

# SWGFAST Glossary

ARCHIVED

## **ACETONE**

Solvent used as a carrier in reagents; also used as a cleaning agent.

## **ACETONITRILE**

Solvent used as a carrier in reagents; also used as a cleaning agent.

## **ACID FUSCHIN**

Reddish protein stain used to enhance bloody friction ridge detail.

## **ADIPS**

Analog Digital Image-Processing System.

## **AFIS**

Automated Fingerprint Identification System.

## **ALGORITHM**

Mathematical routine used in computer processing, e.g., an AFIS matching algorithm establishes the correlation of Level 2 detail between fingerprints.

## **ALIAS (AKA)**

1. A false name. 2. Another name an individual has used. (Also Known As)

## **ALPS**

Automated Latent Print System. The latent print specific operations of an AFIS.

## **ALS**

1. See *Alternate Light Source*.
2. See *Automated Latent System*.

## **ALTERNATE LIGHT SOURCE (ALS)**

Any light source, other than a laser, used to excite luminescence of latent prints, body fluids, etc., now commonly referred to as a forensic light source.

## **ALUMINUM CHLORIDE**

A metal salt used to treat ninhydrin developed latent prints.

## **AMIDO BLACK**

Blue-black protein stain used to enhance bloody friction ridge detail. See *Naphthalene Black*.

## **AMMONIUM CHLORIDE**

A metal salt used to treat ninhydrin developed latent prints.

**ANALOG**

Image representation by waveform variations, e.g., video tape recordings or silver halide photographs of fingerprints.

**ANALYSIS**

The methodical examination of friction skin impressions; separation into parts so as to determine the nature of the whole.

**A-NAPHAFLAVONE**

Chemical used in fixing Iodine processed friction ridge detail.

**ANSI**

American National Standards Institute

**APIS**

Automated Palm Print Identification System. Computerized system for storage, searching and retrieval of known and latent palm print records based on friction ridge detail.

**APOCRINE GLAND**

A type of skin gland that is associated with the hair follicles.

**APPENDAGE**

An attachment or connection within friction ridges.

**AQUEOUS**

Water based.

**ARCH - PLAIN**

A fingerprint pattern in which the ridges enter on one side of the impression, and flow, or tend to flow, out the other with a rise or wave in the center.

**ARCH - TENTED**

A type of fingerprint pattern that possesses either an angle, an upthrust, or two of the three basic characteristics of the loop.

**ARDROX**

Fluorescent yellow dye used with UV light to visualize cyanoacrylate ester fumed friction ridge detail.

**ARTIFACT**

1. Any distortion or alteration not in the original friction ridge impression, produced by an external agent or action.
2. Any information not present in the original object/image, inadvertently introduced by image capture, processing, compressions, transmission, display or printing.

**ASCII**

American Standard Code for Information Interchange. A coding system that converts font characters to standard numeric values.

**AUTHENTICATION**

1. Process used to determine whether a digital image has been altered in any way since its capture.
2. Process used to determine whether an electric file has the correct association, i.e. name, unique identifier, friction ridge images and criminal history record.

**AUTOMATED LATENT SYSTEM.**

The latent print specific operations of an AFIS.

**BALL AREA**

The large cushion area below the base of the big toe.

**BANDWIDTH**

The total amount of data that can be transmitted per second, e.g., bandwidth may limit simultaneous high-speed transmission of digital images by multiple users in an AFIS network.

**BASIC FUSCHIN**

Fluorescent dye used with selected wavelengths of light to visualize cyanoacrylate ester fumed friction ridge detail. See *Rosaniline chloride*.

**BASIC RED 28**

Fluorescent red dye used with selected wavelengths of light to visualize cyanoacrylate ester fumed friction ridge detail.

**BASIC YELLOW 40**

Fluorescent yellow dye used with selected wavelengths of light to visualize cyanoacrylate ester fumed friction ridge detail. See *Panacryl Brilliant Flavone 10GFF*. See *Maxilon Flavone 10GFF*.

**BAUD RATE**

Used interchangeably with bits per second (bps), the unit of measure used to rate the speed at which data can be transmitted via computer modem.

**BIFURCATION**

The point at which one friction ridge divides into two friction ridges.

**BINARY IMAGE**

An image type using only two radiometric values, e.g., black and white.

**BIOHAZARD**

Biological agent or condition (as an infectious organism or insecure laboratory conditions) that constitutes a hazard.

**BIOMETRIC FINGERPRINTING**

Digital image capture of friction ridges and/or a template from friction ridges.

