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(888) 854-0477

PREPARED FOR: 1ST RATE INSPECTIONS

TEST ADDRESS: 5419 STERLING BROOK HOUSTON, TX 77041

CERTIFICATE OF MOLD ANALYSIS

PREPARED FOR:

1ST RATE INSPECTIONS

PHONE NUMBER: (832) 567-5791

EMAIL: CLIENTCARE@1STRATEINSPECTIONS.COM

TEST LOCATION:

LIH CHIUN WANG

5419 STERLING BROOK

HOUSTON, TX 77041

CHAIN OF CUSTODY # 52207026

COLLECTED: SAT JULY 21, 2018

RECEIVED: MON JULY 23, 2018

REPORTED: MON JULY 23, 2018

A handwritten signature in black ink, appearing to read "John D. Shane".

**APPROVED BY: JOHN D. SHANE PH.D.,
LABORATORY MANAGER**

VERSION: 1.0 (A VERSION NUMBER GREATER THAN ONE (1) INDICATES THAT THE DATA IN THIS REPORT HAS BEEN AMENDED)

EPA regulations or standards for airborne or surface mold concentrations have not been established. There are also no EPA regulations or standards for evaluating health effects due to mold exposure. Information about mold can be found at www.epa.gov/mold.

All samples were received in an acceptable condition for analysis unless noted specifically in the Comments section under a particular sample. All results relate only to the samples submitted for analysis.

A version greater than 1.0 indicates that the lab report has been revised.

FOR MORE INFORMATION, PLEASE CONTACT INSPECTORLAB AT (888) 854-0477 OR EMAIL ASK@INSPECTORLAB.COM

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Detailed Mold Report

(WATER-INDICATING FUNGI ARE SHOWN BELOW IN RED)

Analysis Method	Air Analysis	Air Analysis	Air Analysis	Air Analysis
Lab Sample #	52207026-1	52207026-2	52207026-3	52207026-4
Sample Identification	26250849	26250746	26250745	25970898
Sample Location	LIVING ROOM / KITCHEN / FRONT HALL	OUTSIDE	MASTER BEDROOM / BATH	UPSTAIRS GAMEROOM
Sample Type / Metric	Air-O-Cell/75.0L	Air-O-Cell/75.0L	Air-O-Cell/75.0L	Air-O-Cell/75.0L
Analysis Date	Mon July 23, 2018	Mon July 23, 2018	Mon July 23, 2018	Mon July 23, 2018
Determination	NORMAL	CONTROL	NORMAL	NORMAL

Fungal Types Identified	Raw Count	Spores / m ³	% of Total	Raw Count	Spores / m ³	% of Total	Raw Count	Spores / m ³	% of Total	Raw Count	Spores / m ³	% of Total
**Non-Problem Fungi												
Alternaria	---	---	---	4	53	1	---	---	---	---	---	---
Ascospores	1	13	19	8	106	2	---	---	---	1	13	4
Basidiospores	---	---	---	---	---	---	---	---	---	4	53	18
Bipolaris/Drechslera	---	---	---	4	53	1	---	---	---	---	---	---
Cercospora	---	---	---	24	319	8	---	---	---	---	---	---
Chaetomium	---	---	---	---	---	---	1	13	16	---	---	---
Cladosporium	---	---	---	188	2,500	68	---	---	---	---	---	---
Curvularia	4	53	80	8	106	2	4	53	67	---	---	---
Epicoccum	---	---	---	1	13	<1	---	---	---	---	---	---
Fusarium	---	---	---	1	13	<1	---	---	---	---	---	---
Nigrospora	---	---	---	4	53	1	---	---	---	---	---	---
Penicillium/Aspergillus	---	---	---	---	---	---	---	---	---	16	213	76
Pithomyces	---	---	---	4	53	1	---	---	---	---	---	---
Pyricularia	---	---	---	8	106	2	---	---	---	---	---	---
Smut/Myxomycetes	---	---	---	20	266	7	1	13	16	---	---	---
Total Spore Count	5	66	100	274	3,641	100	6	79	100	21	279	100
Minimum Detection Limit	14			14			14			14		
Comments/Definitions Raw Count: Actual number of spores observed and counted. Spores/m³: Spores per cubic meter. % of Total: Percentage of a particular spore in relation to total number of spores. X: Spore type was observed. --- : Spore type was not observed.	Mold counts are within a NORMAL RANGE and there is no indication, based on the mold counts, that there is any exposure concern to the occupants. The LIGHT DEBRIS present in the sample likely had no effect on the accuracy of the mold count.			CONTROL samples are normally taken outside a building to provide a baseline from which samples on the interior of the building are compared. Outside air is considered normal whatever the mold counts may be. LIGHT DEBRIS: The debris present in the sample likely had no effect on the accuracy of the mold count.			Mold counts are within a NORMAL RANGE and there is no indication, based on the mold counts, that there is any exposure concern to the occupants. The LIGHT DEBRIS present in the sample likely had no effect on the accuracy of the mold count.			Mold counts are within a NORMAL RANGE and there is no indication, based on the mold counts, that there is any exposure concern to the occupants. The LIGHT DEBRIS present in the sample likely had no effect on the accuracy of the mold count.		

