



COURSE OVERVIEW HE1054-4D
Hazardous Materials Specialist
HAZMAT Level IV (OSHA 29 CFR 1910.120 and NFPA 472)

Course Title

Hazardous Materials Specialist: HAZMAT Level IV (OSHA 29 CFR 1910.120 and NFPA 472)

Course Date/Venue

Session 1: August 05-09, 2024/Ajman Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE

Session 2: November 03-07, 2024/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE



Course Reference

HE1054



Course Duration/Credits

Five days/3.0 CEUs/30 PDHs

Course Description



This practical and highly-interactive course includes various practical sessions and exercises. Theory learnt will be applied using one of our state-of-the-art simulators.



This course is designed to provide participants with a detailed and up-to-date overview of hazardous materials specialist level IV in accordance with OSHA 29 CFR 1910.120 and NFPA 472. It covers the regulatory overview, incident command system, incident command facilities and incident command system concepts and principles; the roles and responsibilities, HAZMAT site control, HAZMAT site zones, HAZMAT support zones and general health and safety plan guidelines; and the medical surveillance, hazard recognition and respiratory protection.



Further, the course will also discuss the personal protection equipment (PPE), decontamination, placards and labelling, toxicology and hazard recognition; the air monitoring, site emergencies, facility emergency response plan and training and equipping the HAZMAT team; the facility emergency response audit and federal, state and local emergency response requirements; the spill and release reporting under federal regulations; and the applicable laws and regulations including EPA, difference between laws and regulations, major EPA and OSHA laws, recordkeeping, notifying OSHA and OSHA plan states.



During this interactive course, participants will learn the DOT emergency response guidebook (ERG); the availability to recognize and identify hazardous materials; the HAZMAT emergency response strategy and tactics; the HAZMAT emergency response strategic goal for isolation, notification of others, identification of hazards, protection of responsible and public, fire control, spill control, leak control, recovery and termination; the specialized mitigation techniques for non-bulk containers, highway cargo tanks; and the basic chemistry and physical properties terms.

Course Objectives

Upon the successful completion of this course, each participant will be able to:-

- Get Certified as a “*Certified HAZMAT Level IV Specialist*” in accordance with OSHA 29 CFR 1910.120 and NFPA 472
- Discuss the regulatory overview, incident command system, incident command facilities and incident command system concepts and principles
- Identify the roles and responsibilities, HAZMAT site control, HAZMAT site zones, HAZMAT support zones and general health and safety plan guidelines
- Carryout medical surveillance, hazard recognition and respiratory protection
- Recognize personal protection equipment (PPE), decontamination, placards and labelling, toxicology and hazard recognition
- Illustrate air monitoring, site emergencies, facility emergency response plan and training and equipping the HAZMAT team
- Implement facility emergency response audit and identify the federal, state and local emergency response requirements
- Apply spill and release reporting under federal regulations
- Discuss applicable laws and regulations including EPA, difference between laws and regulations, major EPA and OSHA laws, recordkeeping, notifying OSHA and OSHA plan states
- Review DOT emergency response guidebook (ERG) and discuss the ability to recognize and identify hazardous materials
- Employ HAZMAT emergency response strategy and tactics
- Carryout HAZMAT emergency response strategic goal for isolation, notification of others, identification of hazards, protection of responsible and public, fire control, spill control, leak control, recovery and termination
- Implement specialized mitigation techniques for non-bulk containers, highway cargo tanks and rail tanker cars
- Review and discuss the basic chemistry and define physical properties terms

Exclusive Smart Training Kit - H-STK®



Participants of this course will receive the exclusive “Haward Smart Training Kit” (H-STK®). The H-STK® consists of a comprehensive set of technical content which includes **electronic version** of the course materials, sample video clips of the instructor’s actual lectures & practical sessions during the course conveniently saved in a **Tablet PC**.

Who Should Attend

This course provides an overview of all significant aspects and considerations of hazardous materials specialist for those who are dealing with hazardous materials and chemicals in the workplace such as managers, engineers and other technical staff. This course is also suitable for health, safety and environmental (HSE) personnel.

Course Certificate(s)

(1) Internationally recognized Wall Competency Certificates and Plastic Wallet Card Certificate will be issued to participants who have successfully completed the course and passed the exam at the end of the course. Successful candidate will be certified as a "Certified HAZMAT Level IV Specialist". Certificates are valid for 5 years.

