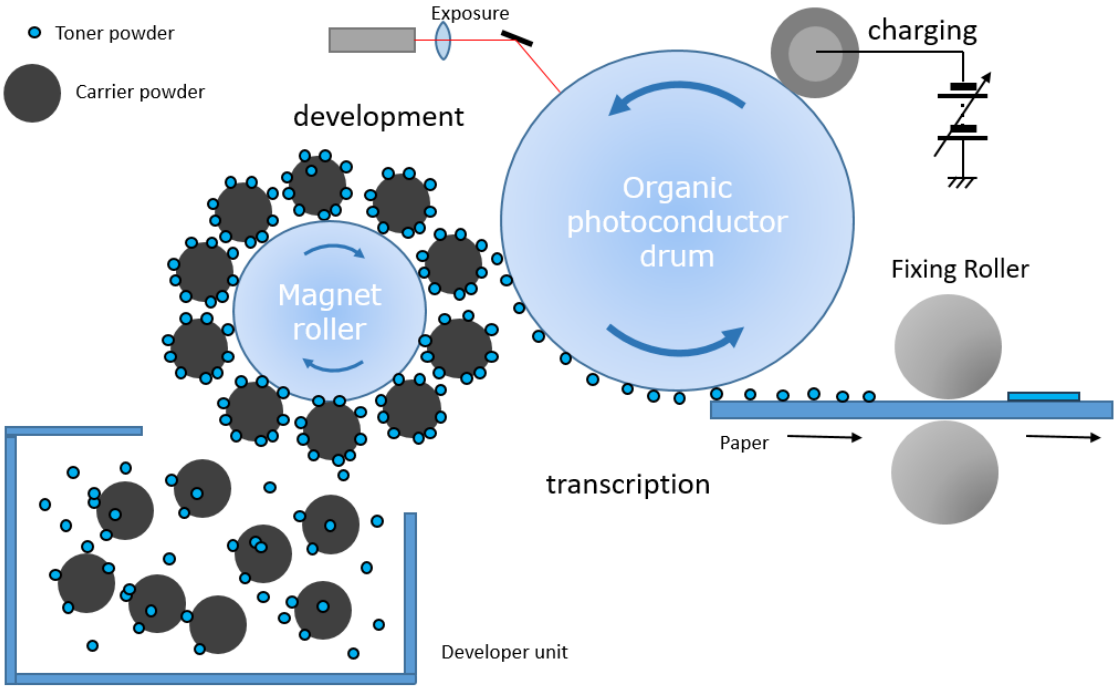
Attachment 2

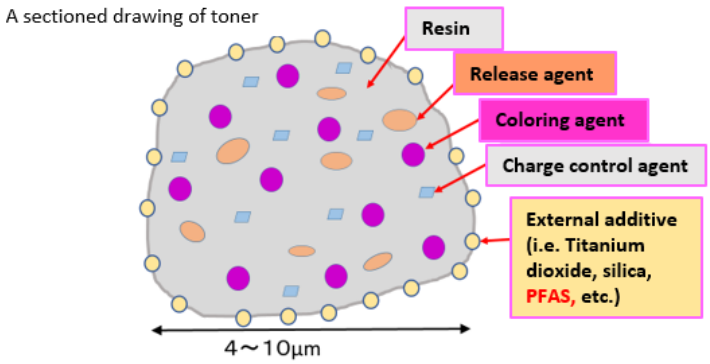
Description about Toner and Carrier

The electro photographic development system is a complex technology that works when there is a perfect balance with the carrier that feeds the toner to the photoconductor.

The toner and carrier are mixed and permanently agitated in the developer station to keep the toner particles with the precise electrical charge needed for their development process. This toner and carrier blend is named developer.

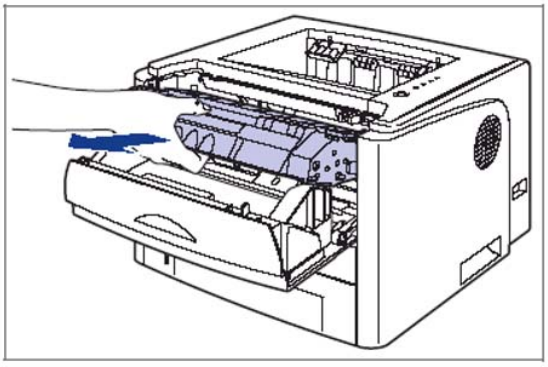


The toner is composed by a thermoplastic polymer of 5-10μm particle size, usually a polyester or a styrene-acrylic resin. About 10-20% of its composition are pigments, waxes, silica and other minor additives such as fluoropolymers.



