

Film - Artefacts

| Problem: | Recommendation: |
|--|---|
| Screen | |
| Dirt or dust on screens prevents exposure of the film through the screen light. This leads to white or light spots on the film. | <ul style="list-style-type: none">• clean the screen• remove dust or dirt |
| Processor (pic-off) | |
| Contaminated, damaged or rough rollers pick off emulsion particles from the film. This results in white (transparent) patches on the developed mammography film. | <ul style="list-style-type: none">• clean the rollers and replace if necessary |
| Handling Errors | |
| Light semicircles or light pressure points occur because the film has been bent or folded over before exposure (desensitisation). | <ul style="list-style-type: none">• carefully place films in the cassette, making sure they are not folded over |
| Dark semicircles or dark pressure points occur because the film has been bent or folded over after exposure (sensitisation). | <ul style="list-style-type: none">• carefully remove films from the cassette, making sure they are not bent |
| Static Electricity | |
| | <ul style="list-style-type: none">• increase atmospheric humidity• apply anti-static spray to workstation, feeding table and cassettes• check earthing of the continuous processor• check clothing of darkroom personnel for synthetic fabrics |

Film - Increased Gross Fog

| Problem: | Recommendation: |
|---------------------|--|
| film is out of date | <ul style="list-style-type: none">• check use-by date |
| incorrect storage | <ul style="list-style-type: none">• store films in a cool and dry area |

pre-exposure on account of
1. X-rays
2. light lead in the darkroom
3. incorrect darkroom light

1. do not store films in X-ray room
2. check the darkroom (TEST in accordance with DIN 6868 part 55)
3. use correct darkroom filter for film sensitisation

over-development

- check the developer temperature
- check the density of the developer and prepare a new batch if necessary
- check the replenishment rate

development has not been halted properly

- check the developer squeezing rollers
- check the pH level of the fixing bath
- check the fluid level in the fixing bath

no starting solution

- add starting solution

developer is contaminated with fixing bath

- prepare a new batch

developer tank cleaning agent

- ensure that all the tank cleaning agent is removed after servicing
- rinse thoroughly!

Film - Increased Film Contrast

Problem:

Recommendation:

developing temperature is too high

- check the developing temperature and reduce it if necessary
- the temperature increase might be due to a faulty heat exchanger or to coolant failure

incorrect replenishment rate

- reduce the replenishment rate

incorrect batch in mixer/replenisher vessel

- use a hydrometer to check the gravity

Film - Increased Film Sensitivity

| Problem: | Recommendation: |
|---|--|
| developing temperature is too high | <ul style="list-style-type: none">• check the developing temperature and reduce it if necessary• the temperature increase might be due to a faulty heat exchanger or to coolant failure |
| traces of fixing bath in developer | <ul style="list-style-type: none">• drain off the developer, rinse and prepare a new batch |
| no starting solution used in new batch | <ul style="list-style-type: none">• add starter |
| incorrect replenishment rate | <ul style="list-style-type: none">• reduce the replenishment rate |
| darkroom lighting | <ul style="list-style-type: none">• check that the darkroom filter is suitable for sensitisation of the film |
| circulation failure in developer tank or inadequate circulation | <ul style="list-style-type: none">• restore circulation |
| film storage | <ul style="list-style-type: none">• observe the transport and storage conditions |
| incorrect batch in mixer / replenisher vessel | <ul style="list-style-type: none">• use a hydrometer to check the gravity |

Film - Reduced Film Contrast

| Problem: | Recommendation: |
|--|---|
| developing temperature is too low | <ul style="list-style-type: none">• check the developing temperature and increase it if necessary |
| developer exhausted (oxidised) | <ul style="list-style-type: none">• prepare a new batch |
| incorrect replenishment rate | <ul style="list-style-type: none">• increase the replenishment rate |
| no starting solution used in new batch | <ul style="list-style-type: none">• add starter |

| | |
|---|---|
| fixer in developer | <ul style="list-style-type: none"> • drain off the developer, rinse, prepare a new batch |
| fixing bath exhausted | <ul style="list-style-type: none"> • drain off the fixing bath, prepare a new batch |
| darkroom lighting | <ul style="list-style-type: none"> • check that the darkroom filter is suitable for sensitisation of the film (test in accordance with DIN 6868 part 55) |
| circulation failure in developer tank or inadequate circulation | <ul style="list-style-type: none"> • restore circulation |
| film is out of date | <ul style="list-style-type: none"> • check the use-by date |
| incorrect batch in mixer / replenisher vessel | <ul style="list-style-type: none"> • use a hydrometer to check the gravity |

Film - Reduced Film Sensitivity

| Problem: | Recommendation: |
|---|---|
| developing temperature is too low | <ul style="list-style-type: none"> • check the developing temperature and increase it if necessary |
| developer exhausted (oxidised) | <ul style="list-style-type: none"> • prepare a new batch |
| incorrect replenishment rate | <ul style="list-style-type: none"> • increase the replenishment rate |
| circulation failure in developer tank or inadequate circulation | <ul style="list-style-type: none"> • restore circulation |
| incorrect batch in mixer / replenisher vessel | <ul style="list-style-type: none"> • use a hydrometer to check the gravity |

Film - Dark Spots on the Film

| Problem: | Recommendation: |
|--|---|
| films have been wetted with developer or fixer before wet-processing | <ul style="list-style-type: none">• ensure strict separation between dry and wet processing areas• avoid splashing film draw-in rollers with developer |
| contamination with tank cleaning agent | <ul style="list-style-type: none">• avoid splashing film draw-in rollers with tank cleaning agent |
| drying temperature is too high | <ul style="list-style-type: none">• reduce the drying temperature |
| uneven air supply in dryer | <ul style="list-style-type: none">• check the drying unit |

Film - Film Has a Milky Haze (Not Fully Fixed)

| Problem: | Recommendation: |
|---|---|
| diluted fixing bath (incorrect mixing of batch) | <ul style="list-style-type: none">• check the specific gravity of the fixing bath |
| fixing bath is exhausted (too old) | <ul style="list-style-type: none">• check the replenishment rate (increase if necessary) and the silver content |
| fixing temperature is too low | <ul style="list-style-type: none">• check the fixing bath temperature |
| circulation in fixing bath (faulty) | <ul style="list-style-type: none">• check the circulation |
| not enough fluid in the fixing tank | <ul style="list-style-type: none">• add more fixing bath |
| fixing time is too short (e.g. standard films in RP or RA process, dental films for rapid processing) | <ul style="list-style-type: none">• check the processing time of the films and adjust if necessary |

inadequate washing rate

- check the amount of rinsing water and/or water temperature

Film - Pink Discoloration of Films

Problem:

residues of sensitising dyes (mammography films) or dye residues from the anti-crossover layer (green-sensitised film)

Recommendation:

- check the pH level of the fixing bath (films tend to discolour at pH levels > 4.4 - 4.5)
- mix a new batch if necessary
- increase the fixing bath temperature
- increase the volume of rinsing water
- extend the washing period

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