

12 Messages

Not Ready messages

Temperature zone not ready

Pressure and/or flow not ready

Detector not ready

Valve not ready

Other not ready messages

Shutdown messages

Warning messages

Fault messages

Messages

The GC regularly monitors the state of its detectors, pneumatics, oven, PC boards, and other components. If a problem exists, the GC displays a message, beeps or activates an LED, and puts itself in a “safe state” if the problem could be dangerous to the user.

In addition to the information in this chapter, there is device-specific troubleshooting and maintenance information in many of the chapters in this and the *Inlets* and *Detectors* sections.

There are six message types:

Not Ready

A Not Ready message means that some component of the GC is not ready to begin a run. When the GC is not ready, the Not Ready LED lights but there is no popup message on the display. Press [STATUS] to see a message that explains why the GC is not ready. Not ready messages are recorded in the run log.

Method Mismatches

These messages appear if you load a method that contains parameters that do not match the current GC configuration. One of two things occurs if the method and configuration do not match:

- If the parameter that does not match is set from the keyboard, the method overwrites the current parameter; the message states that the current parameter has been replaced. For example, if the gas type currently configured differs from the one in the method, the current gas type is overwritten with that of the method.
- If the parameter that does not match is hardware dependent, the method is ignored and the current setpoints remain; the message states that the method parameter is being ignored. For example, if the method indicates that the front detector is an NPD but you have replaced it with an FID, the method NPD information is ignored and the current FID parameters remain.

Warning

A Warning message means that a problem exists but that the problem will not prevent the instrument from executing the run. The GC emits one beep and a Warning message appears on the display. The GC can start the run and the warning disappears when a run starts. The warning is not recorded in the run log.

Shutdown

Shutdown occurs when there is a hardware problem that could compromise the safety of the user or damage the instrument. Before shutdown occurs, the GC emits a series of warning beeps. After a length of time specific for the component elapses, the component with the problem shuts down, the GC emits one beep, and a warning message appears. The GC is still in a ready state. No additional information appears under the [STATUS] key and the error is not recorded in the run log.

Faults

Fault messages indicate hardware problems that require user intervention. Depending on the type of error, the GC emits no beep or a single beep. The Not Ready LED lights because the GC is unable to begin a run and an error message appears. Press [STATUS] for more information. The error is recorded in the run log.

Two faults can occur that shut down the entire GC; they are a pneumatics problem for an inlet configured for hydrogen gas and a thermal runaway condition for the GC oven. In these cases, the GC beeps continuously until you press [Clear].

Bad mainboard and Fatal error messages

These messages almost always indicate that the mainboard is malfunctioning and must be replaced. These messages are not numbered and usually appear when the instrument is first turned on. See [Table 23](#) for a list of messages. With a few exceptions which are listed in the table, if you get a Bad mainboard or Fatal error message, you will need to contact your Agilent service representative to replace the board.

Table 23 Bad Mainboard and Fatal Error Messages

Popup message	Comments
BAD MAINBOARD	
Main FPGA Failure	Contact your Agilent service representative.
Static RAM Failure	
Boot ROM Checksum	
DMA FPGA Failure	Contact your Agilent service representative.
DRAM Failure	
FATAL ERROR	
Exception Vector	Contact your Agilent service representative.
Bus Error	
Address Error	
Illegal Instruction	
Divide by Zero	
No 512Hz Interrupt	

Not Ready messages

A listing of the Not Ready messages is given in [Table 24](#) below.

Table 24 Not Ready Messages

Status message	Run log entry	Comments
Temperature zone not ready messages		
Oven temp	Not ready: Oven temp ####	See page 248 .
Front inlet temp	Not ready: F inlet temp ####	
Back inlet temp	Not ready: B inlet temp ####	See page 249 .
Front det temp	Not ready: Front det temp ####	
Back det temp	Not ready: Back det temp ####	
Aux 1 temp	Not ready: Aux 1 temp ####	
Aux 2 temp	Not ready: Aux 2 temp ####	
Pressure or flow not ready messages		
Front inlet pressure	Not ready: F inl pres	See page 249 .
Front inlet flow	Not ready: F inlet flow ##.#	
Back inlet pressure	Not ready:	
Back inlet flow	Not ready: B inlet flow ##.#	
Front det H2 flow	Not ready: F det H2 flow	
Front det gas 2	Not ready: F det gas 2	
F det makeup gas	Not ready: F det makeup	

Table 24, continued

Status message	Run log entry	Comments
Back det H2 flow	Not ready: B det gas 2	
Back det gas 2	Not ready: B det gas 2	
B det makeup gas	Not ready: B det makeup	
Aux 3 pressure	Not ready:	See page 249 .
Aux 4 pressure	Not ready:	
Aux 5 pressure	Not ready:	
Detector not ready messages		
Front det waiting	Not ready: Front det on wait	See page 249 .
Back det waiting	Not ready: Back det on wait	See page 249 .
Front det igniting	Not ready: Front det ignite	See page 250 .
Back det igniting	Not ready: Back det ignite	See page 250 .
Front det adjusting	Not ready: Front det adjust	See page 250 .
Back det adjusting	Not ready: Back det adjust	See page 250 .
Front det equip time	Not ready: Front det equip	See page 250 .
Back det equip time	Not ready: Back det equip time	See page 250 .
Front det shutdown	Not ready: Front det shutdown	See page 250 .
Back det shutdown	Not ready: Back det shutdown	See page 250 .
F NPDBead slewing	Not ready: Front NPD slewing	See page 251 .
F NPDBead slewing	Not ready: Back NPD slewing	See page 251 .