**BMP**

Bitmap. A non-compressed image file format. The “.bmp” suffix is used for bitmap file names.

**BRACHYDACTYLY**

Abnormal shortness of fingers or toes.

**BRIDGE**

A connecting friction ridge between and at generally right angles to parallel running ridges.

**BULB OF FINGERS (THUMBS, TOES)**

The portion of the friction skin on the tips of fingers, thumbs, or toes in the distal phalanx, from one side of the nail to the opposite side of the nail.

**CA or CAE**

Cyanoacrylate Ester (Superglue). An adhesive used in a fuming method to develop friction ridge detail.

**CADMIUM CHLORIDE**

A metal salt used to treat ninhydrin developed latent prints.

**CALCAR AREA**

Area located at the heel of the foot.

**CARD-SCAN**

Electronic recording of friction ridge impressions (fingers and/or palms) from fingerprint cards, palm print cards, etc. Sometimes referred to as dead-scan or flat-bed scanner.

**CARPAL DELTA AREA**

Area of the palm containing a delta formation nearest the wrist.

**CCD**

Charged-Coupled Device. An electronic chip capture device used in optical recording instruments which converts light energy into electrical current, e.g., the chip in a digital camera or scanner for capturing friction ridge impressions.

**CHARACTERISTICS**

Features of the friction ridges. Commonly referred to as minutia(e), Galton detail, point, feature, ridge formation, ridge morphology.

**CHEMICAL HAZARD**

Chemical agent or condition that constitutes a hazard.

**CITRIC ACID**

Chemical used in the preparation of Physical Developer and other friction ridge development reagents.

**CJIS**

Criminal Justice Information Services.

**CLARITY**

Visual quality of a friction ridge impression.

**CLASS CHARACTERISTICS**

Characteristics used to put things into groups or classes, e.g., arches, loops, whorls,

**CLASSIFICATION**

Alpha/numeric formula of finger and palm print patterns used as a guide for filing and searching.

**CMOS**

1. Complementary Metal Oxide Semiconductor. A digital image capture device.
2. A computer operating system.

**COMPARISON**

The observation of two areas of friction ridge impressions for finding similarities and/or differences.

**COMPRESSION**

The process of reducing the size of a data file.

**COMPRESSION, LOSSLESS**

Compression in which no image data is lost and the image can be restored to its original form.

**COMPRESSION, LOSSY**

Compression in which image data is lost and the image cannot be restored to its original form.

**COMPRESSION RATE**

The ratio of the original file size compared to the compressed file size, e.g., 10 to 1.

**CORE**

The approximate center of a pattern.

**COOMASSIE BLUE**

Blue protein stain used to enhance bloody friction ridge detail.

**CREASE**

A line or linear depression; grooves at the joints of the phalanges, at the junction of the digits and across the palmar and plantar surfaces that accommodate flexion.

**CRYSTAL VIOLET**

See *Gentian violet*.

**CROWLE'S DOUBLE STAIN**

Blue protein stain used to enhance bloody friction ridge detail.

**CYCLOHEXANE**

Solvent used in the preparation of liquid Iodine reagent.

**DAB**

Diaminobenzidine. Reagent used to detect/enhance bloody friction ridge detail.

**DEF**

Direct Electronic Fingerprinting

**DELTA**

That point on a ridge at or nearest to the point of divergence of two type lines, and located at or directly in front of the point of divergence.

**DERMABRASION**

A technique using chemicals, wire brush, surgery or lasers which can cause either temporary or permanent loss of ridge detail.

**DERMAL PAPILLAE**

Peg-like formations on the surface of the dermis.

**DERMIS**

The layer of skin beneath the epidermis.

**DFO**

1,8-Diazafluoren-9-one. Compound that reacts with amino acids to produce friction ridge detail with fluorescent properties when exposed to excitation wavelengths of 352-591 nm.

**DICHLOROMETHANE**

Solvent used in the preparation of liquid Iodine reagent. See *Methylene chloride*.

**DIGIT**

A toe or finger.

**DIGITAL**

Information or data that exists as numerical values.

**DIGITAL CAMERA**

A camera that records an image electronically as numerical values.

**DIGITAL IMAGE PROCESSING**

Image display and operations based on numerical pixel values and the application of computer algorithms.

**DIRS**

Digital Image Retrieval System. Normally an AFIS subsystem, also commonly referred to as IRS.

**DISCREPANCY**

A difference in two friction ridge impressions due to different sources of the impressions (exclusion).

**DISSIMILARITY**

See *Discrepancy*.

