Oxihidrogen Gas Enhancement of Propane
By: Ecovitae / Hidrogenpower
Jan/2011
(Based on Brown's Gas Enhancement of Propane By: Noah Robert Seidman 2/25/06)

Context

Background: Oxihidrogen, is a hydrogen based fuel produced via the electrolysis of water; the product hydrogen and oxygen gases, of the electrolytic reaction, are not separated from one another. Past experimentation involved exploring the physical and chemical properties of the gas with direct regard to torch application. The future of Oxihidrogen involves its use as a fuel enhancer.

Methods of Approach: Four Experiments were conducted to explore the efficiency increasing properties of Oxihidrogen. By apply three different quantities of Oxihidrogen and comparing to a control, which only used propane, we can extract useful information regarding the extent that a quantity of Oxihidrogen effectively increases the efficiency of propane combustion. The constant parameter of each of the four experiments is to boil a particular quantity of water. It takes a particular quantity of energy in order to raise the temperature, of a particular quantity of water, from room temperature to boiling temperature. By maintaining this constant parameter in each experiment, the data implies that the amount of energy contained in a quantity of propane, required to raise a quantity of water to boiling temperature, is the same quantity of energy contained in a reduced amount of propane mixed with a quantity of oxihidrogen.
Results: Oxihidrogen is shown, by the data available in this report, to increase the combustion efficiency of propane gas.

Conclusions: The experimental data implies that Oxihidrogen can be used to reduce the amount of propane fuel that a consumer requires. 90 liters of Propane can be reduced to 50 liters + 545.7 watt-hours of Oxihidrogen.

Introduction

Oxihidrogen is a hydrogen based fuel produced from water using electricity. To extract hydrogen from water, using electricity, requires a separated anode and cathode; by using independent electrodes, hydrogen is attracted to the cathode, while oxygen is attracted to anode. The hydrogen can then be captured, and the oxygen potentially released if not captured at well. Oxihidrogen is the result of allowing the product hydrogen and oxygen, of an electrolytic reaction, to recombine. The combination of oxihidrogen and oxygen, produced in an electrolytic reaction, does not necessarily form water; it seems to be the case that there is at least 1 other form of water, Oxihidrogen. Independent of the chemical specifics of this allotrope of water, Oxihidrogen possesses specifically functional properties, which is the focus of this report. To be precisely clear, this report is going to focus on the practical properties of Oxihidrogen and not thephysical or chemical properties that allow its practical properties to come to be.

More information at www.hidrogenpower.com / hidrogenpower@hotmail.com

Engineer Department : Engº Carlos Leandro Mobilphone (+351) 963 763 619 tecnica@ecovitae.pt

Export/Comercial: Pedro Cordeiro Mobilphone (+351) 963 772 890 comercial@ecovitae.pt

Materials

Components utilized in each of the 4 experiments remain constant. Components include: sufficient piping to connect the output of a Water TorchTM brand Oxihidrogen generator to a check value and then to a T junction with a valve attach allowing the flow rate of the Oxihidrogen to be varied; one other port of the T junction has a check valve allowing a propane source flowing at 5 LPM to enter the junction. By using check valves on both the Oxihidrogen feed and the propane feed, the potential for each respective gas to flow in the opposite direction of either the propane feed or the Oxihidrogen feed is reduced according to the specifications of the check valve. The output of the T junction is connected via sufficient piping to an exhaust device allowing the output gas to be ignited in a safe fashion while being applied to the following prescribed components of the experiments. 4 Pyrex measuring cups, filled with 500 milli-liters of water. The Pyrex measuring cup is to be situated ½ - 1 inch away from the ignited fuel source on, a level plane, with no vertical amplitude offset.

If the apparatus is assembled according the latter specification the following test procedures can be accomplished. The valve on the Oxihidrogen feed should only be “cracked”, meaning that from a completely shut position, the experimenter should only turn the valve a matter of single digit degrees; in practice the valve should never be open to such a degree as to allow for the output propane/Brown’ Gas mixture to burn according to the properties of a pure Oxihidrogen flame. A pure Oxihidrogen flame has unique properties, which are not desired in this particular experiment.

(Image #1)
Image #1 is a picture of the HIDROGENPOWER WW260LAC brand Oxihidrogen generator.
(Important Note: This equipment is rated in up to260liters oxihidrogen hour.

The experiment should apply a minimum of three different quantities of Oxihidrogen to the 5 LPM propane flow, which can then be compared to a mandatory control experiment, which only utilizes propane. The experiment should capture temperature vs.time data for each experiment. The experiment should also take note of the altitude, which directly influences the temperature at which water begins to boil. The experimenter should also take note of ambient temperature; room temperature.