Table 24, continued

Status message	Run log entry	Comments
Inlet not ready messages		
Gas saver	Not ready: Gas saver active	The inlet is in Gas Saver mode. Press [Prep Run].
Front inlet purging	Not ready: F inlet purge	Inlet in split mode is purging. Press [Prep Run]. See page 252 .
Back inlet purging	Not ready: B inlet purge	Inlet in split mode is purging. Press [Prep Run]. See page 252 .
F inl pulse inactive	Not ready: F inlet pres pulse	Press [Prep Run].
B inl pulse inactive	Not ready: B inlet pres pulse	Press [Prep Run].
F inl VI flow idle	Not ready: F inlet VI flow	Press [Prep Run].
B inl VI flow idle	Not ready: B inlet VI flow	Press [Prep Run].
Need F inl Solv vent	Not ready: F inlet Solv. vent	Press [Prep Run].
Need B inl Solv vent	Not ready: B inlet Solv. vent	Press [Prep Run].
Valve not ready messages		
24V pneu valve drive	Not ready: 24V pneu valve drive	See page 251 .
Multiposition valve	Not ready: Multiposition valve	See page 251 .
Gas sampling valve 1	Not ready: Gas sampling valve 1	See page 251 .
Gas sampling valve 2	Not ready: Gas sampling valve 2	See page 251 .

Table 24, continued

Status message	Run log entry	Comments
Other not ready messages		
Diagnostics mode	Not ready: Diagnostics active	See page 252 .
Test in progress	Not ready: Test in progress	A diagnostic test is in progress. Wait until it is completed.
Front inj door open	Not ready: Front inj door open	
Back inj door open	Not ready: Back inj door open	
Host system	Not ready: Host system	See page 252 .
External device		An device connected to the Remote Start connector is not ready.
Power on in progress	Power-on restart: Blank run	See page 253 .

Temperature zone not ready

Oven temp

The GC is not ready to begin a run until the oven temperature is within ± 1 degree of the setpoint for the equilibration time. The GC is not ready if the oven is not turned on.

If the oven is unable to reach the setpoint, the GC remains not ready indefinitely unless the oven temperature is out of the oven range, which will cause a shutdown.

Other heated zones

The GC has a number of heated zones in addition to the oven. These are inlets, detectors, and auxiliary, or “aux,” zones. The GC is not ready to start a run until

all the zones are within $\pm 1^\circ\text{C}$ of the setpoint *and* have maintained the setpoint temperature for 30 seconds. A zone that is turned off is considered ready.

If a temperature zone is unable to reach the setpoint, the GC remains not ready indefinitely. The GC does not shut down unless a temperature is out of the range for the zone.

Pressure and/or flow not ready

The GC will not start a run until all pressurized areas have reached their setpoints and maintained them for 6 seconds. The acceptable pressure range of an area is between 0.05 and 0.5 psi, depending on its sensor type.

Likewise, the GC is not ready to begin a run until flows are within 1 mL/min of the setpoint and remain in the range for 6 seconds. Pressure zones that are turned off are considered ready.

If the zone does not become ready within a specified time, the GC goes into shutdown mode. See the Shutdown messages for more information.

When a pressure or flow cannot become ready, check that the gas supply is on and has enough gas.

Detector not ready

Front det waiting

Back det waiting

To prevent condensation, FID and NPD temperatures must be at least 150°C before they can ignite. The FPD must be at 120°C or higher before it can ignite. The TCD must be at 100°C or higher before the filament current turns on. If temperatures are below the minimum, the GC is not ready.

If a detector is unable to reach its minimum temperature, the GC remains not ready indefinitely.

- Verify that the detector temperature setpoint is high enough for operation. Raise it if it is too low.

- If the temperature setpoint is high enough but the detector is unable to reach it, the heater may have failed or the sensor or mainboard may be bad. Contact your Agilent service representative.

Front det igniting**Back det igniting**

The GC is not ready while the FID or FPD is going through the flame ignition sequence. The messages clear if the detector is turned off.

If the FID or FPD is unable to ignite, the detector may eventually shutdown. See the ["The Flame Ionization Detector"](#) or ["The Flame Photometric Detector"](#).

Front det adjusting**Back det adjusting**

The GC is not ready because the NPD or μ -ECD is adjusting its baseline to reach the offset (FID) or output (μ -ECD) setpoint. The μ -ECD adjustment is usually complete in 30 seconds. The NPD may require an hour to adjust.

The NPD may be unable to reach the setpoint if there is contamination in the system (for example, if the gas is not pure enough or the bead is damp) or if the bead is worn out. If it cannot reach the setpoint, you will not receive an error message; the GC simply does not become ready.

Turning the detector off clears the message.