**DISSOCIATED RIDGES**

Disrupted, rather than continuous, ridges; an area of ridge units that did not form into friction ridges.

**DISTAL**

Farthest away from the center or point of attachment. The direction away from the body.

**DISTORTION**

Variances in the reproduction of friction skin caused by pressure, movement, force, contact surface, etc.

**DIVERGENCE**

The separation of two friction ridges that have been running parallel or nearly parallel.

**DOT**

An isolated ridge unit whose length approximates its width in size.

**DOWN SAMPLING**

The process of representing an image with a smaller number of samples, also referred to as sub-sampling.

**DPI**

Dots Per Inch. The printing resolution of an output device. Often referred to incorrectly as PPI (pixels per inch).

**DUCT**

A tube or canal that delivers secretions or excretions.

**DYSPLASIA**

Ridge units that did not form complete friction ridges due to a genetic cause.

**ECCRINE GLANDS**

Sweat glands that open on all surfaces of the skin.

**ECTRODACTYLY**

Congenital absence of all or part of a digit(s).

**EDGEOSCOPY**

Study of the morphological characteristics of friction ridges; contour or shape of the edges of friction ridges.

**EFTS**

Electronic Fingerprint Transmission Specifications. Documents prescribing content and format for electronic transactions.

**ELASTICITY**

The ability of skin to recover from stretching, compression, or distortion.

**ELIMINATION PRINTS**

Exemplars of friction ridge skin detail of persons known to have had access to the item examined for latent prints.

**ENCLOSURE**

A single friction ridge that bifurcates and rejoins after a short course and continues as a single friction ridge.

**ENCODING**

AFIS process used to record minutiae data.

**ENDING RIDGE**

A single friction ridge that terminates within the friction ridge structure.

**EPIDERMIS**

The outer layer of the skin.

**ERRONEOUS IDENTIFICATION**

The incorrect determination that two areas of friction ridge impressions originated from the same source.

**ETHANOL**

Solvent used in preparation of reagents, dye stains and rinses (ethyl alcohol).

**ETHYL ACETATE**

Solvent used in the preparation of reagents and dye stains.

**EVALUATION**

The determination of the significance, value, or clarity of a friction ridge impression by careful observation and study.

**EXEMPLAR**

Friction ridge record of an individual, recorded electronically, photographically, by ink or other medium.

**EXCLUSION**

The determination that two areas of friction ridge impressions did not originate from the same source (non-identification).

**FERROUS AMMONIUM SULFATE**

Chemical used in Physical Developer and Multimetal Deposition solutions.

**FERRIC NITRATE**

Chemical used in Physical Developer and Multimetal Deposition solutions.

**FETUS**

For the human species, the unborn individual from about the end of the second month of development until birth. Earlier stages are termed embryo.

**FFT**

Fast Fourier Transform. An algorithm used in digital image processing.

**FIBULA**

The smaller of the two bones in the lower leg on the little toe side.

**FIBULAR AREA**

The plantar area situated on the little toe side of the foot.

**FINAL**

A numerical value that is derived from the ridge count of a little finger, usually the right.

**FINGER**

See *Phalange*.

**FINGERPRINT**

An impression of the friction ridges of all or any part of the finger.

**FINGERPRINT POWDERS**

Powders used to visualize friction ridge detail; Can be magnetic, non-magnetic, fluorescent, bichromatic, or a variety of mono-chromatic types.

**FLAME TECHNIQUE**

Many common materials (e.g. camphor, magnesium, masking tape, nitro-cellulose, pine tar, titanium tetrachloride) burned to produce soot for detection of friction ridge detail.

**FLS**

Forensic Light Source. Common term for all light sources including lasers used in forensic examinations. See *ALS*.

**FLUORESCENCE**

Emission of light, resulting from the absorption of radiation from another source.

**FLUORESCCEIN**

Fluorescent reagent used to develop bloody friction ridge detail.

**FOCAL POINTS**

Those areas that are enclosed within the pattern area of loops and whorls. They are also known as the core and the delta.

**FRICITION RIDGE**

A raised portion of the epidermis on the palmar or plantar skin, consisting of one or more connected ridge units of friction ridge skin.

**FRICITION RIDGE DETAIL (MORPHOLOGY)**

An area comprised of the combination of ridge flow, ridge characteristics, and ridge structure.

**FRICITION RIDGE IDENTIFICATION**

See *Individualization*.

**FRICITION RIDGE UNIT**

Single section of friction ridge containing one pore.

**FULCRUM AREA**

The area between the thumb and index finger on the palm.

