# Instructor Manual

# Module

# 1

# An Introduction to Ethanol

# Introduction

## About This Course

***Welcome/ Instructor:***

***Module Time:*** *10 minutes/ 25 minutes*

*During this portion of the course, you should facilitate the following activities:*

- *Introduction of instructors*
- *Introduction of course participants*
  - *(Tell who they are, experience, expectations)*
- *Overview of participant manual and other resources*

*You will need the following materials to teach this course:*

- Training Guide to Ethanol Emergency Response *(downloadable or available online)*
  - *Includes videos*
- *Computer and projector/ screen*
- *Paper chart or dry erase board*

## *Administrative Information*

***Instructor Note:***

*At this point in the course, familiarize participants with the following:*

- *Facility safety briefing*
- *Exits*
- *Restroom facilities*
- *Refreshments*
- *Available resources*

Instructors will use this portion of the course time to familiarize the participant with facility safety and convenience features as well as any additional resources or equipment available.

## *Target Audience*

This course is designed for individuals who will respond to ethanol-related emergencies as well as those who work at fixed-facilities and with transport fuel.

## *Delivery Method*

Course delivery method consists of:

- Lecture with PowerPoint presentations
- Videos
- Hyperlinks
- Exercises
- Participant discussions

## *Course Prerequisites*

- None

## *Course Length*

- 4 hours - Lecture with PowerPoint presentations
- 6 hours - Lecture with PowerPoint presentations and student activities

## *Course Goal*

Upon the completion of this course, participants will have knowledge related to ethanol and ethanol-blended fuels including the use, chemical and physical characteristics, transportation modes, transfer operations, basics of foam, suggested responder tactics and strategies, and environmental issues.

## *Introduction*

Over 16 billion gallons of ethanol is transported across our country by railroad tank cars, highway cargo tank trucks, freighter ships/ barges and pipeline. Ethanol is one of the top hazardous materials shipped by rail today. It is important that the emergency responder community throughout the country is well prepared and trained for ethanol and ethanol-blended fuel-related emergencies.

## *Course Overview*

Course topics include:

- Module 1: An Introduction to Ethanol
- Module 2: Ethanol and Ethanol-Blended Fuels
- Module 3: Chemical and Physical Characteristics of Ethanol and Hydrocarbon Fuels
- Module 4: Transportation and Transfer
- Module 5: Storage and Dispensing Locations
- Module 6: Fire Fighting Foam Principles
- Module 7: General Health and Safety Considerations
- Module 8: Storage and Pre-planning Considerations

## *Training Package Includes:*

- Training program with PowerPoint & video presentations
- Module PowerPoints embedded with instructor notes
- Instructors manual
- Participants guide
- Emergency Response Considerations video
- Responding to Ethanol Incidents video
- Rail Tank Car 101 PowerPoint
- Rail Tank Car 101 video
- U.S. DOT ERG
- TRANSCAER® and CHEMTREC® information
- RFA Fuel Ethanol: Guideline for Release Prevention & Impact Mitigation
- DOT Chart 16
- AAR Pamphlet 34
- Association of American Railroads Loading and Unloading video
- RFA Guidelines for Hinged and Bolted Manway Assembly
- RFA How to Properly Close a Tank Car Manway poster and brochure
- 2017 Field Guide for Tank Cars

## *Resources*

For additional information please visit the following web sites:

- http://www.EthanolRFA.org
- http://EthanolResponse.com
- http://www.transcaer.com