Front det equip time**Back det equip time**

The NPD has completed adjusting the offset and is waiting for the value to remain at the setpoint for the equilibration time.

The NPD may not be able to equilibrate if the system is contaminated or the bead is worn out. In addition, changes in the room temperature could prevent equilibration. The GC becomes ready if the detector is turned off.

You can change the equilibration time from the Detector control menu.

Front det shutdown**Back det shutdown**

The FID, FPD, NPD, or TCD shut down if they experience a pneumatics failure or if the TCD experiences a filament failure.

The GC remains not ready until the detector with the failure is turned off. Turning off the FID or FPD turns off the igniter, hydrogen flow, and air flow. Turning off the NPD turns off bead voltage, hydrogen flow, and air flow. Turning off the TCD turns off filament voltage and reference flow.

F NPD bead slewing**B NPD bead slewing**

The NPD bead voltage is adjusting to a new setpoint.

Valve not ready**24V pneu valve drive**

This Not Ready state means that the +24 V supply to the pneumatics valves is actually less than +16.5 V. All valves are disabled to prevent improper operation. When full voltage is restored, the GC becomes ready.

This Not Ready state could indicate a hardware problem.

Gas sampling valve 1**Gas sampling valve 2**

The GC is not ready because the inject time or load time has not elapsed. It becomes ready when the specified load or inject time has passed.

Multiposition valve

The multiposition valve is causing the GC to be in a not ready state for one of the following reasons:

- The multiposition valve is not at the setpoint position. The GC remains not ready until the valve reaches the setpoint.
- The BCD cable is missing or not plugged into the receptacle. If the cable is missing, the valve will never become ready.
- The BCD setpoint is incorrect for the valve BCD output polarity. The valve will most likely shutdown with Illegal Position or Not Switching shutdown errors.
- If the valve is plugged or the sample is viscous, the switching time may be too short for the valve to switch. Increase the switching time.

Other not ready messages

Diagnostics mode

The GC is not ready when it is in diagnostics mode. The instrument is in diagnostics mode whenever a Diagnostics control table has been accessed through the [Options] key.

Exit the Diagnostics section of the keyboard for the GC to become ready.

External device

An instrument that is part of the start/stop bus is not ready. For example, the automatic liquid sampler is not ready to begin injecting. The GC becomes ready when the other instruments on the bus are ready.

Host system

The GC is not ready if the integrator, Agilent ChemStation, or other controller is not ready to begin a run. It becomes ready when the host does.

Front inlet purging

Back inlet purging

This applies only if you have a split/splitless inlet. The message appears if you try to start a run while the inlet purge valve is still in the split mode.

The inlet remains not ready and purging continues until you press the [Prep Run] key. Pressing [Prep Run] closes the valve (it also turns off the gas saver mode and increases pressure for a pressure pulse, if selected).

Power on in progress

This message appears when:

- Power is restored after a power failure during a run or while the oven was turned on and the GC was not performing a run.
- Power is turned on again after a user turned it off while the oven was turned on.

The GC heats all the other thermal zones and then heats the oven. When the oven temperature reaches the setpoint for equilibration time, the GC becomes ready.

If the power failure occurred during a run, upon power restoration the GC heats all the thermal zones and the oven and automatically performs a blank run. When the blank run is completed, the GC becomes ready.

Shutdown messages

When the GC encounters a Shutdown condition, a popup message appears on the display. The popup message is numbered and briefly explains the problem. This chapter provides more thorough information about the problems that cause the GC or a component of the GC to shut down.

Table 25 Shutdown Messages

Shutdown no.	Popup message	Comments
1	Oven shut off	See page 255 .
2	Oven cryo shutdown	See page 255 .
3	Front inlet pressure shutdown	See page 256 .
4	Front inlet flow shutdown	See page 256 .
5	Back inlet pressure shutdown	See page 256 .
6	Back inlet flow shutdown	See page 256 .
7	Front detector fuel gas shutdown	See page 256 .
8	Front detector air/ref shutdown	See page 256 .
9	Front detector makeup shutdown	See page 256 .
10	Back detector fuel gas shutdown	See page 256 .
11	Back detector air/ref shutdown	See page 257 .
12	Back detector makeup shutdown	See page 257 .
13	Pres aux 3 shutdown	See page 257 .
14	Pres aux 4 shutdown	See page 257 .
15	Pres aux 5 shutdown	See page 257 .
16	Multiposition valve is not switching	See page 257 .
17	Can't reach setpoint of multipos valve	See page 257 .
18	Front inlet cryo shutdown	See page 258 .
19	Back inlet cryo shutdown	See page 258 .
20	Aux 1 cryo shutdown	See page 258 .
21	Aux 2 cryo shutdown	See page 258 .
22	Front inlet heating too slowly: temperature shut off	See page 259 .
23	Back inlet heating too slowly: temperature shut off	See page 259 .