**FURROWS**

Valleys or depressions between the friction ridges.

**GALTON DETAILS**

Term referring to friction ridge characteristics attributed to the research of English fingerprint pioneer, Sir Francis Galton.

**GENTIAN VIOLET**

Violet stain used to develop or enhance friction ridge detail, which can be viewed by either fluorescence or nonfluorescence. Also known as Crystal Violet.

**GLACIAL ACETIC ACID**

Chemical used in the preparation of reagents and dye stains.

**GOLD CHLORIDE**

A metal salt used in the multimetal process for developing latent prints.

**GOLD TETRACHLORIDE/COLLOIDAL GOLD**

Initial suspension used in the Multimetal Deposition Process.

**GRAY SCALE IMAGE**

An image type using more than two radiometric values, i.e., 256 shades of gray in an eight bit image.

**GUN BLUEING**

A solution consisting of acetic acid, selenious acid and cupric salt, used to develop friction ridge detail on metal surfaces.

**HALLUCAL**

A region which corresponds to the distal thenar and first interdigital region of the palm.

**HENRY CLASSIFICATION**

A system of fingerprint classification named for Sir Edward Richard Henry (1850 - 1931).

**HEPTANE**

Solvent used in the preparation of reagents.

**HEXANE**

Solvent used in the preparation of reagents.

**HFE 7100®**

A commercial solvent by 3M used as carrier in reagents such as ninhydrin, DFO, and Indanedione.

**HUNGARIAN RED**

A red protein stain used to visualize bloody friction ridge detail.

**HYDROGEN PEROXIDE**

Chemical used in friction ridge development reagents.

**HYPERDACTYLY**

See *Polydactyly*.

**HYPOTHENAR AREA**

The friction ridge skin on the palm, below the interdigital area on the ulnar side of the palm.

**IAFIS**

Integrated Automated Fingerprint Identification System. The FBI's national AFIS.

**IDENTIFICATION**

See *Individualization*.

**INCIPIENT RIDGE**

A friction ridge not fully developed which may appear shorter and thinner in appearance than fully developed friction ridges (interstitial, nascent).

**INCONCLUSIVE**

The inability to either individualize or exclude an area of friction ridge detail.

**1,2-INDANEDIONE**

Compound that reacts with the amino acids present in print residue, producing a fluorescent product when exposed to excitation wavelengths of 352-591 nm.

**INDIVIDUALIZATION**

The determination that corresponding areas of friction ridge impressions originated from the same source to the exclusion of all others (identification).

**INFRARED**

Light wavelengths longer than the visible spectrum, 700 to 1,000,000 nm.

**INHERENT LUMINESCENCE**

Luminescence resulting from selected wavelength illumination without chemical treatment.

**INKED PRINT (FINGER, PALM, FOOT)**

See *Exemplar*.

**INKED PRINT (FINGER, PALM, FOOT)**

See *Known Print*.

**INNER TERMINUS**

See *Core*.

**INTERDIGITAL**

Palmar area below the fingers and above the thenar and hypothenar areas.

**INTERPOLATION**

A sampling technique used to increase the size of an image file by creating more pixels and increasing the apparent resolution of an image. When used to decrease image size, interpolation is generally referred to as down sampling.

**INTERVENING RIDGES**

The number of friction ridges between two characteristics.

**IODINE**

Element used as either a vapor or solution; binds with fats and oils to visualize friction ridge detail.

**IRS**

Image Retrieval System. Normally an AFIS subsystem also commonly referred to as DIRS.

**ISOPROPANOL (ISOPROPYL ALCOHOL)**

Solvent used in the preparation of reagents.

**JPEG**

Joint Photographic Experts Group. A compressed image file format. The “.jpg” file name extension used for JPEG file names. Most JPEG images use lossy compression.

**KEY**

A numerical value derived from the ridge count of the first loop beginning with the right thumb exclusive of the little fingers.

**KNOWN PRINT (FINGER, PALM, FOOT)**

A recording of an individual’s friction ridges with black ink, electronic imaging, photography, or other medium on a contrasting background.

**LASER**

Light Amplification by Stimulated Emission of Radiation. A device that produces a coherent wavelength(s) of light. See *FLS*.

**LATENT PRINT**

Transferred impression of friction ridge detail not readily visible; generic term used for questioned friction ridge detail.

**LCV**

Leucocrystal violet. Reagent used to detect/enhance bloody friction ridge detail by either fluorescent or nonfluorescent staining.

