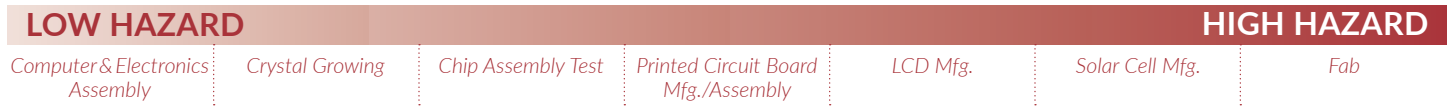




# A GUIDE TO TERMINOLOGY AND CLEAN ROOMS

Understanding the spectrum of hazards associated with underwriting technical occupancies leads to better bottom-line results. Here's a quick guide to terminology and clean rooms.

## WHERE DOES YOUR RISK FALL WITHIN THIS SPECTRUM?



Some of these processes can be quite hazardous, while others are not. Some tech occupancies will have more dynamic Business Interruption exposures than others.

And, clean room replacement costs will vary depending on the occupancy. These are just a few risk characteristics to factor into your underwriting process.

## USEFUL TERMINOLOGY

**A.S.I.C. (Application-Specific Integrated Circuit)**—An Integrated Circuit (IC) designed for one specific application in an electronic system, usually custom designed. Often made by smaller fabs.

**Chip**—Sliver of silicon on which the tiny components of integrated circuits are formed.

**Fab**—A “fabrication” facility where the integrated circuits are imprinted onto blank wafers.

**Fabless Fab**—A facility that designs and sells IC chips but contracts out the actual fabrication.

**Foundry**—A facility that fabricates the chips that others have designed. TSMC is a foundry.

**H.E.P.A. Filter (High Efficiency Particulate Air Filter)**—Filters out particles > 0.1 microns in diameter.

**Integrated Circuit (IC)**—A circuit in which many components are fabricated and interconnected on a single chip of semiconductor material. Thousands of components and dozens of layers are laid down and interconnected to make a chip.

**MEMS (Micro-Electro-Mechanical Systems)**—Miniaturized mechanical elements embedded onto the chip itself using semiconductor device manufacturing techniques. An example is the accelerometer that allows a fitness band to count steps.

**Micron**—Equals one millionth of a meter.

**Microprocessor**—A single semiconductor device which carries out the processing tasks in a digital system.

**Semiconductor**—An element such as silicon, intermediate in its conductivity. Its conductivity can be chemically altered making it an ideal substance to use in the manufacturing of computer chips.

**Wafer**—A thin, round slice of a semiconductor material from which chips are made.

**Wet Bench**—A workstation, sometimes heated, often made of plastic, that is used for washing wafers at various stages of the process using corrosive, non-flammable and flammable liquids. Plastics benches, even if fire retardant, add to the fire load. Local, fixed protection (in addition to the sprinklers) represents a significant improvement over “unprotected” wet benches.

## CLEAN ROOM GUIDE

Class	Maximum Particles/ft <sup>3</sup>				ISO* Equivalent
	>/= 0.5 μm	>/= 0.3 μm	>/= 0.2 μm	>/= 0.1 μm	
1	1	3	7	35	ISO 3
10	10	30	75	350	ISO 4
100	100	300	750		ISO 5
1,000	1,000				ISO 6
10,000	10,000				ISO 7
100,000	100,000				ISO 8

The “Class” refers to the maximum number of particles (.5 microns or larger) in a cubic foot of air, so a Class 1 means just 1 particle in 1 cubic foot of air.

\* [International Organization for Standardization](#)