

An Introduction to Storable Liquid Propellants

OVERVIEW

This class will go over the fundamentals of storable liquid propellants. The use of propellants and why they are used will be explained, along with the main engines in use today. The main physical and chemical properties are introduced, as well as general safety hazards. The propellants covered include hydrazine, MMH, NTO, nitrous oxide, ASCENT, LMP-103S, hydrogen peroxide, and RP.

LEARNING OBJECTIVES

By the end of this course participants will be able to:

- Know the main storable propellants and where they are used
- Know the important properties of the main storable propellants
- Understand the general hazards of storable propellants

WHO IS THIS FOR?

This class is intended as an introduction for students who are not familiar with storable propellants.

INSTRUCTORS

Eric Cardiff is the founder of Virtucon Earth and Space, LLC, and former chief engineer for propulsion at NASA Goddard Space Flight Center. He received his Ph.D. in propellants from Penn State University in 2002, and has over 20 years of experience in design, build, test, and flight of spacecraft propulsion systems. Dr. Cardiff has worked on multiple high-profile mishap investigations and spacecraft anomalies, and has expertise in propellant handling. He has also contributed to the development of both ASCENT and HyperFlex propellants and propulsion systems.

COURSE FEES

\$300 per person for local onsite training

\$450 per person at JANNAF Conference

Current university student rate at JANNAF \$300, for local onsite \$150

HOURS

Classroom Hours: 2 classroom hours