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Grades of Propane - Gas Purity and Quality

Propane is considered propane regardless of the grade but the reality is that three grades of propane are processed or refined in the United States. Each of the three grades, HD5, HD10 and commercial propane differ in propane consistency and are used for different purposes. All grades of propane come from the same raw materials (crude oil or natural gas). The differing grades are created during the refining or processing of the gas at the refinery. In other words, the refinery specifies which grade is to be processed. Each grade of propane is stored separately following processing to ensure that the propane grade loaded at the refinery is what was specified by the buyer.

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HD-5 Propane

HD5 grade propane is "consumer grade" propane and is the most widely sold and distributed grade of propane in the U.S. market. HD5 is the highest grade propane available to consumers in the United States and is what propane companies ordinarily sell to their customers. What does HD5 propane mean in terms of specification to an ordinary consumer? It means that the propane is suitable and recommended for engine fuel use, which was the original purpose of the HD5 grade propane specification. HD5 spec propane consists of:

- Minimum of 90% propane
- Maximum of 5% propylene - propylene is used in the manufacture of plastics
- Other gases constitute the remainder (iso-butane, butane, methane, etc.)

The HD5 specification is based on "allowable" contents. For instance, 99% propane and 1% propylene is HD5 grade propane the same as 95% propane and 5% propylene is HD5 propane. Although the product consistency and purity is different, both mixtures are considered HD5 propane because they fall within the allowable limits for the product to be named and labeled as such. Consider this: **10,000 gallons of pure propane (100% propane) is classified as HD-5 grade propane.**

HD5 Propane Quality - Fact vs. Fiction

Retail propane companies that advertise "highest quality propane" are actually selling propane that conform to the specifications as required to be labeled and sold as HD5 propane. An important fact to note is that there is no higher grade than HD5 propane available for resale through retail propane companies in the United States...HD5 is the highest grade propane available to U.S. consumers. A company stating that their propane is of a higher grade than HD5 is inaccurate in their claim. As presented above, a tank holding pure propane contains what is classified as HD5 propane.

HD-10 Propane and Commercial Propane

HD10 propane is a grade below HD5 and is commonly found in California. HD10 grade propane allows up to 10% propylene in the propane/propylene mixture and is still labeled as "propane". Because propylene is used in creating plastics, HD10 can possibly create problems in some engines and vehicle applications. Propylene can cause engine components to "gum" or stick during operation. However, HD 10 spec propane works just fine in domestic and commercial propane powered appliances. The only problem that may be encountered in using HD-10 propane involves its use as an engine fuel (vehicles, forklifts, etc.).

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Commercial grade propane and HD10 grade propane are sometimes used interchangeably due to the fact that both grades are sub-HD5 spec product and do not meet the standards of engine grade propane. Refineries use commercial propane in their processes and fractionation of chemicals for end use in numerous industries. Although commercial grade propane can be used in a manner similar to that of HD10 propane, it is not used in vehicle applications.