Engineer Department : Engº Carlos Leandro Mobilphone (+351) 963 763 619 tecnica@ecovitae.pt
Export/Comercial: Pedro Cordeiro Mobilphone (+351) 963 772 890 comercial@ecovitae.pt

Methods

Experiment #1 establishes the control. Propane flowing at 5 LPM was ignited and applied to a Pyrex measuring cup, situated approximately ½ -1 inch away from the source of the flame. The flame was applied for a total of 18 minutes, until a stable temperature was successfully achieved. A total of 90 liters of propane was required in order to boil the water.

Experiment #2 utilizes a quantity of Oxihidrogen to enhance the propane flow. An apparatus consisting of a T valve connection, with check valves on the Oxihidrogen feed, and the propane feed. The propane was flowing at 5 LPM. The mixture of Oxihidrogen and propane was ignited and applied to a Pyrex measuring cup situated approximately ½ - 1 inch away from the source of the flame. The ignited mixture was applied for a total of 10 minutes, until a stable temperature was successfully achieved. A total of 50 liters of propane was required in order to boil the water. A total quantity of 545.7 watt-hours worth of Oxihidrogen was added to the propane flow.

Experiment #3 utilizes a decreased quantity of Oxihidrogen to enhance the propane flow. The same apparatus as experiment #2 was utilized. Propane was flowing at 5 LPM, and a net quantity of 241.8 watt-hours of Oxihidrogen was used to enhance the propane flow. The ignited mixture was applied to a Pyrex measuring cup situated approximately ½ - 1 inch away from the source of the flame. The ignited mixture was applied for a total of 11 minutes, until a stable temperature was successfully achieved. A total of 55 liters of propane was required in order to boil the water.

Experiment #4 utilizes a further decreased quantity of Oxihidrogen to enhancement the propane flow. The same apparatus as experiment #2 and #3 was utilized. Propane was flowing at 5 LPM, and a net quantity of 172.8 watt-hours of Oxihidrogen was used to enhancement the propane flow. The ignited mixture was applied to a Pyrex measuring cup situated approximately ½ - 1 inch away from the source of the flame. The ignited mixture was applied for a total of 12 minutes, until a stable temperature was successfully achieved. A total of 60 liters of propane was required in order to boil the water.

Example Calculations

The economic and fuel savings implications of the experimental data found in the appendix of this report, are expressed in Calculation Example #1, #2 and #3. The following calculations are based specifically on the propane savings observed in experiment #2. 90 Liters of propane can be reduced to 50 liters + 545.7 watt-hours of Oxihidrogen.

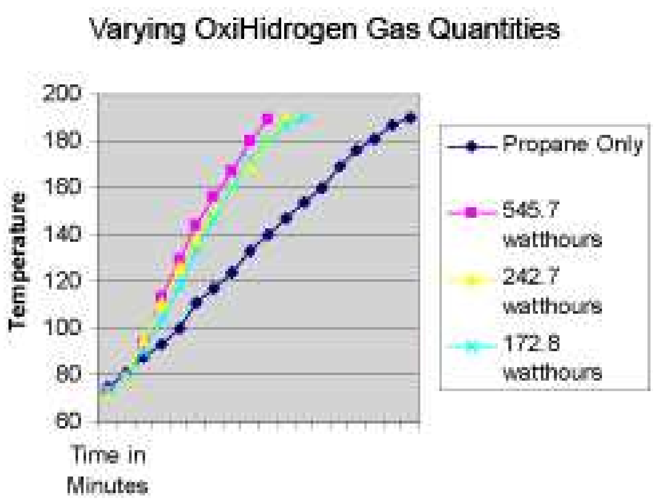
Calculation Example #1

90 liters of propane-gas ~ $6.00 @ 2$/gallon-liquid
50 liters of propane-gas ~ $3.33 @ 2$/gallon-liquid
545.7 watt-hours = 7.1 cents @ 13 cents/kilowatt-hour

