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## **Ethanol carries a little-recognized risk**

**Fires require special firefighting foam**

**By CHRIS BLANK**

JEFFERSON CITY, Mo. (AP) — The nation's drive toward alternative fuels carries a danger many communities have been slow to recognize: Ethanol fires are harder to put out than gasoline ones and require a special type of firefighting foam.

Many fire departments around the country don't have the foam, don't have enough of it, or are not well-trained in how to apply it, firefighting experts say. It is also more expensive than conventional foam.

"It is not unusual to find a fire department that is still just prepared to deal with traditional flammable liquids," said Ed Plaughter, director of national programs for the International Association of Fire Chiefs.

The problem is that water doesn't put out ethanol fires, and the foam that has been used since the 1960s to smother ordinary gasoline blazes doesn't work well against the grain-alcohol fuel.

Wrecks involving ordinary cars and trucks are not the major concern. They carry modest amounts of fuel, and it is typically a low-concentration, 10 percent blend of ethanol and gasoline. A large amount of conventional foam can usually extinguish such fires.

Instead, the real danger involves the many tanker trucks and railcars that are rolling out of the Corn Belt with huge quantities of 85 or 95 percent ethanol and carrying it to parts of the country unaccustomed to dealing with it.

"Now, the most common hazardous material has a new twist to it," said Mike Schultz, a firefighter who manned a foam gun during a recent blaze in Missouri.

The risk is more than theoretical. Over the past several years, ethanol accidents on highways, along railroads and in storehouses and refineries have triggered evacuations and fires from Texas to Minnesota, injuring several people and killing at least one person.

Water is not used against gasoline fires, because it can spread the blaze and cause the flames to run down into drains and sewers. Instead, foam is used to form a blanket on top of the burning gasoline and snuff out of the flames. But ethanol — a type of grain alcohol often distilled from corn — eats through that foam and continues to burn.

Such fires require a special alcohol-resistant foam that relies on long-chain molecules known as polymers to smother the flames. Industry officials say the special foam costs about 30 percent more than the standard product, at around \$90 to \$115 for a five-gallon container.

Fighting ethanol fires also requires a change in tactics. Brent Gaspard, marketing director for Williams Fire & Hazard Control Inc., an industrial firefighting company in Texas, said firefighters cannot just charge ahead and attack an ethanol fire with foam.

"If you just plunge the foam into the fuel, it's going to be less effective. You have to let the foam gently run across the surface so you create a shield," he said.

Industry officials said fire departments in just the past few months are becoming more knowledgeable about ethanol blazes and the special firefighting foam.

At the ethanol industry's annual conference in Orlando, Fla., a member of a leading ethanol trade group is leading a session this week on safety for ethanol employees, emergency workers and communities. Fire officials in Iowa and Missouri also want to offer firefighters there ethanol training.

"We're talking about a product that could become more widely used with therefore more exposure to this chemical," said Randy Novak, head of the training bureau for the Iowa fire marshal. "We need to make sure folks understand what it is and how to deal with it."

To help firefighters identify when high concentrations of ethanol are burning, the U.S. Transportation Department has approved a rule requiring signs on tanker trucks hauling fuel that is more than 10 percent ethanol.

In the last three months of 2007, three major fires pointed up the danger. In western Pennsylvania, nine ethanol tanker cars derailed and triggered a blaze that tied up a busy rail line.

In Missouri, a tanker truck carrying several thousand gallons of ethanol and gasoline crashed near the state Capitol, killing the driver. The flames spurred the evacuation of two elementary schools and forced the state to rebuild a badly damaged bridge.

And in Ohio, a train heading through the northeastern part of the state to Buffalo, N.Y., derailed and burned, forcing more than 1,000 people from their homes.

Firefighters in Missouri and Pennsylvania each had some of the special foam on hand. But John Ofman, chief of a volunteer fire company in West Wheatfield Township, Pa., said his department did not have enough and had to depend on outside help.