Recommendations for Cleaning Photographic Materials

The information in this publication applies in general to modern photographic films and papers that use silver halide emulsions in gelatin to form a silver or dye image. With older or more specialized materials, test cleaning procedures on non-image areas or on non-critical images.

You can use several materials and methods to clean photographic products in the laboratory or darkroom. This publication describes materials and techniques that we have found to be successful, but these recommendations are certainly not the only procedures available. You may discover other methods and materials that produce good results.

CLEAN WORK ENVIRONMENT

To help achieve success when cleaning photographic products, make sure that your work area is clean and well ventilated and that it has a positive airflow. Proper ventilation removes fumes produced by photographic cleaning solvents, and also reduces dust and dirt accumulation.

Keep the materials you use for cleaning, such as fabrics, brushes, and applicators, free of dirt, dust, and other foreign matter.

Always store cleaned photographic products in a clean, dry area.

SUITABLE CLEANING MATERIALS

Cleaning materials that you use with photographic products must remove unwanted foreign matter without damaging the products. You can use soft, dry fabric, soft-bristled brushes, bursts of air, some solvents, and water to remove various types of surface dirt. Here are some guidelines for selecting and using these cleaning materials:

Soft, Dry Fabric

You can use a soft, dry cloth to gently wipe away surface matter. Use white or light-colored fabric that will show dirt buildup so you'll know when to change to a new cloth. You can use specially treated anti-static cloths to remove dirt and dust.

Soft-Bristled Brush

Dust photographic products with a soft-bristled brush, such as a flat camel's-hair brush. Running the bristles several times across a plastic rod (e.g., the barrel of a pen or mechanical pencil) can build up a static charge that will remove dirt or dust from the product.

Air Bursts

A burst of air from a can or a compressed-air system will remove loose dirt from photographic products. However, the air stream must be absolutely clean. Dirt in the air stream can act like a sand blaster and pit the surface of the product being cleaned. Make sure that air from compressed-air systems is filtered to remove the oil used to lubricate the compressor pump. If the oil is not removed, it can spot the photographic product and make further cleaning necessary.

Solvents

You can use some solvents to remove grease, oil, and dirt from photographic products. Kodak has reviewed the performance of a number of photographic cleaning solvents. Although we have not tested all the cleaning solvents on the market, we have found that isopropyl alcohol is an effective cleaning solvent for photographic materials.

Recommendations for Cleaning Photographic Materials

Isopropyl Alcohol

We recommend isopropyl alcohol that has a purity of 98 percent or higher as a good, general-purpose cleaning solvent for photographic materials. Isopropyl alcohol (also known as 2-propanol or isopropanol) has several benefits. It is available in small volumes at a reasonable price; it has been successful in cleaning tar, streaks, processing scum, and opaque from photographic products; and it had no detrimental effect on the image stability of the emulsions we tested.

Use only isopropyl alcohol that has a purity of 98 percent or higher. Alcohol with a lower purity, such as rubbing alcohol, will cause streaking and take longer to dry. Also, the higher water content of rubbing alcohol may cause the emulsion of the photographic materials to swell, resulting in physical damage and possible deterioration of image-forming dyes.

To use isopropyl alcohol:

- Make sure your work area is well ventilated, with sufficient positive air flow.
- Use only a soft, lint-free cleaning applicator (e.g., a cotton swab, cloth, or glove).
- Slightly moisten the cleaning applicator and re-moisten it as needed. Do not saturate the applicator with alcohol. Too much alcohol can produce streaks and result in a longer drying time. (If streaks form, you can usually remove them by wiping the area with a fresh, dry cloth.)
- Clean a small area at a time.
- Repeat the application if necessary to remove foreign matter such as china marker, crayon, or other wax-based markers.

Note: Tests have shown that isopropyl alcohol may be inefficient at cleaning the mounting oils used with film in some electronic scanning systems.

Isopropyl alcohol is available through most chemical supply houses. Purchase it in small containers. When you clean materials, pour out only enough for current use, and then discard any alcohol that remains after cleaning. Keep the original container sealed to prevent the alcohol from taking on water content from the air.

Note: Residues of non-image-forming dyes (usually magenta dye) may be present on the surfaces of some processed color negative films.Using isopropyl alcohol on these negatives may cause coloration of the cleaning swab or cloth. If cleaning these negatives causes an uneven distribution of these residual dyes (e.g., swirls or streaks), you may need to repeat the cleaning procedure.

Caution

Do not use isopropyl alcohol to clean nitrate-based film manufactured before 1950. It may cause serious physical damage to the support and may accelerate deterioration of the image.

All Photographic Cleaning Solvents

Whenever you choose a solvent to clean photographic materials, carefully consider the following criteria:

- Quick evaporation
- Sufficient purity
- Reasonable price
- Inertness to photographic dyes and gelatin (the solvent will not accelerate loss of image-forming dyes or harm the photographic gelatin)
- Personal-hazard and fire-hazard (flash point) ratings
- Required storage conditions
- Environmental/disposal issues

Before using any solvent, be sure to obtain the Material Safety Data Sheet (MSDS) and any available information on the solvent's effects on photographic materials from the manufacturer. The MSDS provides a list of the components, hazard information, and handling/disposal recommendations.

The effectiveness of solvents will differ with the application and the type of material being cleaned. Test any solvent on a non-critical area before cleaning the entire product.

Water

Re-washing photographic products will sometimes remove surface matter and processing streaks. However, it is important to follow the processing guidelines of the product's manufacturer to achieve optimum results.

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