



# EXPANDED FUNGAL REPORT <sup>TM</sup>

#### Prepared Exclusively For

Hill's Top Home Inspections, LLC

3216 Harbor Landing Antioch, TN 37013 Phone:615-784-3828

Report Date:12/3/2024Project:CustomerEMSL Order:123456789

AIHA LAP, LLC.

AIHA LAP, LLCEMLAP #100662



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2205 Corporate Plaza Parkway SE, Suite 200 Smyrna, GA 30080 Phone: (770) 956-9150 Fax: (770) 956-9181 Web: http://www.EMSL.com Email:atlantalab@emsl.com

Attn: Brandon Hill

Hill's Top Home Inspections, LLC 3216 Harbor Landing Antioch, TN 37013

#### Proj:

#### 1. Description of Analysis

#### Analytical Laboratory

EMSL Analytical, Inc. (EMSL) is a nationwide, full service, analytical testing laboratory network providing Asbestos, Mold, Indoor Air Quality, Microbiological, Environmental, Chemical, Forensic, Materials, Industrial Hygiene and Mechanical Testing services since 1981. Ranked as the premier independently owned environmental testing laboratory in the nation, EMSL puts analytical quality as its top priority. This quality is recognized by many well-respected federal, state and private accrediting agencies, and assured by our high quality personnel, including many Ph.D. microbiologists and mycologists.

EMSL Order:

Customer ID:

12/03/2024 12/03/2024

Collected:

Received:

Analyzed:

EMSL is an independent laboratory that performed the analysis of these samples. EMSL did not conduct the sampling or site investigation for this report. The samples referenced herein were analyzed under strict quality control procedures using state-of-the-art microbiological methods. The analytical methods used and the data presented are scientifically and legally defensible.

The laboratory data is provided in compliance with ISO-IEC 17025 guidelines for the particular test(s) requested, including any associated limitations for the methods employed. These data are intended for use by professionals having knowledge of the testing methods necessary to interpret them accurately.

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#### Air Samples - Spore traps:

Spore traps are commercially available sampling devices that capture airborne particles on an adhesive slide. Air is pulled through the device using a vacuum pump. Spores, as well as other airborne particles, are impacted on the collection adhesive. Using spore trap collection methods has inherent limitations. These collection methods are biased towards larger spore sizes.

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The analysis for total spore counts is a direct microscopic examination and does not include culturing or growing the fungi. Therefore, the results include both viable and non-viable spores. Some fungal groups produce similar spore types that cannot be distinguished by direct microscopic examination alone (i.e., *Aspergillus/Penicillium*, and others). Other spore types may lack distinguishing features that aid in their identification. These types are grouped into larger categories such as Ascospores or Basidiospores.

Fungal spores are identified and grouped by morphological characteristics including color, shape, septation, ornamentation, and fruiting structures (if present) which are compared to published mycological identification keys and texts. EMSL reports provide spore counts per cubic meter of air to three significant figures. Please note that each spore category is reported to three significant figures. Due to rounding and the application of three significant figures the sum of the individual spore numbers may not equal the total spore count on the report. EMSL does not maintain responsibility for final volume concentrations (counts/m3) since this volume is provided by the field collector and can not be verified by EMSL.

EMSL analyzes spore traps using phase contrast microscopy. There is a wide choice of collection devices (Air-O-Cell, Micro-5, Burkhard, etc.) on the market. Differences in analytical method may exist between spore trap devices.

Spore trap results are reported in spores per cubic meter of air. Due to the other airborne particles collected with the spores, EMSL reports a background particle density. Background density is an indication of overall particulate matter present on the sample (i.e. dust in the air). High background concentrations may obscure spores such as the *Penicillium/Aspergillus* group. The rating system is from 1-5 with 1 = 1 - 25% of the background obscured by material, 2 = 26 - 50%, 3 = 51 - 75%, 4 = 76% - 99%, 5 = 100% or overloaded. A background rating of 4 or higher should be regarded as a minimum count since the actual concentrations may be higher than those reported. EMSL will not be held responsible for overloading of samples. Sample volumes are left to the discretion of the company or persons conducting the fieldwork.

Skin fragment density is the percentage of skin cells making up the total background material, 1 = 1 - 25%, 2 = 26 - 50%, 3 = 51 - 75%, 4 = 76-100%. Skin fragment density is considered an indication of the general cleanliness in the area sampled. It has been estimated that up to 90% of household dust consists of dead skin cells.

