



ORANGE COUNTY SANITATION DISTRICT Staff Report

Date: May 30, 2012

To: Nick Arhontes, Director of Facilities Support Services

Through: Mike Larkin, Engineering Supervisor

From: Jamie Malpede, Principal Environmental Specialist

Copy : Mark Esquer, Engineering Manager

Subject: Dispersion of Flushable Wipes

Executive Summary

This test was designed to evaluate the dispersibility of products that claim to be “flushable.” While toilet paper begins to rapidly disperse after 20 seconds, the wet wipe tested in this experiment does not break down after 24 hours. The wet wipe remained intact and was still recognizable. The inability of products to disperse may adversely affect sanitary sewer systems, lift stations, and wastewater treatment plants.

Background

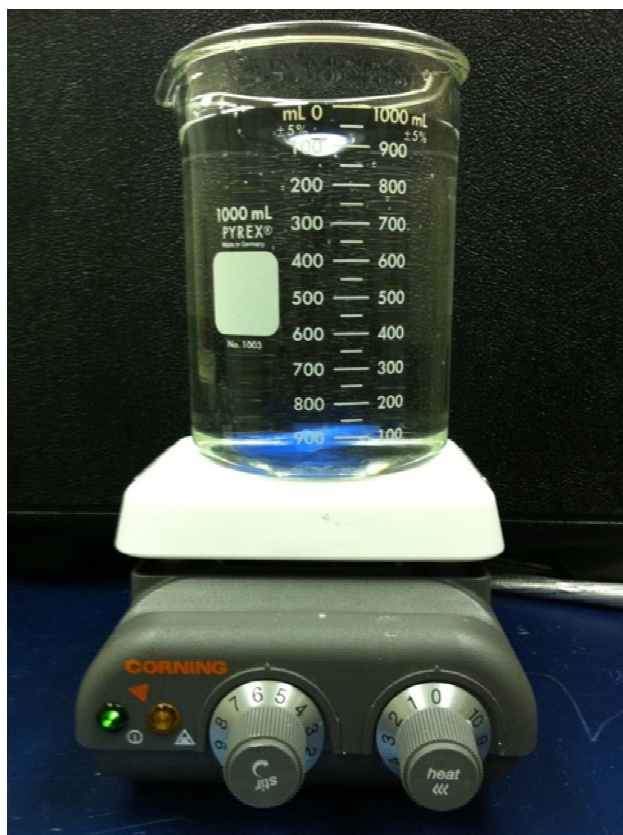
While products such as wet wipes are advertised to be “flushable,” “biodegradable,” and “safe for sewer and septic systems,” rapid dispersibility of these products within the sanitary sewer system has not been observed. Field observations have found these types of products to be a cause of back-ups within the sewer system leading to Sanitary Sewer Overflows (SSO), clogs at lift stations, and disruption within the treatment plant. An industry standard for these products needs to be established. For example, according to the European Disposables and Nonwoven Association (EDANA)’s *Flushability Guidance Document Definition of Flushability*, a wet wipe must “become unrecognizable in a reasonable period of time” (2008). The Water Environment Research Federation (WERF) states that if a product is flushable it should “be compatible with wastewater conveyance and treatment systems” in their *Protocols to Assess the Breakdown of Flushable Consumer Products* (2003).

Test Method

A 1L wide-mouth beaker was filled with tap water (24° C) and placed on a stir plate. A stir bar (5.0 cm x 0.8 cm) was added and the speed was set between 5 and 6- approximately 120 rotations per minute- Picture 1. One sheet of Kirkland Signature™ “Moist Flushable Wipes” measuring 18.5 cm x 14.5 cm was added at approximately 2:45 p.m. on 5/23/2012 (Note: The package claimed the wipes to be 17.3 cm x 15.0 cm- Picture 2). The wipe was removed from the beaker 24 hours later at approximately 2:45 p.m. on 5/24/2012. This procedure was duplicated with 4 perforated sheets of toilet paper measuring 37.5 cm x 11.5 cm at approximately 10:40 a.m. on 5/29/2012.

Results

After 24 hours the wipe remained intact and recognizable. There was no change to the wipe’s initial dimensions- Picture 3. The toilet paper began to disperse after approximately 20 seconds and was fully dispersed and unrecognizable after approximately 1 minute and 7 seconds- Picture 4.



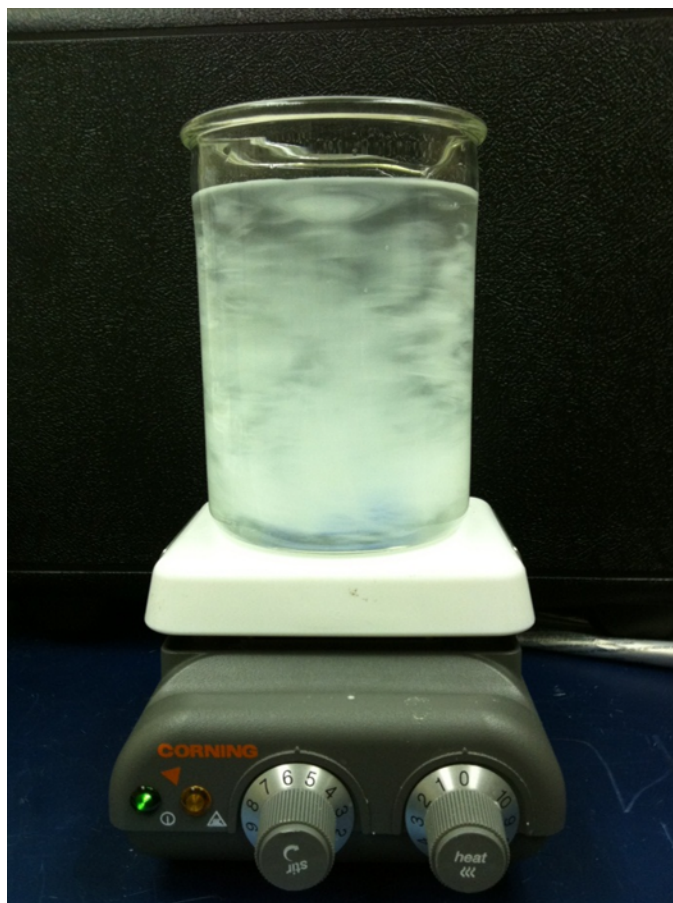
Picture 1: Test set-up



Picture 2: Kirkland Signature™ “Moist Flushable Wipes”



Picture 3: Fresh Wipe (left) and Wipe After Testing 24 Hours (right)



Picture 4: Toilet paper after 1 minute and 7 seconds