

Product Information thermoscript

Image Durability | Health | Safety

Application

Thermoscript is a brand from Mitsubishi HiTec Paper Europe GmbH incorporating thermal sensitive speciality paper for use in thermal printers.

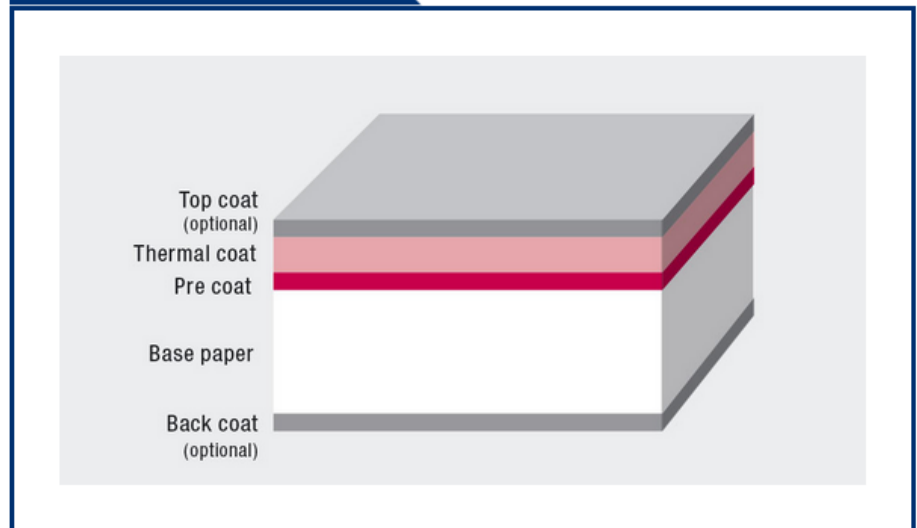
The image is achieved using a “direct thermal imaging” process.

Product design

Thermoscript grades consist of wood free base paper, made from ECF (elementary chlorine-free) pulp with a specially treated clay undercoat and a thermal sensitive coating. In addition, some special grades have a protective “top-coat” covering the thermal layer or a reverse side layer as a barrier when required.

The main chemical components in the thermal layer are wax-type materials, colour former, colour developer and additives which adjust the melting process according to the requirements of the various print heads. The components are fixed on the base paper by a binder. For better thermal printing characteristics as well as better performance of the coating process various other additives and pigments (like calcium carbonate or clay) are added into the coating mixture.

Thermal paper structure



Product description

Thermoscript resembles a calandered, one-side coated printing paper. Thermoscript is odourless and it is possible to use conventional writing equipment.

Image durability

With every grade of thermoscript, Mitsubishi HiTec Paper guarantees a certain durability for the thermal image. The lifespan of the thermal image is based upon a set of optimum storage conditions and a fully developed thermal image. Under these conditions a thermal image will last

from 5 years up to 25 years depending on the grade.

In reality it is recognised that thermal papers are rarely stored in perfect conditions. The paper is often subjected to conditions that can be destructive to the thermal image and/or image contrast. Depending on the application it may be advisable to use a more stable thermal coating. Our experts are readily available to suggest a suitable paper grade for each application.

Storage conditions

Our thermal papers should be stored at a temperature of between 18 °C and 25 °C and a relative humidity of 40 % to 60 %. When storing unprinted thermal papers, we can guarantee a shelf life of three years from the date of production. Prolonged storage, storage above 40 °C or above 65 % relative humidity can adversely affect the thermal function of the paper and lead to a discoloration of the thermal layer or to a loss of contrast in printing.

Because paper is a natural product, improper storage can also have a negative impact on physical properties.

In the case of an inappropriate ambient humidity, the fibre of the base paper either absorbs or releases moisture, depending on the atmospheric humidity, which leads to a dimensional change and thus to tensions within the paper. As a result, the profile of the paper changes and there is a uneven tension within a roll of paper.

Handling conditions

Direct sunlight, fluorescent and similar UV light sources should be avoided.

As the printed image can also be affected or destroyed when exposed to the following substances, depending on the duration, avoidance is strongly advised:

- > Carbonless papers
- > Wet-type diazo copy paper
- > Chart papers or adhesives containing tributyl-phosphate, dibutyl-phosphate or other organic solvents
- > Envelopes or folders composed of plastics containing plasticizers
- > Solvents or solvent-containing products, which include alcohol, ketones, esters, ethers or derivatives from this chemical group
- > Petroleum solvents (gasoline/petrol or diesel)
- > Greasy substances like lanolin (e.g. hand-lotion), lard, butter, mineral oil or vegetable oil

Health

Tests have shown that no health or safety risks are expected as a result of using thermoscript.

We guarantee that our products do not contain any of following substances: lead (Pb), mercury (Hg), cadmium (Cd), chrome (Cr VI), polybrominated biphenyl (PBB) and polybrominated diphenylether (PBDE) according to ROHS directive 2011/65/EU.

Toxicological and dermatological test results:

- > Oral toxicity: Not poisonous or harmful, LD50 > 2,000 mg/kg.
- > Skin Irritation: Tests have proved that there is no skin irritation from direct contact with thermoscript.
- > Sensitivity: Sensitivity or skin related allergies are unlikely through the use of thermoscript.

Furthermore we declare that all of our thermoscript products fulfil the toxicity requirements of the EC Directive 94/62/EC.

Thermoscript complies with REACH directive (EC) No 1907/2006. If a SVHC candidate substance is used in quantities > 0.1 %, according to article 33 of REACH each customer is informed separately.

Nonetheless thermoscript must not stay in direct contact to any food. However, there is no risk from using thermoscript for labelling food packages of on food that is peeled or washed before consumption.

Environment

Thermoscript thermal papers are FSC® Mix and PEFC™ certified. Our pulp suppliers only use wood from sustainably managed forests.

No environmental risks have been found from the use, storage and disposal of thermoscript.

The incineration behaviour of thermoscript is similar to normal uncoated papers. The usual fire extinguishing equipment may be used.

Recycling & Disposal

Thermoscript can be recycled through the waste paper cycle.

The usual methods of disposal can be used, i.e. landfills or incineration.

In case of any further questions please contact our Technical Service:

> technical.service.mpe@mitsubishi-paper.com