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#### 2. Analytical Results

See attached data reports and charts.

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Hill's Top Home Inspections, LLC 3216 Harbor Landing Antioch, TN 37013 EMSL Order: Customer ID: Collected: Received: 12/03/2024 Analyzed: 12/03/2024

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Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)					
	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
072411100-0001	Alternaria (Ulocladium)	-	-	-	
	Ascospores	1	40	2.9	*
Client Sample ID	Aspergillus/Penicillium++	-	-	-	
38805842	Basidiospores	18	800	58	<b>▲ *</b>
	Bipolaris++	1*	10*	0.7	▲ 巻 ▲ 巻 愛
	Chaetomium++	-	-	-	
Location	Cladosporium	2	90	6.5	*
Outside	Curvularia	1*	10*	0.7	A *
	Epicoccum	1*	10*	0.7	<b>▲ *</b>
Sample Volume (L)	Fusarium++	-	-	-	
	Ganoderma	-	-	-	
75	Myxomycetes++	9	400	29	<b>▲ ※</b>
	Pithomyces++	-	-	-	
Sample Type	Rust	1*	10*	0.7	<b>▲ ※</b>
5 4 4	Scopulariopsis/Microascus	-	-	-	
Background	Stachybotrys/Memnoniella	-	-	-	
Comments	Unidentifiable Spores	-	-	-	
	Zygomycetes	-	-	-	
	Pestalotia++	1*	10*	0.7	<b>A</b>
	Total Fungi	35	1380	100	
	Hyphal Fragment	1	40	-	
	Insect Fragment	-	-	-	
	Pollen	2	90	-	<b>▲ *</b>
Analytical Sensitivity 600x: 44       counts/cubic meter       Skin Fragments: 1       1 to 4 (low to high)         Analytical Sensitivity 300x *: 13*       counts/cubic meter       Fibrous Particulate: 1       1 to 4 (low to high)         Background: 1       1 to 4 (low to high)       1 to 4 (low to high)					
		r	Fibrous Particulate Background	e: <b>1</b> 1 to 4 ( d: <b>1</b> 1 to 4 (	

Not commonly found growing indoors, spores likely come from outside.

Spores reported to be able to cause allergies in individuals.

Potential for mycotoxin production exists with these fungi.

<u>∲</u> F

\*

These fungi are considered water damage indicators

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

Initial report from: 12/03/2024 18:17:30

Daoxin Li, PH.D, Lab Manager or Other Approved Signatory

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Email:atlantalab@emsl.com

Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391) Particle Identification **Raw Count** (Count/m<sup>3</sup>) % of Total Interpretation Guideline Alternaria (Ulocladium) 072411100-0002 Ascospores 8 400 0.9 <u>₩</u> ELEVATED 57.6 Aspergillus/Penicillium++ 567 25100 ELEVATED **Client Sample ID** Basidiospores 38805825 Bipolaris++ \_ -Chaetomium++ Location Cladosporium 407 18000 41.3 ELEVATED . 1st Floor Bedroom Curvularia Epicoccum ---Sample Volume (L) Fusarium++ Ganoderma 100 ▲ 💥 75 Myxomycetes++ 0.2 Acceptable 3 Pithomyces++ Rust Sample Type Scopulariopsis/Microascus \_ \_ Inside Stachybotrys/Memnoniella Unidentifiable Spores Comments Zygomycetes Pestalotia++ 43600 985 ELEVATED Total Fungi 100 Hyphal Fragment 5 200 -Slightly Elevated 40 Insect Fragment 1 **Slightly Elevated** Pollen \_ Analytical Sensitivity 600x: 44 counts/cubic meter Skin Fragments: 2 1 to 4 (low to high) Analytical Sensitivity 300x \*: 13\* counts/cubic meter Fibrous Particulate: 1 1 to 4 (low to high) Background: 2 1 to 4 (low to high); 5 (overloaded) Not commonly found growing indoors, spores likely come from outside. Acceptable Concentration at or below background Spores reported to be able to cause allergies in individuals. Slightly Elevated Concentration above background Potential for mycotoxin production exists with these fungi ELEVATED Concentration 10X or more above background

These fungi are considered water damage indicators.

