0.26% CH\textsubscript{4}, 0.09% C\textsubscript{2}H\textsubscript{6}, 1.65% O\textsubscript{2}, 98.0% Ar, Φ = 0.5, p = 1.0 atm

\begin{itemize}
  \item Aramco Mech 1.3
  \item Aramco Mech 2.0
\end{itemize}

0.15% CH\textsubscript{4}, 0.15% C\textsubscript{2}H\textsubscript{6}, 1.69% O\textsubscript{2}, 98.0% Ar, Φ = 0.5, p = 1.0 atm

\begin{itemize}
  \item Aramco Mech 1.3
  \item Aramco Mech 2.0
\end{itemize}
0.12% CH$_4$, 0.36% C$_2$H$_6$, 1.52% O$_2$, 98.0% Ar, Φ = 1.0, p = 1.0 atm

0.67% CH$_4$, 1.33% O$_2$, 98.0% Ar, Φ = 1.0, p = 1.0 atm
0.86% CH₄, 2.59% C₂H₆, 21.55% O₂, 75.0% Ar, Φ = 0.5, p = 1.0 atm

5.0% CH₄, 20.0% O₂, 75.0% Ar, Φ = 0.5, p = 1.0 atm
5.56% C₂H₆, 19.44% O₂, 75.0% Ar, \( \Phi = 1.0, \ p = 1.0 \ \text{atm} \)

![Graph showing ignition delay time vs. \( 10^4 K/T \) for 5.56% C₂H₆, 19.44% O₂, 75.0% Ar, \( \Phi = 1.0, \ p = 1.0 \ \text{atm} \)]

3.13% C₂H₆, 21.88% O₂, 75.0% Ar, \( \Phi = 0.5, \ p = 1.0 \ \text{atm} \)

![Graph showing ignition delay time vs. \( 10^4 K/T \) for 3.13% C₂H₆, 21.88% O₂, 75.0% Ar, \( \Phi = 0.5, \ p = 1.0 \ \text{atm} \)]
1.11% CH₄, 0.37% C₂H₆, 3.52% O₂, 95.0% Ar, Φ = 1.0, p = 10.0 atm

0.67% CH₄, 0.67% C₂H₆, 3.67% O₂, 95.0% Ar, Φ = 1.0, p = 10.0 atm
0.17% CH₄, 0.52% C₂H₆, 4.31% O₂, 95.0% Ar, Φ = 0.5, p = 10.0 atm

0.67% CH₄, 0.67% C₂H₆, 3.67% O₂, 95.0% Ar, Φ = 1.0, p = 30.0 atm
0.49% CH₄, 1.46% C₂H₆, 3.05% O₂, 95.0% Ar, Φ = 2.0, p = 10.0 atm

2.5% CH₄, 2.5% O₂, 95.0% Ar, Φ = 2.0, p = 30.0 atm
5.14% CH₄, 1.71% C₂H₆, 8.14% O₂, 85.0% Ar, Φ = 2.0, p = 30.0 atm

3.16% CH₄, 3.16% C₂H₆, 8.68% O₂, 85.0% Ar, Φ = 2.0, p = 10.0 atm
0.91% CH$_4$, 2.73% C$_2$H$_6$, 11.36% O$_2$, 85.0% Ar, $\Phi = 1.0$, $p = 30.0$ atm

![Diagram 1](image1)

5.0% CH$_4$, 10.0% O$_2$, 85.0% Ar, $\Phi = 1.0$, $p = 10.0$ atm

![Diagram 2](image2)
3.33% C$_2$H$_6$, 11.67% O$_2$, 85.0% Ar, $\Phi = 1.0$, $p = 10.0$ atm

1.88% C$_2$H$_6$, 13.13% O$_2$, 85.0% Ar, $\Phi = 0.5$, $p = 10.0$ atm