Recertification is FOC for a Lifetime.

Sample of Certificates

The following are samples of the certificates that will be awarded to course participants:-





- (2) Official Transcript of Records will be provided to the successful delegates with the equivalent number of ANSI/IACET accredited Continuing Education Units (CEUs) earned during the course.

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Haward Technology Middle East
Continuing Professional Development (HTME-CPD)

CEU Official Transcript of Records

TOR Issuance Date: 10-May-18
HTME No. PAR11356
Participant Name: Amro Al Kader

Program Ref.	Program Title	Program Date	No. of Contact Hours	CEU's
HE1054	Hazardous Materials Specialist: HAZMAT Level IV (OSHA 29 CFR 1910.120 and NFPA 472)	May 06-10, 2018	30	3.0

Total No. of CEU's Earned as of TOR Issuance Date **3.0**

TRUE COPY

Maricel De Guzman
Academic Director

Haward Technology has been approved as an Authorized Provider by the International Association for Continuing Education and Training (IACET), 1760 Old Meadow Road, Suite 500, McLean, VA 22102, USA. In obtaining this approval, Haward Technology has demonstrated that it complies with the ANSI/IACET 1-2013 Standard which is widely recognized as the standard of good practice internationally. As a result of their Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for programs that qualify under the ANSI/IACET 1-2013 Standard.

Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking Continuing Education Units (CEUs) in accordance with the rules & regulations of the International Association for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology is accredited by












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Certificate Accreditations

Certificates are accredited by the following international accreditation organizations:-

- 
The International Accreditors for Continuing Education and Training (IACET - USA)

Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units (CEUs)** in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology Middle East will award **3.0 CEUs** (Continuing Education Units) or **30 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.

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British Accreditation Council (BAC)

Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

- 30% Lectures
- 20% Practical Workshops & Work Presentations
- 30% Hands-on Practical Exercises & Case Studies
- 20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:



Mr. Dimitry Rovas, CEng, MSc, PMI-PMP, is a **Senior HSE Consultant** with extensive industrial experience in **Oil, Gas, Power and Utilities** industries. His expertise include **Hazardous Materials (HAZMAT), Hazard Communication (HAZCOM), Hazard Recognition & Assessment, Task Risk Management & Managing Risk in Process Plant, Risk Assessment & Hazard Identification, Risk Control, Cryogenics, MSDS, Liquefied Natural Gas, Hazard Monitoring Techniques, Environmental Pollution Prevention, Hazardous Classification, Packaging & Labelling, Chemical Transportation, Waste Management, Chemical Spill Clean Up, Risk Assessments, Safety & Emergency Plans, Working at Heights, Firefighting, Rescue & Operation, Fall Protection, HSSE Emergency Response & Crisis Management Operations, Confined Space Entry, Construction Health & Safety, HSSE Principles & Practices, HSE Quantitative Risk Assessment (QRA), Root Cause Analysis & Techniques, Hazardous Materials & Chemicals Handling, Chemical Spills, Safety Precaution & Response Action Plan, PSM, PHA, HAZOP, HAZID, Hazard & Risk Assessment, Task Risk Assessment (TRA), Incident Command, Accident & Incident Investigation, Emergency Response Procedures, Job Safety Analysis (JSA), Behavioural Based Safety (BBS), Work Permit & First Aid, Emergency Response, H₂S, ERP Preparation, Project HSE Management System, Health & Hygiene Inspection, PTW Control, Process Modules Fire & Gas Commissioning, Ergonomics, Lockout/Tagout, Fire Safety & Protection and Spill Prevention & Control**. He is currently the **Project Manager** wherein he is managing, directing and controlling all activities and functions associated with the domestic heating/cooling facilities projects.

During his life career, Mr. Rovas has gained his practical and field experience through his various significant positions and dedication as the **EPC Project Manager, Field Engineer, Preventive Maintenance Engineer, Researcher, Instructor/Trainer, Telecom Consultant and Consultant** from various companies such as the Podaras Engineering Studies, Metka and Diadikasia, S.A., **Hellenic Petroleum Oil Refinery** and COSMOTE.

