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Cleaning of Photo-Mask Films & Plates

This describes best practises for cleaning and handling photographic emulsion masks, both for film and glass.

Cleaning Fluids

Use Isopropyl Alcohol (91%) or Heptane. Never use water, which will soften the gelatin, making it vulnerable to scratching. Important: When using Isopropyl Alcohol, 91% or higher is preferred because 70% is too "wet"



Clean Wipes

Use a lintless, soft, absorbent, non-scratching cotton pad, such as WebriI™ Hand-Pads (or equivalent). Since cotton materials may leave fibers behind, a (more expensive) alternative is a 100% knitted polyester photo wipe.

Cleaning Methods

- Apply cleaner to cleaning wipe. Squirt an approved cleaning fluid onto wipe. Do not dip the wipe into the cleaner, it should not be oversaturated. An oversaturated wipe should be squeezed and air dried until suitably damp for the wiping operation.
- Wipe film in a single top-to-bottom direction, working from one side of the film to the other. **Note:** Do not wipe the film in a "scrubbing" motion (circular or back-and-forth). A particle of dirt can be picked up and embedded in the wipe. This can cause severe scratching if wiping in a circular motion.
- Turn and refold the wipe frequently to expose a fresh surface and to bury any particles that may have been picked up. Change wipes often - a single wipe should be dampened only once and discarded after cleaning an area no larger than 10 times

Handling of Films and Plates

- Be careful removing raw film from the original package as well as taking film in or out of humidity conditioning racks, and especially look out for sharp burrs or grit on racks.
- Only use pre-conditioning cabinets with a circulating fan and HEPA filters.
- Try to store film in its original bag. (do not use cardboard boxes) and carefully package and films and plates when delivering them to the imaging dept. Try to minimize exposure to dirt and dust when handling and transporting film.

Film handling

- Be careful of metal surfaces.
- Handle film only by its edges.
- Use the fingertips of both hands.
- Carry film with "3-point grip"
- Give yourself room to spread out.
- Carry film flat in trays or boxes.
- Wear gloves.
- Avoid jewellery with sharp edges

3-point grip

To carry a single sheet of film, fold film in half and hold it in a "3-point grip" between thumb and middle finger, with index finger in the center to keep film surfaces separated.



Film Rollers

Film Rollers can be used to remove dry, unattached particles of contamination from a production process to increase yield and improve quality.

Exercise Care When....

- Removing films from packaging during setup, and then carrying films from worktables to work stations.
- Positioning the phototool in exposure frames and removing the phototool from register pins afterwards (or removing two-sided sticky tape)
- Cleaning the phototool between exposures and repackaging the phototool after use.

Try to Avoid....

- Copper burrs, resist chips, laminate slivers.
- Sharp edges of panels.
- Wipes that are used too often.

Cleanrooms – best practise reduces contamination.

- Film Rollers can be used to remove dry, unattached particles of contamination from a production process to increase yield and improve quality
- Exterior packages should conform to a certain clean standard to be admitted to the cleanroom.
- Avoid shedding materials such as paper, or cardboard boxes.
- Use intermediate containers to transport materials to cleanroom, such as plastic containers.
- Decontaminate larger items in a preparation room before entering clean area.
- Material transportation equipment should conform to the same cleanroom standard.
- Equipment should not generate contaminants – such as rust, and should not interfere with filtered air flow and/or cause turbulence.
- Surfaces should be easy to clean. (e.g. smooth, glossy, no crevices)
- Perform maintenance outside the clean environment when possible.
- Use trained maintenance personnel with awareness of cleanroom requirements.



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