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

Initial report from: 12/03/2024 18:17:30

Daoxin Li, PH.D, Lab Manager or Other Approved Signatory

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Hill's Top Home Inspections, LLC 3216 Harbor Landing Antioch, TN 37013

EMSL Order: Customer ID: Collected: Received: 12/03/2024 12/03/2024 Analyzed:

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	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
072411100-0003	Alternaria (Ulocladium)	-	-	-	
	Ascospores	-	-	-	
Client Sample ID	Aspergillus/Penicillium++	19	840	58.7	ELEVATED 💥
38805840	Basidiospores	4	200	14	Acceptable
	Bipolaris++	-	-	-	
	Chaetomium++	-	-	-	
Location	Cladosporium	7	300	21	Slightly Elevated
2nd Floor Bonus Room	Curvularia	1	40	2.8	Slightly Elevated
	Epicoccum	-	-	-	
Sample Volume (L)	Fusarium++	-	-	-	
	Ganoderma	-	-	-	
75	Myxomycetes++	3*	40*	2.8	Acceptable 🔺 🗮
	Pithomyces++	-	-	-	
Sample Type	Rust	1*	10*	0.7	Acceptable 🔺 🗮
la state	Scopulariopsis/Microascus	-	-	-	
Inside	Stachybotrys/Memnoniella	-	-	-	
Comments	Unidentifiable Spores	-	-	-	
	Zygomycetes	-	-	-	
	Pestalotia++	-	-	-	
	Total Fungi	35	1430	100	Slightly Elevated
	Hyphal Fragment	2	90	-	Slightly Elevated
	Insect Fragment	-	-	-	
	Pollen	-	-	-	
	tivity 600x: 44 counts/cubic mete vity 300x *: 13* counts/cubic mete		Skin Fragment Fibrous Particulat Backgroun	e: <b>1</b> 1 to 4 (	low to high) low to high) low to high); 5 (overloaded)
Acceptable Concentration at or below background Slightly Elevated Concentration above background			Spores reported to	be able to cause alle	•
ELEVATED Concen	tration 10X or more above background		~	oxin production exists	•
ELEVAIED Concentration 10X or more above background			These fungi are considered water damage indicators.		

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

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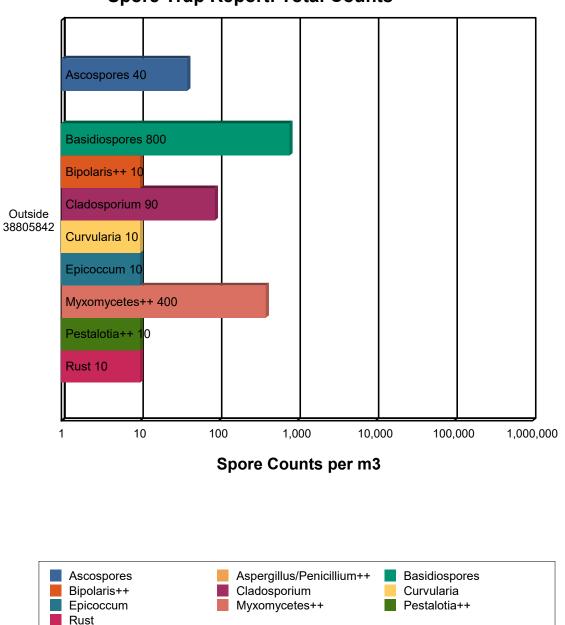
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# **Spore Trap Report: Total Counts**

\* The chart is displayed using a logarithmic scale. Bar size is not directly proportional to the number of spores.

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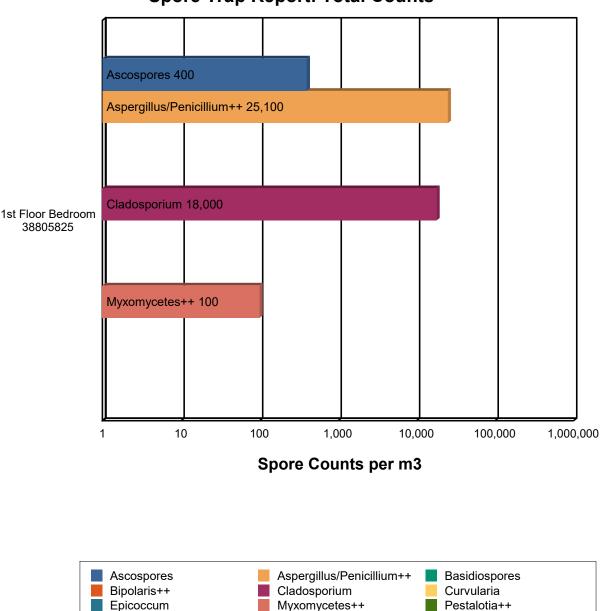
12/03/2024 12/03/2024

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Rust

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Spore Trap Report: Total Counts

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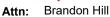
\* The chart is displayed using a logarithmic scale. Bar size is not directly proportional to the number of spores.

