- Location*
- Min TWA Value**
- Hour TWA Value**
- Min TWA Threshold**
- Hour TWA Threshold**
- Action Level Value***
- Action Level Threshold***
- Mode of Operation
- Sensor Type
- Serial Number

***Only in Sampling Mode**
****Only in Industrial Hygiene Mode**
*****Only For Ethylene Oxide E-Cell Sensors**

Comments

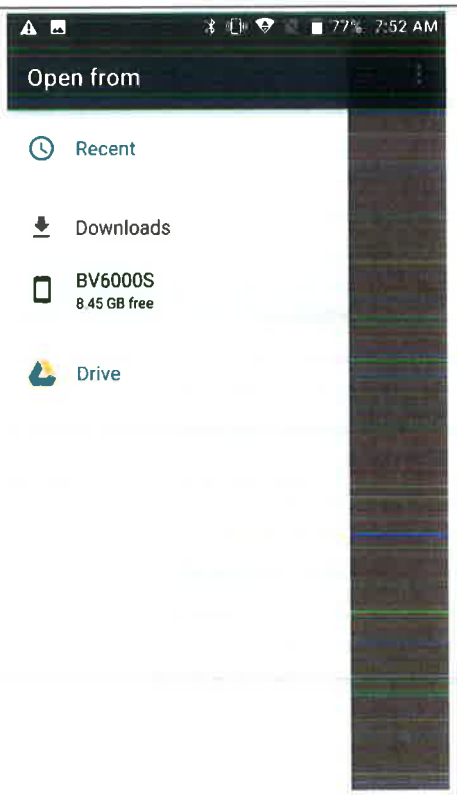
During data collection, a comment can be entered in the log file and reviewed later. On the Data Screen press the "Comment" button and enter the comment. Press "Submit," and a prompt will confirm that the comment was logged in the data file while returning to the Data Screen.

Data Review

Previously collected data can be uploaded to the SafeCide Dashboard, transferred from the Handheld Device to a Computer or reviewed directly in the SafeCide App.

Review Data in App

1. Press the Review Button in the Bottom Toolbar
2. Press the Select File Button



No items

3. Navigate to the SafeCide Folder
    a. Tap the Menu Button in the top left
    b. Select the device home folder (Typically the Model Number of the Device)
    c. Select the SafeCide Folder
4. Select the log file to open
5. The Data will be displayed with 3 viewing options
    a. Data – A Table of the data
    b. Graph – A Graph of the Data
    c. Combined – The Table and Graph of the Data will be stacked vertically

Upload File to SafeCide Dashboard

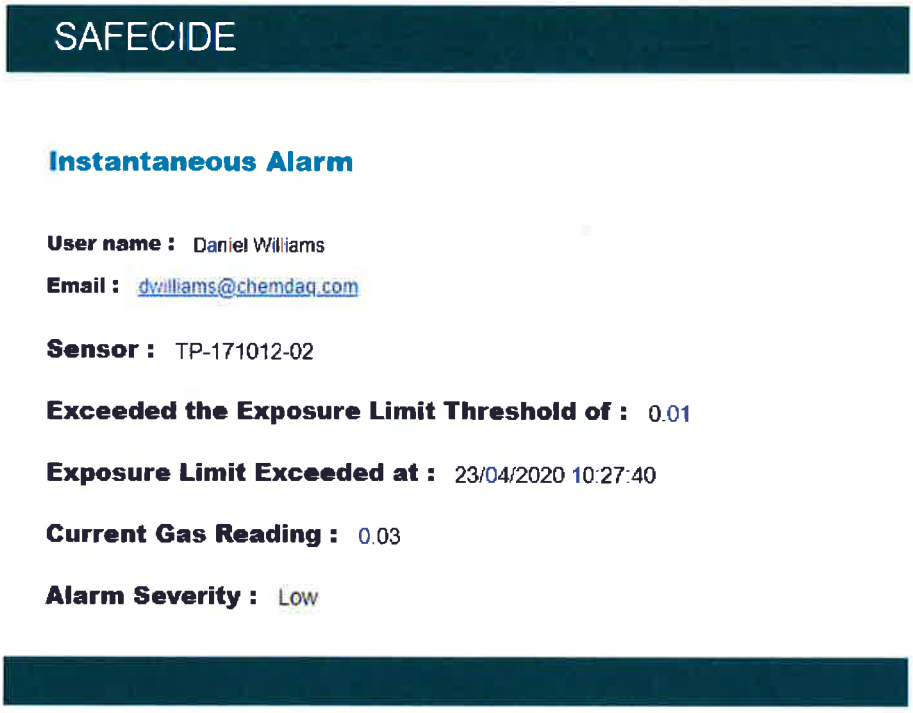
1. Press the Review Button in the Bottom Toolbar
2. Press the Select File Button
3. Navigate to the SafeCide Folder
4. Select the log file to Open
5. Press the Upload File Button
6. A Confirmation Prompt will appear when the file has finished uploading*

