

SUMMARY OF CLASS I, II, III HAZARDOUS LOCATIONS

CLASSES	GROUP	DIVISIONS	
		1	2
I Gases, Vapors and Liquids (Art. 501)	A. Acetylene B. Hydrogen, etc. C. Ether, etc. D. Hydrocarbons, Fuels, Solvents, etc.	Normally explosive and hazardous.	Not normally present in an explosive concentration (but may accidentally exist).
	E. Metal Dusts (conductive* and explosive) F. Carbon Dusts (Some are conductive* and all are explosive) G. Flour, Starch, Grain, Combustible Plastic or Chemical Dust (explosive)		
II Dusts (Art. 502)	Textiles, Woodworking, etc. (easily ignitable, but not likely to be explosive)	Ignitable quantities of dust that is normally or may be, in suspension or conductive dust may be present.	Dust not normally suspended in an ignitable concentration (but may accidentally exist). Dust layers are present.
III Fibers and Filings (Art. 503)		Handled or used in manufacturing.	Stored or handled in storage (exclusive of manufacturing).

*NOTE: Electrically conductive dusts are dusts with a resistivity less than 105 OHM-centimeter.

Class I - Hazardous locations or areas where flammable gases or vapors are/could become present in concentrations suitable to produce explosive and/or ignitable mixtures. CI locations are further divided into 2 divisions:

Class I, Division 1: There are three different situations that could exist to classify an area as a CI, D1 location.

1. When the atmosphere of an area or location is expected to contain explosive mixtures of gases, vapors, or liquids during normal working operations. (This is the most common Class I, Div. 1)
2. An area where ignitable concentrations frequently exist because of repair or maintenance operations.
3. The release of ignitable concentrations of gases or vapors due to equipment breakdown, while at the same time causing electrical equipment failure.

Class I, Division 2: One of the following three situations must exist in order for an area to be considered a Class I, Division 2 location.

1. An area where flammable liquids and gases are handled, but not expected to be in explosive concentrations. However, the possibility for these concentrations to exist might occur if there was an accidental rupture or other unexpected incidents.
2. An area where ignitable gases or vapors are normally prevented from accumulating by positive mechanical ventilation, yet could exist in ignitable quantities if there was a failure in the ventilation systems.
3. Areas adjacent to Class I, Division 1 locations where it is possible for ignitable concentrations of gas/vapors to come into this area because there isn't proper ventilation.

Class II - hazardous locations are areas where combustible dust, rather than gases or liquids, may be present in varying hazardous concentrations.

Class II, Division 1: The following situations could exist, making an area become a Class II, Division 1 location:

1. Where combustible dust is present in the air under normal operating conditions in such a quantity as to produce explosive or ignitable mixtures. This could be on a **continuous, intermittent, or periodic** basis.
2. Where an ignitable and/or the explosive mixture could be produced if a mechanical failure or abnormal machinery operation occurs.
3. Where electrically conductive dust in hazardous concentrations are present.

Class II, Division 2: Class II, Division 2 locations exist in response to one of the following conditions:

1. Where combustible dust is present but not normally in the air in concentrations high enough to be explosive or ignitable.
2. If dust becomes suspended in the air due to equipment malfunctions and if dust accumulation may become ignitable by abnormal operation or failure of electronic equipment.

Sources: [29 CFR 1910.307 – Hazardous \(classified\) Locations.](#)

UL 1203 – Explosion-Proof and Dust-Ignition-Proof Electrical Equipment.