

Classification of the Temperature Indicator Labels

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What is a Temperature Indicator Labels?

The temperature indicator label is made with the temperature change ink; this kind of ink can change colour rapidly with ambient temperature change. The coloured object has a dynamic colour effect. It is specific colour or colourless at standard temperature and changes colour according to high and low-temperature changes. The label also can be called a colour change label and thermometer sticker.

The temperature indicator label is a new temperature measurement technology. It adopts the temperature sensitive colour change temperature measurement technology, which can stick on the tested equipment to change the colour or display the temperature number with the change of the equipment temperature, thus control the temperature change of the equipment. This kind of label is widely used in many areas such as the food industry and medical industry; you can know the food or the blood go wrong or not by the temperature indicator sticker.

Advantages of Temperature Indicator Labels

- (1) It is suitable for parts, external surfaces and objects in life-threatening environments that cannot be difficult to be measured by ordinary thermometers.
- (2) It is convenient for inspection. If the temperature changes, the colour will change. People can take measures to avoid accidents and prevent them from happening.
- (3) The product is light, easy to carry, and easy to install. If a thermochromic patch is not suitable for use, it is very convenient to use. Just peel it off.
- (4) When measuring the same number of temperature measuring points, the cost is saved compared with other temperature measuring tools.

Discolouration mechanism

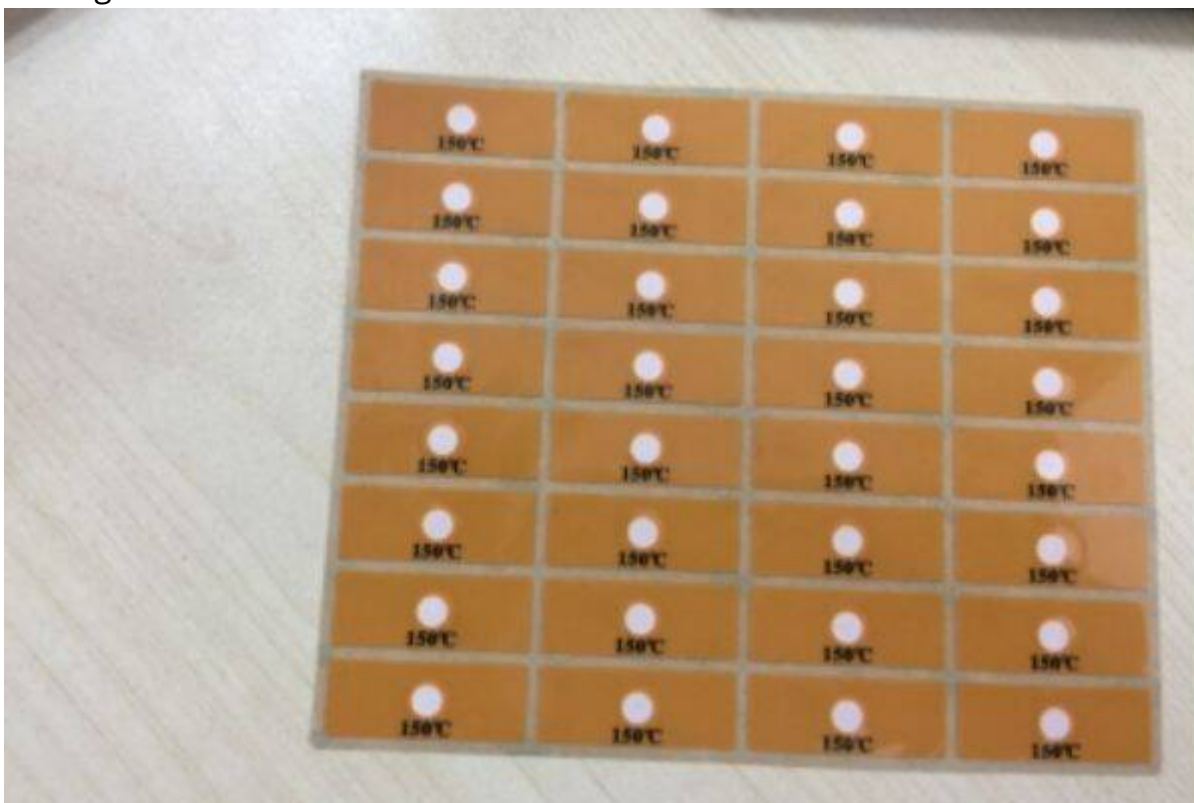
There are various mechanisms, but they are all chemical and physical changes after the object is heated. The evolution of molecular structure leads to the shift in a reflected light colour. For example, crystal transformation, sublimation, dehydration, oxidation and decomposition cause the frequency band to shift, resulting in light scattering.