Shutdown 1—Oven shut off

The power required to keep the oven at setpoint exceeds the expected power for that temperature. The GC becomes not ready. The oven flaps open half-way (if they are operating correctly). Turn the GC off and then on again or change the oven temperature to restore operation. Possible causes include:

- Malfunctioning oven flap. Check the oven flap on the back of the GC. It should be open when cooling (for temperatures between 50 and 250°C) or closed completely to reach temperature setpoints. If the flap is stuck completely or partially open, it is not operating correctly. Contact your Agilent service representative.
- Look for thermal leaks in the oven (for example, missing insulation around an inlet or detector location or a leak in the door).
- Check for excessive load in the oven (for example, a very large packed column).
- The oven heater or the heater electronics are not operating correctly. Contact your Agilent service representative.

Shutdown 2—Oven cryo shutdown

The GC oven has shut down. Cryogenic shutdowns conserve liquid coolant when the GC is unable to start a run. A cryo shutdown does not mean that the cryogenic cooling system is malfunctioning. Instead, one of the following could be the cause:

- A “cryo timeout” has occurred. This happens if the GC oven has reached its temperature setpoint but the amount of time you specified for the cryo timeout setpoint has elapsed without a run beginning.
Turn the oven off and then on again or change the setpoint to restore normal operation. Then turn the timeout option off to prevent another shutdown or lengthen the timeout period.
- A “cryo fault” has occurred. Cryogenic cooling has been on for over 16 minutes but the oven has not reached its temperature setpoint.
Check the level of the cryogenic fluid and replace the supply if it is too low for proper cooling. The cryo valve may be stuck open or closed. If your fluid supply is adequate, the valve may be broken or the electronics driving it may be malfunctioning (this is a less likely cause). Contact your Agilent service representative.

Shutdown 3—Front inlet pressure shutdown

The front inlet failed to reach its setpoint in the allotted time. The time varies with the type of inlet; it is 2 minutes for purged packed and cool on-column inlets and 5.5 minutes for the split/splitless inlet. The GC is not ready until the problem is corrected and the inlet reaches the setpoint.

Shutdown 4—Front inlet flow shutdown

The front inlet failed to reach its flow setpoint in the allotted time. In flow-control mode, the inlet has 2 minutes to reach the setpoint before shutdown. The GC is not ready until the problem is corrected and the inlet reaches the flow setpoint.

Shutdown 5—Back inlet pressure shutdown

The back inlet can not reach or maintain the pressure setpoint. See Shutdown 3.

Shutdown 6—Back inlet flow shutdown

The back inlet can not reach or maintain the flow setpoint. See Shutdown 4.

Shutdown 7—Front detector fuel gas shutdown

The front detector fuel gas is unable to reach or maintain the pressure setpoint in the allotted 2 minutes. The GC is not ready until the problem is corrected and the detector reaches the setpoint.

Shutdown 8—Front detector air/ref shutdown

The front detector air or reference gas is unable to reach or maintain the pressure setpoint. All the detector gases are shut off and the GC is not ready. See Shutdown 7.

Shutdown 9—Front detector makeup shutdown

The front detector makeup gas is unable to reach or maintain the pressure setpoint. All the detector gases are shut off and the GC is not ready. See Shutdown 7.

Shutdown 10—Back detector fuel gas shutdown

The back detector fuel gas is unable to reach or maintain the pressure setpoint. All the detector gases are shut off and the GC is not ready. See Shutdown 7.

Shutdown 11—Back detector air/ref shutdown

The back detector air or reference gas is unable to reach or maintain the pressure setpoint. All the detector gases are shut off and the GC is not ready. See Shutdown 7.

Shutdown 12—Back detector makeup shutdown

The back detector makeup gas is unable to reach or maintain the pressure setpoint. All the detector gases are shut off and the GC is not ready. See Shutdown 7.

Shutdown 13—Pres aux 3 shutdown

The pneumatics aux 3 module can not maintain the pressure setpoint. All the detector gases are shut off and the GC is not ready. See Shutdown 3.

Shutdown 14—Pres aux 4 shutdown

The aux 4 module can not maintain the pressure setpoint. See Shutdown 3.

Shutdown 15—Pres aux 5 shutdown

The aux 5 module can not maintain the pressure setpoint. See Shutdown 3.

Shutdown 16—Multiposition valve is not switching

The multiposition valve has tried to switch twice without success. The valve shuts down and reports that it is not ready (not at setpoint). Clear the shutdown by entering a new setpoint. Possible causes include:

- The valve is not connected to the correct valve driver or is not connected at all. Connect the valve to the correct valve driver.
- The valve is stuck.
- The switching time is too short for the speed of the valve. The valve could be switching more slowly than usual because it is sticking slightly or the sample is viscous. Increase the switching time.

Shutdown 17—Can't reach setpoint of multipos valve

The valve is switching to the wrong position or is unable to switch to the setpoint position. The valve will shut down. Clear the shutdown by entering a new setpoint. Possible causes include:

- The valve position is incorrect. A setpoint was entered that the valve is unable to reach. For example, position ten was entered for an eight-port valve. Enter a correct valve position setpoint.
- The Invert BCD setpoint is incorrect. With most valves, the invert should be On. If the BCD setpoint is already On and you experience a shutdown, set it to Off.

