Weighing in Hazardous Areas

How does it work?
What does it mean?
Does it affect my weighing operations?

Explosion protection is the technique of controlling or preventing the effects of explosions that might otherwise occur where flammable materials are stored, handled, or processed. These environments can include: gas metering and processing, chemical industries, pharma-ceutical industries, pyrotechnics, military applications, grain mills, coal processing, fuel processing and many more. Keeping these safe from explosions is a number one priority for all personnel. Making sure all equipment, including scales and balances, are approved is key to safe operations.

Explosive Area Classification

Where the formation of explosive atmospheres cannot be overlooked, action must be taken to prevent the ignition of these elements. The area classification system commonly used to identify different hazards is broken down into Classes, Divisions and Groups. The first breakdown, by Class, specifies in what form the hazardous materials exist.

CLASS I: A location where quantities of flammable gas or vapor, sufficient to produce an explosive or ignitable mixture, may be present in the air.

CLASS II: A location made hazardous by the presence of combustible or electrically conductive dust.

CLASS III: A location made hazardous by the presence of easily ignitable fibers or flyings in the air, but not likely in sufficient quantities to produce ignitable mixtures.

The second breakdown, by Divisions, outlines how long the hazardous material will be present in the environment specified as potentially explosive.

DIVISION 1: A location where a classified hazard is present continuously, intermittently, or periodically under normal operating conditions. Includes Division 2.

DIVISION 2: A location where a classified hazard does not normally exist but is possible under abnormal conditions.

The final breakdown, by Groups, describes, what type of explosive component is present. For example:

GROUP A: Atmospheres containing Acetylene

GROUP B: Atmospheres containing Hydrogen

GROUP C: Atmospheres containing Ethylene

GROUP D: Atmospheres containing Methane

GROUP E: Atmospheres containing Metal Dusts

GROUP F: Atmospheres containing Coal Dust

GROUP G: Atmospheres containing Grain Dusts

GROUP T4*: Has a maximum permissible surface temperature of 135°C

*The Group breakdown also contains permissible surface temperatures of electrical equipment. For ignition by hot surfaces, materials are classified according to the maximum surface temperature to which they can be exposed without risk of ignition. The letter T designates temperature class: ranging from T6 with permissible surface temperature of 85°C, to T1, with a permissible surface temperature of 450°C.

TYPICAL PLACEMENT OF EQUIPMENT ON BOTH SAFE & HAZARDOUS AREAS SHOWN BELOW;