Mr. Rovas is a **Chartered Engineer** of the **Technical Chamber of Greece**. Further, he has **Master** degrees in **Mechanical Engineering** and **Energy Production & Management** from the **National Technical University of Athens**. Moreover, he is a **Certified Instructor/Trainer**, a **Certified Project Management Professional (PMP)** and a **Certified Six Sigma Black Belt**. He is an active member of Project Management Institute (**PMI**), Technical Chamber of Greece and Body of Certified Energy Auditors and has further delivered numerous trainings, seminars, courses, workshops and conferences internationally.

Course Fee

US\$ 5,500 per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1

0730 – 0800	<i>Registration & Coffee</i>
0800 – 0815	<i>Welcome & Introduction</i>
0815 – 0830	PRE-TEST
0830 – 0900	Regulatory Overview <i>EPA • OSHA • Levels of Training</i>
0900 – 0915	Overview of Incident Command System <i>Introduction • Incident Commander Responsibilities • Hazardous Materials Contingency Plan • Organization • Incident Command System</i>
0915 – 0930	Incident Command Facilities <i>Incident Command Facilities & Locations • Command Post • Staging Areas • Bases</i>
0930 – 0945	<i>Break</i>
0945 – 1030	Incident Command System Concepts & Principles <i>Common Terminology • Unity of Command • Designated Incident Facilities</i>
1030 – 1100	Roles & Responsibilities <i>Organizational Structure • Essential Personnel • Health & Safety Plan (HASP) • Optional Personnel • Lines of Authority</i>
1100 – 1130	HAZMAT Site Control <i>Site Map • Site Preparation</i>
1130 – 1200	HAZMAT Site Zones <i>Site Zones • Hot Line • The Buddy System</i>
1200 – 1230	HAZMAT Support Zones <i>Site Security • Communication Systems</i>
1230 – 1245	<i>Break</i>
1245 – 1315	General Health & Safety Plan Guidelines <i>Health & Safety Guidelines • Overview of Health & Safety Plan</i>
1315 – 1345	Medical Surveillance <i>Information for Medical Program • Develop a Site Specific Medical Program • Medical Examination • Periodic Medical Monitoring • Examination After Injury • Termination Exam</i>
1345 – 1420	Hazard Recognition (Overview) <i>Injury Prevention • Boiling Point, Vapor Pressure, Vapor Density, pH, Flashpoint • Oxidizers • Lower/Upper Explosive Limits • Flammability • Fire Triangle • SDS</i>
1420 – 1430	Recap
1430	<i>Lunch & End of Day One</i>



Day 2

0730 – 0800	Respiratory Protection Respirator Protection Program • Respirator Types • Selection of Respiratory Equipment • Air-purifying Respirators • Combination Canisters & Cartridges • Types of APR Face Pieces • Supplied Air Respirators (SAR) • Self-Contained Breathing Apparatus (SCBA) • Combination SCBA/SAR
0800 – 0845	Respiratory Protection (cont'd) Chemical Concentration • Protection Factors • Calculating Protection Factors • Respirator Fit Test (Quantitative & Qualitative) • Respiratory Maintenance • Types of Respirator Canisters • How Respirators Work • Positive & Negative Pressure Fit Test • Respirator Limits • Cleaning, Maintenance & Storage
0845 – 0930	Personal Protection Equipment (PPE) Clothing & Ensembles • Developing a PPE Program • Training • Program Review & Evaluation • Level A • Level B • Level C • Level D • Selecting the Level of Protection
0930 – 0945	Break
0945 – 1030	Personal Protection Equipment (PPE) (cont'd) Protective Clothing • Inspection & Maintenance of Protective Clothing • Selection of Chemical Protective Clothing • Permeation & Degradation • Work Mission Duration
1030 – 1115	Personal Protection Equipment (PPE) (cont'd) Considerations for Working in PPE • Air Supply Consumption • Coolant Supply • Accessories • Special Considerations • Reasons to Upgrade/Downgrade PPE • PPE Inspection Program • Proper Storage • PPE Before Use Inspection
1115 – 1200	Personal Protection Equipment (PPE) (cont'd) In-use Monitoring • Donning & Doffing • Clothing Reuse • Heat Stress & Monitoring • Heat Rash • Heat Cramps • Heat Stroke • Hand Protection • General Requirements of the OSHA Standard • Eye & Face Protection • Selection of Eye & Face Protection • Head Protection • Foot Protection
1200 – 1230	Decontamination Decon Plan & Procedures • Standard Operating Procedures • Maximizing Worker Protection from Hazardous Wastes • Proper Dress Out Procedures • Levels of Contamination • Personal Decon Station • Extent of Decon Required • Types of Contamination • Amount of Contamination • Levels of Protection
1230 – 1245	Break
1245 – 1315	Decontamination (cont'd) Decon of Personnel & Equipment • Decon During Medical Emergencies • Physical Injury • Heat Stress • Protection for Decon Workers • Decon Procedures • Chemical & Physical Removal of Contamination • Persistent Contamination • What if Decon Procedure has not Worked?
1315 – 1400	Decontamination (cont'd) Lab Testing Articles • Fundamentals that Affect Permeation of Protective Clothing • Substance & Tools for Effective Decontamination • Disposal of Contaminated Equipment & Materials • Decon Tools, Devices & Equipment • Disposal of Contaminated Materials • Health & Safety Hazards of Decontamination • Decon Facility Design
1400 – 1420	Placards & Labelling NFPA Hazardous System Identification • DOT Placards
1420 – 1430	Recap
1430	Lunch & End of Day Two