**** Non-Problem Fungi** are less capable or do not grow on wetted building materials. They are commonly found in the air outside and infiltrate into indoor air naturally. High numbers of any one of these spore types as compared to the Control sample may indicate that they are growing on wetted building materials indoors.

Spore types not listed in this report were not observed.

Background debris estimates the amount of non-spore particles. Increasing amount of debris will affect the accuracy of the spore counts. Total percent may not equal 100% due to rounding.

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Detailed Mold Report

(WATER-INDICATING FUNGI ARE SHOWN BELOW IN RED)

Analysis Method	Air Analysis	Intentionally Blank	Intentionally Blank	Intentionally Blank
Lab Sample #	52207026-5			
Sample Identification	25970884			
Sample Location	UPSTAIRS HALL			
Sample Type / Metric	Air-O-Cell/75.0L			
Analysis Date	Mon July 23, 2018			
Determination	NORMAL			

Fungal Types Identified	Raw Count	Spores / m ³	% of Total			
**Non-Problem Fungi						
Cladosporium	1	13	33			
Pyricularia	1	13	33			
Smut/Myxomycetes	1	13	33			
Total Spore Count	3	39	100			
Minimum Detection Limit	14					
Comments/Definitions Raw Count: Actual number of spores observed and counted. Spores/m³: Spores per cubic meter. % of Total: Percentage of a particular spore in relation to total number of spores. X: Spore type was observed. --- : Spore type was not observed.	Mold counts are within a NORMAL RANGE and there is no indication, based on the mold counts, that there is any exposure concern to the occupants. The LIGHT DEBRIS present in the sample likely had no effect on the accuracy of the mold count.			INTENTIONALLY BLANK	INTENTIONALLY BLANK	INTENTIONALLY BLANK

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Introduction

All spores found in indoor air are also normally found in outdoor air because most originate or live in the soil and on dead or decaying plants. Therefore, it is not unusual to find mold spores in indoor air. This Mold Glossary is only intended to provide general information about the mold found in the samples that were provided to the laboratory.

Alternaria

Outdoor Habitat: One of the most commonly observed spores in the outdoor air worldwide, normally in low numbers.

Indoor Habitat: Capable of growing on a wide variety of substrates and manufactured products found indoors when wetted.

Allergy Potential: Type I (hay fever, asthma), Type III (hypersensitivity pneumonitis), Common cause of extrinsic asthma

Disease Potential: Not normally considered a pathogen, but can become so in immunocompromised persons.

Toxin Potential: Several known

Comments: One of the most common and potent allergens in the indoor and outdoor air. Seen in indoor air in low concentrations, probably as a result of outdoor air infiltration and/or recycling of settled dust.

Ascospores

Outdoor Habitat: Soil and decaying vegetation, dead and dying insects. These spores constitute a large part of the spores in the air and can be found in the air in very large numbers in the spring and summer, especially during and up to three (3) days after a rain.

Indoor Habitat: Very few of fungi that produce ascospores grow indoors. Some fungi that produce ascospores are recognizable by their spores and when observed are listed under their own categories. Wetted wood and gypsum wallboard paper

Allergy Potential: Depends on the type of fungus producing the ascospores.