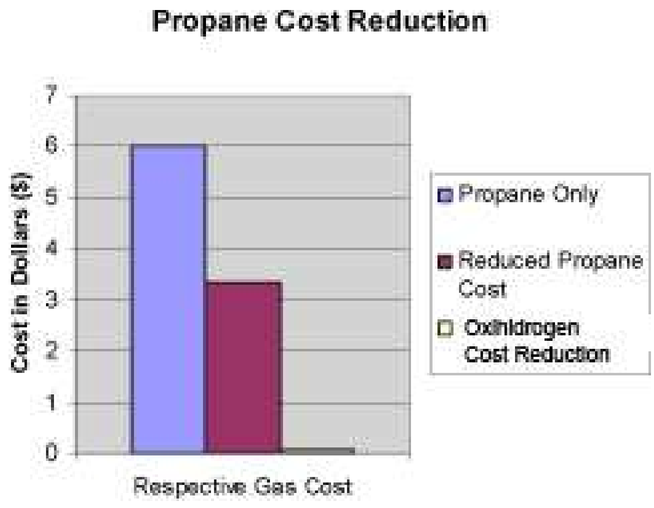
Calculation Example #2
90 liters of propane-gas = $1.69 @ 30$/1600 liters-gas
50 liters of propane-gas = $.94 @ 30$/1600 liters-gas
545.7 watt-hours = 7.1 cents @ 13 cents/kilowatt-hour
Calculation Example #3
90 liters of propane-gas = $3.38 @ 60$/1600 liters gas
50 liters of propane-gas = $1.88 @ 60$/1600 liters gas
545.7 watt-hours = 10.6 cents @ 19.5 cents/kilowatt-hour

Results
In each successive experiment, a decreased quantity of Oxihidrogen was utilized, and propane requirements maintained significant reductions. In experiment #2, #3, and #4, 45%, 39%, and 30% reductions in propane requirements were respectively achieved, while maintaining a constant output of a particular quantity of energy.

Graphs



(Graph #1)
This graph consists of temperature vs. time. The four experiments conducted in this publication can be seen in this graph. Propane takes 18 minutes to increase the temperature of the water to that of boiling. Experiment #2, which utilized 545.7 watthours of Oxihidrogen, required the least amount of time to reach boiling temperature taking only 10 minutes.



(Graph #2)

This graph consists of extrapolations base on the data collected in experiment #2. Calculation example #1 is numerically representative of the data in this graph. The national average of propane is used (2$/gallon-liquid). 90 liters of propane can successfully be reduced to 50 liters + 545.7 watt-hours worth of Oxihidrogen as shown in experiment #2. Obviously the values in this experiment can be varied proportionally in order to calculate particular savings for other quantities.

Discussion

With direct regard to consumer appliances, and even industrial appliances, Oxihidrogen can be used to increase the combustion efficiency of a propane flame, **decreasing** the quantity of propane required to transfer a particular amount of energy required to achieve desired ends. In addition, the net result of utilizing Oxihidrogen, to enhance propane, results in a net economic savings, which can be seen in

Example
Calculations #1, #2, and #3.

Conclusions

The potential exists for Oxihidrogen to be the worlds most widely used fuel enhancer. There is no other fuel additive available that is produced immediately before it is intended to be used. The implications of Oxihidrogen fuel enhancement, specifically with the on-demand Water TorchTM brand Oxihidrogen generator, has the potential influence the future of energy industries by significantly reducing the amount of fuel consumers require.

Time Increment (Minutes)	Temperature (Fahrenheit)
1	75
2	81
3	88
4	93
5	100
6	111
7	117
8	124
9	133
10	140
11	147
12	154
13	160
14	169
15	176
16	181
17	187
18	190

(Experiment #1)
(Experimental Control Propane Only)
Propane flowing at 5 LPM.

Time Increment (Minutes)	Temperature (Fahrenheit)
1	73
2	79
3	93
4	113
5	129
6	144
7	156
8	167
9	180
10	189

(Experiment #2)
A net quantity of 545.7 watt-hours of OxiHidrogen Gas has been applied.
Propane flowing at 5 LPM.

Engineer Department : Engº Carlos Leandro Mobilphone (+351) 963 763 619 tecnica@ecovitae.pt

Export/Comercial: Pedro Cordeiro Mobilphone (+351) 963 772 890 comercial@ecovitae.pt

Time Increment (Minutes)	Temperature (Fahrenheit)
1	72
2	79
3	95
4	111
5	126
6	138
7	149
8	160
9	170
10	180
11	190

(Experiment #3)

Propane flowing at 5 LPM.

A net quantity of 241.8 watt-hours of OxiHidrogen Gas has been applied.

Time Increment (Minutes)	Temperature (Fahrenheit)
1	73
2	79
3	90
4	104
5	118
6	133
7	147
8	160
9	172
10	180
11	187
12	190

(Experiment #4)

Propane flowing at 5 LPM.A net quantity of 172.8 watt-hours of OxiHidrogens Gas has been applied.

More information at www.hidrogenpower.com / hidrogenpower@hotmail.com

Engineer Department : Engº Carlos Leandro Mobilphone (+351) 963 763 619 tecnica@ecovitae.pt

Export/Comercial: Pedro Cordeiro Mobilphone (+351) 963 772 890 comercial@ecovitae.pt