Shutdown 18—Front inlet cryo shutdown**Shutdown 19—Back inlet cryo shutdown**

The inlet is shut down. A cryogenic shutdown conserves liquid coolant when the GC is unable to start a run. A cryo shutdown does not mean that the cryogenic cooling system is malfunctioning. Instead, one of the following could be the cause:

- A “cryo timeout” has occurred. This happens if the GC inlet has reached its temperature setpoint but the amount of time you specified for the cryo timeout setpoint has elapsed without a run beginning.
Turn the inlet off and then on again or change the setpoint to restore normal operation. Then turn the timeout option off to prevent another shutdown or lengthen the timeout period.
- A “cryo fault” has occurred. Cryogenic cooling has been on for over 16 minutes but the inlet has not reached its temperature setpoint.
Check the level of the cryogenic fluid and replace the supply if it is too low for proper cooling. The cryo valve may be stuck open or closed. If your fluid supply is adequate, the valve may be broken or the electronics driving it may be malfunctioning (this is a less likely cause). Contact your Agilent service representative.

Shutdown 20—Aux 1 cryo shutdown**Shutdown 21—Aux 2 cryo shutdown**

The Auxiliary temperature zone equipped with cryo cooling has shut down. A cryogenic shutdown conserves liquid coolant when the GC is unable to start a run. A cryo shutdown does not mean that the cryogenic cooling system is malfunctioning. Instead, one of the following could be the cause:

- A “cryo timeout” has occurred. This happens if the GC Aux zone has reached its temperature setpoint but the amount of time you specified for the cryo timeout setpoint has elapsed without a run beginning.

Turn the zone off and then on again or change the setpoint to restore normal operation. Then turn the timeout option off to prevent another shutdown or lengthen the timeout period.

- A “cryo fault” has occurred. Cryogenic cooling has been on for over 16 minutes but the Aux zone has not reached its temperature setpoint. Check the level of the cryogenic fluid and replace the supply if it is too low for proper cooling. The cryo valve may be stuck open or closed. If your fluid supply is adequate, the valve may be broken or the electronics driving it may be malfunctioning (this is a less likely cause). Contact your Agilent service representative.

**Shutdown 22—Front inlet heating too slowly:
temperature shut off**

**Shutdown 23—Back inlet heating too slowly:
temperature shut off**

The inlet heater has been full on for a long time but the inlet temperature is not at setpoint. Either the temperature sensor for the zone has failed, or the zone’s heater is defective.

Warning messages

[Table 26](#) lists the Warning messages for the GC. Most require Agilent service intervention. Those that users can correct are indicated along with the corrective procedures.

Table 26 **Warning Messages**

Warning no.	Status message	Popup message	Run log entry	Comments
100	Oven sensor missing	Oven sensor missing		
101	Invalid heater power	Invalid heater power for front detector, inlet, and aux 1		If using an MSD, make sure the Aux zone is configured for an MSD transfer line..
102	Invalid heater power	Invalid heater power for front detector, inlet, and aux 2		
103	Sig 1 buffer full	Sig 1 buffer full	Possible data loss: Sig 1 buffer full	See page 263 .
104	Sig 2 buffer full	Sig 2 buffer full	Possible data loss: Sig 2 buffer full	See page 263 .
105	Analog out data loss	Analog out data loss	Possible data loss: Analog out data loss	Contact Agilent service.
106	Signal data loss	Non-recoverable data loss. Data corrupt.	Possible data loss: Signal data loss	Contact Agilent service.
107	F det config changed	Front det: config changed, method defaulted		Correct the method to match your hardware.
108	B det config changed	Back det: config changed, method defaulted		Correct the method to match your hardware.
109	F inl config changed	Front inlet: config changed, method defaulted		Correct the method to match your hardware.
110	B inl config changed	Back inlet: config changed, method defaulted		Correct method to match your hardware.
111	Col 1 config changed	Column 1: config changed, method defaulted		Correct method to match your hardware.

Table 26, continued

Warning no.	Status message	Popup message	Run log entry	Comments
112	Col 2 config changed	Column 2: config changed, method defaulted		Correct method to match your hardware.
113	Aux 3 method changed	Aux 3 config changed Method defaulted		Correct method to match your hardware.
114	Aux 4 method changed	Aux 4 config changed Method defaulted		Correct method to match your hardware.
115	Aux 5 method changed	Aux 5 config changed Method defaulted		Correct method to match your hardware.
116			Log overflow	Run log capacity is 50 entries.
117	F inl calib deleted	F inl calib deleted		Inlet module is returned to default calibration.
118	B inl calib deleted	B inl calib deleted		
119	F det calib deleted	F det calib deleted		Detector module is returned to default calibration.
120	B det calib deleted	B det calib deleted		
121	P aux calib deleted	P aux calib deleted		Module is returned to default calibration.
122	Comm data overrun	Host communications: data overrun	Possible data loss: Comm data overrun	Contact Agilent service.
123	Comm data error	Host communications: data error	Possible data loss: Comm data error	Contact Agilent service.
124	Comm abnormal break	Host communications: abnormal break	Possible data loss: Comm abnormal break	Check connection.
125	Sampler data overrun	Sampler communications: data overrun	Possible data loss: Sampler data overrun	Check your sampler settings. Contact Agilent service.
126	Sampler data error	Sampler communications: data error	Possible data loss: Sampler data error	Check your sampler settings. Contact Agilent service.
127	Sampler abnormal com	Sampler communications: abnormal break	Possible data loss: Sampler abnormal com	Check connection.