***Note: This will require the Android Device to be connect to Wi-Fi**

Transfer File to Connected Computer

1. Connect the Handheld Device to a Computer via a USB Mini to USB Micro Cable
2. On the Handheld Device:
    a. Swipe down from the top of the screen to show the Notifications Menu
    b. Tap the Charging Notification to bring up the USB Preferences Menu
    c. Select File Transfer
3. On the Computer
    a. Open File Explorer
    b. Click on This PC
    c. Click on the Android Device Folder (This is typically the Model Number of the Handheld Device) to the show the contents of its Internal File System
    d. Navigate to the SafeCide Folder
    e. Copy the desired data files to the a folder on the Computer

Notifications


SAFECIDE

Instantaneous Alarm

User name : Daniel Williams

Email : dwilliams@chemdaq.com

Sensor : TP-171012-02

Exceeded the Exposure Limit Threshold of : 0.01

Exposure Limit Exceeded at : 23/04/2020 10:27:40

Current Gas Reading : 0.03

Alarm Severity : Low

In the event that and Instantaneous Alarm or TWA Alarm is triggered. An Email Notification will be sent to the Company Admin detailing the occurrence of the Alarm.

FAQs

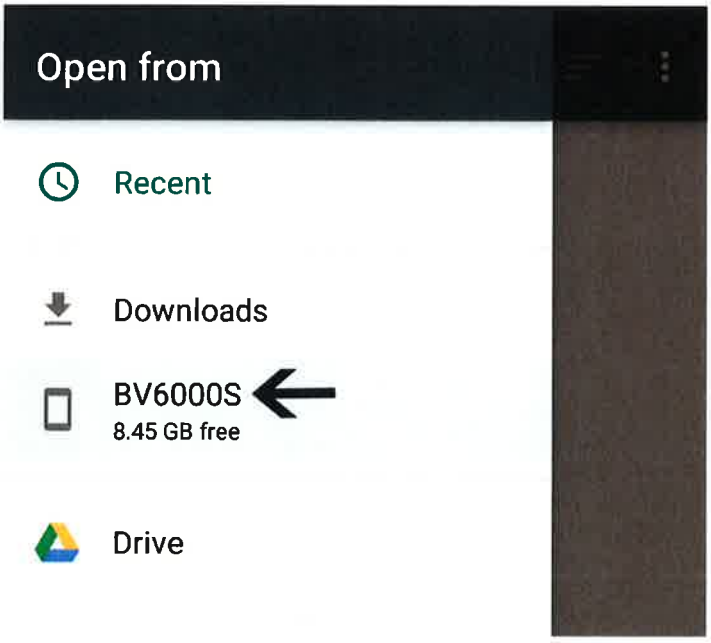
When I go to Review my Data, no files are present

Ensure that you are looking in the correct folder for Data Files. The first time a User Searches for Data it opens to the "Recent" Folder which will be empty