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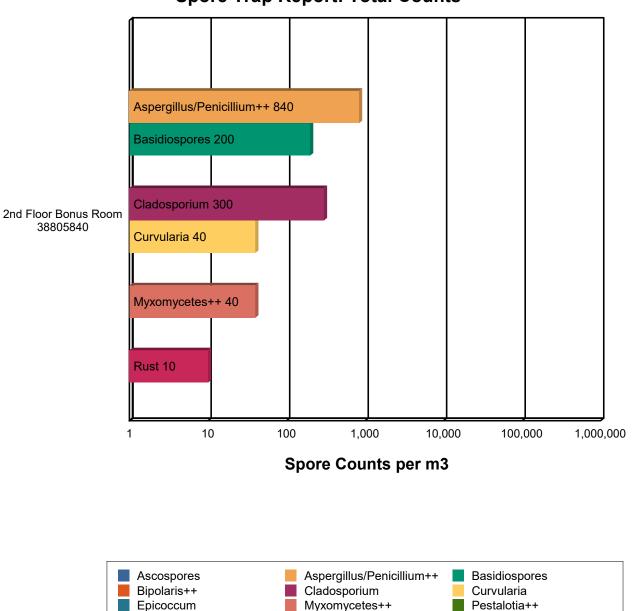


Hill's Top Home Inspections, LLC 3216 Harbor Landing Antioch, TN 37013

Rust

EMSL Order: Customer ID: Collected: Received: 12/03/2024 Analyzed: 12/03/2024

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# **Spore Trap Report: Total Counts**

\* The chart is displayed using a logarithmic scale. Bar size is not directly proportional to the number of spores.

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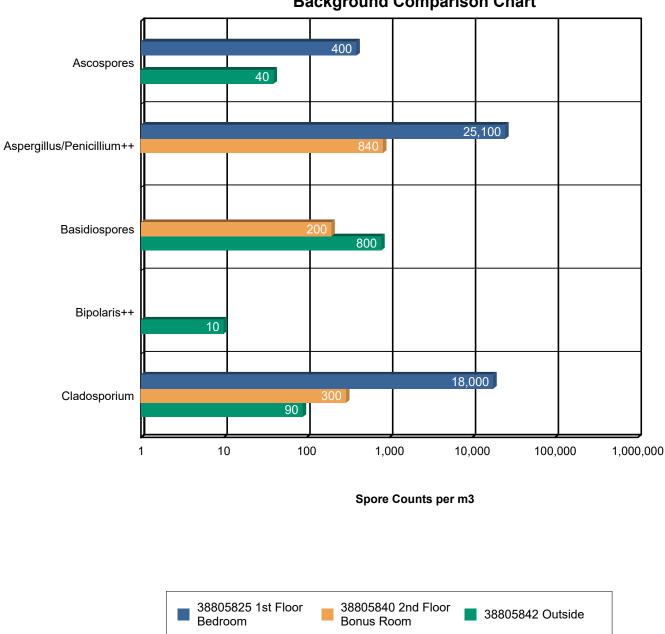
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# **Background Comparison Chart**

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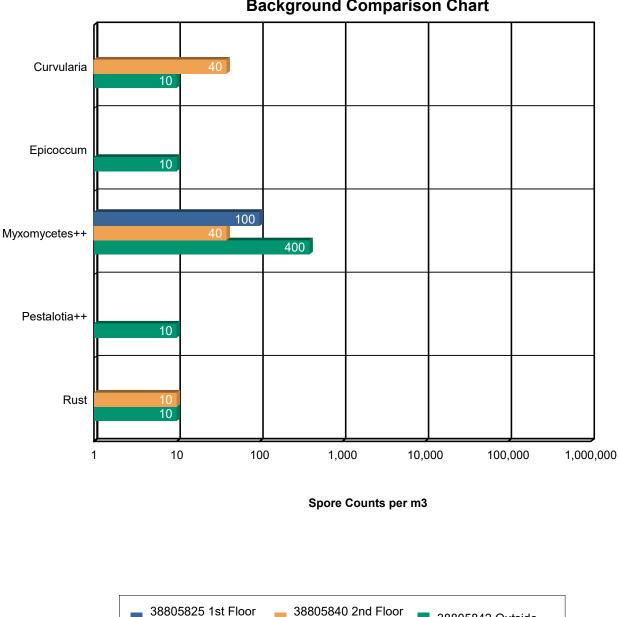
38805842 Outside

