

STANDARD DISSOLVING TESTS

1. INTRODUCTION

There is no official standard or regulation given by law for testing the dissolving behaviour of a product like pCure or other toilet care products. Together with manufacturers (BUCK CHEMIE GmbH), an existing internal standard was selected (FP-PL04-00) which was developed with other international distributors of toilet care products. It is used to test the dissolving behaviour of different kind of rim blocks and is valid for today's market.

The standard test reflects the typical flushing practice of a four-person household in Europe. As every toilet model is different, and works with different flushing streams, the results of such flushing tests depend on the used toilet, positioning, flushing behaviour of the user(s), and cannot be directly compared to each other.

pCure identifies the average dissolving behaviour of the products by testing on many different toilet models under the conditions decided for the standard dissolving test.

The practical approach lets us observe equilibration between solving (swelling) and the drying periods between the flushes in a simulated real household environment. This information is used to further improve the products formulations and the enzyme release mechanisms which is important to define the average performance of a product.

2. TEST CONDITIONS

The test operates with the following conditions:

- Water temperature: 16 ± 2 °C
- Air temperature: 20 ± 2 °C
- Volume per flush 8 litres of water per flush

3. TEST PROCEDURE

The test procedure is as following;

- Number of products A minimum of 5 blocks are tested simultaneously
- Toilets: Ability to test on up to 20 different toilets from different suppliers and different years of manufacture, at each test-period
- Flushes: 19 flushes per 24 hours, on an automated system
- Test-period Until product is dissolved

For the dissolving tests a timetable are kept reflecting the typical four-person household flushing behaviour. From this practical orientation we receive important information about the physical behaviour of the products. The flushing test is continued until the block is fully dissolved or stopped for other reasons.

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The typical timetable looks like this:

No. of Flushes	Time to next flush (h:m)	Time of day (24h)
1	01:00	03:00
2	03:00	04:00
3	00:30	07:00
4	00:30	07:30
5	00:30	08:00
6	00:30	08:30
7	01.00	09:00
8	02.00	10:00
9	00.30	12:00
10	02.30	12:30
11	00.30	15:00
12	02.30	15:30
13	00.30	18:00
14	00.30	18:30
15	00.30	19:00
16	00.45	19:30
17	02.00	20:15
18	00.30	22:15
19	04.15	22:45

The block is weighted between a daily interval (normally every 3-7 days) and by combining behavioural data from different toilet models pCure is given its average dissolving behaviour.

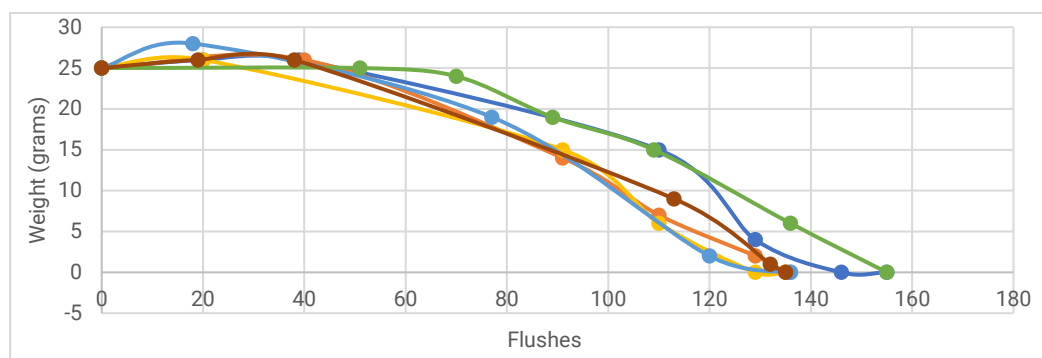


Figure 1: Example of a Dissolving graph from a Standard Dissolving Test

The dissolving behaviour is studied and tested for all product versions and formulations qualified to production. An example of such reports can be found [here](#)

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