

Terms used in Fingerprint Technology

Friction Skin – Skin that covers the inside surface of the hands and fingers and the bottom of the feet and toes.

Friction ridges or papillary ridges – Elevated strips of skin that begin as raised apertures around the pores and then are joined together into rows forming the ridges. Friction ridges begin to form on the human fetus during the third and fourth months of fetal life.

Furrows – Recessed areas between friction/papillary ridges.

Incipient or Nascent ridges – Narrow ridge fragments found between well formed or developed papillary ridges.

Dermis – Layers of skin below the Epidermis layers.

Epidermis or Outer scarf skin – The outer layers of skin.

Eccrine Glands – Glands that secrete sweat from the human body.

Sebaceous Glands – Glands that secrete sebum, an semi-liquid, greasy secretion from the face and/or hairy portions of the body.

Amino Acid – Components of protein found in perspiration.

Flexion creases – represent the sites of attachment of the skin to underlying structures and enable the skin to fold during grasping and movement by the hand (Olsen, Robert D. *Fingerprint Mechanics* 1977)

Delta – The delta is that point on a ridge at or in front of and nearest the center of the divergence of the type lines.

The Core – as the name implies, is the approximate center of the finger impression.

Points of Identification – Ridge ending, bifurcation, enclosure, short ridge & ridge dot.

Ridge ending – Point where a friction ridge ends.

Bifurcation – Point where a friction ridge forks and becomes two separate ridges.

Enclosure or Ridge Island – Formation where ridge bifurcates and rejoins to be one in a short distance.

Ridge Dot – A well formed ridge that is normally caused by a single protuberance.

Loop – is that type of fingerprint pattern in which one or more of the ridges enter on either side of the impression, recurve, touch or pass an imaginary line drawn from the delta to the core, and terminate or tend to terminate on or toward the same side of the impression from whence such ridge or ridges entered. (*The Science of Fingerprints* – FBI 1984)

Radial Loop – Loop pattern in which the ridges of the recurve flow from and back toward the radius bone in the arm.

Ulnar Loop – Loop pattern in which the ridges of the recurve flow from and back toward the ulna bone in the arm.

Whorl – Whorl pattern is one in which there are two deltas and in which at least one ridge makes a turn through one complete circuit. (*The Science of Fingerprints* – FBI 1984) Whorl patterns are interpreted in for subtypes: Plain Whorl, Central Pocket Loop Whorl, Double Loop Whorl, and Accidental Whorl.

Arch Pattern - In arch patterns the ridges will flow in one side of the pattern and out the other side with no recurve or delta. Arch patterns are found in two types, the plain and the tented.

Control or Inked Print - is fingerprint impressions taken of individuals usually know for comparison or identification purposes.

Latent print or impression – is an impression left behind normally on an article of evidence at the crime scene. Latent prints are normally invisible until developed.

Fingerprint powder – A dry powder used to adhere to the moisture and oils remaining in a latent fingerprint in order to make the latent fingerprint visible.

Ninhydrin- is a chemical process used to develop latent fingerprints on porous surfaces such as paper, cardboard, unfinished wood, etc.

Poroscopy – is the term applied to a specialized study of pore structure found on the papillary ridges of the skin as a means of identification.

Edgeoscopy - is a term applied to the study of the characteristics form by the sides or edges of papillary ridges as a means of identification.

Processes used for the development of fingerprints:

Powders – black, white, silver, and fluorescent colors

Magnetic Powders

Amido Black

Gentian Violet

Iodine

Ninhydrin

DFO

Physical Developer

Small Particle Reagent

Silver Nitrate

Sudan Black

Super Glue (Cyanoacrylate Ester)

Vacuum Metal Deposition