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#### **Background Comparison Chart**

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Bonus Room

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Bedroom

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	Hill's Top H	ome Inspections, LLC		Customer ID:	
	3216 Harbo	or Landing		Collected:	
	Antioch, TN	I 37013		Received:	12/03/2024
				Analyzed:	12/03/2024
Proj:					
Surface	Contamination	ASSESSMENTReport	™ Swab Samples	Based on Direct Microscopic A	nalysis MICRO-SOP-200

(Referenced in IICRC S520)	(Referenced in IICRC S520)
Condition 3: Actual fungal	Remediate to a Condition 1 status
Ċ	,

Definitions (from IICRC S520 Standard)

Condition 1 (normal fungal ecology): an indoor environment that may have settled spores, fragments, or traces of actual growth.

Condition 2 (settled spores): an indoor environment which is primarily contaminated with settled spores that were dispersed directly or indirectly from a Condition 3 area, and which may have traces of actual growth.

Condition 3 (actual growth): an indoor environment contaminated with the presence of actual mold growth and associated spores. Actual growth includes growth that is active or dormant, visible or hidden.

Data provided in this report are intended to facilitate the assessment process performed by an Indoor Environmental Professional (IEP). The IEP is responsible for final data interpretation and remediation conclusions based on their assessment which may include information on the building history, an inspection, sampling, and laboratory data. Post-remediation verification testing recommended after any remediation.

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Samples analyzed by EMSL Analytical, Inc Smyrna, GA AIHA LAP, LLC-EMLAP Accredited #100662

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Customer ID: Collected: Received: 12/03/2024 Analyzed: 12/03/2024

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# Test Report: Microscopic Examination of Fungal Spores, Fungal Structures, Hyphae, and Other Particulates from Swab Samples (EMSL Method MICRO-SOP-200)

					1 1
Lab Sample Number: Client Sample ID:	072411100-0004 Swab				
Sample Location:	HVAC				
Spore Types	Category	-	-	-	-
Alternaria (Ulocladium)	Low				
Ascospores	-				
Aspergillus/Penicillium++	-				
Basidiospores	-				
Bipolaris++	-				
Chaetomium++	-				
Cladosporium	*High*				
Curvularia	Rare				
Epicoccum	-				
Fusarium++	-				
Ganoderma	-				
Myxomycetes++	Rare				
Pithomyces++	Low				
Rust	Rare				
Scopulariopsis/Microascus	-				
Stachybotrys/Memnoniella	-				
Unidentifiable Spores	-				
Zygomycetes	-				
Hyphal Fragment	-				
Insect Fragment	-				
Pollen	-				
Fibrous Particulate	-				

Category: Count/per area analyzed Rare: 1 to 10 Low: 11 to 100 Medium: 101 to 1000 High: >1000 High background particulate: A high level of background particulate can obscure fungal matter and lead to underestimation or failure to detect ++ = Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category. * = Sample contains fruiting structures and/or hyphae associated with the spores. - = Not detected.	Daoxin Li, PH.D, Lab Manager or Other Approved Signatory
No discernable field blank was submitted with this group of samples.	_
EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates or except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. T from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within or noted. Samples analyzed by EMSL Analytical, Inc Smyrna, GA AIHA LAP, LLC-EMLAP Accredited #100662	he report reflects the samples as received. Results are generated
nitial report from: 12/03/2024 18:17:30	
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#### 3. Understanding the Results

EMSL Analytical, Inc. is an independent laboratory, providing unbiased and scientifically valid results. These data represent only a portion of an overall IAQ investigation. Visual information and environmental conditions measured during the site assessment (humidity, moisture readings, etc.) are crucial to any final interpretation of the results. Many factors impact the final results; therefore, result interpretation should only be conducted by qualified individuals. The American Conference of Governmental Industrial Hygienists (ACGIH) has published a good reference book covering sampling and data interpretation. It is entitled, <u>Bioaerosols: Assessment and Control</u>, 1999.