**LEUCOMALACHITE GREEN**

Reagent used to detect/enhance bloody friction ridge detail.

**LEVEL 1 DETAIL**

Friction ridge flow and general morphological information.

**LEVEL 2 DETAIL**

Individual friction ridge paths and friction ridge events, e.g., bifurcations, ending ridges, dots.

**LEVEL 3 DETAIL**

Friction ridge dimensional attributes , e.g., width, edge shapes, and pores.

**LIFT**

An adhesive or other medium on which recovered friction ridge detail is preserved.

**LIGROINE**

See *Petroleum ether*.

**LIQUI-DROX**

Fluorescent yellow solution used to develop friction ridge detail on the adhesive and non-adhesive sides of dark colored tape.

**LIQUI-NOX®**

Detergent used in a solution to develop friction ridge detail on the adhesive and non-adhesive sides of tape; cleaning agent.

**LIQUID NITROGEN**

An element used in its liquid state (-195°C) for the separation of adhesive surfaces, as well as to enhance the fluorescence of Zinc Chloride and Zinc Nitrate treated prints for visualization and photography.

**LIVE-SCAN**

Electronic recording of friction ridges (fingers and/or palms).

**LOOP - ULNAR**

A type of pattern in which one or more ridges enter upon either side, recurve, touch or pass an imaginary line between delta and core and pass out, or tend to pass out, on the same side the ridges entered. The flow of the pattern runs in the direction of the ulna bone of the forearm (toward the little finger).

**LOOP - RADIAL**

A type of pattern in which one or more ridges enter upon either side, recurve, touch or pass an imaginary line between delta and core and pass out, or tend to pass out, on the same side the ridges entered. The flow of the pattern runs in the direction of the radius bone of the forearm (toward the thumb).

**LOSSLESS**

See *Compression, Lossless*

**LOSSY**

See *Compressions, Lossy*

**LT/TP - Latent /Ten Print**

AFIS latent print to ten print search process. Sometimes referred to as LI (Latent Inquiry).

**LUMINESCENCE**

Emission of light by energy from non-thermal sources (i.e., chemical, biochemical, electrical), including both fluorescence and phosphorescence.

**MACRODACTYLY**

Congenitally abnormal largeness of fingers or toes.

**MAJOR**

A value derived from the pattern types of the thumbs.

**MAJOR CASE PRINTS**

A systematic recording of all of the friction ridge detail appearing on the palmar sides of the hands. This includes the extreme sides of the palms, and joints, tips and sides of the fingers.

**MALEIC ACID**

Weak acid used in an aqueous solution as a pre-wash step for the Physical Developer process.

**MATRIX**

The substance that is deposited by the finger.

**MAXILON FLAVONE 10GFF**

See *Basic Yellow 40*. See *Panacryl Brilliant Flavone 10GFF*.

**MBD**

7-(P-Methoxybenzlamino-4Nitrobenz-2-Oxa-1,3-Diazole). Yellow dye which produces a fluorescent product when exposed to selected wavelengths of light; used to visualize cyanoacrylate fumed friction ridge detail.

**MEDIAL**

At or near the center.

**MERBROMIN**

Reagent used to detect/enhance bloody friction ridge detail; produces a fluorescent product when exposed to excitation at selected wavelengths.

**MERCURIC NITRATE**

Chemical used as a clearing agent for silver staining.

**METAL ETCHING**

Technique utilizing acidic solutions or vapors in the development of friction ridge detail on select metal surfaces.

**METAL SALT**

Secondary treatment of ninhydrin developed friction ridge detail for visualization (e.g. Zinc Chloride, Zinc Nitrate, or Cadmium Chloride); produces a fluorescent product when exposed to selected wavelengths of light.

**METHANOL (METHYL ALCOHOL)**

Solvent used as a carrier in reagents, dyes, stains, and rinses; also used as a cleaning agent.

**METHYLENE CHLORIDE**

Solvent used in the preparation of liquid iodine. See *Dichloromethane*.

**MINUTIAE**

See *Characteristics*.

**MISSED IDENTIFICATION**

The failure to make an identification (individualization) when, in fact, both friction ridge impressions are from the same source.

**MMD**

Multimetal Deposition. Two step process using a colloidal gold and a modified Physical Developer solution to visualize friction ridge detail.

**MOLYBDENUM DISULFIDE**

Chemical used in the preparation of Small Particle Reagent (SPR).

**MOTTLED SKIN**

Ridge detail is present, but is dissociated due to trauma or genetic causes. It lacks any continuous pattern flow.

