

## Mold Glossary

### Mold Information

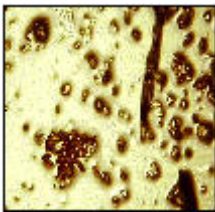
This is general mold information only and is not intended to be legal or medical advice for those seeking such professional services. Contact an attorney for legal assistance and a health care provider, physician, or allergist for health concerns.

There are numerous books and web-sites that provide excellent, expert information on a variety of fungi. Many references were used in this mold glossary. This is limited, general, mold information only, with references and acknowledgements listed below.

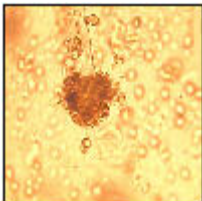
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***Alternaria***: A common allergen that is most frequently found indoors in carpets, fabrics, food, and on window sills. It is also a common outdoor mold that can be found on textiles, soil, and dead organic materials. This is a mold that appears everywhere throughout the year. It is frequently seen growing on horizontal surfaces inside of buildings and homes. Some species of this mold can produce toxic metabolites that may be associated with disease in humans. Spores from this mold are considered large, ranging in size from 20 to 200 microns length to 7 to 18 microns in width. Experts associate this size mold spore with fungi that deposit in the nose, mouth and upper respiratory tract. Susceptible individuals most frequently affected are immunocompromised. Chronic cases may develop pulmonary emphysema, edema and bronchospasms. This mold can be a common contributor to poor indoor air quality and sick building syndrome.



***Arthriniium***: A common saprophyte that is frequently found on decaying plants or grass, also found in soil. A reported allergen with no associated diseases related to toxic effects. This mold can be found everywhere both outside and indoors.



***Aspergillus sp.***: A genus of fungi with over 150 species. Many species produce mycotoxins associated with disease in humans. Toxin production relies on specific food source and is determined by species or strain of species. Found in a variety of environments most frequently thriving as saprophytes on decayed material, soil, or food. Some species are parasitic to man, animals, plants and insects. Aspergillus and several related fungi are the considered cause of aspergillosis and similar

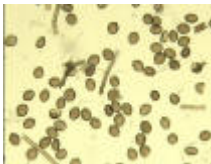
infections. This disease affects primarily the external ear and lungs. Traveling spores can not only enter lungs, eyes, and ears but are also commonly found in buildings and may be associated with sick building syndrome health problems. An opportunistic pathogen it can pose extreme risk to immune compromised individuals.

In the book Identifying Filamentous Fungi: A Clinical Laboratory Handbook the authors note that there have been numerous outbreaks of aspergillosis cases in neutropenic patients that have been recorded in conjunction with hospital renovation projects (62). *Aspergillus fumigatus* is the most frequently isolated agent of aspergillosis in humans. Associated with pulmonary nasal, ocular, cerebral, bone, cardiovascular and organ infections most frequently found in immune compromised individuals.



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***Bipolaris sp.:*** This fungus is associated with upper respiratory tract problems. It can produce mycotoxins that have been shown to produce liver and kidney damage when ingested by laboratory animals. It is another common mold often associated with decaying food, plant material, and soil. It is frequently found both inside and outdoors. A variety of infections have been recognized in immune compromised individuals as well as in normal hosts including sinusitis, keratitis, peritonitis, endocarditis, and cutaneous infections.



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***Chaetomium sp.:*** Found on substrates containing cellulose, paper and plant compost. It is considered allergenic and associated with peritonitis, cutaneous lesions and system mycosis. Frequently found on water damaged paper on sheetrock. It is also located on a variety of substrates containing cellulose, plant and paper compost.



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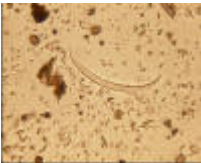
***Cladosporium:*** This is one of the most commonly identified outdoor molds. It is most often isolated from air during the times of year when humidity is elevated. It is found indoors in numbers that should be considerably less than outdoors. It is frequently found on fiberglass duct liners in the interior of supply ducts. Found most often on dead plants, soil, food, straw, paints and textiles. A common cause of extrinsic asthma. Acute symptoms are skin lesions, eye ulcerations, mycosis including infections of nails on feet and hands. Associated with edema and bronchospasms, chronic cases may develop pulmonary emphysema. It is a fungal allergen and is considered a contributor to sick building syndrome and

related health issues. It is capable of causing mycosis.



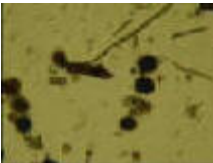
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**Curvularia:** This is a reported allergen also linked to fungal sinusitis. It is associated with corneal infections, mycetoma, and infections in immune compromised individuals. As the occasional cause of human infection it is also associated with pneumonia, cerebral abscess and disseminated infections. It is an ubiquitous mold and can be found on a variety of substrates.



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**Fusarium:** Most often found in plants and soils this mold produces trichothecene toxins that may be associated with diseases in humans. *Fusarium* sp. is a common soil fungus that is frequently found in humidifiers. A variety of the species can produce potent trichothecene toxins that target circulatory, alimentary, skin and nervous systems. Symptoms can manifest through ingestion or inhalation of spores. It is also a reported allergen frequently involved in eye, skin and nail infections. Genera can produce hemorrhagic syndrome in humans: nausea, vomiting, diarrhea, dermatitis and extensive internal bleeding.