Classification of Temperature Indicator Labels

1. There are two forms of high-temperature disappearance, high-temperature discolouration and ink after heating; according to the colour change, it can be divided into single-colour change or multi-colour change, reversible or irreversible. For example, liquid crystal colour-changing products can change red, blue and other colours within a specified small temperature range. Different colours correspond to different temperatures. With the recovery of temperature, the colour also recovers, belonging to the reversible colour series. Only one colour change occurred in the single colour change series. Colour irrecoverable series. In most industrial production, it is impossible for someone to always be present at the temperature measuring part, and it needs to be observed by people's patrol inspection. Such claims are for irreversible colour-changing temperature measuring products. Its colour does not recover after warming. In other words, the colour over temperature is preserved. Because it can record the accident process and help to avoid the danger of over-temperature, it is favoured by users. In some cases, people want to have both the advantages of reversibility and irreversibility. Therefore, the products that can be reversed and have the function of recording also come into being.

1). The Irreversible type of temperature indicator sticker

There are two kinds of thermosensitive ink: colour developing and colour changing. The appearance of colour creating irreversible thermal ink is colourless. After being heated, it will show colour. After cooling, the colour will no longer return to colourless; the original colour of the colour-changing irreversible ink will change from one colour to another after being heated, and the colour will no longer return to the actual colour after cooling.



2). Reversible type of the temperature indicator sticker

There are three types of reversibility: colouration, achromatic and discolouration. Colour rendering re becomes colourless in appearance, presents colour after heating, and recovers to colourless after cooling; colour fading reversibly means that the original colour disappears after heating and recovers to the original colour after cooling; colour-changing reversibly implies that the initial colour changes to another colour after heating, and recovers to original colour after cooling; colour can be changed rapidly with the evolution of ambient temperature, to be coloured Objects have dynamic colour effects.



2. Anti-counterfeiting can be detected by hand

The discolouration principle is that the chemical structure inside the ink changes when the external temperature reaches a specific temperature range so that the logo presents different colours. The identification method can be used to touch the logo with your hand or forehead, or gently breathe in it, or use high-temperature heating to change the logo pattern so that the user can immediately identify the authenticity of the purchased goods.

3. Low-temperature identification anti-counterfeiting

This anti-counterfeiting technology is specially used for the beverage and refrigerated food industry. Selection

To better select the temperature measurement standard suitable for users, the general product specifications are 40 , 50 , 55 , 60 , 65 , 70 , 75 , 80 , 85 , 100 , 120 , and higher or lower temperature patches. In the part where the temperature standard has been defined, the detection is more intuitive and obvious. To make the single temperature point white to red. If the observation distance is not far and the light is good, choose a 1.5cmx1.5cm temperature measuring patch.

If the observation distance is far and the light is not good, choose a larger 3cmx3cm temperature measuring patch. Round thermometers are also available. The colours available for selection are white to red and yellowing, green, black, etc.

If you want to have a more comprehensive temperature measurement range or do not have a temperature measurement standard for a while, you can choose several temperature measurement patches simultaneously. To distinguish different temperatures, you can use different sizes, colours, or positions to indicate the difference in colour change temperature. For example, 60 white to black, 70 white to red, and 80 white to red patches are used in the same part. After over-temperature, different colours indicate different temperatures; 70 2cmx2cm can also be used; a small piece of white and red temperature measuring patch; 80 3cmx3cm and significant piece of white and red colour combination indicate two temperatures. Alternatively, you can choose the white and red colour patch of random cutting type and use scissors to cut out different kinds of temperature at different temperatures to indicate the temperature difference. If you want to choose the right temperature indicating label for your productions, contact me, and we will recommend the suitable label for you.