

Fire Fighter Concerns With Ethanol and Training

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Ethanol

- What is Ethanol
- How is Ethanol different from other available fuels
 - Gasoline
 - Diesel Fuel
 - Bio-Diesel Fuel
 - Hydrogen

Creating Ethanol

- Where is Ethanol Refined

- Area of the Country
- Stationary or Expanding

- How is Ethanol Refined

- Process

- What Are The Grades of Ethanol Produced

- What are fire fighting concerns specific to the percentage of mixture

- How is The Finished Product Stored and Quantities Stored

- Multiple Types in the same area
- Identification of Storage Tanks

Hazards of Production

- What is The Flammability of Ethanol
- How Does The Mixture Effect Flammability
- Amount of Fuel on Site
- Do the Ethanol Production Facilities Meet The Same Industry Standards as Gasoline Refineries
- Are There Standards That Apply Specifically to Ethanol Plants

- What are the hazards of the production ingredients
 - Grain Handling
 - Dust Collection – Explosion Hazards
 - On site Chemical Storage and Applications
- Characteristics of the Ethanol
 - Flash Point
 - Solvancy with Water

Transportation of Ethanol

- How is Ethanol Transported
 - Over the Road Tanker
 - Rail Car
 - Mixtures
 - Identifying What Mixture is Being Transported

- Fire Fighting Tactic Options By Transport Properties

Challenges in Training

- Addressing the Difficulty in Establishing Training Situations

- Training Situations Need to Simulate Real Life Application Options and Results
 - How and When to Use:
 - Plunge Method
 - Float Across the Surface
 - Sub-Injection
 - Defensive Operational Options

Best Practice Methods

- What Resources are Available To Identify:
 - Successes
 - Mistakes
 - Real Scenario Results
 - Other Jurisdictions Who Have Experienced a Response to an Ethanol Incident and Lessons Learned

Cost Factors of Training

- Acquiring the Amount of Product to Simulate Real Applications
- Facilities Available to Conduct Training Evolutions
- Amount of Foam Required to Experience Real Results That Can Be Applied
- Personnel Costs
 - Overtime
 - Trainers
 - Back Fill
 - Removing Companies From Service

Are There Available Resources

■ Number of Trainers Available

- Train the Trainer Options
- Who Incurs Costs of Training the Trainers
- Scheduling Abilities – Time Frames

■ Training Materials

- Power Point Presentation for Fire Academies
- Written Materials
- Practical Materials
- Where Can They Be Accessed

Fire Department Resources

■ Can Many Departments Afford These Resources

- Amount of Foam Needed in Reserve For a Response
- Number and Type of Application Appliances Required
- Adequate Resources Capable of Response Personnel and Equipment
 - Rural Capabilities
 - Suburban Capabilities
 - Metro Department Capabilities

Future of Ethanol

- Is it a Quick Fix Reaction
- Has the Impact of Ethanol Been Fully Studied
 - Environmental
 - Food Sources
 - Carbon Foot Print
- Long Term Availability
 - Impacted by Weather – Recent Floods
 - Food Demands

Should The Fire Service Make The Investment in Training

- Amount Required to Properly Address the Training Requirements
- Product Wide Spread Impact Is Relatively New to the Market
- What is the Sustainability in the Marketplace
 - Required by Law
 - Other Bio-Fuels
 - Hydrogen
 - Batteries

Fire Service Must Find A Way

- Cost of Training May Prove to be Substantial
- Cost of Not Being Prepared is Potentially Far Greater

Collaborative Effort

- A Collaborative Effort Between Representatives of the Fire Service and Industry is The Responsible Approach and is Essential to the Success of This Investment