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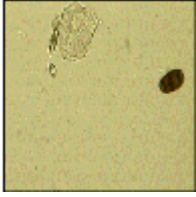
**Nigrospora:** This mold is most frequently found in warmer climates and is associated with hay fever and asthma. This mold can be found indoors. It is usually found in decaying plant materials and in soil. It is considered to be allergenic.



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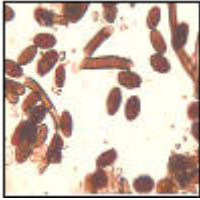
**Penicillium sp.:** Identification to species is difficult. Many species of this mold are known as probable mycotoxin producers and can be found on various substrates. Identification is important when isolating from food contamination. Often found in soil, decaying plant debris, compost, rotting food, and house dust. Can thrive and grow in water damaged environments on wall paper, fabrics, behind paint and interior fiberglass duct insulation contributing to poor indoor air quality. Cause of extrinsic asthma. Acute symptoms include edema and bronchospasms, chronic cases can develop pulmonary emphysema associated with headaches, vomiting and diarrhea. Associated with infections of the ear and cornea. Usually nonpathogenic, *Penicillium marneffeii* is capable of causing infection of the lymphatic system, the lungs, liver, skin, spleen and bones (St-Germain 1966).

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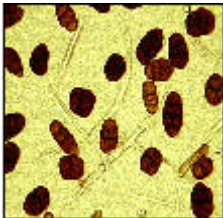
***Pithomyces*:** This genus has fifteen known species most commonly associated with soil. However it is frequently found on dead leaves, plants and most often on dead pasture grass. It is capable of growing on paper and can be found indoors.

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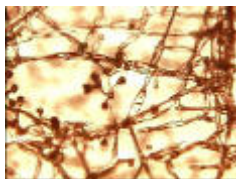
***Stachybotrys*:** This mold is rarely found in “air” samples unless it has been physically disturbed. It is distinctive and easily identifiable when analyzed from a swab sample. Mold growth thrives in moist high cellulose content with low nitrogen content. Environments with relative humidity above 55% that are subject to temperature fluctuations are conducive to toxin production. Spores die easily after release but are still allergenic and toxigenic. Toxins are present on the fungal spores. Distribution throughout the environment can occur through wet spores, insects, water travel, or wind when the spores are dry. Debate and continued research is on-going in regards to the toxigenic effects through inhalation of this mold. Chronic exposure by susceptible individuals reports some symptoms as cold and flu-like, sore throats, diarrhea, headaches, and fatigue. It is reported that the toxins from this mold may suppress the immune system affecting the lymphoid tissue and bone marrow. When toxins are absorbed into the human lung it is called pneumomycosis. Mycotoxins are considered possible liver and kidney carcinogens. Other associated symptoms to this mold are: coughs, rhinitis, nosebleed, burning sensation in the nasal passages, throat, lungs and fever.

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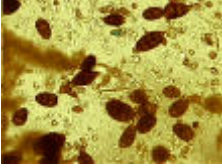
***Stemphylium*:** This mold is a reported allergen most frequently found outdoors in soil or wood. It is found in cellulose materials and isolated from decaying vegetation or dead plants. This mold can be found indoors.

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***Trichoderma sp.*:** This mold is allergenic. It produces an antibiotic that is toxic to humans. It is capable of growing on other fungi. It is commonly found in soil, dead trees, pine needles, and paper. This mold can rapidly feed and grow on cellulose. Predominantly considered nonpathogenic *Trichoderma viride* was reported in a case of infection in a pulmonary cavity, as peritonitis in a dialysis patients and as a asperihepatic infection in a liver transplant patient (St-Germain 200).

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***Ulocladium***: A saprophytic mold it is most commonly found in soil, grasses, wood and decaying plants, paper, and textiles. It is not associated with infections in humans or animals.

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#### Mold Glossary:

#### Acknowledgements, References, Publications and Helpful Links

<http://encompass.library.cornell.edu:20028/about/1612> "On-line Glossary of Technical Terms in Plant Pathology" Cornell University.

<http://www.dehs.umn.edu/iaq/fungus/glossary.html> . "Fungal Glossary" University of Minnesota, Department of Environmental Health & Safety.

<http://sciweb.science.adelaide.edu.au/mycology/myco.nsf?OPenDatabase>. Mycology Unit at the Adelaide Women's & Children's Hospital. Department of Microbiology & Immunology at the University of Adelaide Adelaide Science Online at the University of Adelaide.

Larone, Davise H. "Medically Important Fungi: A Guide to Identification." *Mycology Resource Center, Clinical Microbiology Service, Columbia Presbyterian Medical Center*. 3<sup>rd</sup> ed. ASM Press. Washington D.C.

Smith, Grant, E. "Sampling and Identifying Allergenic Pollens and Molds." *An Illustrated Identification Manual for Air Samplers*. Blewstone Press: San Antonio. 2000.

ST-Germain, Guy and Summerbell, Richard. "Identifying Filamentous Fungi." *A Clinical Laboratory Handbook*. Star:Belmon 1996.

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