Disease Potential: Not normally pathogenic as a group

Toxin Potential: None known

Comments: Ascospores are produced from a very large group of fungi. Notable ascospores that are considered problematic for indoor environments are *Chaetomium*, *Peziza*, and *Ascotricha*. If these types of ascspores are observed they will be listed in the report under their own names.

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Basidiospores

Outdoor Habitat: These are mushroom spores and are common everywhere outside, especially in the late summer and fall.

Indoor Habitat: Mushrooms can grow on very wet wood products, especially on footer plates, basements, and crawlspaces. Sometimes mushrooms can be observed growing in potted plants indoors.

Allergy Potential: Rarely reported, but some Type I (hay fever, asthma) and Type III (hypersensitivity pneumonitis) has been reported.

Disease Potential: None known

Toxin Potential: None known

Comments: Mushroom spores are commonly found indoors, especially when the outdoor spore count is high. When spores of this group are derived from wood rotting fungi, including dry rot (*Serpula* and *Poria*), they can be especially destructive to buildings. When spores from destructive types of mushrooms (dry and wet rot group) are observed in the sample they are listed under their own names on the report.

Bipolaris/Drechslera

Outdoor Habitat: Commonly observed spores in the outdoor air worldwide, normally in low numbers.

Indoor Habitat: Wetted wood and gypsum wallboard paper

Allergy Potential: Type I (hay fever, asthma)

Disease Potential: Opportunistic pathogen in immunocompromised persons, not normally a pathogen in healthy individuals.

Toxin Potential: None known

Comments: This category represents at least three genera, including *Bipolaris*, *Drechslera*, and *Exserohilum*. This group cannot be consistently separated by spore morphology alone.

Cercospora

Outdoor Habitat: Parasitic on leaves

Indoor Habitat: Not known to grow indoors

Allergy Potential: None known

Disease Potential: None known

Toxin Potential: None known

Comments: Easily dispersed by wind

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Chaetomium

Outdoor Habitat: Commonly found on paper products, soil, decaying vegetation, wood and natural fiber textiles (such as jute-backed carpets, canvas, etc.) and similar materials. They are rarely identified in outdoor air. These spores can be disseminated by insects, wind and water splash, etc. It is also known as a soft-rot fungus for softwood and hardwood timber.

Indoor Habitat: Chaetomium is often found on a variety of substrates containing cellulose that are chronically wetted, including paper documents, wallpaper, textiles and construction materials like gypsum board (paper-coated sheet rock) and wood.

Chaetomium can develop quickly, covering a surface with substantial growth after two weeks.

Chaetomium globosum is the most commonly found species indoors. It is not that unusual to find the occasional Chaetomium spore in the air indoors.

Allergy Potential: Type I (hay fever, asthma) potential. However, no allergens have yet been characterised. However, at least two potential allergens have been isolated.

Disease Potential: Rarely reported as human pathogen.

Toxin Potential: Several known

Comments: Chaetomium spores are easily disseminated when it becomes dry. However, Chaetomium spores do not remain airborne for long unless disturbed.

High numbers of spores of this genus is not normal for indoor environments and indicate a current or former water problem. Furthermore, since the spores are held together by mucilage and trapped by hairs, few become airborne until the mold has completely dried out or is mechanically disturbed during renovations remediation. It is, therefore, not uncommon to find low Chaetomium spore counts in pre-remediation air samples and relatively higher counts in post-remediation samples.

Chaetomium species colonize surfaces under similar conditions as Stachybotrys, Alternaria, Fusarium and Ulocladium.

HIGH CONCENTRATIONS AND LONG EXPOSURES TO CHAETOMIUM SHOULD BE AVOIDED.

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Cladosporium

Outdoor Habitat: Cladosporium is one of the most common environmental fungi observed worldwide and is widely reported from soil and decaying vegetation.

Cladosporium herbarum and C. cladosporioides are among the most frequently encountered species, both in outdoor and indoor environments.

Indoor Habitat: Wetted wood and gypsum wallboard paper, paper products, textiles, rubber, window sills. Cladosporium has the ability to grow at low temperatures and can thus, grow on rubber gaskets and food in refrigerators.

Allergy Potential: Type I (hay fever, asthma) - an important and common outdoor allergen

Disease Potential: Opportunistic pathogen in immunocompromised persons, not normally a pathogen in healthy individuals. Cladosporium are some of the most common species reported as indoor contaminants, occasionally linked to health problems.