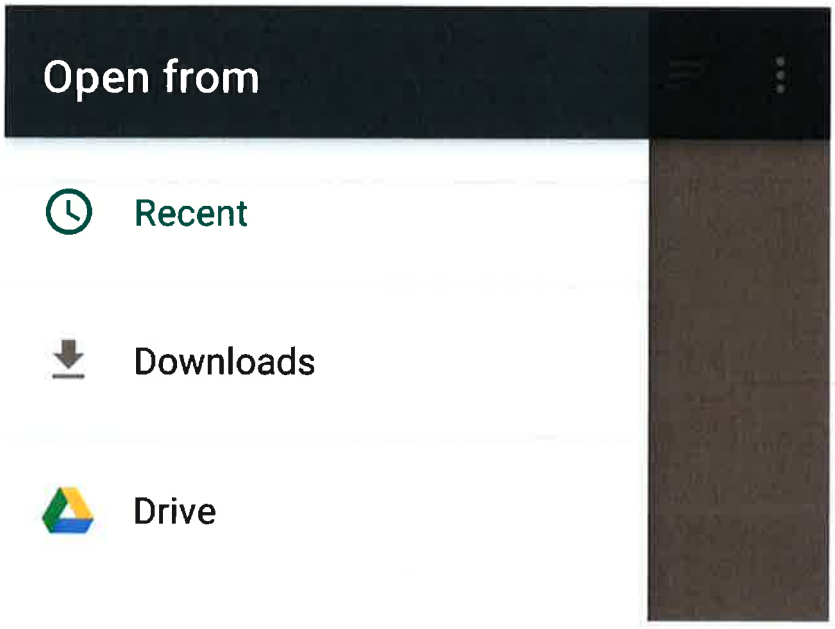
No items

A. Name of the Current Folder/Location
B. Horizontal Bars/Device Locations Menu
C. Vertical Bars/Folder View Menu

1. Tap the 3 Horizontal Bars to bring up the Device Locations Menu.
2. The Locations listed should be Recent, Downloads, Internal Filesystem, and Google Drive.

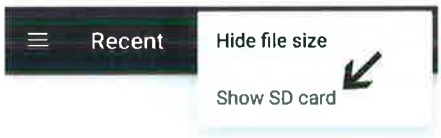


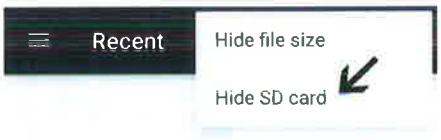
3. If the Internal File System is not listed as an option it may be hidden from display.



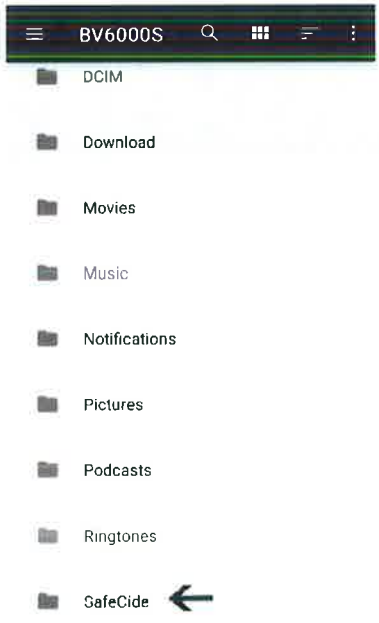
4. Press the 3 Vertical Dots to bring up the Folder View Setting Menu
5. The option to show the Internal Filesystem (or SD Card) should be turned on. This can be confusing if the option displayed is not a toggle-switch, if there text says "Hide Internal

Filesystem" that means the Internal Filesystem is currently being show, otherwise it must be toggled on.





6. From the Locations Menu, select the Internal Filesystem and Navigate to the SafeCide Folder. The data files should now be present.



When I connect my handheld device to my computer I don't see any of my data files in the SafeCide folder?

You can clear the device's cache by:

1. Disconnect the handheld device from the computer
2. Hold the power button on the side of the device to turn the device off
3. Wait for 30-60 seconds
4. Press and hold the power button on the side of the device to turn the device on
5. Reconnect the device to the computer
6. Navigate to the SafeCide folder
7. The data files should now be visible

Technical Support

For questions, technical support and repair information contact ChemDAQ's Technical Service Department at techsupport@chemdaq.com, 1-800.245.3310 x310 or 412.787.0202 x310; or visit us on our website at www.chemdaq.com.