Day 3

0730 – 0800	Toxicology Chemical Classification • Toxicology • Routes of Exposure & Dose • Interaction with Other Chemicals • Dust, Fumes, Mists & Vapors • Toxicokinetics • Metabolism
0800 – 0845	Toxicology (cont'd) Classes of Chemical Toxins • Dose to Organs • Dose & Response • Storage in the Body • Chronic Response • Toxic • Chemical Interaction • Dose/Response • OSHA Exposure Limits
0845 – 0930	Hazard Recognition NFPA Requirements • Job Hazard Analysis • Defining Risk • Chemical Hazard Identification Systems • NFPA 704 System • DOT Labels & Placards • Ionizing Radiation
0930 – 0945	Break
0945 – 1030	Hazard Recognition (cont'd) Chemical & Physical Hazards • Fires & Explosions • Combustibles • Shock Sensitive • Oxygen Deficiency • Site & Equipment Hazards • Noise • Heat Stress
1030 – 1100	Hazard Recognition (cont'd) Heat Stroke • Cold Stress • Infectious Diseases (Bloodborne Pathogens, HIV, HBV) • Sanitation • Illumination • Lockout/Tagout
1100 – 1130	Air Monitoring Requirements for Air Monitoring Devices • Sampling Methods • Air Monitoring Equipment Characteristics • Types of Direct Reading Instruments • Calibration • Toxic Atmosphere Monitors
1130 – 1200	Air Monitoring (cont'd) Photoionization Detector (PID) • Flame Ionization Detector (FID) • Radiation Monitors • OSHA Action Levels • Active & Passive Sampling Equipment • Personal Monitors • Radiation Dosimeters • Calibration • Personal Sampling Plan
1200 – 1230	Air Monitoring (cont'd) OSHA Exposure Limits • Measuring Particles, Gases & Vapors • Permissible Exposure Limit (PEL) • Time Weighted Averages (TWA) • Calculating TWAs • Site Monitoring • Monitoring for Immediately Dangerous to Life & Health (IDLH) • Perimeter Monitoring • Variables of Hazardous Waste Site Exposures
1230 – 1245	Break
1245 – 1315	Site Emergencies Planning & Personnel • Site Emergencies • How Teams Assist in Emergencies • Roles of Personnel During Emergencies • Communications • Safe Distances & Site Mapping • Safe Refuge • Public Evacuations
1315 – 1400	Site Emergencies (cont'd) Evacuations & Emergency Decontamination • Personal Locator Systems • Evacuation Routes & Procedures • First Aid/Medical Treatment • Emergency Response Procedures • Notification • Size-Up • Rescue/Response Action • Follow Up • Documentation
1400 – 1420	Facility Emergency Response Pre-emergency Planning • Personnel Roles & Communication • Recognition & Prevention • Safe Distances & Refuge • Site Security & Control • Evacuation Routes & Procedures • Emergency Decontamination • Emergency Medical Treatment & First Aid • Emergency Response Procedures & Critique
1420 – 1430	Recap
1430	Lunch & End of Day Three



