

# 1

## What Is Mold?

The word MOLD seems to be everywhere these days, from bathroom cleaner commercials about buildup on your shower tile to dramatic media reports on toxic mold growth. But before you try to find out how the dreaded “M word” can affect you as a homeowner, it’s important to understand just what mold is—and isn’t.

### SCIENTIFIC FACT



**MOLDS ARE NOT BACTERIA.** MISTAKENLY MOLD AND BACTERIA ARE OFTEN LUMPED TOGETHER. OUTSIDE THE FACT THAT BOTH ARE POTENTIALLY PROBLEMATIC ORGANISMS, MOLD AND BACTERIA ARE VERY DIFFERENT AND NEED TO BE TREATED DIFFERENTLY IN YOUR HOME. MOLD SHOULD BE REMOVED; BACTERIA SHOULD BE RENDERED INEFFECTIVE OR KILLED. AND, WHILE REMOVING MOLD AND IMPACTED MATERIALS IS NECESSARY TO CORRECT A PROBLEM, REMOVING BACTERIA IS NOT NECESSARILY REQUIRED.

**Molds are a type of fungus.** It is important to remember that while all molds are fungi, not all fungi are lucky enough to become mold. Some fungal spores will become mushrooms or yeast. Other fungal spores will become mold if the appropriate conditions (see page 3 for details) exist for fungi to grow and germinate. The term mold refers to the fuzzy appearance you see when fungi is growing on a surface.

**Mold is everywhere.** Fungi naturally exist in the environment,

and it is not possible and not necessary to rid our world completely of fungi.

**Mold may not be visible.**

Because molds thrive where there is generally a lack of ventilation, they are found in places that are typically less visible to homeowners—such as inside closets, above ceilings, beneath wall and floor coverings, behind vapor barriers, and behind ceiling tiles. As a result, mold is sometimes best detected using senses other than sight. For example, feeling moisture or humidity along a surface and smelling a musty odor may be a good indication that mold may be present.

**THE TERM MOLD REFERS TO THE FUZZY APPEARANCE YOU SEE WHEN FUNGI IS GROWING ON A SURFACE**

**Mold is not mildew.** Sometimes the word *mildew* is used synonymously with mold or fungus. Mildew is actually a term originally used to describe a whitish fungal growth on plants. Today the word mildew is commonly used to describe the odor that is given off by molds.

**SCIENTIFIC FACT**



**THERE ARE THOUSANDS OF DIFFERENT SPECIES OF FUNGI EXISTING NATURALLY IN OUR ENVIRONMENT TODAY.** FUNGI HAVE EXISTED FOR MILLIONS OF YEARS, ARE GENERALLY PRESENT THROUGHOUT THE WORLD, AND HAVE LIMITED NEGATIVE IMPACT ON MANKIND. GERMINATION OR REPRODUCTION OF FUNGI OCCURS WHEN FUNGAL SPORES ARE EXPOSED TO MOISTURE. AS LONG AS THERE IS MOISTURE, FUNGI WILL REPRODUCE, AND WILL CONTINUE TO COVER A LARGER SURFACE AREA.

## What does mold look like?

More than likely, at some point in your life, you've seen mold—on a piece of stale bread, an expired fruit, or cheese in your refrigerator.

So you are probably well aware that mold usually appears to be somewhat dark in color and sometimes a bit fuzzy. Just as you would always discard a moldy piece of fruit upon discovering it in your fridge—you should always remove any mold you see in your home.

Even though there are few regulations for removing mold or for identifying a person who is qualified to remove mold from your home, there still may be times when you should ask experts to help make sure your home is safe for your family. (See page 35 for information about identifying mold removal experts.)

And if you're not sure if what you are seeing or smelling is really mold, use testing to verify your suspicions. Do not be fooled by things that may look like mold but may actually be dirt, hairballs, insulation, or even dried up Dr. Pepper. (See page 33 for more information about identifying mold.)

**SCIENTIFIC FACT**


**MOLDS USUALLY HAVE A DARK COLOR TO PROTECT THEM FROM THE ULTRAVIOLET LIGHT OF THE SUN'S HARMFUL RAYS. THIS DARK COLORATION IS FROM MELANIN, THE SAME SUBSTANCE THAT GIVES PEOPLE SKIN, HAIR, AND EYE COLOR. JUST LIKE WITH PEOPLE, THE AMOUNT AND TYPE OF MELANIN PRESENT IN THE SPORE DETERMINES THE COLOR OF THE MOLD. THE COLOR DOES NOT DETERMINE THE TYPE OR SPECIES OF MOLD, SO YOU WON'T BE ABLE TO IDENTIFY A TYPE OF MOLD JUST BY EXAMINING THE COLOR.**

## What does mold need to grow?

Like most living organisms, molds need food, moisture, and a friendly environment to grow and thrive. Without a food source and a warm environment, mold will be prevented from growing, but the mold problem can remain. Mold spores are able to retreat into a dormant state for thousands of years only to be reinvigorated upon the reintroduction of moisture.