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Fungal spores are found everywhere. Whether or not symptoms develop in people exposed to fungi depends on the nature of the fungal material (e.g., allergenic, toxic, or infectious), the exposure level, and the susceptibility of exposed persons. Susceptibility varies with the genetic predisposition (e.g., allergic reactions do not always occur in all individuals), age, pre-existing medical conditions (e.g., diabetes, cancer, or chronic lung conditions), use of immunosuppressive drugs, and concurrent exposures. These reasons make it difficult to identify dose/response relationships that are required to establish "safe" or "unsafe" levels (i.e., permissible exposure limits).

It is generally accepted in the industry that indoor fungal growth is undesirable and inappropriate, necessitating removal or other appropriate remedial actions. The New York City guidelines and EPA guidelines for mold remediation in schools and commercial buildings define the conditions warranting mold remediation. Always remember that water is the key. Preventing water damage or water condensation will prevent mold growth.

This report is not intended to provide medical advice or advice concerning the relative safety of an occupied space. Always consult an occupational or environmental health physician who has experience addressing indoor air contaminants if you have any questions.

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#### 4. Glossary of Fungi

ALTERNARIA(ULOCL	ADIUM)
Natural Habitat	Common saprobe and pathogen of plants. Typically found on plant tissue, decaying wood, and foods. Soil . Air outdoors.
Suitable Substrates in the	Indoors near condensation (window frames, showers), House dust (in carpets, and air). Also
Indoor Environment	colonizes building supplies, computer disks, cosmetics, leather, optical instruments, paper, sewage, stone monuments, textiles, wood pulp, and jet fuel
Water Activity	Aw =0.85-0.88 (water damage indicator)
Mode of Dissemination	Wind
Allergic Potential	Type I allergies (hay fever, asthma), Type III (hypersensitivity pneumonitis)
Potential or Opportunistic	Phaeohyphomycosis {causing cystic granulomas in the skin and subcutaneous tissue}. In
Pathogens	immunocompetent patients, Alternaria colonizes the paranasal sinuses, leading to chronic hypertrophic sinusitis
Industrial Uses	Biocontrol of weed plants Biocontrol fungal plant pathogens.
Potential Toxins Produced	Alternariol (AOH) . Alternariol monomethylether (AME). Tenuazonic acid (TeA). Altenuene (ALT). Altertoxins (ATX)
Other Comments	Many species of Ulocladium have been renamed as Alternaria. Alternaria spores are one of the most common and potent indoor and outdoor airborne allergens. Additionally, Alternaria sensitization has been determined to be one of the most important factors in the onset of childhood asthma. Synergy with Cladosporium or Ulocladium may increase the severity of symptoms
References	Alternaria redefined. J. Woudenberg et al., Studies in Mycology. Volume 75, June 2013, Pages 171-212

ASCOSPORES	
Natural Habitat	Everywhere in nature.
Suitable Substrates in the	Depends on genus and species.
Indoor Environment	
Water Activity	Depends on genus and species.
Mode of Dissemination	Forcible ejection or passive release and dissemination by wind or insects.
Allergic Potential	Depends on genus and species.
Potential or Opportunistic	Depends on genus and species.
Pathogens	
Industrial Uses	Depends on genus and species.
Potential Toxins Produced	Depends on genus and species.
Other Comments	Ascospores are the result of sexual reproduction and produced in a saclike structure called an
	ascus. All ascospores belong to members of the Phylum Ascomycota, which encompasses a
	plethora of genera worldwide.

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background debris.

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ASPERGILLUS/PENICILLIUM++ Plant debris ·Seed ·Cereal crop Natural Habitat Suitable Substrates in the Grows on a wide range of substrates indoors · Prevalent in water damaged buildings · Foods (blue mold on cereals, fruits, vegetables, dried foods) ·House dust ·Fabrics ·Leather Indoor Environment ·Wallpaper ·Wallpaper glue Allergic Potential Type I (hay fever, asthma) ·Type III (hypersensitivity) Possible depending on the species. **Potential Opportunist or** Pathogen **Potential Toxins Produced** Possible depending on the species. Free moisture required for Aw=0.75-0.94 mold growth Mode of Dissemination Wind ·Insects Industrial Uses Many depending on the species Other comments Spores of Aspergillus and Penicillium (including others such as Geosmithia, Goidanichella, Nalanthamala, Rasamsonia, Samsoniella, and Talaromyces) are small and spherical with few distinguishing characteristics. They cannot be differentiated by non-viable impaction sampling methods. Some species with very small spores may be undercounted in samples with high