Day 4

0730 – 0800	Training & Equipping Your HAZMAT Team Training Requirements • HAZMAT Levels • Responsibilities • Medical Monitoring • Cost of Training • Protection Levels & Equipment
0830 – 0900	Facility Emergency Response Audit Performing a Process Hazard Analysis • Site Identification • Hazard Qualification • Consequence Analysis • Performing a Workplace Hazard Analysis • Determining Location • Examine Container Condition • Determine the Physical State of Contents • Determine Dispersion Pathways • Exposure Indicators
0900 – 0930	Federal, State & Local Emergency Response Requirements Site Zones Explained • Establishing the Hot Line • The Buddy System
0930 – 0945	Break
0945 – 1030	Spill & Release Reporting Under Federal Regulations Emergency Planning Requirements • Emergency Planning & Notification • Procedures for SARA Title III Compliance • Regional Response Team • National Response Team • DOT Notification Requirements • Leaking Containers
1030 – 1100	Applicable Laws & Regulations EPA • Difference Between Laws & Regulations • Major EPA & OSHA Laws • Recordkeeping & Notifying OSHA • OSHA Plan States
1100 – 1130	Overview of DOT Emergency Response Guidebook (ERG) Introduction • How to Read the ERG • List of DOT Tanks & Containers • Labelling
1130 – 1200	The Ability to Recognize & Identify Hazardous Materials Hazardous Materials Clues • Occupancy/Location • Fixed Sites • Transportation Sources • Highway, Rail & Air • Marine • Pipelines • Tanks & Containers • Container Shape & Size • Types of DOT Highway Transportation Tanks, Tankers, Trailers & Containers • Types of DOT Rail Transportation Tank • Cars • Intermodal Containers
1200 – 1230	The Ability to Recognize & Identify Hazardous Materials (cont'd) Stationary Bulk Tanks & Containers • Cryogenic Liquid Storage Tank • Dome Roof Tank • High Pressure Spherical Storage Tank • High Pressure Horizontal Tank • Cone Roof Tank • Covered Top Floating Roof Tank With Geodesic Dome • Covered Top Floating Roof Tank • Open Top Floating Roof Tank • Petroleum Storage Tanks • Horizontal Tank • Non-Bulk Containers • Drums • Bags or Sacks • Boxes or Crates • Cylinders • Intermediate Bulk Containers
1230 – 1245	Break
1245 – 1315	The Ability to Recognize & Identify Hazardous Materials (cont'd) Radioactive Containers • Type A • Type B • Excepted • Industrial Package I • Industrial Package II • Tanks & Containers Markings & Colors • NFPA 704 System • HMIS Placards & Labels • UN NA Hazard Class System • DOT 9 Classes of Hazardous Materials • Shipping Papers & SDSs
1315 – 1330	HAZMAT Emergency Response Strategy & Tactics Incident Action Plan (IAP) • Strategy & Tactics
1330 – 1400	HAZMAT Emergency Response Strategic Goal – Isolation HAZMAT Zones • Staging Areas • Public Protection • Shelter in Place • Evacuation
1400 – 1420	HAZMAT Emergency Response Strategic Goal – Notification of Others Unity of Command • Emergency Response Plan • Incident Levels
1420 – 1430	Recap
1430	Lunch & End of Day Four



