ATEX is an acronym for "**Atmospheres Explosives**" and refers to a set of European Union (EU) directives for the design of electrical equipment suitable for use in hazardous locations where an explosive atmosphere could exist. Typical hazardous locations include the more obvious places such as flour mills, coal mines, petrochemical plants, fuel transfer facilities etc. However, some not so obvious hazardous locations also include waste water treatment plants, saw mills, tunnels and underground passageways or any location where a build-up of naturally occurring flammable material (such as methane or dust) could occur.

In many of these locations there is a need for condition monitoring, for example by measuring temperature or vibration of rotating machinery. The equipment needed to do the monitoring must therefore be "intrinsically safe", in other words it must be incapable of igniting an explosive atmosphere, should one exist. This is where ATEX comes in, as in order to be considered "safe", equipment needs to be **certified** for use in hazardous locations.

Definitions of areas subject to explosive atmospheres

The likelihood of an explosive atmosphere existing is dealt with by the definition of various zones, and for IECEx (Worldwide) & ATEX (European) standards the following zones are defined:

Zone 0 - an area in which an explosive atmosphere is present constantly or for long periods or frequently.

Zone 1 - an area in which an explosive atmosphere is likely to occur in normal operation occasionally.

Zone 2 - an area in which an explosive atmosphere is not likely to occur in normal operation but, if it does occur, will persist for a short period only.

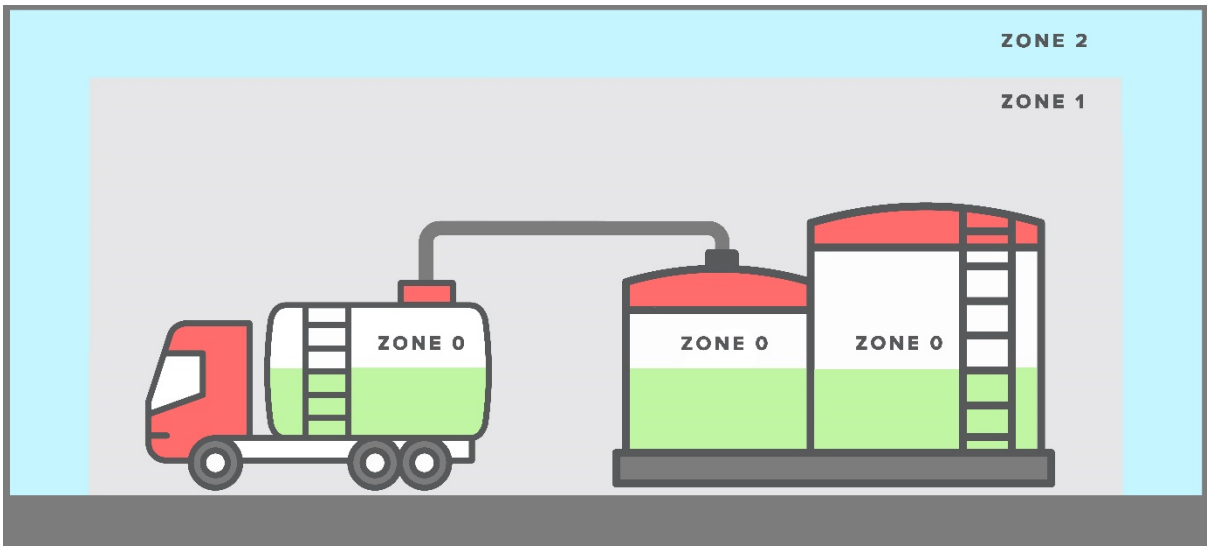

Figure 1 – Examples of IECEx and ATEX zones

Affordable intrinsically safe instruments for condition monitoring

Intrinsically safe instruments can cost many times more than their non-intrinsically safe equivalents. This is partly due to the increased manufacturing costs (e.g. additional safety components and encapsulation) but also due to the high cost of certification. However, Test Products International (TPI) believes it has introduced a real game-changer with the certification of the very affordable **TPI 9080Ex.** IECEx/ATEX certified for use in Zone 1 and with North American approval for Class I, Zone 1, the **TPI 9080Ex** is certified for use in hazardous locations anywhere in the world.

The **TPI 9080Ex** uses industry standard BNC connected intrinsically safe accelerometers and offers on-meter analysis for detection of machine faults such as unbalance, misalignment, looseness and bearing wear. With full colour OLED display and Bluetooth communications, the **TPI 9080Ex** features colour coded alarms and zoomable on-screen vibration frequency plots with cursor readout. It can store lists (routes) of up to 1000 machines, each with up to 10 measurement points, with full waveform and frequency spectrum (FFT) capture.

The included **VibTrend** PC based trending and reporting software has features normally only found on high-end software such as automatic email notification of alarms and report generation. The windows based software is totally intuitive so it can be used easily and effectively by both expert and novice users to implement a full CBM strategy. In-line with TPI's philosophy of being **the** value leader, the **TPI 9080Ex** comes at the incredibly low list price of only £3,500 that includes a full **VibTrend** software license.

For more information please contact TPI Europe's head office on +44 1293 530196 or take a look on the website at www.tpieurope.com or email sales@tpieurope.com