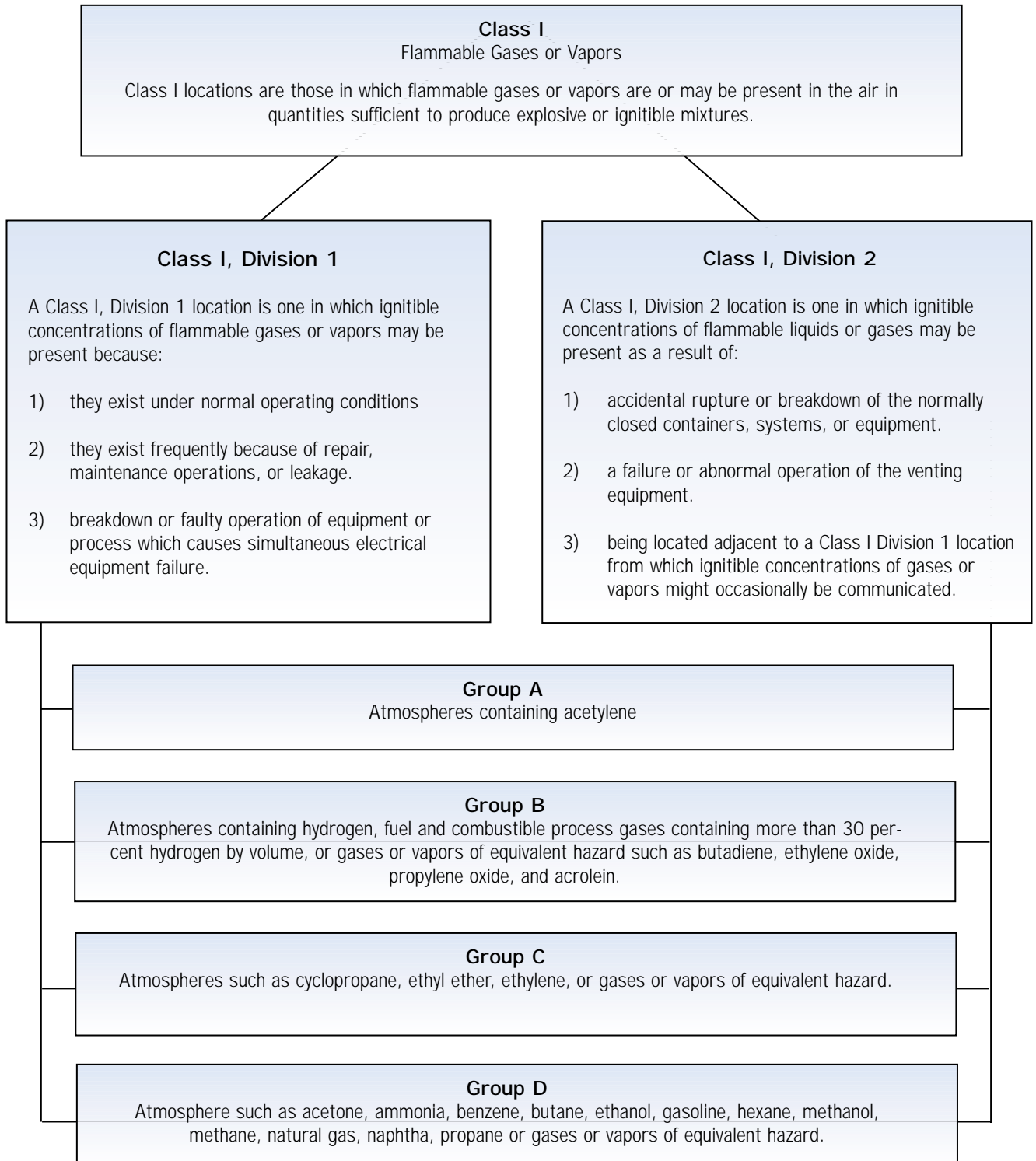


## Intrinsically Safe Definitions & Standards

### Hazardous (Classified) Locations In Accordance with Article 500, National Electrical Code\*



## ▶ Simple Apparatus Devices For Use In Intrinsically Safe Systems

**“Hazardous Areas”** are areas where flammable materials are handled and any leak or spill has the potential to form an explosive atmosphere.

**“Intrinsically Safe”** is a practice where one is restricting the energy available to electrical equipment in this potentially hazardous area so that a spark or hot surface can not occur due to any type of electrical fault. The IEC (International Electrical Code) states that: “Equipment must not store or generate more than 1.2V, 0.1A, 20 micro joules, and 25mW.” A certified IS interface (Barrier) limits the voltage and current that can reach the equipment in the hazardous area under fault conditions.

**“Simple Apparatus”** devices are able to be used in an Intrinsically Safe area without certification because they do not store energy (See definition below). They include thermocouples, resistive sensors, LED's and switches. The proper IS interface must still be used with any Simple Apparatus device.

**“Simple Apparatus”** such as thermocouples, resistive sensors, LED's and switches may be employed in a hazardous area without certification provided that it does not generate or store more than 1.2V, 0.1A, 20µJ and 25mW. This IEC definition is now used in the USA and Canada.

**“Simple Apparatus”** can be defined as the following: a device that does not generate or store energy.

From the definition above, it is clear that all switches manufactured or supplied by Westlock Controls can be used in Intrinsically Safe systems. Switches included are as follows:

1. Magnum XT-90 proximity sensors
2. 316 Silver Bullet
3. V3 mechanical switches (SPDT)
4. 22-104 mechanical switches (DPDT)
5. Reed proximity sensors (SPDT or SPST)
6. GO proximity sensors