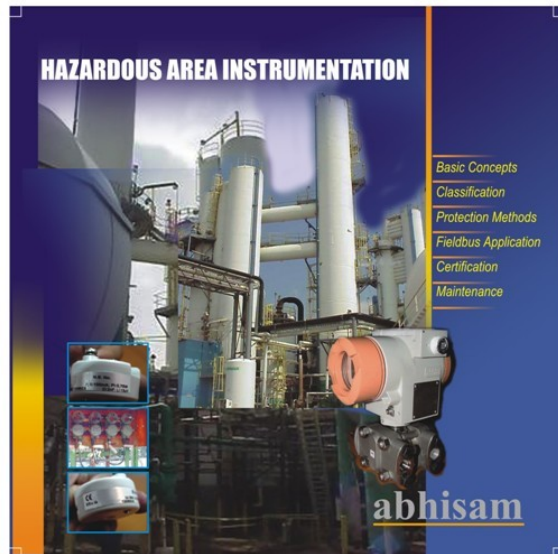


Introduction

Hazardous areas are found in a variety of industries including oil & gas processing, chemical manufacturing, shipping terminals, oil rigs, fertilizer industries and other process plants, sugar and grain handling facilities, coal and mining industries. The electrical/electronic instrumentation and controls used in these areas has to be of a special type to prevent ignition. This course covers hazardous areas, their classification, methods of protection of instruments & related equipment such as explosionproof, intrinsic safety, pressurization, increased safety and others. It also covers Fieldbus applications in hazardous areas, Certification and Labeling (including ATEX) and Maintenance/Inspections of hazardous area instruments.



We would like to express our good impression about this course. It is one of the most comprehensive, information rich and fun at the same time regarding Hazardous area classification and its equipment installation practice- Instrumentation Dept, Gulf of Suez Petroleum Company (GUPCO), Egypt

Extensive animations, graphics and actual photos of facilities, real life examples and design related calculations, easy to understand pictures and diagrams make this a wonderful learning experience.

Join the hundreds of engineers and technical staff from all over the world, from a diverse range of industries like Oil & Gas, Shipping, Power Plants, Chemical manufacturing companies, engineering design & contracting companies, automation companies, government agencies, and many other organizations, who have downloaded the course (or accessed it online) and discover for yourself how hazardous area instruments work, use the knowledge so gained to design or upgrade a much better & safer plant or facility.

There is a Self Assessment Test included as well as an option to take on Online test. Successful completion of the online test entitles learners to get a **Certificate of Achievement**.

Though the course covers all aspects of Hazardous Area Instrumentation in detail, we understand the needs of some clients who need to train their employees using their own examples or in house standards & practices. This is easily possible by using our Customization service. Call or mail your request.

TABLE OF CONTENTS

The course consists of **six modules** listed below and they covers all aspects of hazardous areas, as given below

Module 1 : Basic Concepts

- Introduction to hazardous areas
- History Related to Mines
- Flammable Materials
- Fire Triangle
- Explosive Limits (Concept of LEL & UEL)
- Hazardous Atmosphere
- Effects of Temperature and Pressure
- Ignition Energy
- Flashpoint
- Auto Ignition Temperature
- Dust Hazards
- Explosion Pentagon

Module 2 : Classification

- Why do we classify Hazardous Areas
- More about Classification
- Different Types of Standards
- Standards Bodies (IEC)
- Standards Bodies (NFPA)
- Area Classification for Gases (IEC) Zone 0, Zone 1, Zone 2
- Area Classification for Gases (IEC)-Example
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- Area Classification for Dust atmospheres (IEC)-Example
- Material Classification (IEC)
- Material Classification (IEC)-Examples
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- Minimum Ignition Current (MIC)
- Minimum Ignition Current Curve
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- Classification of Hazardous Locations (North American system) -2
- Material Classification for Gases & Vapors (North American system)
- Classification of Gas Groups (North American System)
- Comparison between IEC and North American System
- Article 505 of the National Electrical Code
- Area Classification of Dusts (North American)
- Area Classification of Dusts (North American)-2
- Dust Groups (North American)
- Fibers and Flyings (North American)
- Temperature Classification (North American)

- Step by step area classification of gases and vapors
- Step by step area classification of gases and vapors
- Pitfalls in the classification process
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- Intrinsic Safety apparatus
- Intrinsic Safety Barriers - Diodes
- Intrinsic Safety Barriers- Zener Diodes
- Ordinary Diode curves
- Zener Diode Curves
- Functioning of a safety barrier-1

Working as an Electrical and Instrumentation Technician at a busy refinery I often have to undertake maintenance and install new process control components in a wide variety of locations. Not being fully aware of the the current regulations and requirements imposed on hazardous areas I took it upon myself to further my education in this field, I purchased the Hazardous Area Instrumentation e-learning course by Abhisam. I found this product to be very informative and easy to understand. It is a very useful tool to have on hand when determining zones, temperature classifications, Gas groups and equipment selection for use in different areas. The price of the product compared with others is fantastic and I personally recommend that any technician working in this field should own a copy.

*M.Dempsey
Western Australia*

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- Zener Barrier earthing
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Self Assessment Test

Online Test

**YOU HAVE SEEN HOW COMPREHENSIVE AND DETAILED THE COURSE IS,
NOW YOU CAN DOWNLOAD THE FREE DEMO FROM
<http://www.abhisam.com/hazardousareatraining.html>**

More Questions? Please Contact us (Info on following page)

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