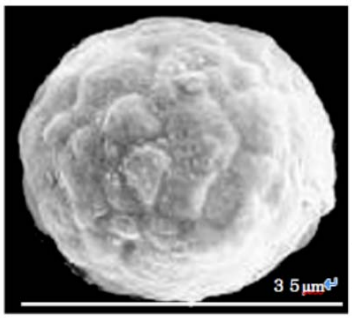
The toner is delivered to the consumer in a sealed condition in a toner cartridge. Plural kinds of toners of various combinations of constituent materials are used according to the equipment, and the capacity is also different according to the specifications of the equipment, and the shape is also different according to the mechanism of the equipment.

Given the 10-year product liability imposed by Council Directive 85/374/EEC (Product Liability Directive), we must continue supplying the toner cartridges as consumables to customers who have purchased copiers and printers for at least 10 years.



The carrier are bigger particles, usually 40-100μm in average particle diameter, composed by an iron or a ferrite core, and a coating. The coating is usually a fluoropolymer, silicone, or styrene acrylate. Due to the mixing, there is friction between toner and carrier particles which give electrical charge to the toner particles.

we must continue supplying the carrier(developer) as a spare parts to customers who have purchased copiers and printers for at least 10 years.



Toner

Quoted from a certain carrier manufacturer

Description about roles, functions, and necessity of PFAS

By applying PFAS as either of a coating on the carrier particles or a toner surface additive, or by applying PFAS as both of them, friction between the toner and the carrier is reduced, and the toner is protected from degradation and the carrier particles are protected from contamination. As a result, a staggering number of the developer life were established, which could not have been achieved without the use of PFAS.

In addition, its electrical charging properties can contribute to such effects as improving initial charge rising property and ensuring the stable frictional charging to the toner particles during all the developer life.

Relation and Influence with the equipment

Toners including PFAS achieve an increased durability meanwhile printing.

This means that any part or component where there is friction between toner or printed paper and metal such as printer rollers, drums, blades, etc in the printer or in the post-processing equipment will be protected and achieve a longer life thanks to the use of PFAS.

In small and medium size printers for home and office, the damage of unreplaceable components, means a shorter life-time of the printer and an increase of electronic waste generation. In case of large size and production printers, without the aid of PFAS, parts and components of rollers and post-processing units will need to be fixed or replaced earlier with the consequent effect of maintenance cost increase and productivity loss.

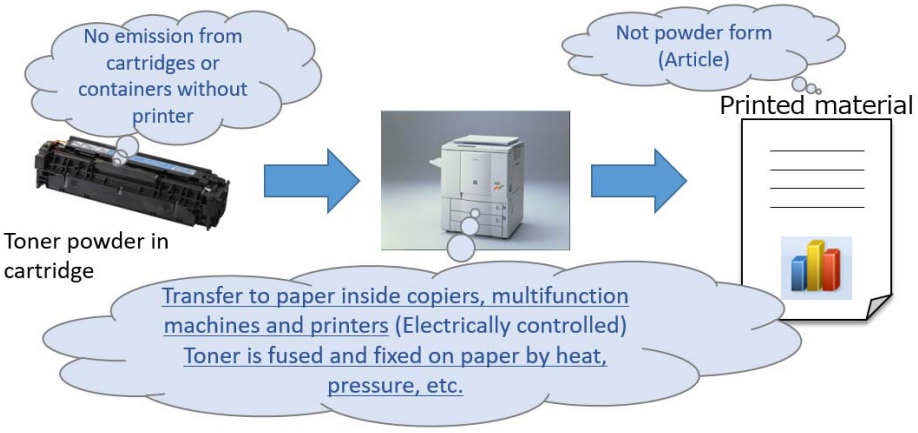
Further, the toner containing the PFAS improves initial charge rising property and charging stability. Due to that, effects such as making generation of the toner scattering not easily and making fogging generation not easily, can be obtained,

thereby contributing to prevention of contamination in an equipment by scattering toner and stabilization of image quality.

If there is no aid of PFAS, it may have negative effects, such as deterioration of the contamination in an equipment and destabilization of image quality, and it can be considered that the maintenance cost to cope with them will be increased and productivity will be decreased.

Possibility of exposure during use

■ Machine design: Extremely low risk of exposure to toner under normal use condition



■ Toner powder is melted and fixed into the paper during fixing process.
■ The printed material is recognized as an “Article”.