**MRM-10**

Combination of Basic Yellow 40, Rhodamine 6G and MBD dyes which produce fluorescence when exposed to selected wavelengths of light; used to visualize cyanoacrylate fumed friction ridge detail.

**MSDS**

Material Safety Data Sheet. Manufacturers' information concerning the handling and use of a chemical.

**NAPHTHALENE BLACK**

See *Amido black*

**NCIC**

National Crime Information Center

**NCIC CLASSIFICATION**

An alpha/numeric system of fingerprint classification.

**N-DODECYLAMINE ACETATE**

Chemical used in the preparation of the detergent solution in Physical Developer.

**NINHYDRIN**

1,2,3-triketohydrindine hydrate. Reagent that reacts with amino acids to develop friction ridge detail.

**NIST**

National Institute of Standards and Technology, U.S. Department of Commerce.

**NITRIC ACID**

Acid used in a fuming technique to visualize friction ridge detail on select metal surfaces.

**NON-IDENTIFICATION**

See *Exclusion*.

**NON-POROUS**

Non-absorbent.

**ORTHODACTYLY**

Fingers and toes cannot be flexed.

**OUTER TERMINUS**

See *Delta*.

**PALM (PALMAR AREA)**

The friction ridge skin area on the side and underside of the hand.

**PALMAR ZONE**

The interdigital area of the palm.

**PANACRYL BRILLIANT FLAVONE 10GFF**

See *Basic Yellow 40*.

**PAPILLAE**

Peg-like structures of the dermis.

**PAPILLARY RIDGES**

Orderly rows of eccrine glands positioned along the path of the friction ridge.

**PATENT PRINT**

Friction ridge impression of unknown origin, visible without development.

**PATHOLOGY**

The study of causes, nature, and effects of diseases, trauma, and other abnormalities.

**PATTERN AREA (CLASSIFICATION)**

In the distal phalange of the fingers, the configuration of friction ridges that are utilized in classification.

**PATTERN FORMATIONS**

Friction ridge skin arrangements formed as early as the third month of gestation.

**PATTERNS**

The designation of friction ridge skin into basic categories of general shapes.

**PDMAC**

Para-dimethylaminocinnamaldehyde. Reagent that reacts with urea, amines and their salts to develop friction ridge detail with fluorescent properties when exposed to selected wavelengths of light.

**PENTADACTYLY**

The occurrence of five fingers or toes on a hand or foot.

**PETROLEUM ETHER**

Solvent used as a carrier in reagents; also as a rinse or cleaning agent.

**PHALANGE (PHALANX)**

A finger or toe, with proximal, medial and distal segments. Any bones in the fingers or toes.

**PHOTO-FLO™**

Surfactant developed by Kodak, used in powder suspension techniques for the development of friction ridge detail.

**PHYSICAL DEVELOPER**

Silver physical development process which reacts with some components of friction ridge secretions, as well as fatty or oily contaminants.

**PIXEL**

Short for picture element. The fundamental element of a digital image.

**PLANTAR AREA**

The friction ridge skin area on the side and underside of the foot.

**POINTS/POINTS OF IDENTIFICATION**

See *Characteristics*.

**POLYDACTYLY**

A hand or foot having more than the normal number of fingers or toes.

**POLYMERIZATION**

Chaining together many simple molecules to form a more complex molecule with different physical properties.

**PORES**

Small openings on friction ridges through which body fluids are released.

**POROSCOPY**

A study of the size, shape and arrangement of pores.

**POROUS**

Absorbent.

**PPI**

Pixels Per Inch. The spatial resolution of a digital image. Often referred to incorrectly as DPI (dots per inch).

**PRIMARY**

A numerical formula derived from the presence of any whorl pattern as they appear on the fingers.

**2-PROPANOL**

Solvent used in preparation of reagents.

**PROXIMAL**

Situated at the closest point of attachment; direction toward the body.

**QUALITATIVE**

The clarity of information contained within a friction ridge impression.

**QUANTITATIVE**

The amount of information contained within a friction ridge impression.

**RADIAL**

The smaller of the two bones of the forearm, on the same side as the thumb.

**RADIOMETRIC RESOLUTION**

The number of intensity levels (such as the number of shades of gray or color values) in a digital image.

**RAM**

Combination of Rhodamine 6G, Ardrex, and MBD dyes, which fluoresce when exposed to selected wavelengths of light; used to visualize cyanoacrylate fumed friction ridge detail.

**REAGENT**

Substance used in a chemical reaction to detect, examine, measure, or produce other substances.

