IDFL NEWS

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Down & Dust

Both retailers and consumers are concerned about dust that is sometimes found in down and feather-filled products.

Dust comes from many sources:

- Material containing an unusally high % of small feather and down fibers.
- Soap & Other residues.
- Actual presence of dust & dirt particulates.
- Dust originating from the fabric shell or sizing.
- Dust accumulating in products during normal home use.

Most products have no dust problem and most dust has no harmful effects.

Current trends in the industry target the reduction or elimination of dust. Marketing efforts highlight cleanliness and dust-free products.

The Japanese down and feather market has extremely stringent no-dust requirements.

Test Procedures for Dust and Cleanliness.

IDFL has performed thousands of tests during the past 20 years for cleanliness and the presence of dust.

The following tests will determine the cleanliness of feather and down products. Test for dust and for special customs and labeling requirements are also listed.

Oxygen Number.
The oxygen number test determines presence of organic material such as plants, insects, blood, etc. In the USA, down & feathers must have an oxygen number of 20 or lower.

Turbidity.
Turbidity measures suspended particles in a solution of water after rinsing feather and down fill material. Turbidity detect both organic and inorganic dust and other foreign material.

Because most dust is non-organic, turbidity will find potential dust problems that exist even if material meets government cleanliness requirements (oxygen number).

Dust Evaluation Test.
In some cases the oxygen # and turbidity tests are excellent, yet the material is dusty.

In such cases a qualitative procedure is needed to evaluate dust. The buyer might shake a comforter or pillow over a dark surface or through a light source to determine acceptable levels of dust.

Also, a small amount of down & feather material can be placed in a loose-weave cotton bag and patted several times over a black surface. A qualitative judgement is made to determine if dust is excessive.

Oxygen Number vs. Turbidity

Oxygen # Range	TURBIDITY Average	High	Low
1 - 2	542	550	305
3 - 3	501	550	180
4 - 5	357	550	120
6 - 7	254	550	100
8 - 10	190	530	80
11 - 15	120	250	60
16 - 19	90	150	50
20 - 29	80	200	30
30+	50	150	20

The lower the oxygen number, the cleaner the down and feather material.

The higher the turbidity, the less dust/dirt etc.

Please note that poor turbidity can exist even with a good oxygen result.

DUST & DIRT:
Other Related Tests

As environment and health concerns increase, some companies and countries require further testing. IDFL can provide the following tests.

Bacteria Evaluation.
Samples are tested for the presence of bacteria.

Pesticide Evaluation.
Samples are tested for the presence of several pesticides, and other materials.

Element Test (Dirt & Metals)
Samples are tested for the presence of 40 metals and elements. This is normally done for raw material.

Wash Loss.
One sample is washed with water only and then allow to dry. The material is weighed before and after washing.

A second sample is washed with soap and weighed. A percentage wash loss is given for both the water and soap washings.

Which tests should I request?

To meet Federal and State regulations an **oxygen number** test should always be performed.

Each country and each buyer has its own maximum oxygen level. The FTC in the USA requires the oxygen number to be below 20.

If buyers are concerned about dust -- a **turbidity** test should be requested.

Also, if marketing claims related to dust or allergy are made then the **turbidity** should be tested.

Other tests should be requested for particular problems or buyer/country requirements. Contact IDFL if you have questions about specific samples or tests.

TURBIDITY PROCEDURE

1. Mix 10 grams of feathers and down with 1 liter of distilled water in a 2 liter jar.
2. Agitate jar until material begins to soak the water.
3. Place jar on a 90rpm washing wheel for 15 minutes.
4. Strain water from jar through a 200 mesh screen into a beaker.
5. Transfer water slowly into the turbidity tube until the cross at the bottom of the tube is no longer visible.
6. Water level may be lowered and/or water added to identify the exact point where the cross mark is no longer visible.
7. Read the scale markings representing the mm of liquid in the tube.
8. Repeat step 5 and average results.

DEFINITIONS

The following definitions may help in evaluating test results:

Quill. The stem or central shaft of feathers.

Quill Point.
The section of quill extending beyond the last barb of a feather.

Quill Feather.
Feathers which are over 100 mm (4 in.) in length or which have a quill point exceeding 9.5 mm (3/8 in.) in length.

CALIFORNIA STANDARDS

IDFL has recently received many inquiries about standards in California, which are different from the normal FTC/USA standards.

A product labeled **"DOWN"** in California must have a minimum of **75% down cluster & plumules,** in contrast to the FTC requirement of 70%. Different rules for feather fiber and quill (long feathers) also exist.

Down/Feather blends must be labeled with the actual down content. (No tolerance is allowed)

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