Table 26, continued

Warning no.	Status message	Popup message	Run log entry	Comments
128	F inl flow cal fail	Front inlet flow sensor auto zero calib failed.		Contact Agilent service.
129	B inl flow cal fail	Back inlet flow sensor auto zero calib failed.		Contact Agilent service.
130	Aux 1 cryo disabled	Aux 1 & front inlet on same cryo valve drive: aux1 disabled		Reconfigure aux or inlet cryo drive.
131	Aux 2 cryo disabled	Aux 2 & back inlet on same cryo valve drive: aux2 disabled		Reconfigure Aux or inlet cryo drive.
132		Chgd Col 1 Init time to ###.## ; avoids Sampling End problem		For Volatiles interface, a setpoint conflicted with the Sampling End time parameter. Check your method. See "The Volatiles Interface" for more information.
133		Chgd Col 2 Init time to ###.## ; avoids Sampling End problem		
138	F inj/inlet mismatch	Front injector incompatible with front inlet		
138	b inj/inlet mismatch	Back injector incompatible with front inlet		
140		Chgd FI Saver time to ###.## ; avoids Sampling End problem		For Volatiles interface, a setpoint conflicted with the Sampling End time parameter. Check your method. See "The Volatiles Interface" for more information.
141		Chgd BI Saver time to ###.## ; avoids Sampling End problem		
142		Chgd FI Purge time to ###.## ; avoids Sampling End problem		
142		Chgd BI Purge time to ###.## ; avoids Sampling End problem		

Warning 103–Sig 1 buffer full**Warning 104–Sig 1 buffer full**

Usually, this error occurs when your data collection device (for example, a PC running Agilent Cerity or ChemStation software) goes off-line while the GC is still collecting data.

Possible causes and solutions:

- There is a problem with the PC, the cabling to the PC, or the local network that links the GC to the PC. Check the PC, cabling, and network.
- The PC was turned off without closing the Agilent Cerity or ChemStation instrument session. The GC collects and stores real-time plot data until the buffer overflows and the warning appears. Next time, close the instrument session before turning off the PC so that the GC stops collecting data.
- The PC entered power saver mode. When the PC enters power saver mode, its processor slows down and cannot collect data fast enough for normal communications, eventually causing the warning to appear. If the PC stays in power saver mode overnight, for example, there will be an error on the GC but the Agilent Cerity or ChemStation software will show a Ready status. Close and restart the instrument session, and disable the PC's power saver feature.
- There was a software problem on the PC that stops data collection.
- There is a hardware problem in the GC. If the problem persists, contact Agilent for service.

Fault messages

[Table 27](#) lists the Fault messages for the GC. Most require Agilent service intervention. Those that users can correct have a page reference for the corrective procedures.

Table 27 **Fault Messages**

Fault no.	Status message	Popup message	Run log entry	Comments
200	Pneu board FPGA	Pneumatics shutdown: faulty pneumatics board	Not ready: Pneu board FPGA	
201	Pneumatics board	Pneumatics shutdown: faulty pneumatics board	Not ready: Pneumatics board	
202	Hydrogen shutdown	Hydrogen safety shutdown	Not ready: Hydrogen shutdown	See page 270 .
203	Signal DSP faulty	Signal DSP faulty	Not ready: Signal DSP faulty	
204	Sig DSP ROM broken	Sig DSP ROM broke	Not ready: Sig DSP ROM broken	
205	Sig DSP RAM broken	Sig DSP RAM broken	Not ready: Sig DSP RAM broken	
206	Sig DSP registers	Sig DSP registers	Not ready: Sig DSP registers	
207	Sig DSP data corrupt	Sig DSP data corrupt	Not ready: Sig DSP data corrupt	
208	0-1 mV out #1	Signal path test failed	Not ready: 0-1 mV out #1	
209	0-1 mV out #2	Signal path test failed	Not ready: 0-1 mV out #2	
210	Analog out #1	Signal path test failed	Not ready: Analog out #1	

Table 27, continued

Fault no.	Status message	Popup message	Run log	Comments
211	Analog out #2	Signal path test failed	Not ready: Analog out #2	
212	F det electrometer	Front detector electrometer out of specification	Not ready: F det electrometer	
213	B det electrometer	Back detector electrometer out of specification	Not ready: B det electrometer	
214	Front det flame out	Front detector flame out	Not ready: Front det flame out	See page 271 .
215	Back det flame out	Back detector flame out	Not ready: Back det flame out	See page 271 .
216	F TCD filament open	Front TCD filament open	Not ready: F TCD filament open	See page 271 .
217	B TCD filament open	Back TCD filament open	Not ready: B TCD filament open	See page 271 .
218	F TCD filament short	Front TCD filament shorted	Not ready: F TCD filament short	See page 272 .
219	B TCD filament short	Back TCD filament shorted	Not ready: B TCD filament short	See page 272 .
220	Heater overcurrent	Heater overcurrent. Thermal shutdown.		
221	Thermal shutdown		Not ready:	See page 272 .
222	Oven temp too hot	Oven thermal shutdown	Not ready: Thermal shutdown	See page 272 .
223	Oven temp too cool	Oven thermal shutdown	Not ready: Thermal shutdown	See page 272 .
224	Oven temp sensor	Oven thermal shutdown	Not ready: Thermal shutdown	See page 272 .
225	F det temp too hot	Front detector thermal shutdown	Not ready: Thermal shutdown	See page 272 .

