

	Natural Gas at STP	Gaseous Hydrogen at STP	Butane / Propane Mix (commonly LPG)	Regular Unleaded Gasoline	#2 Diesel	Methanol	Ethanol
<b>Chemical Composition</b>	Primarily Methane CH4	H2	Propane: C3 H8 Butane: C4 H10	Varies- Typical C8H18	Varies from C9 to C20 - Typical C14H30	CH3OH	C2H5OH
<b>Flash Point</b>	-366° F		-155° F	< -49° F	135° F	52° F	56° F
<b>Boiling Point</b>	-259° F	-423° F	-45° F	85° F	320° F - 675° F	149 F	172° F
<b>Auto Ignition</b>	900° F to 1200° F	932° F	878° F	536° F to 835° F	482° F	867° F	683° F
<b>Range of Flammability</b>	5 to 15 percent in air by volume - Note #4	4 to 74 percent in air by volume - Note #4	2 to 10 percent in air by volume - Note #5	.6 to 8 percent in air by volume Note #5	.6 to 6.5 percent in air by volume - Note #5	6 to 36 percent in air by volume - Note #5	3.3 to 24.5 percent in air by volume - Note #5
<b>Density</b>	0.051 lb. / ft <sup>3</sup>	0.0056 lb. / ft <sup>3</sup>	0.125 lb. / ft <sup>3</sup>	46.2 lb. / ft <sup>3</sup>	51.8 lb. / ft <sup>3</sup>	49.3 lb. / ft <sup>3</sup>	49.3 lb. / ft <sup>3</sup>
<b>Vapor Density (Air = 1)</b>	0.55 to 0.65	Lightest gas known, vapor density is 0.0695	1.55	3.0 - 4.0	Greater than 5	1.1	1.59
<b>Specific Gravity (Water = 1)</b>	0.425 at -263° F		0.51	0.76	0.876	0.791	0.7893
<b>Liquid Density</b>	3.54 lbs / gal at -263° F		4.25 lbs / gal at -40° F	6.33 lbs / gal at 60° F	7.296 lbs / gal at 60° F	6.59 lbs / gal at 60° F	6.57 lbs / gal at 60° F
<b>Specific heating value</b>	20507 btu. / lb.	51590 btu. / lb.	19905 btu. / lb.	18357 btu. / lb.	18271 btu. / lb.	8469 btu. / lb.	11521 btu. / lb.
<b>State at STP</b>	Flammable gas	Flammable gas	Flammable gas	Note #1	Note #1	Note #1	Note #1
<b>Sensory</b>	Colorless, odorless, tasteless (cannot be detected by human senses) Code requires that CNG be odorized so that the average person can smell it at concentrations of 1% by volume in air. Note #1	Colorless, odorless, tasteless (cannot be detected by human senses) It is believed that odorant will damage the fuel cell. Note #1	Colorless, odorless, tasteless (cannot be detected by human senses) Code requires that LPG be odorized so that the average person can smell it at concentrations of 1% by volume in air. Note #1	Note #1	Note #1	Note #1	Note #1
<b>Toxicity</b>	Non-toxic - Note #1	Non-toxic - Note #1	Note #1	Note #1	Note #1	Note #1 - Poison	Note #1
<b>Hazard to Human Health</b>	Is an asphyxiant (when it displaces a portion of the normal 21% oxygen in a confined area without adequate ventilation) - Note #1	Is an asphyxiant (when it displaces a portion of the normal 21% oxygen in a confined area without adequate ventilation) - Note #1	Note #1	Note #1	Note #1	Note #1	Note #1
<b>Flame</b>	Flame is pale blue to yellow depending on richness of mixture	Flame is pale blue, almost invisible	Note #1	Note #1	Note #1	Invisible Flame	Note #1
<b>NFPA Hazard Class</b>	Health: 1 (slight) Flammability: 4 (extreme) Reactivity: 0 (least)	Health: 0 (least) Flammability: 4 (extreme) Reactivity: 0 (least)	Health: 1 (slight) Flammability: 4 (extreme) Reactivity: 0 (least)	Health: 1 (slight) Flammability: 3 (high) Reactivity: 0 (least)	Health: 1 (slight) Flammability: 2 (moderate) Reactivity: 0 (least)	Health: 1 (slight) Flammability: 3 (high) Reactivity: 0 (least) Contact Rating: 1 (slight)	Health: 2 (moderate) Flammability: 3 (high) Reactivity: 0 (least)

- Notes:**
1. See MSDS sheets for information.
  2. Data assembled from various sources - some variation in data is noted on sources - consult product supplier for more detailed / exact information.
  3. STP = Standard temperature and pressure (60° F and 14.7 psig)
  4. Natural gas and hydrogen are lighter than air gases and will rise and dissipate unless trapped in a roof structure. Therefore the duration of a flammable mixture is minimized.
  5. LPG, gasoline, diesel, methonal and ethonal are all heavier than air when vaporized and therefore will stratify near the ground and maintain a flammable mixture for extended periods of time.