

LASER

X-ray Film & Chemical



FILM DEFECTS AND ARTIFACTS

PRESSURE MARKS :

These appear as areas of low density. These are caused by the application of exercise local pressure on some area of the film. They can occur during handling. Careful handling can help to identify the defect.

CRIMP MARKS

A sharp bend before and after the exposure can produce the characteristic thumb nail marks. The crescent shaped mark may be of low or high density. If the film has been handled several times such mark may appear. Careful handling will eliminate these defects.

STATIC MARKS

These appear either as lightning streaks or drop spots. The film is made of a polyester base, some times static electricity will accumulate on the surface and while quickly removing the film from the box, this will dissipate producing intense flashes. Dry weather conditions favor static discharges. Keep the film in an area with relative humidity before use and remove the film from the box slowly. This will avoid static problems.

UN SHARP IMAGES

The most likely cause of this is the poor contact between the film and the screen in the cassette. Charge the cassette and observe the change in the image quality.

WHITE AND BLACK SHARP SPOTS :

To avoid white spots, always keep the exposed and unexposed film away from the processing solutions. Black spots are likely due to developer splash. Careful processing will avoid these problems.

HAIR LINES

They appear as fine lines of low density on the film. They could be due to fine fibers stuck to the screens. Cleaning the screens gently will avoid these types of the problems.

SCREEN MARKS

These are dark lines or spots produced generally by scratches or other particles deposited on the screen. Obviously, they will appear on radiographs. Careful handling or replacing of the old screen by new one will solve these respective problems.

PAPER MARKS

If a part of the interleaving paper is left with the film while exposing, this will cast a shadow of low density. They can be avoided by taking optimum care by the user.

LIGHT LEAKS

If the light enters the cassette either before or during exposure, a black streak or blotch can appear on the film. Light leak can also occur in an improperly closed film box. Unexposed and processed films confirm the latter situation. So always keep the film boxes properly closed.

PROCESSOR MARKS

Various types of marks can be appearing on the film during processing. Generally they will have a definite pattern. They can be in the shape of lines or spots of higher density which can be avoided by taking optimum care by the user only.

Most of the above artifacts can be eliminated by careful handling of the film throughout the NDT process. Good darkroom practices can not only save precious time and resources but also give a near perfect radiograph.

FILM FOG

Any density in a film that is not produced as part of the image-forming exposure is generally referred to as fog. There are several potential sources of film fog.

INHERENT

All film, even under the best conditions, shows some density even if it has received no radiation exposure. This density comes from the film base and from the unexposed emulsion and is the density observed if a piece of unexposed film is processed. This is typically referred to as the base plus fog density and is generally in the range of 0.15 to 0.2 density units for radiographic film.

CHEMICAL

If a film is over processed, abnormally high densities will be developed by chemical action in image areas that received little or no exposure. This results from chemicals in the developer solution interacting with some of the film grains that were not sensitized by exposure.

HEAT AND AGE

Fog will gradually develop in unprocessed film with age; therefore, film should not be stored for long periods of time. Each box of film is labeled with an expiration date by the manufacturer. When stored under proper conditions, film should not develop appreciable fog before the expiration date.

The development of film fog with age is accelerated by heat; therefore, film should not be stored in hot areas.

RADIATION EXPOSURE

It is not uncommon for film to be fogged by accidental exposure to either x-radiation or light. Light exposure fogging can result from light leaks in a darkroom, the use of incorrect safelights and cassettes with defective light seals around the edges.

Film darkrooms and storage areas should be properly shielded from nearby x-ray sources.

STORAGE AND HANDLING

Opened packages of film should be stored at 10 to 20° C (50 to 70° F) and 30 to 50% relative humidity. For long term storage the ideal conditions are 10 to 27° C (61 to 87° F) and 30 to 50% relative humidity.

Handle film carefully to avoid physical strains such as pressure, creasing and buckling. Each package of films should be stored on edge, with the expiry date is clearly visible and to avoid pressure marks.

LASER NDT Processing Chemicals

The LASER NDT chemicals are specially manufactured for processing industrial x-ray film to get optimum result and long archiving life.

Available packing

POWDER & LIQUID

LASER NDT Industrial X-Ray Film Developer	9, 13.5 and 22.5 ltrs.
LASER NDT Industrial X-Ray Film Fixer with Hardner	9, 13.5 and 22.5 ltrs.

PREFIX WASH (Stop Bath)

Enhance fixer life and arrest developer carryover.

SUPER RINSE (Wetting Agent)

Gives better image, uniform drying. Also, helps removing residual fixer from film emulsion.

For CR system like ACR 2000, ACR 2000i, HPX-1 Digital system, Digitizer LS-85, Processors, Film Dryer please refer individual brochures.



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