

White paper

## ThermoFuse CtP

### *The Next Level of Digital Platemaking*

Just as computer-to-plate eliminated the variables that come with film imaging, processing and copying to plate, ThermoFuse technology now makes it possible to do away with any remaining variables resulting from conventional computer-to-plate imaging and processing. ThermoFuse, such as it is used in Agfa's :Azura plate, is the next level of digital platemaking. There are no chemicals in the process. The laser and the laser only forms the printing image, and nothing affects it after exposure.

ThermoFuse enables digital platemaking without chemical processing and offers a growth path to truly processfree CtP.

# Computer to Plate: How Digital?

## Removing the variables of chemical processing

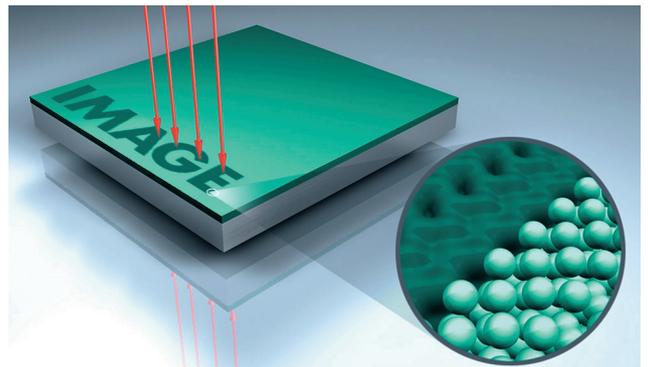
Digital plate imaging such as it is used in current computer-to-plate systems forms a latent image on the plate using the heat or the light of a laser. This image is latent, which means it is not yet ready for printing. It may or may not be clearly visible on the plate. Chemical development transforms the latent image into a durable printing image such as it is needed for offset printing.

Although chemical plate development is an automated and tightly controlled process, it remains an essentially analogue step. The effect of the chemistry on the image varies depending on the temperature and exhaustion of the chemicals, the speed at which the plate travels through the processing unit, the thoroughness with which the plate is rinsed and treated with preservative gum and optionally, pre-heat or pre-wash steps. Chemical processing is analogue rather than truly digital. No matter how tightly you control it, it is only accurate within tolerances.

### How does ThermoFuse work?

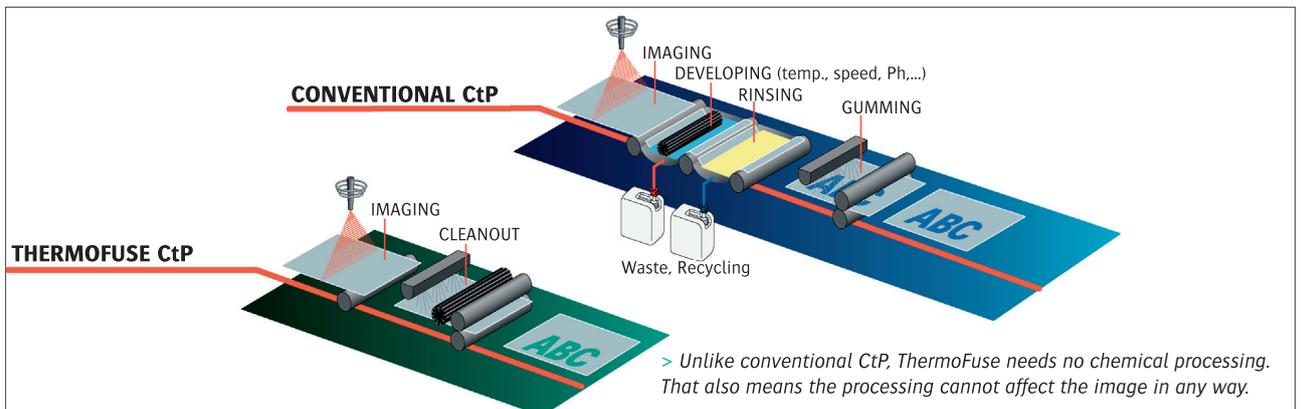
In conventional CtP systems, the heat or light from the laser hits the sensitised layers of the plate and forms a latent image. This may or may not be visible, but it is not physically durable. Next, the plate is developed. Plate development is the chemical process that is needed after imaging to make the latent image stable and durable.

ThermoFuse imaging, unlike conventional CtP, does not rely on adapted analogue processes. Using the high power of today's lasers, ultrafine thermoplastic particles are melted and fused together to create a durable image on the aluminium plate substrate in one single, digital step. This image does not need development. It is ready immediately after imaging. No subsequent steps can alter it in any way. The image that is formed on the plate is precisely the image that will be printed on press. In other words, ThermoFuse is 100% binary.



> With ThermoFuse, the heat of the laser melts latex particles to form a durable image in a single step.

The only thing left to do after imaging is to remove unused latex in the non-image areas in a cleanout step. ThermoFuse uses a single-layer coating, and immediately under the latex is the aluminium printing surface.



## The benefits of ThermoFuse

A plate made with ThermoFuse imaging does not require chemical processing. Although this is not true processless CtP, the immediate benefits are plain to see. It eliminates variables and provides a non-ablative aluminium plate with excellent press behaviour.

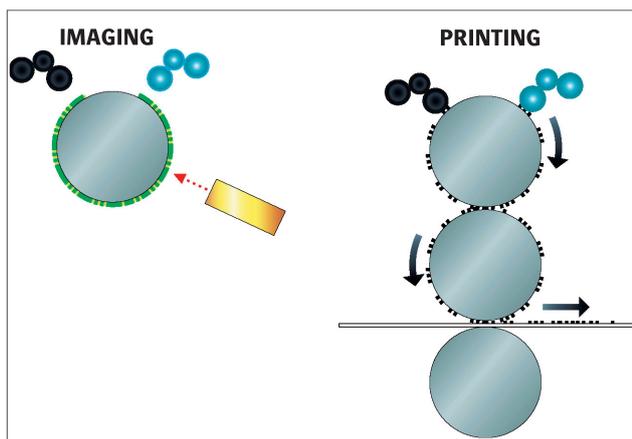
- 100% binary
- Aluminium printing surface
- Non ablative
- Technology available today
- Real step towards processless CtP
- Easy to use
- Visible printing image
- Eliminates the variables of conventional CtP
- Cleaning/preservative gum but no developer
- Compact
- Environmental

ThermoFuse has been conceived with ecology in mind. The plates have very thin single-layer coatings of aqueous solutions. Their thermoplastic (latex) particles are chemically inert. The pH of :Azura cleaning gum, for instance, is close to that of tap water. Gum contains no alkaline or corrosive agents or solvents.

ThermoFuse is also non-ablative. As with all thermal CtP systems, some unwanted ablation occurs, but it is at such a low level that there is no risk to the operator or the environment.

## Proven technology

ThermoFuse technology has been around since 2000, when Agfa first introduced the :Thermolite plate for on-press imaging. :Thermolite is in use on over 100 direct imaging presses and is well accepted by the market. :Azura was introduced at Drupa 2004. It is imaged in a thermal platesetter at 830 nm with an online gumming step to clean out non-image areas.



> When used for on-press imaging, :Thermolite makes use of the press's inking rollers to remove non-image areas.

## Growth path to true processfree

ThermoFuse is a broad technology platform. Currently, two types of plate are available, but the technology has potential for many more that share the benefits of simplicity, predictability and environmental friendliness. ThermoFuse is the most likely direction for a true processless CtP system in the future.

By Jo Vander Aa.

To learn more about ThermoFuse and chemical free platemaking, email [stay.ahead@agfa.com](mailto:stay.ahead@agfa.com)

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