BASIDIOSPORES	
Natural Habitat	Forest floors. Lawns .Plants (saprobes or pathogens depending on genus)
Suitable Substrates in the	Depends on genus. Wood products
Indoor Environment	
Water Activity	Unknown.
Mode of Dissemination	Forcible ejection. Wind currents.
Allergic Potential	Type I allergies (hay fever, asthma). Type III (hypersensitivity pneumonitis)
Potential or Opportunistic	Depends on genus.
Pathogens	
Industrial Uses	Edible mushrooms are used in the food industry.
Potential Toxins Produced	Amanitins. monomethyl-hydrazine. muscarine. ibotenic acid. psilocybin.
Other Comments	Basidiospores are the result of sexual reproduction and formed on a structure called the
	basidium. Basidiospores belong to the members of the Phylum Basidiomycota, which includes
	mushrooms, shelf fungi, rusts, and smuts.

BIPOLARIS++	
Natural Habitat	Plant saprophyte.Plant pathogen of many plants, causing leaf rot, crown rot, and root rot on warm season turf grasses
Suitable Substrates in the	House plants, Indoor building materials
Indoor Environment	
Free moisture required for	Unknown
mold growth	
Mode of Dissemination	Wind
Allergic Potential	Hay fever, asthma. Allergic and chronic invasive sinusitis
Potential or Opportunistic	Invasive sinusitis, disseminated mycoses, peritonitis, keratitis, phaeohyphomycosis
Pathogens	
Potential Toxins	Can potentially produce sterigmatocystin.
Other Comments	Includes Bipolaris, Drechslera, Exserohilum.

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#### CLADOSPORIUM

Natural Habitat	Dead plant matter. Straw. Soil. Woody plants
Suitable Substrates in the	Fiberglass duct liner. Paint. Textiles. Found in high concentration in water-damaged building
Indoor Environment	materials.
Water Activity	Aw 0.84-0.88
Mode of Dissemination	Air
Allergic Potential	Type I (asthma and hay fever).
Potential or Opportunistic	Edema. keratitis. onychomycosis. pulmonary infections. Sinusitis.
Pathogens	
Industrial Uses	Produces 10 antigens.
Potential Toxins Produced	Cladosporin and Emodin.

CURVULARIA	
Natural Habitat	A worldwide saprophytic fungi, being isolated from dead plant material and soil.
Suitable Substrates in the	Paper, wood products
Indoor Environment	
Free moisture required for	Unknown
mold growth	
Mode of Dissemination	Wind
Allergic Potential	Hay fever, asthma, allergic fungal sinusitis
Potential or Opportunistic	In immunocompromised patients can cause cerebral abscess, endocarditis, mycetoma, ocular
Pathogens	keratitis, onychomycosis, and pneumonia.

EPICOCCUM	
Natural Habitat	A worldwide saprophytic fungi, being isolated from dead plant material and soil.
Suitable Substrates in the	Paper, textiles
Indoor Environment	
Water Activity	0.86-0.90
Mode of Dissemination	Wind
Allergic Potential	Hay fever, asthma
Potential or Opportunistic	Unknown
Pathogens	

MYXOMYCETES++	
Natural Habitat	Decaying logs, Dead leaves , Dung , Lawns , Mulched flower beds,
	Lawns
Suitable Substrates in the	Rotting lumber
Indoor Environment	
Free moisture required for	Unknown
mold growth	
Mode of Dissemination	Insects, Water, Wind
Allergic Potential	Туре І
Potential or Opportunistic	Unknown
Pathogens	
Industrial Uses	
Other Comments	Includes Myxomycetes, Smut, Rust, and Periconia.

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PESTALOTIA++	
Suitable Substrates in the	Unknown; some require a living plant host for growth.
Indoor Environment	
Allergic Potential	Unknown
Potential Opportunist or	Unknown
Pathogen	
Potential Toxins Produced	Unknown
Free moisture required for	Unknown
mold growth	
Mode of Dissemination	Unknown; air dispersal likely.
Industrial Uses	None known

PESTALOTIA-LIKE	
Natural Habitat	Saprophyte on dead leaves of different plants. Some are plant pathogens that attack foliage or fruit of different plant species. Genera with like spores include Pestalotia, Diploceras, Diversimediispora, Heterotruncatella, Monochaetia, Neopestalotiopsis, Parabartalinia, Pestalotiopsis, Pseudopestalotiopsis, Pseudosarcostroma, Truncatella, and others.

