RelyOn Nutec
360° Safety

OSP301

Hazardous Area and Explosive Atmosphere Course

Duration	16 hours
Target group	Industrial area and maritime workers who deal directly or indirectly in activities in hazardous area.
Prerequisites	- RG and CPF; - Passport (Expatriate); - Have more than eighteen (18) years old; - Have completed high school; - Certificate of good physical and mental health conditions (ASO).
Objective	To qualify the industrial area worker and maritime worker who deals directly or indirectly in activities in hazardous area.
Contents	Theory– 14 Hours Introduction – Concepts; Hazardous Area; A Non-Hazardous Area; Reasons for classification of areas; Classification of hazardous areas in accordance with NBR IEC 60079; Safety in hazardous areas; Signaling in hazardous areas; Safety procedures; Explosive Atmosphere; Combustion; Fire Tetraedron; Oxidizer; Fuel; Combustible substances; Ignition; Sources of ignition; Radiant Energies; Chain reaction; Propagation; Rate of spread; Deflagration, Explosion and Detonation; Flash point, combustion point and ignition point; Process equipment: Tanks, pressure vessels, reactors, Boilers and Silos; Risk management; Danger; Risk; Types of risks; Preventive Measures; Risk analysis; Preventive actions with flammable liquids; How to manage risks of explosions; Illustrations of some explosions; Standardization and legislation; Penalties; Responsibilities; Tables of standards; Classification of areas and its characteristics; Procedure for classifying areas; Flammability limits; Air density; Relative density of gas and steam; Volatility; Minimum Ignition energy; Characteristics of dusts and fibers; Maximum surface temperature; Temperature classes; Maximum temperature for dusts and fibers; Group of Explosiveness; Zones 0, 1, 2 and 20, 21, 22; Demarcation of areas; Ventilation; Electrical Equipment; Containment; Segregation; Dilution; Limitation; Suppression; Types of protective equipment; Intrinsic Safety; Explosion-proof; Don't Ignitable; No Sparkling; Restricted Breathing; Limited Power; Protected Contacts; Pressurization; Increased Security; Immersion in oil; Immersion in sand; Encapsulated; Wrapper protection; Special; Tables of types of protection according to the zones; Conventional electrical equipment specification; Ex equipment specification; Protection level-EPL; Protection level tables according to EPL; Degrees of protection IP; Additional Letter; Supplementary Letter; IK Degree of protection; Ex equipment certification; Inspection of hazardous areas; Ex equipment repairs. Technical Reference: ABNT NBR IEC 60079-10-1, NR-20, NBR 15662, NR-10, NR-33, Portaria INMETRO 179/2010, ABNT NBR IEC 60079-17, ABNT NBR IEC 60079-19, ABNT NBR IEC 60079-0, ABNT NBR IEC 60079-14, ABNT NBR IEC 62262, ABNT NBR IEC 60529

Exam	Multiple choice exam with minimum passing grade of 60%. Validity: N/A