**Moisture.** The most critical element required for mold growth is moisture. Without moisture, mold can't grow. While many molds require direct contact with water, some molds only require high humidity to grow and prefer to be in direct contact with a dry environment. Fungi that require water to grow are often termed *indicator species*. Sometimes the media has called these types of

**THE MOST CRITICAL  
ELEMENT REQUIRED  
FOR MOLD GROWTH  
IS MOISTURE**

mold *toxic mold*, but this description is not necessarily accurate and incorrectly conveys the impression that these molds are continuously emitting toxins. (See page 20 for more information about indicator species.)

While molds will grow in any quality of water, including water that is chlorinated, dirty water—such as from a sewer problem—will not promote faster mold growth. Instead, dirty water may create bacteria problems because sewage and other dirty water contain larger numbers of bacteria than chlorinated water.

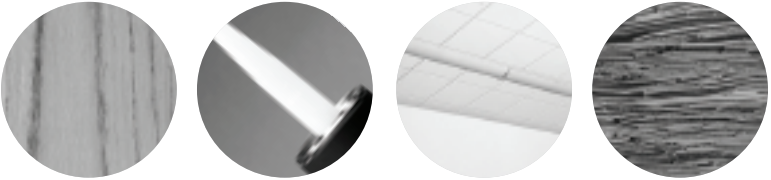
**Temperature.** In general molds will grow in temperatures above 32 degrees Fahrenheit. The warmer—up to approximately 80 degrees Fahrenheit—and the moister a surface is, the faster molds will grow. Above 80 degrees, molds will continue to grow, but the rate of growth will be slower.

**SCIENTIFIC FACT**



**MOLD SPORES HELP SPREAD MOLD GEOGRAPHICALLY.** THESE SPORES ARE VERY HEARTY DORMANT CREATURES THAT DO NOT REQUIRE FOOD AND WATER. MOLD SPORES CAN LAY DORMANT FOR LONG PERIODS OF TIME WAITING FOR ADEQUATE FOOD AND WATER THAT WILL ALLOW THEM TO BEGIN GROWING AGAIN.

**Food.** When they have a menu choice, many molds prefer to eat materials made from plants, which are called cellulose-based. Fortunately for molds, many common building materials are cellulose-based: ceiling tiles, drywall, oriented strand board (OSB), plywood, particle board, and certain types of mastic, caulking, paper, and glues, along with most other building materials that are porous or semi-porous.



Molds also will feast on most other types of wood products (although the rate of growth varies based upon the type of wood present), good old fashioned dirt, and any type of plant material. As a result, mold can often be found on materials that are not typical food sources for mold but have dirt or plant materials on or in them that are good food sources. For example, building insulation composed of fiberglass is not a good food source for mold, but the dust and dirt that becomes trapped in the fibers provide ample food for mold to grow.

**MOLD SPORES CAN LAY  
DORMANT FOR LONG  
PERIODS OF TIME**

**Friendly Environment.** Molds need a friendly environment to grow. Just as temperature affects the growth rate for molds, an environment that lacks oxygen is not a suitable climate for mold growth. While molds usually prefer ventilation, mold growth can thrive in areas that are not well ventilated. And many species of

mold can grow nicely without light. Areas consisting of warm, moist environments with little air movement and plentiful cellulose building materials are usually perfect mold environments.

**SCIENTIFIC FACT**



**SO WHAT IS MOLD ANYWAY?** SOME OF THE MOST COMMON TYPES OF MOLDS FOUND OUTDOORS IN THE UNITED STATES INCLUDE ALTERNARIA, CURVULARIA, DRECHSLERA, AND CLADOSPORIUM. YOU WILL BE ABLE TO FIND THOSE SAME MOLDS INDOORS, AND YOU ALSO MAY FIND ASPERGILLUS AND PENICILLIUM, ESPECIALLY IF THERE HAS BEEN A WATER PROBLEM. WITHIN EACH TYPE OF MOLD THERE MAY BE THOUSANDS OF DIFFERENT UNIQUE SPECIES. MANY OF THESE SPECIES HAVE YET TO BE IDENTIFIED. (THE CONCENTRATION OF FUNGI VARY BASED ON THE GEOGRAPHIC REGION AND ON THE WEATHER.) WHILE ALL OF THESE MOLD GROWTHS MAY LOOK THE SAME, THE IMPACT ON YOUR HOME WILL BE DIFFERENT BASED ON THE TYPE AND SPECIES OF THE MOLD PRESENT.