Day 5

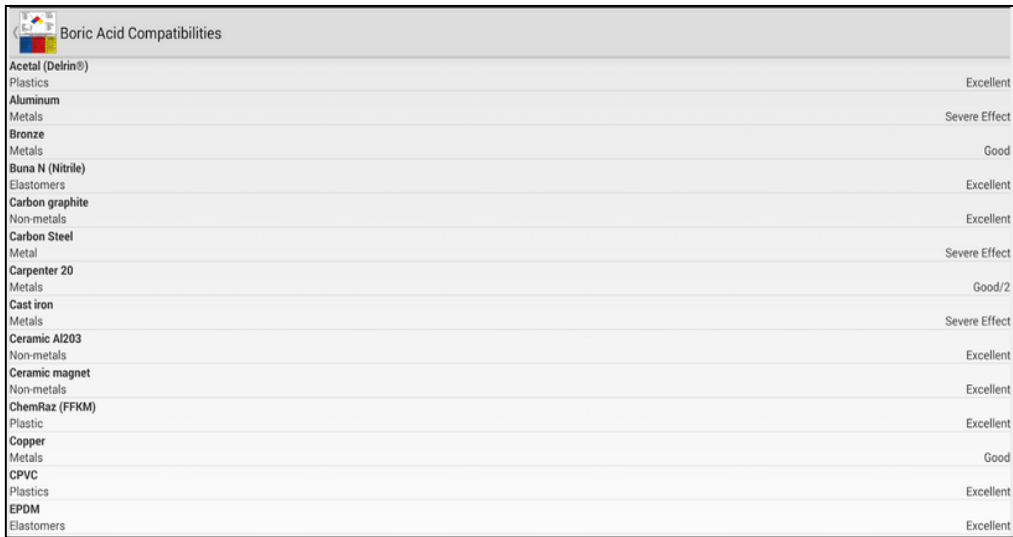
0730 - 0800	HAZMAT Emergency Response Strategic Goal - Identification of Hazards Surveying the Scene • Rescue Risks Associated with DOT Hazard Classes • Pipelines • Containers • Dispersion Patterns • Environment • Confined Spaces • Storage Areas
0800 - 0845	HAZMAT Emergency Response Strategic Goal - Protection of Responders & Public HAZMAT Technician Personal Protective Equipment • Structural Firefighting Equipment • Proximity & Entry Suits • Chemical Protective Equipment • Limitation of Personal Protective Equipment (PPE) • Responder Rehabilitation • Emergency Decon • Mass Decontamination • Hose line Decontamination • Engine Corridor Decontamination • Ladder Corridor Decontamination • Decontamination Tents & Trailers • Hospital Decon • Contaminated Victim Decontamination • Pets & Animals Decontamination
0845 - 0915	HAZMAT Emergency Response Strategic Goal - Fire Control Ignition Sources • Extinguishing Fires • Remove Fuel Supply • Remove Oxygen Source • Control Burn • Exposure Protection • Preventing Container Failure • Cool Containers • Stress Barriers • Remove Uninvolved Materials • Tactical Withdrawal • Explosion-Resistant Barriers
0915 - 0930	Break
0930 - 1000	HAZMAT Emergency Response Strategic Goal - Spill Control (Confinement) Air Releases • Foams • Ventilation • Releases Onto Land • Absorption • Blanketing • Diversion • Diking • Damming • Retention • Filter Fence • Floating Boom • Chemical Control Methods • Groundwater Contamination
1000 - 1020	HAZMAT Emergency Response Strategic Goal - Leak Control (Containment) Tool Kits • Leaks from Drums • Leaks From Piping • Leaks from Tank Trucks & Assorted Containers • Product Transferring • Specialty Tools • Product Displacement • Crimping
1020 - 1040	HAZMAT Emergency Response Strategic Goal - Recovery & Termination Procedures Incident Transition • Termination • Debriefing • Critiquing • After-Action Procedures • Reporting • Follow Up
1040 - 1100	Specialized Mitigation Techniques Basic Safety Procedures • Overpacking • Patching • Bandages • Sealants • Engineering Methods
1100 - 1120	Specialized Mitigation Techniques - Non-Bulk Containers Control Techniques for Non-Bulk Containers • Mitigation Methods • Plugging/Patching • Bandages • Sealants • Compressed Gas Cylinders • Commercial Kits
1120 - 1140	Specialized Mitigation Techniques - Highway Cargo Tanks Control Techniques for Cargo Tanks • Types of Leaks • Dome Cover Leaks • Tears/Irregular Holes/Punctures • Vents/Relief Valves/Rupture Disk Leaks • Inspecting Damaged Cargo Tanks
1140 - 1200	Specialized Mitigation Techniques - Highway Cargo Tanks (cont'd) Inspecting & Repairing Damaged Cargo Tank Fittings • Handling Damaged Cargo Tanks • Field Product Removal Methods • Transfers • Venting, Flaring, & Venting & Burning • Non-Pressure Cargo Tank • Special Considerations - Fire in MC 306/DOT 406 Cargo Tanks • Vacuum Trucks
1200 - 1215	Break
1215 - 1245	Specialized Mitigation Techniques - Rail Tanker Cars Control Techniques for Tank Cars • Inspecting & Repairing Damaged Fittings • Decision-Making & Mitigation • Offensive Operations Decision-Making • Safety