Toxin Potential: Cladosporium has two known toxins (cladosporin and emodin). These toxins are not known to be highly toxic. There is no evidence in the literature of toxic effects associated to inhalation of Cladosporium conidia (spores) indoors.

Comments: The most commonly reported spore in the outdoor air worldwide. This makes Cladosporium one of the most commonly reported and abundant spore types both indoors and outdoors. The prevalence of this spore can vary throughout the year, but is especially high in late summer and autumn, especially where cereal crops are commonly planted.

An important and common allergen source.

Curvularia

Outdoor Habitat: Soil and decaying vegetation

Indoor Habitat: Wetted wood and gypsum wallboard paper, many cellulytic substrates

Allergy Potential: Type I (hay fever, asthma), common cause of allergenic rhinitis

Disease Potential: Potential human pathogen in immunocompromised people

Toxin Potential: None known

Comments: None

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Epicoccum

Outdoor Habitat: Epicoccum is a widespread cosmopolitan that grows on dead or decaying organic matter, wood, textiles, paper, a variety of foods, insects and human skin. It is commonly found in the soil. Epicoccum spores are more prevalent on dry, windy days, with higher counts late in the day.

Indoor Habitat: Capable of growing on a wide variety of substrates and manufactured products found indoors when wetted such as gypsum board, floors, carpets, mattress dust, and house plants.

Allergy Potential: Type I (hay fever, asthma)

Disease Potential: None known

Toxin Potential: None known

Comments: Very common in outdoor air in the summer months, especially in the midwest USA during harvest times.

Fusarium

Outdoor Habitat: Soil and decaying vegetation, common plant pathogen

Indoor Habitat: Occasionally

Allergy Potential: Type I (hay fever, asthma), rare

Disease Potential: Opportunistic pathogen in immunocompromised persons, occasionally in healthy persons

Toxin Potential: Several known toxins, especially important when ingested.

Comments: Spores can be dispersed into the air when old and dry.

Nigrospora

Outdoor Habitat: Soil and decaying vegetation

Indoor Habitat: Wetted wood and gypsum wallboard paper

Allergy Potential: Type I (hay fever, asthma)

Disease Potential: None known

Toxin Potential: None known

Comments: Rarely observed growing indoors

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Penicillium/Aspergillus

Outdoor Habitat: Soil and decaying vegetation, textiles, fruits. These spores are commonly observed and are a normal part of outside air.

Indoor Habitat: Wetted wood and gypsum wallboard paper, textiles, leather, able to grow on many types of substrates.

Allergy Potential: Type I (hay fever, asthma), Type III (hypersensitivity pneumonitis)

Disease Potential: Opportunistic pathogen in immunocompromised persons, not normally a pathogen in healthy individuals.

Toxin Potential: Several known

Comments: Extremely common in indoor air in low amounts. This type of spore should not constitute an overwhelming percentage and be present in very high numbers.

These two genera are grouped together because they cannot be reliably differentiated into their respective genera based solely on spore morphology.

Pithomyces

Outdoor Habitat: Soil and decaying vegetation and their spores are easily dispersed into the air by wind

Indoor Habitat: Wetted wood and gypsum wallboard paper

Allergy Potential: None known

Disease Potential: None known

Toxin Potential: One known (sporidesmin)

Comments: A very common spore type in the air. Can be a water indicator mold type indoors

Pyricularia

Outdoor Habitat: Soil and decaying vegetation, especially grass and leaves

Indoor Habitat: Not known to grow indoors

Allergy Potential: None known

Disease Potential: None known

Toxin Potential: None known

Comments: Spores easily dispersed into the air by wind

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Smut/Myxomycetes

Outdoor Habitat: Soil and decaying vegetation and wood, especially dead stumps and bark

Indoor Habitat: Not known to grow indoors, sometimes found on firewood

Allergy Potential: Type I (hay fever, asthma), rare

Disease Potential: None known

Toxin Potential: None known

Comments: These two groups are difficult to distinguish due to their "round, brown" morphology. Smuts are especially common in the environment and can be seen in indoor air samples even during the winter in homes because the spores can get trapped in carpets
