



Endless Possibilities ...

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notes

Protocols:
Developing Film
for TEM

Developing Film for TEM

Since the introduction of larger CCDs and CMOS devices for recording of images on a TEM the use and knowledge of film has become all but forgotten. But if you are a die-hard purist or don't have the budget for the latest TEM camera you will be assured of beautiful images using film. The following is the basic SOP for processing of film for TEM and covers just the developing of film, presuming the finished negative will be scanned and digitized for subsequent digital output.

Supplies Needed for Developing

- 5 tanks:
Developer tank, Stop tank, Fix tank, Hypo-clear tank, and Photo-flo tank
- TEM Film
- Film Developer
- Kodak Rapid fix
- Hypo clear
- Photo-flo
- Lucite film rack

EMS Catalog Supplies

Catalog #74345	Tank with floating lid
Catalog #74104	TEM Film – Kodak 4489, 3 ¼' x 4"
Catalog #74200	Kodak D-19 high contrast developer
Catalog #74340	Kodak Stop bath
Catalog #74312	Kodak Rapid fix
Catalog #74256	Hypo clear
Catalog #74257	Photo-flo
Catalog #74891-18	Lucite film rack

Steps for Developing Film

NOTE: Processing is done under safe light conditions with chemicals at room temperature.

1. Place films in Lucite racks, making sure that they do not touch each other.
NOTE: A slight curl is required to hold the films in place.
2. **Developer Tank:** Immerse rack into Developer tank with ample volume of D-19 for 4 min.
NOTE: Slight agitation or lifting of film rack should be performed during entire development time.
3. **Stop Tank:** Remove rack from Developer Tank, shaking to remove excess fluid, and place in Stop tank for 1 min.
4. **Fix Tank:** Remove rack from Stop Tank and place film rack in Fix Tank for 4 min. *Occasional slight agitation helps.*
5. **Hypo Clear Tank:** Remove rack from Fix Tank and place in Hypo Clear Tank for 4 min.
6. **Photo-flo Tank:** Remove rack from Hypo Clear Tank and place in Photo-flo tank for 1 min.
7. After chemical processing, the film racks can be placed into a drying oven or in a tray to air dry. Whichever environment is used, ensure that it is dust-free.

Hopefully a scanner, equipped for film scanning, is available to digitize films for subsequent digital output.