

Reversible and Non-Reversible Temperature Labels

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Why Use Temperature Labels?

When the need arises for measuring temperatures in various industrial situations, most engineers turn to expensive electronic temperature measuring equipment. In many cases, though, you can do the job with much less costly and much more straightforward methods. When the need is only for an indication that a pre-determined temperature has or has not been reached, heat-sensitive materials in the form of crayon pellets, or labels can do the job readily, inexpensively, and accurately enough for most industrial applications.

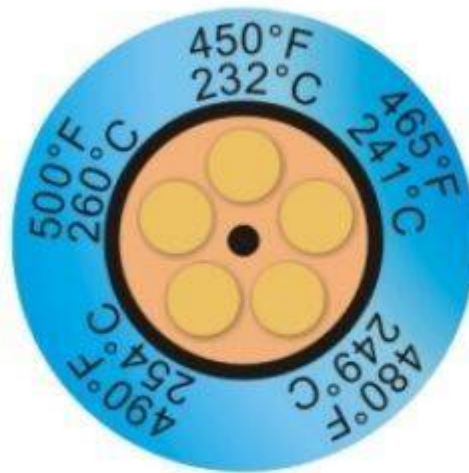
These heat-sensitive, fusible materials consist of crystalline solids. When heated, a temperature will be reached at which the solids change sharply to a liquid. The melting point is reproducible and is virtually unaffected by ambient conditions that may cause errors with other temperature-sensing methods. For example, electrical means of measuring temperatures often function erratically in the presence of static electricity, electrical "noise," or ionized air near electrical equipment.

Temperature labels are temperature monitors consisting of small, heat-sensitive indicators sealed behind transparent, heat-resistant windows.

What is the Difference Between Non-reversible and Reversible Temperature Labels?

As implied by the name, reversible temperature labels can change back and forth as needed to indicate current temperature. One advantage of reversible labels is that they can be used over and over again. Reversible temperature labels are a one-time usage that means that the specified temperature has been reached. Non-reversible labels are helpful when an operator is not available or does not have access to the label attached to a product under test. At any future time, a non-reversible label may be examined to determine if the specified temperature had been obtained.

The reversible temperature labels can be used repeatedly, which makes them ideal for monitoring the temperature of objects that have a fluctuating temperature throughout the day, like ROOM TEMPERATURE or a refrigerator. These labels are to be used to give the consumer a glance temperature reading. They are not used to "RECORD" temperature changes on their own; for you to monitor the temperature at different times throughout the day while using a reversible temperature label, you will need to physically be present to look at what the brand is reading at the time.



What Are Non-reversible Temperature Labels?

Irreversible self-adhesive temperature monitors consist of one or more heat-sensitive indicators sealed under transparent, heat-resistant windows. The centres of the indicator circles will turn black at the temperature ratings shown on the label. The change to black is irreversible and registers the temperature history of the workpiece. The exposed Crystal Code label can be made part of the permanent record by removing the label and affixing it to a service report. These conveniently applied and easy-to-interpret temperature indicators find many industrial and military uses, as well as applications in research and development programs.

The temperature labels will indicate a specified temperature or sequence of temperatures. The performance of the temperature labels is typically not affected by transient contact with solvents, gasoline, fuel oil, lubricants, hot water, or steam. The temperature labels are handy in the solution of problems that include: monitoring the safe operating temperature of equipment and processes; determining temperatures as a guide to design and material selection in research and development projects; determining temperatures as a guide to design and material selection in research and development projects; safeguarding temperature-sensitive materials in storage and transit; obtaining operating temperature data of components and regions not readily accessible to other methods.

These temperature labels are perfect for monitoring the temperature of items that are subjected to temperatures unfit for humans. Additionally, Non-Reversible / Irreversible Labels are also used in the chain monitoring method, which monitors food during shipping. Each temperature point contains a specially formulated wax ink that melts and is absorbed into a black substrate. The colour change becomes

permanent which allows the end-user to keep a record of the unfavourable temperatures the product is subjected to.

Non Reversible Labels are used in many industries, including Medical, Industrial, Transportation, Food Safety, Printing, and Sanitation.

Most Non Reversible labels go through a permanent change usually less than 1 minute for response.



Non-reversible Temperature Label

To use the temperature labels, remove the backing, exposing the adhesive; press the temperature label firmly to the work surface. No special treatment is needed for the surface, although it should be clean to obtain maximum adhesion.

Choose the correct temperature label for your application

Reversible temperature sticker

Reversible liquid crystal sensor labels change appearance once a specific temperature is reached and can be used repeatedly.

Non-reversible temperature sticker

Irreversible sensor labels change appearance once a specific temperature is reached. These can be used when one needs confirmation that the temperature of a piece of equipment or a material has not exceeded a certain level.

Advantages of electronic devices

This family of fusible temperature indicators has several advantages over other methods of determining surface temperature. First, the temperature indications obtained are unquestionably those of the surface being tested. The temperature-sensitive material is applied directly to the surface and therefore changes state in direct response to that surface, and only that surface.

A second advantage of using fusible temperature indicators is that there is no delay in obtaining a reading. Since a mark left by a crayon or a lacquer has a tiny mass, it attains rapid equilibrium with the surface. A "massive" probe tends to prolong response time and could result in an erroneously low reading. With the use of fusible temperature indicators, there is no conduction of heat away from the surface. Nor is there dependence on the duration of heating.

The third advantage of fusible indicators is that the technique for using them is simple and economical. Determining surface temperatures by most other means requires some technical competence and special

in many cases, sophisticated instrumentation. Surface temperature readings can be obtained from film indicators with little effort, training, and expense.

Temperature Labels & Color Changing Paints

Just as the names state, a Reversible temperature label can display temperature changes dynamically and change according to the temperature at the time. Also known as a Thermochromic Thermometer. They have

a range of -30°C ~ 120°C (-22°F ~ 248°F)

A Non-Reversible Temperature Label is just that irreversible, so once the temperature change occurs causing the label to trigger, it can not go back. They have a range of 84°F ~ 554°F (29°C ~ 290°C).

Time Temperature Indicators

Temperature Range: -18°C ~ 37°C. Non-Reversible Temperature Label will monitor how long the label has been subjected to a specific trigger temperature.

Thermal Paints:

Temperature Range: 80°C ~ 1270°C

Thermal Crayons:

Temperature Range: 120°C ~ 600°C

With so many different types of temperature labels as well as the uses for each one, we have made sure to keep our thermal advisors on call, ready to assist all of our customers with the selection of the proper temperature label for their specific application.