PITHOMYCES++	
Natural Habitat	A worldwide saprophytic fungi, being isolated from dead plant material and soil.
Suitable Substrates in the	Paper
Indoor Environment	
Water Activity	Requires high moisture for spore germination
Mode of Dissemination	Wind
Allergic Potential	Unknown
Potential or Opportunistic	Mycosis in immunocompromised patients
Pathogens	
Other Comments	Pithomyces++ includes spores of Pithomyces and Pseudopithomyces.

RUSTS	
Natural Habitat	Parasitic on cultivated and many types of plants
Suitable Substrates in the	Unknown- rust fungi require a living plant host for growth
Indoor Environment	
Free moisture required for	Unknown
mold growth	
Mode of Dissemination	Wind, Forcible Ejection
Allergic Potential	Type I. (hay fever, asthma)
Potential or Opportunistic	Unknown
Pathogens	

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#### 5. References and Informational Links

#### Books

- Bioaerosols: Assessment and Control. Janet Macher, Ed., American Conference of Governmental Industrial Hygienists, Cincinnati, OH 1999.
- Exposure Guidelines for Residential Indoor Air Quality. Environmental Health Directorate, Health Protection Branch, Health Canada, Ottawa, Ontario, 1989.

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- Fungal Contamination in Public Buildings: Health Effects and Investigation Methods. Health Canada, Ottawa, Ontario, 2004.
- IICRC: S500 Standard and Reference Guide for Professional Water Damage Restoration.
   3rd Edition, Institute of Inspection, Cleaning, and Restoration Certification, Vancouver, WA, 2006

IICRC: S520 Standard and Reference Guide for Professional Mold Remediation. 1st Edition, Institute of Inspection, Cleaning, and Restoration Certification, Vancouver, WA, 2004

• Field Guide for the Determination of Biological Contaminants in Environmental Samples. 2nd Edition, American Industrial Hygiene Association, 2005.

#### **Consumer Links**

Read the full text of AIHA's "The Facts About Mold" consumer brochure. <u>https://aiha-assets.sfo2.digitaloceanspaces.com/AIHA/resources/Facts-About-Mold-A-Consumer-Focus-Fact-Sheet.pdf</u>

The Occupational Safety and Health Administration (OSHA) <u>http://www.osha.gov/SLTC/molds/index.html</u>

CDC Mold Facts https://www.cdc.gov/mold-health/about/index.html? CDC AAref Val=https://www.cdc.gov/mold/faqs.htm

CDC Stachybotrys - Questions and answers on Stachybotrys chartarum and other molds <u>https://www.cdc.gov/mold-health/data-research/facts-stats/?</u> CDC AAref Val=https://www.cdc.gov/mold/stachy.htm

IOM, NAS: Clearing the Air: Asthma and Indoor Air Exposures <u>https://www.epa.gov/indoor-air-quality-iag/should-you-have-air-ducts-your-home-cleaned</u>

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National Library of Medicine-Mold website http://www.nlm.nih.gov/medlineplus/molds.html

California Department of Health Services (CADOHS) https://www.cdph.ca.gov/Programs/cls/dehl/ehl/Pages/AQS/Mold.aspx

Minnesota Department of Health https://www.health.state.mn.us/communities/environment/air/mold/index.html

New York City Department of Health and Mental Hygiene https://www.nyc.gov/site/doh/health/health-topics/mold.page

#### **EPA**

"Should You Have the Air Ducts in Your Home Cleaned?" https://www.epa.gov/indoor-air-guality-iag/should-you-have-air-ducts-your-home-cleaned

General information about molds and actions that can be taken to clean up or prevent a mold problem.

https://www.epa.gov/mold/mold-cleanup-your-home

"A Brief Guide to Mold, Moisture, and Your Home" - Includes basic information on mold, cleanup guidelines, and moisture and mold prevention https://www.epa.gov/mold/brief-guide-mold-moisture-and-your-home

"Mold Remediation in Schools and Commercial Buildings" - Information on remediation in schools and commercial property, references for potential mold and moisture remediators. https://www.epa.gov/mold/mold-remediation-schools-and-commercial-buildings-guide

#### **FEMA**

"Homes That Were Flooded May Harbor Mold Problems" - Information and tips for cleaning mold.

https://www.fema.gov/press-release/20210318/fact-sheet-mold-problems-and-solutions

"Dealing With Mold & Mildew in Your Flood Damaged Home. http://www.fema.gov/pdf/rebuild/recover/fema mold brochure english.pdf

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