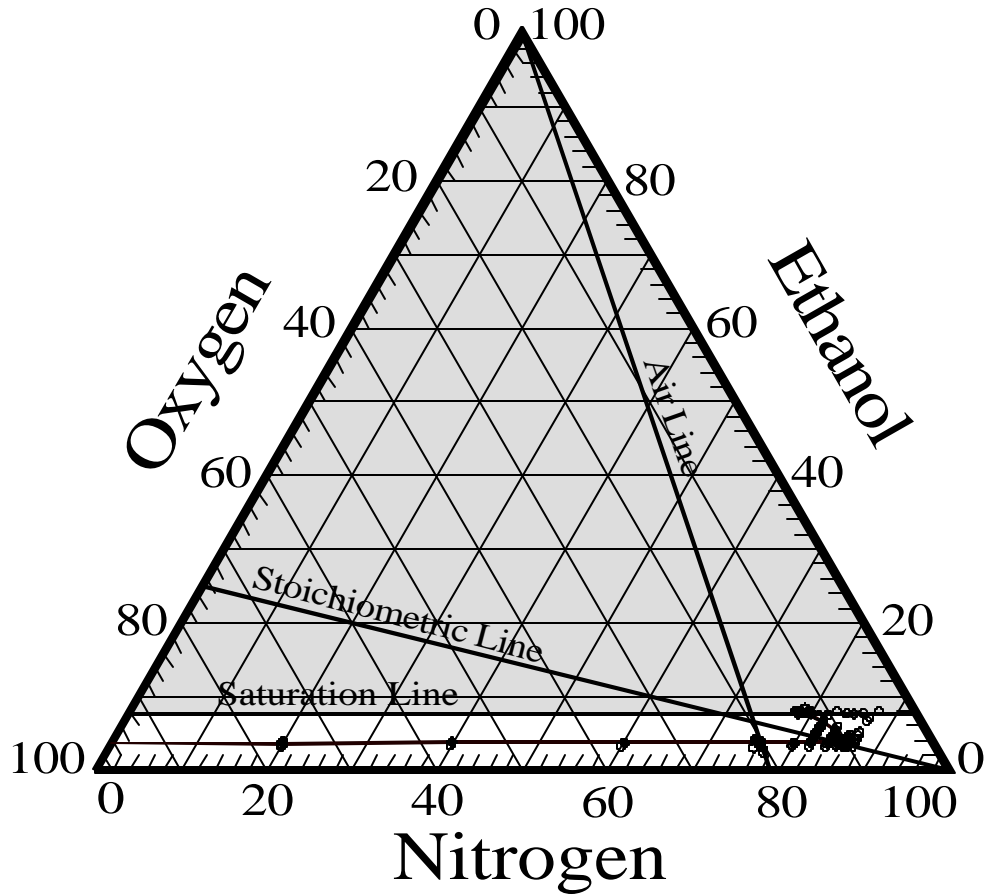


Flammability Diagram for Ethanol



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 May 7, 2001

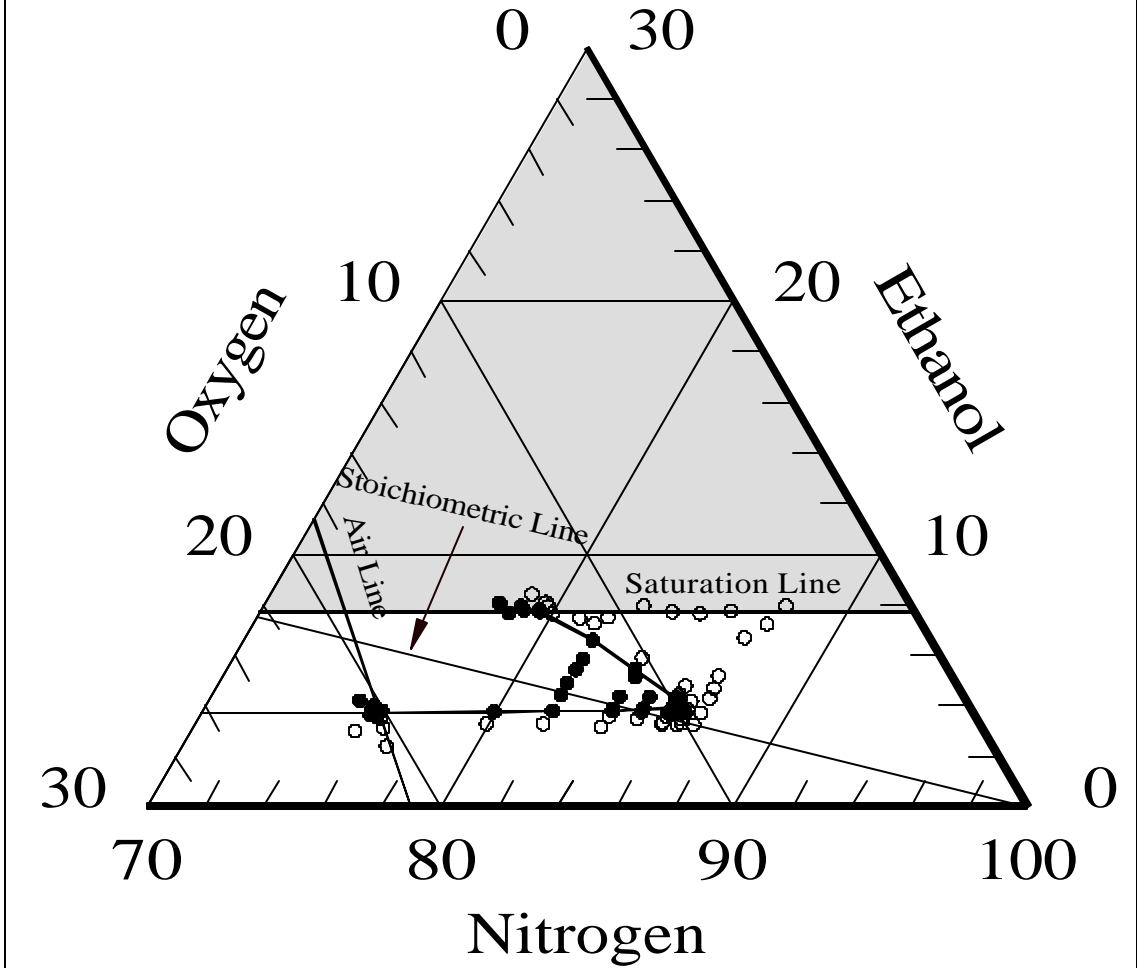
Flammability Parameters

Lower Flammability Limit (LFL): 3.7% Ethanol
 Minimum Oxygen Concentration (MOC): 9.8% O₂
 Flammable Boundary at Saturation (FBS): 12.7% O₂

- Flammable Mixture
- Non-Flammable Mixture
- Flammable Zone Boundary

Initial Pressure: 14.70 psia
 Initial Temperature: 25°C
 Reactor Volume: 20 L
 Igniter Location: Center
 Igniter Type: 1 cm 40 AWG SnCu / 500 VA
 Igniter Energy: 10 J

Flammability Diagram for Ethanol (Close-Up View)



<p>Mark R. Brooks and Dr. Daniel A. Crowl Hazards Evaluation Laboratory Michigan Technological University Houghton, Michigan May 7, 2001</p>	<p style="text-align: center;">Flammability Parameters</p> <p>Lower Flammability Limit (LFL): 3.7% Ethanol Minimum Oxygen Concentration (MOC): 9.8% O₂ Flammable Boundary at Saturation (FBS): 12.7% O₂</p>
<p>● Flammable Mixture ○ Non-Flammable Mixture — Flammable Zone Boundary</p>	<p>Initial Pressure: 14.70 psia Initial Temperature: 25°C Reactor Volume: 20 L Igniter Location: Center Igniter Type: 1 cm 40 AWG SnCu / 500 VA Igniter Energy: 10 J</p>