Table 27, continued

Fault no.	Status message	Popup message	Run log	Comments
226	F det temp sensor	Front detector thermal shutdown	Not ready: Thermal shutdown	See page 272 .
227	B det temp too hot	Back detector thermal shutdown	Not ready: Thermal shutdown	See page 272 .
228	B det temp sensor	Back detector thermal shutdown	Not ready: Thermal shutdown	See page 272 .
229	F inl temp too hot	Front inlet thermal shutdown	Not ready: Thermal shutdown	See page 272 .
230	F inl temp sensor	Front inlet thermal shutdown	Not ready: Thermal shutdown	See page 272 .
231	B inl temp too hot	Back inlet thermal shutdown	Not ready: Thermal shutdown	See page 272 .
232	B inl temp sensor	Back inlet thermal shutdown	Not ready: Thermal shutdown	See page 272 .
233	Aux 1 temp too hot	Aux 1 thermal shutdown	Not ready: Thermal shutdown	See page 272 .
234	Aux 1 temp sensor	Aux 1 thermal shutdown	Not ready: Thermal shutdown	See page 272 .
235	Aux 2 temp too hot	Aux 2 thermal shutdown	Not ready: Thermal shutdown	See page 272 .
236	Aux 2 temp sensor	Aux 2 thermal shutdown	Not ready: Thermal shutdown	See page 272 .
237	No line interrupt	No line interrupt thermal shutdown	Not ready: Thermal shutdown	
238	Line interrupt	Faulty line interrupt thermal shutdown	Not ready: Thermal shutdown	
239	No mux ADC response	Mux ADC thermal shutdown	Not ready: Thermal shutdown	
240	Mux ADC offset value	Mux ADC thermal shutdown	Not ready: Thermal shutdown	

Table 27, continued

Fault no.	Status message	Popup message	Run log	Comments
241	Invalid line sense	Line sense reading thermal shutdown	Not ready: Thermal shutdown	
242	Aux3 faulty fact cal	Pneu aux module invalid constants from factory calibration	Not ready: Aux3 faulty fact cal	
243	Aux4 faulty fact cal	Pneu aux module invalid constants from factory calibration	Not ready: Aux4 faulty fact cal	
244	Aux5 faulty fact cal	Pneu aux module invalid constants from factory calibration	Not ready: Aux5 faulty fact cal	
245	F det module rev	Front det module: obsolete EEPROM	Not ready: F det module rev	
246	B det module rev	Back det module: obsolete EEPROM	Not ready: B det module rev	
247	F inlet module rev	Front inlet module: obsolete EEPROM	Not ready: F inlet module rev	
248	B inlet module rev	Back inlet module: obsolete EEPROM	Not ready: B inlet module rev	
249	Aux module rev	Pres aux module: obsolete EEPROM	Not ready: Aux module rev	
250	F det wrong module	Front det: non-det module	Not ready: F det wrong module	
251	B det wrong module	Back det: non-det module	Not ready: B det wrong module	
252	F inlet wrong module	Front inlet: non-inlet module	Not ready: F inlet wrong module	
253	B inlet wrong module	Back inlet: non-inlet module	Not ready: B inlet wrong module	
254	Aux wrong module	Non-aux module in pneu aux position	Not ready: Aux wrong module	

Table 27, continued

Fault no.	Status message	Popup message	Run log	Comments
255	F det invalid type	Front detector: invalid det module	Not ready: F det invalid type	
256	B det invalid type	Back detector: invalid det module	Not ready: B det invalid type	
257	F inlet invalid type	Front inlet: invalid inlet module	Not ready: F inlet invalid type	
258	B inlet invalid type	Back inlet: invalid inlet module	Not ready: B inlet invalid type	
259	F det type mismatch	Front detector: det board not the same as module	Not ready: F det type mismatch	If you installed a new detector, check that the new detector's electronics board and module are installed in the proper locations.
260	B det type mismatch	Back detector: det board not the same as module	Not ready: B det type mismatch	
262	RS232 defective	Host communications: RS232 defective	Not ready: RS232 defective	
264	Sampler RS232 defect	Sampler communications: RS232 defective	Not ready: Sampler RS232 defect	
265	F inlet invalid pid	Front inlet: invalid pids		
266	B inlet invalid pid	Back inlet: invalid pids		
267	F det invalid pid	Front detector: invalid pids		
268	B det invalid pid	Back detector: invalid pids		
269	Pneu aux invalid pid	Pneu aux module: invalid pids		
270	F inlet bad cksum	Front inlet: invalid module checksum		

