IS HYDROGEN PEROXIDE THE BEST ROCKET FUEL

Part of the Hydrogen Peroxide Propulsion Guide

Hydrogen Peroxide has a long history in the space industry and was even used in the Reaction Control System (RCS) for the X-15. Some view hydrogen peroxide as an unstable and dangerous propellant but when handled properly, it is safer than most other options. It's dense (very important for mass ratios), environmentally friendly and makes rocket engine design much easier.

I spoke with Michael Carden of X-L Space systems to learn more about the usage and safe handling of hydrogen peroxide. Michael has been working with this propellant for over 20 years, including designing the engines for Beal Aerospace back in the 90's.

Who supplies hydrogen peroxide to the space industry

There are four suppliers of hydrogen peroxide to the space industry. They are the FMC in Texas, Evonik, X-L Space Systems and the Solvay. For the US markets, they are the FMC and the X-L Space Systems.

Benefits of hydrogen peroxide to the space industry

Hydrogen peroxide is a magnificent propellant especially for the space business start-ups. With hydrogen peroxide, development is made faster compared to when liquid oxygen is used. This helps the start-ups to do more and to do them faster because of the faster development time with hydrogen peroxide. This makes a huge difference when it comes to launching something into space because the project will be done sooner and the start-ups can already see the results. People should see the results as quickly as possible so that they can immediately adjust

along the way. This will help them save money and improve the project. In addition, the money can be allotted to other features of the project. Another advantage of using hydrogen peroxide as a propellant is that it is environment friendly. If spills happen, it will serve as an anti-pollutant. It will break apart the hydrocarbons in the ground making them safe to the environment.

Why hydrogen peroxide is better than liquid oxygen

Although liquid oxygen is one of the most efficient propellants, more and more people find it easier to work with hydrogen peroxide than working with liquid oxygen. Hydrogen peroxide is in liquid form at room temperatures. It is easier to handle and store than liquid oxygen. Even if hydrogen peroxide is more expensive than liquid oxygen, this can only contribute little to the overall expenses of the project. With the convenience and ease on working with hydrogen peroxide, it is worth the price to pay.

Storing hydrogen peroxide

Hydrogen peroxide can be stored in plastic containers, and it is safe to store them at normal temperatures up to 120 degrees Fahrenheit. It can last extremely long if one knows how to stabilize it and take some precautions. It can last up to a few decades with only low degradation.

A gallon of high test hydrogen peroxide can weigh up to 11 pounds. It is a particularly dense liquid, and it is good for rocket vehicles. When someone handles hydrogen peroxide, he or she should use eye protection and rubber gloves to assure safety.

Precautions to take with hydrogen peroxide rockets

One should consider material compatibility when working with hydrogen peroxide. It is best to avoid brass, copper, and nylon because these will make hydrogen peroxide decompose. To avoid the problems when working with hydrogen peroxide, it is best to stick with Teflon, stainless steel, aluminum, and polyethylene.

As long as one sticks with the materials mentioned above and one can maintain cleanliness in the work area, it will be easy to work with hydrogen peroxide. For cleaning, one can just rinse everything with deionized water.

With ease in handling, one can realize that it is relatively easy to do some space projects. One can realize that it is not as expensive, challenging and difficult to do space projects as many people think. This is great information for everyone because more and more people would be able to do their own space projects.

Great resource for hydrogen peroxide rockets

Even if it is relatively easy to do space projects, people should still do their homework. They should study more about space projects and see the potentials. This is important especially when they want to deal with hydrogen peroxide in their space projects. This way, they can get the most out of the benefits and advantages of using hydrogen peroxide in their space projects. One valuable resource that can help people is Jim McCormick's hydrogen peroxide rocket manual. It provides the parameters on how to design a rocket. One will know about parameters such thrust chamber pressure without going into much calculus.

Purchasing and shipping hydrogen peroxide

There are some regulations when it comes to purchasing and shipping hydrogen peroxide. One has to deal with different organizations that have concerns about the environment and sanitation. In addition, one should deal with competencies and requirements by suppliers to purchase hydrogen peroxide. This way, one would not have any legal and regulatory problems when purchasing and shipping hydrogen peroxide.

Current market for hydrogen peroxide

With the convenience and ease in working with hydrogen peroxide, it became popular for space business start-ups to use it as propellant for their space projects. In addition, universities and colleges are also doing some space projects that require propellants such as hydrogen peroxide. People, companies, and academic institutions are purchasing hydrogen peroxide for peroxide fueled helicopters, university projects and do-it-yourself space lift programs.

Source : http://www.diyspaceexploration.com/hydrogen-peroxide-best-rocket-fuel/