

How to Read a Chart Recorder

How It Works

Chart recorders consist of a graph wheel with replaceable graph paper and ink pens. The pens mark the temperature on the graph paper as the wheel turns. The current temperature is at the end of the line. Temperatures are recorded continuously, 24 hours a day. The wheels of the most common models used for vaccine temperature monitoring make one full rotation every seven days. The graph paper has Fahrenheit or Celsius scales on it and the temperature is read where the ink line falls on the scale. Follow manufacturer instructions for loading the chart to ensure that the chart references the correct time.



Chart recorder.



Graph paper—
two-degree increments.

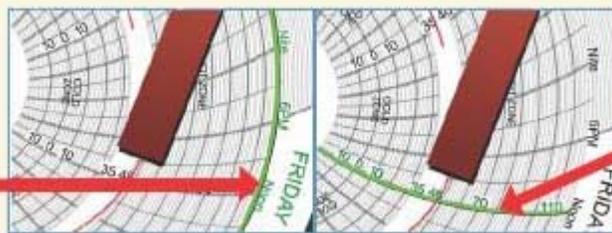


Graph paper—range.

How to Read It

1. The graph contains two scales: one along the outer border of the paper that indicates the day of the week and the time; the other radiating from the center of the graph, like the spokes of a wheel, that indicates the temperature. The temperature will either be in Fahrenheit or Celsius.

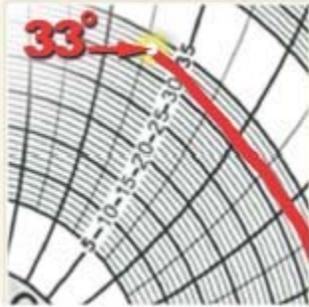
Day and
time scale.



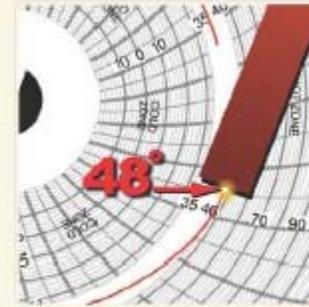
Temperature scale.

Each graph contains two scales.

- To read the temperature for any point of interest along the recorded ink line, find the nearest graph line that circles the center of the graph. Follow that circular graph line to the temperature scale. The temperature is indicated by where the circular graph line intersects the scale. Temperature scales come in different increments. On some graphs, the circular graph lines represent 1-degree increments. On other graphs, the circular graph lines represent 2-degree increments.

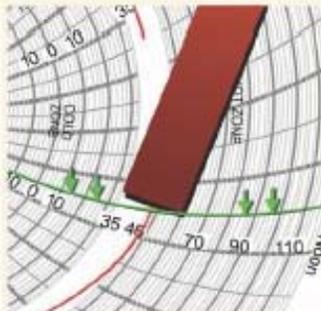


Current temperature is 33°F (end of red line). Each circular graph line represents 1 degree.

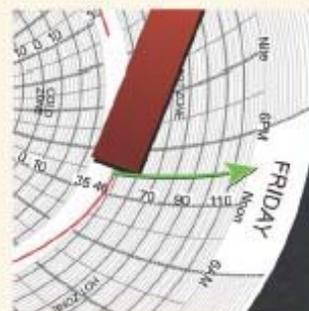


Current temperature is 48°F (end of red line). Each circular graph line represents 2 degrees.

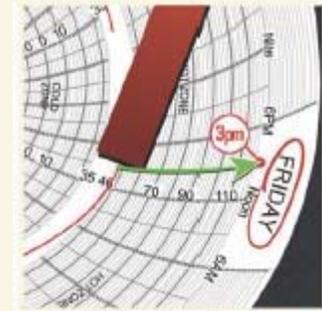
- To read the day for any point of interest along the recorded ink line, find the nearest curved line flowing from the center of the graph to the outside border. Follow the curved line to the outside border to read the day of the week. Estimate the time of day from the nearest curved line. The curved lines usually progress in 3-hour increments.



Nearest curved line to temperature of interest (current temperature at end of red line).



Follow curved line to outside border to reach the day and time scale.



Current temperature falls on the line halfway between the curved lines "Noon" and "6PM" under "FRIDAY", indicating Friday, 3 p.m.

- Record the current temperature on the temperature log. Note any out-of-range temperatures and the action taken on the back of the log.

Temperature Log for Vaccines (Fahrenheit) Month/Year: Jan 2018 Days 1-15

*Instructions: Place an "X" in the box that corresponds with the temperature. The shaded rows represent unacceptable temperature ranges. If the temperature recorded is in the shaded area: 1. Move the vaccine under proper conditions as quickly as possible. 2. Call the vaccine manufacturer to determine whether the potency of the vaccine(s) has been affected. 3. Call the immunization program at your local health department for further assistance: 952-555-8812, and 4. Document the action taken on the reverse side of this log.

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Temperature															
Time															
Notes															

Take immediate action if temperature is in shaded section*

Take immediate action if temperature is in shaded section*

Front: Temperature Log for Vaccines.

Note: ⚠ Immediate action must be taken to correct improper vaccine storage conditions.

Vaccine Storage Troubleshooting Record

Date	Time	Temp	Problem	Action Taken	Result	Notes
1/15/18	3:00 PM	48°F	Temperature too high	Refrigerator temperature checked and found to be 38°F. Refrigerator door was closed and door was inspected.	Temperature returned to 38°F.	Refrigerator temperature checked at 3:00 PM and found to be 38°F.

Reverse: Vaccine Storage Troubleshooting Record.

5. Some charts (such as the one shown here) may have only a white band (without circular graph lines) indicating the recommended temperature range for vaccine storage. In this case, you must still document that the temperatures were checked twice daily and were in range. You may either:

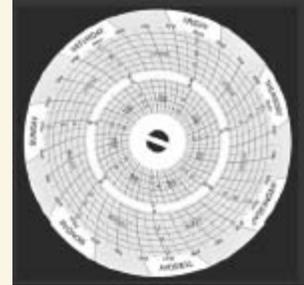


Chart with only a white band (without circular graph lines) indicating the recommended temperature range.

a. Make a mark in the unshaded area of the temperature log that corresponds to the position of the line on the chart recorder graph (an approximation is acceptable, so long as the recorded temperature is within the recommended range); or

b. Write "graph in range" or some similar notation in the appropriate column of the temperature log.

6. All charts from recording thermometers must be kept with the temperature logs for a minimum of 3 years. Charts should always be labeled with the date range before they are placed in the chart recorder and when they are removed.

7. Some graphing thermometers have both a recording wheel and a digital temperature display. The reading from the digital display may not be the same as the temperature recorded on the chart. In case of discrepancies, the charted reading on the certified calibrated chart recorder is preferred over the digital reading, which uses a separate, uncertified sensor.