Table 27, continued

Fault no.	Status message	Popup message	Run log	Comments
271	B inlet bad cksum	Back inlet: invalid module checksum		
272	F det bad cksum	Front detector: invalid module checksum		
273	B det bad cksum	Back detector: invalid module checksum		
274	Pneu aux bad cksum	Pneu aux module: invalid module checksum		
275	F inlet bad fact cal	Front inlet: invalid constants from factory calibration		
276	B inlet bad fact cal	Back inlet: invalid constants from factory calibration		
277	F det bad fact cal	Front detector: invalid constants from factory calibration		
278	B det bad fact cal	Back detector: invalid constants from factory calibration		
279	P aux bad fact cal	Pneumatics aux invalid constants from factory calibration		
280	F inlet i/o failure			
281	B inlet i/o failure			
282	F det i/o failure			
283	B det i/o failure			
284	Pneu aux i/o failure			
285	F det adjust failure	Front detector offset adjustment failed	Not ready: F det adjust failure	
286	B det adjust failure	Back detector offset adjustment failed	Not ready: B det adjust failure	

Table 27, continued

Fault no.	Status message	Popup message	Run log	Comments
290	Zones not updating	Zones not updating	Not ready: Zones not updating	
293	Zone heater driver	Zone heater driver	Not ready: Zone heater driver	

Fault 202—Hydrogen safety shutdown

An inlet configured for hydrogen gas did not reach the pressure setpoint within 2 minutes. Because hydrogen presents an explosion hazard, the following occurred:

- The GC oven fan and heaters are turned off.
- The oven flaps are fully opened.
- Both pressure and flow controls are turned off and the control parameters are flashing when viewed.
- The small zone heaters for inlets and detectors are turned off and the control parameter are flashing when viewed.
- The warning beep continues until the [Clear] key on the keypad is depressed.
- The oven cannot be turned on unless the instrument is power failed. Turn the GC power off and on again to restore operation.

The sequence would continue until the fault is fixed. To find the fault, check for the following possible causes:

- Check the gas supply pressure. Increase the pressure at the initial supply if it is too low to reach the setpoint.
- Check for a leak somewhere in the system. Leak test the gas supply tubing, the inlet, and the inlet column fittings. Leak test procedures are found with each inlet section.
- The column may be broken. Use the leak detector to check the column for leaks and replace the broken column or break off the cracked portion.
- An inlet proportional control valve may be stuck open or closed because of contamination or other fault. Contact your Agilent service representative.

Fault 214—Front detector flame out**Fault 215—Back detector flame out**

This message appears when the FID or FPD is not able to ignite or if the flame goes out during a run. During the ignition process or the run, the detector will try to ignite the flame twice; if both attempts fail, the hydrogen, air, and ignitor will shut off, and the error message will appear. The detector will be in a not ready state.

- Make sure the hydrogen and air are turned on and that the flow rates are high enough for the flame to ignite.
- Use an electronic leak detector to search for and correct leaks around the detector column fitting.
- See the discussion of your detector in ["The Flame Ionization Detector"](#), ["The Flame Photometric Detector"](#) to make sure that you are using the correct jet for your column.
- Change the Lit Offset to 0.5 for the FID or 0.2 for the FPD (the default value).
- If problem persists, contact your Agilent service representative.

Fault 216—Front TCD filament open**Fault 217—Back TCD filament open**

The TCD filament bridge voltage indicates that the filament resistance is too high (or "open," in the electrical sense). The resistance may be too high because the filament is broken or worn thin from use, or the wires from the TCD are not connected on the detector board, or if the cell temperature sensor (Δ PRT) is shorted.

The detector will not be ready until the condition is corrected.

- Check that the wires from the detector are connected on the detector board.
- Check the cell temperature sensor (Δ PRT).
- The TCD cell must be replaced. Contact your Agilent service representative.

Fault 218—F TCD filament shorted**Fault 219—B TCD filament shorted**

The TCD filament bridge voltage indicates that the resistance of the filament is too low, indicating a shorted filament. This could be caused by a worn or sagging filament or if the wires from the TCD (including the cell temperature sensor wires) are not connected properly to the detector board or are touching each other.

The detector will not be ready until the condition is corrected.

- Check that the wires from the cell are connected on the detector board properly.
- The TCD cell must be replaced. Contact your Agilent service representative.

Faults 221 to 236—Thermal shutdown

These faults cause the GC to shut down entirely. A thermal fault is detected if the oven or another heated zone is not within its allowable temperature range (lower than minimum temperature or greater than maximum temperature by 25°C). Several things could cause this error:

- A problem with the electrical supply to the instrument.
- A malfunction of the zone control electronics.
- A shorted temperature sensor.
- A shorted heater.

No power reaches the oven and other heated zones. The GC is not ready.

Any of the following components can experience a thermal shutdown: the oven, the inlets, the detectors, and the aux zones. In addition, problems with electronics on the main PC board can cause a thermal shutdown.

- If you see any thermal shutdown message, turn the GC off and on. If the error was caused by a power supply problem, the error will disappear and the instrument will become ready. If the error reappears, the main board or one or more of the heater/sensor assemblies must be replaced. Contact your Agilent service representative.