**REDOX**

Reduction-Oxidation. Chemical reaction in which one or more electrons are transferred from one atom or molecule to another. An important component of the Physical Developer and Multimetal Deposition processes.

**RELATIVE POSITION**

Proximity of characteristics to each other.

**RHODAMINE(S)**

Family of dyes that produce fluorescence when exposed to selected wavelengths of light; used to visualize cyanoacrylate fumed friction ridge detail.

**RIDGE (FRICTION)**

See *Friction Ridge*.

**RIDGE APLASIA**

Congenital absence of friction ridge skin.

**RIDGE CHARACTERISTICS**

See *Characteristics*.

**RIDGE DISSOCIATION**

See *Dissociated Ridges*.

**RIDGE DYSPLASIA**

See *Dysplasia*.

**RIDGE FLOW**

A series of adjacent friction ridges in a directional arrangement. Also see Classification Terms glossary.

**RIDGE FLOW**

The direction of a series of adjacent friction ridges. See *Level 1 Detail*.

**RIDGE HYPOPLASIA**

Underdeveloped ridges associated with an excess of creases.

**RIDGE PATH**

The directional flow of a single friction ridge. Also see Classification Terms glossary.

**RIDGE PATH**

The course of a single friction ridge. See *Level 2 Detail*.

**RIDGEOLOGY**

The study of the uniqueness of friction ridge skin and its use for personal identification (individualization).

**ROSANILINE CHLORIDE**

See *Basic Fuschin*.

**RUBBING TECHNIQUE**

Powdering technique that can develop friction ridge detail when substrates are rubbed with gloves or cotton dipped in powder, usually after surfaces are cyanoacrylate fumed.

**RUDIMENTARY RIDGE**

See *Incipient Ridge*.

**RUHEMANN'S PURPLE**

Colored compound that is the product of the reaction between amino acids and ninhydrin.

**RUTHENIUM TETROXIDE (RTX)**

Reagent used in the visualization of friction ridge detail, especially on fabrics.

**RUVIS**

Reflected Ultra-Violet Imaging System that allows visualization of friction ridge detail from the ultraviolet spectrum.

**SAFRANIN O**

Red dye which produces fluorescence when exposed to selected wavelengths of light; used to visualize cyanoacrylate fumed friction ridge detail.

**SCANNER**

A capture device used to create digital image files from original objects, photographs, etc.

**SCAR**

A mark remaining after the healing of a wound.

**SCARF SKIN**

Dry or dead skin which has scaled and peeled away from the surface skin.

**SEBACEOUS GLAND**

An oil-secreting gland generally associated with a hair follicle.

**SECONDARY**

An alpha expression derived from the pattern type of the index fingers.

**SEQUENTIAL PROCESSING**

Use of a series of development techniques in a specific order to maximize development of friction ridge detail.

**SHANNON-XYLENE**

Technique used to separate adhesive surfaces.

**SHORT RIDGE**

A single friction ridge beginning, traveling a short distance, and ending.

**SILVER NITRATE**

Chemical used in the Physical Developer, Multimetal Deposition and Silver Nitrate processes. Used alone, silver nitrate reacts with salt to develop friction ridge detail.

**SKIN**

The outer covering of the body consisting of the dermis and epidermis.

**SODIUM ACETATE**

Chemical used in the preparation of reagents.

**SODIUM BICARBONATE**

Chemical used in the preparation of reagents.

**SODIUM HYPOCHLORITE (HOUSEHOLD BLEACH)**

Solution used to clear ninhydrin stains and to darken the silver deposits of Physical Developer.

**SPATIAL DENSITY**

A measure of the number of pixels in a digital image, e.g., pixels per inch.

**SPATIAL RESOLUTION**

The relationship of the individual pixels to the size of the actual area represented. This is similar to the relationship of film grain to individual details in a photograph.

**SPECTRAL RESOLUTION**

The color bands of light detected during image acquisition, e.g., detection from 520 to 700 nanometers.

**SPLIT THUMB**

Thumb that has conjoined distal phalanges.

**SPR**

Small Particle Reagent. Suspension in which molybdenum disulphide adheres to fats and oils, allowing for visualization of friction ridge detail.

**SPUR**

A bifurcation with one short ridge branching off a longer ridge.

**STICKY SIDE POWDER™**

Product used to develop friction ridge detail on adhesive surfaces and/or tapes.

**STOCK SOLUTION**

Concentrated solution diluted to prepare a working solution.

**SUBSTRATE**

Surface upon which a friction ridge impression is deposited.

