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Stickies definition and classification

Scope

Paper recycling mills deal with stickies that cause problems on paper machine and affect product quality. Many terms used to discuss stickies related problems include: macro stickies, micro stickies, dispersed stickies, colloidal stickies, mini stickies, DISCO (dissolved and colloidal) stickies, primary stickies, secondary stickies, environmentally benign adhesives (EBA), recycle compatible adhesives (RCA), screenable stickies, removable stickies, depositable stickies, visible stickies, sub-visible stickies, and so on.

The purpose of this TIP is to explain and standardize some of the terms.

Safety precautions

There are no particular safety precautions for this TIP.

Stickies definition and classification

In paper recycling terminology, stickies are primarily synthetic polymers arising from pressure sensitive adhesives (for example, styrene butadiene), hot melts (for example, polyvinyl acetate, PVA), binders used in coatings and inks (for example, polyacrylates), etc.

Generally, a laboratory slotted screen is used to classify stickies. Stickies retained on the screen are termed macro stickies while those passing through the screen are termed micro stickies, as shown in the Figure 1.

- Macro stickies: Retained on 0.006 in (0.15 mm) or 0.004 in (0.10 mm) or 0.003 in (0.075 mm) laboratory slotted screen.
- Micro stickies: Passing through 0.006 in (0.15 mm) or 0.004 in (0.10 mm) or 0.003 in (0.075 mm) laboratory slotted screen.

This classification scheme exists for three chief reasons:

1. Methods for the removal of macro and micro stickies are different;
2. Strategies for minimizing their impacts on papermaking are different;
3. Methods for their quantification are different.

TIP Category: Automatically Periodically Reviewed (5 years)



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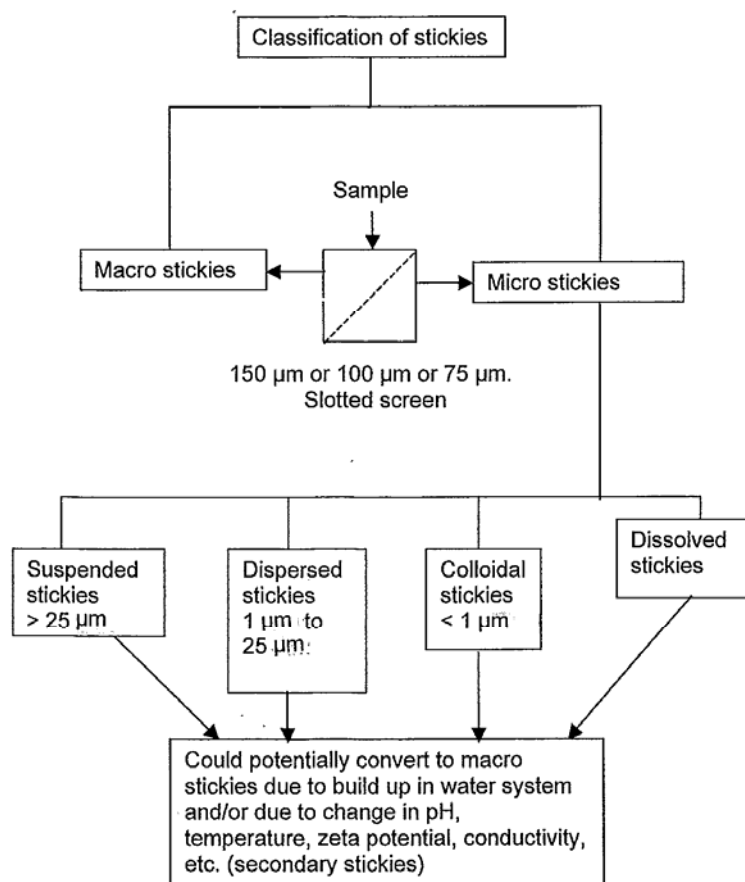


Fig. 1. Classification of stickies.

Micro stickies are further classified as follows:

- Suspended stickies, > 25 µm.
- Dispersed stickies, 1 µm to 25 µm
- Colloidal stickies, < 1 µm
- Dissolved stickies

Please note that the selection of 25 µm to distinguish between suspended and dispersed stickies is somewhat arbitrary. An alternative is to combine the two and call it suspended and dispersed micro stickies (> 1 µm).

Micro stickies could potentially agglomerate with fines and fillers due to accumulation in the water system and/or due to changes in pH, temperature, zeta potential, conductivity, etc. These agglomerates are termed secondary stickies.

Keywords

Adhesives, Impurities, Recycling, Secondary fibers, Stickies