1245 - 1310	Review & Basic Chemistry Physical Properties Terms Physical Properties Terms
1310 - 1320	Course Conclusion
1320 - 1420	COMPETENCY EXAM
1420 - 1430	Presentation of Course Certificates
1430	Lunch & End of Course


Simulators (Hands-on Practical Sessions)

Practical session will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using the simulator; “Chemical Compatibility 1.1 Simulator”, “Chemical Safety Database Simulator”, “CAMEO Chemicals Suite Simulator” or “ERG 2012 Simulator”.

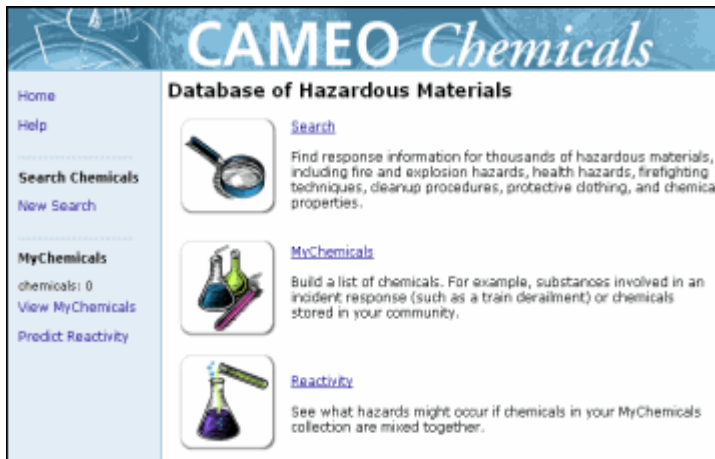


Boric Acid Compatibilities	
Acetal (Delrin®)	Excellent
Plastics	Excellent
Aluminum	Severe Effect
Metals	Good
Bronze	Good
Metals	Good
Buna N (Nitrile)	Excellent
Elastomers	Excellent
Carbon graphite	Excellent
Non-metals	Excellent
Carbon Steel	Severe Effect
Metal	Severe Effect
Carpenter 20	Good/2
Metals	Good/2
Cast iron	Severe Effect
Metals	Severe Effect
Ceramic Al2O3	Excellent
Non-metals	Excellent
Ceramic magnet	Excellent
Non-metals	Excellent
ChemRaz (FFKM)	Excellent
Plastic	Excellent
Copper	Good
Metals	Good
CPVC	Excellent
Plastics	Excellent
EPDM	Excellent
Elastomers	Excellent

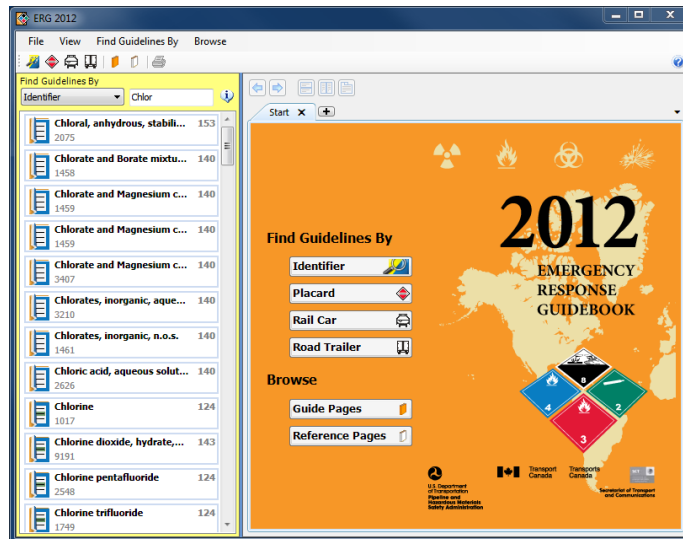
Chemical Compatibility 1.1 Simulator



Chemical Safety Database Simulator



CAMEO Chemicals Suite Simulator



ERG 2012 Simulator

Course Coordinator

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