

SWGFAST

Glossary

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.

FLUORESCEIN

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, Ardrox, 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 examiner¹.

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.

¹ - 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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