

# SAFETY NEWS

## Advisory Guidance:

# Emergency Response Involving Ethanol and Gasoline Fuel Mixtures

The Pipeline and Hazardous Materials Safety Administration (PHMSA) is **alerting emergency responders** to new and revised proper shipping names and identification numbers (ID) that may be used on shipping papers for fuel mixtures composed of ethanol (or “ethyl alcohol”) and gasoline in various concentrations. The proper shipping names and IDs are added to the ERG2008.

The following chart is provided as guidance in identifying proper shipping names and identification numbers for Ethanol, Gasoline, and gasoline/ethanol fuel blends. Voluntary compliance began January 28, 2008.

Proper Shipping Name and ID	Ethanol Concentrations
Gasohol, NA 1203	E1 thru E10
Gasoline, UN 1203	E1 thru E10
Ethanol and gasoline mixture, UN 3475	E11 thru E99
Denatured alcohol, NA 1987	E95 thru E99
Alcohols, n.o.s, UN 1987	E95 thru E99
Ethanol or Ethyl alcohol, UN 1170	E100

**E10**



**E85**



**E95**



**OR**

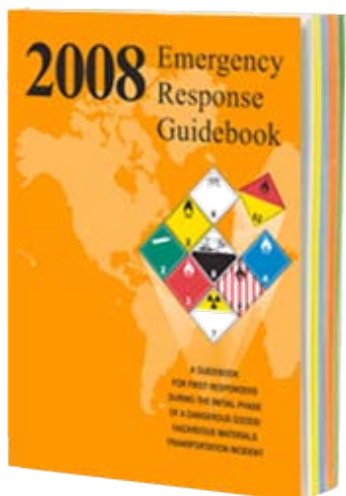


**E100**



**U.S. Department of Transportation**

Pipeline and Hazardous Materials Safety Administration



Fires involving ethanol/gasoline mixtures containing more than 10% ethanol, such as E85, should be treated differently than traditional gasoline fires because these mixtures are polar/water-miscible flammable liquids (they mix readily with water) and degrade the effectiveness of non alcohol-resistant fire-fighting foam.

For this reason, PHMSA recommends First Responders refer to Guide 127 of the 2008 Emergency Response Guidebook (ER2008) when responding to incidents involving fuel mixtures known to contain or potentially containing more than 10% alcohol. Guide 127 specifies the use of alcohol-resistant foam.

The International Association of Fire Chiefs (IAFC) recommends the use of alcohol-resistant, aqueous film-forming foam (AR-AFFF) or alcohol-resistant film-forming fluoroprotein foam (AR-FFFP) in application rates\* as follows:

Fuel Mixture	Foam Application Rate*
Gas	0.1
Ethanol Spill (not in depth)	0.2
Ethanol Fire (in depth)	0.3
*Application rate expressed in gallons per minute of unexpanded foam solution flow divided by the fire area. (gpm/ft <sup>2</sup> )	

Gasohol, E10, fires may be extinguished using conventional aqueous film-forming foam (AFFF) or AR-AFFF but increased application rates may be necessary especially for prolonged burn back resistance.

Denatured ethyl alcohol fires, E95, can only be extinguished with AR type foams. All other type of foams or water additives are ineffective as the foam blanket is destroyed when it strikes the fuel surface.

AR type foams must be applied to ethyl alcohol fires using type II gentle application techniques. Direct application to the fuel surface will likely be ineffective unless fuel depth is very shallow.

**For additional information regarding ethanol and gasoline mixtures or the HMR contact: Hazmat Information Center: 1-800-467-4922 or E-mail: [infocntr@dot.gov](mailto:infocntr@dot.gov)**