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This Test Method may include safety precautions which are believed to be appropriate at the time of publication of the method. The intent of these is to alert the user of the method to safety issues related to such use. The user is responsible for determining that the safety precautions are complete and are appropriate to their use of the method, and for ensuring that suitable safety practices have not changed since publication of the method. This method may require the use, disposal, or both, of chemicals which may present serious health hazards to humans. Procedures for the handling of such substances are set forth on Material Safety Data Sheets which must be developed by all manufacturers and importers of potentially hazardous chemicals and maintained by all distributors of potentially hazardous chemicals. Prior to the use of this method, the user must determine whether any of the chemicals to be used or disposed of are potentially hazardous and, if so, must follow strictly the procedures specified by both the manufacturer, as well as local, state, and federal authorities for safe use and disposal of these chemicals.

Storage of paper samples for optical measurements and color matching

1. Scope

Procedures for handling and storing samples are generally based on the premise that heat and light are the two primary factors affecting change. This standard practice lists several practices that have been found to be helpful in preserving samples.

2. Significance

Facilities and individuals responsible for control of color of paper products from run to run or within runs have learned through experience, many times embarrassing and/or expensive, that samples used for optical measurements and color matching frequently exhibit changes over time. Changes may be due to:

- Reversion of bleached pulps
- Fading of dyes and pigments
- Loss of photochemical activity of optical brighteners
- Exposure to various gasses in a paper mill environment
- Physical handling and manipulation

3. Safety precautions

There are no specific safety precautions associated with this standard practice.

4. Procedures

- 4.1 Store samples at a low temperature in the dark.
- 4.2 Achieve ideal low temperature storage through the use of a freezer of the type used for storage of frozen foods. It can either be a separate unit or the freezer compartment of a refrigerator provided that the compartment is totally

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separated from the refrigerator portion. Use the freezer for no other purpose than the storage of the standard samples. Temperatures are normally below -20°C (-4°F).

4.3 Achieve protection from light by sealing the samples in opaque envelopes or in bags made of black polyethylene or polyethylene-aluminum foil combinations. Enhance long-term storage by sealing the envelopes or bags.

4.4 Store sample packages on edge.

4.5 Avoid wrappers or components in the package that are acidic or contain fluorescent whitening agents. Acid free file folders and envelopes are available from suppliers specializing in items used for archival storage purposes.

4.6 In addition to the essential identification information provided with the sample, it is desirable to include the reflectance, fluorescence level, and tristimulus color values determined on samples when new so that any changes can be monitored.

4.7 After removal from freezer storage, allow the samples to reach temperature and humidity equilibrium before being used (usually several hours).

5. Keywords

Storage, Cold storage, Optical measurement, Color, Color matching, Samples

6. Additional Information

6.1 Effective date of issue: April 24, 2012.

6.2 This practice was originally published in 1985 as TIP 0804-08. There were no changes to this version other than minor editorial.

Your comments and suggestions on this procedure are earnestly requested and should be sent to the TAPPI Standards Department. ■