**SUB-SECONDARY**

An alpha expression derived from the index, middle and ring fingers of both hands.

**SUDAN BLACK**

Black dye that stains fats, oils, sebaceous components, and contaminants of friction ridge residue; can enhance cyanoacrylate fumed friction ridge detail.

**SUFFICIENT RECURVE**

The space between the shoulders of a loop, free of any appendages that abut upon the recurve at a right angle on the outside.

**5-SULFOSALICYLIC ACID**

Chemical used in fixative solutions for a variety of blood enhancement reagents.

**SURFACTANT**

Surface-active substance; detergent.

**SYMPHALANGY**

End to end fusion of the phalanges of the fingers or toes.

**SYNDACTYLY**

Refers to webbed fingers. Side-to-side fusion of digits.

**SYNPERONIC-N**

Chemical used in the preparation of the detergent solution in Physical Developer.

**TEC**

Thenoyl Europium Chelate. Treatment having fluorescent properties used with selected wavelengths of light to enhance cyanoacrylate fumed friction ridge detail.

**TEMPLATE**

Format of the extracted digital friction ridge detail.

**THENAR AREA**

The large cushion of the palm located at the base of the thumb.

**THERMOPLASTIC POWDER**

Toner powder used in copiers and printers.

**TIBIA**

A bone in the lower leg.

**TIBIAL AREA**

The plantar area situated on the big toe side of the foot.

**TIFF**

Tagged Image File Format. An image file format. The “.tif” extension used for TIFF files. TIFF images can be lossless or lossy.

**TMB**

Tetramethylbenzidine. Reagent used to detect/enhance bloody friction ridge detail.

**TRAUMA**

Injury or damage.

**TRIFURCATION**

The point at which one friction ridge divides into three friction ridges.

**TWAIN**

Technology Without An Important Name. An image acquisition and output protocol commonly used between computers and image capture devices, printers, etc.

**TYPE LINES**

The two innermost ridges associated with a delta that are parallel, diverge, and surround or tend to surround the pattern area.

**ULNA**

The larger of the two bones of the forearm, on the palmar side of the little finger.

**ULTRAVIOLET**

Wavelengths of light shorter than that of the visible spectrum, between 10 and 400 nm.

**UN-DU®**

Product used to separate adhesive tapes.

**VACUUM CYANOACRYLATE ESTER**

Fuming method, conducted under vacuum conditions, in which cyanoacrylate polymerizes on friction ridge residue; used to visualize friction ridge detail.

**VERIFICATION**

Confirmation of an examiner's conclusion by another qualified examiner<sup>1</sup>.

**VMD**

Vacuum Metal Deposition. Process of selective condensation of metals under vacuum conditions; used to visualize friction ridge detail.

**VOLAR**

Related to the palmar and plantar surfaces.

**VOLAR PADS**

Palmar and plantar fetal tissue growth that affects friction ridge skin development and patterns.

**WEBBED FINGERS**

Two or more fingers connected along the sides by skin.

**WHORL - ACCIDENTAL**

A fingerprint pattern consisting of two different types of patterns, with the exception of the plain arch, with two or more deltas; or a pattern which possesses some of the requirements for two or more different types; or a pattern which conforms to none of the definitions.

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<sup>1</sup> - SWGFAST Training to Competency for Latent Print Examiners

**WHORL - CENTRAL POCKET LOOP**

A type of fingerprint pattern which has two deltas and at least one ridge which makes, or tends to make, one complete circuit, which may be spiral, oval, circular, or any variant of a circle. An imaginary line drawn between the two deltas must not touch or cross any recurving ridges within the inner pattern area.

**WHORL - DOUBLE LOOP**

A type of fingerprint pattern that consists of two separate loop formations with two separate and distinct sets of shoulders and two deltas.

**WHORL - PLAIN**

A type of fingerprint pattern which consists of one or more ridges which make, or tend to make, a complete circuit, with two deltas, between which, when an imaginary line is drawn, at least one recurving ridge within the inner pattern area is cut or touched.

**WORKING SOLUTION**

Solution at the proper dilution for processing.

**WSQ**

Wavelet Scalar Quantization. A compression algorithm used to reduce finger or palm print image file size. WSQ uses lossy compression.

**ZINC CHLORIDE**

A metal salt used to treat ninhydrin developed latent prints.

**ZINC NITRATE**

A metal salt used to treat ninhydrin developed latent prints.

*Note: Many of the classification terms within this glossary are based upon the FBI's modified Henry classification definitions.*

*Note: See also the imaging definitions in the SWGIT Glossary*

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