



Cryogenics

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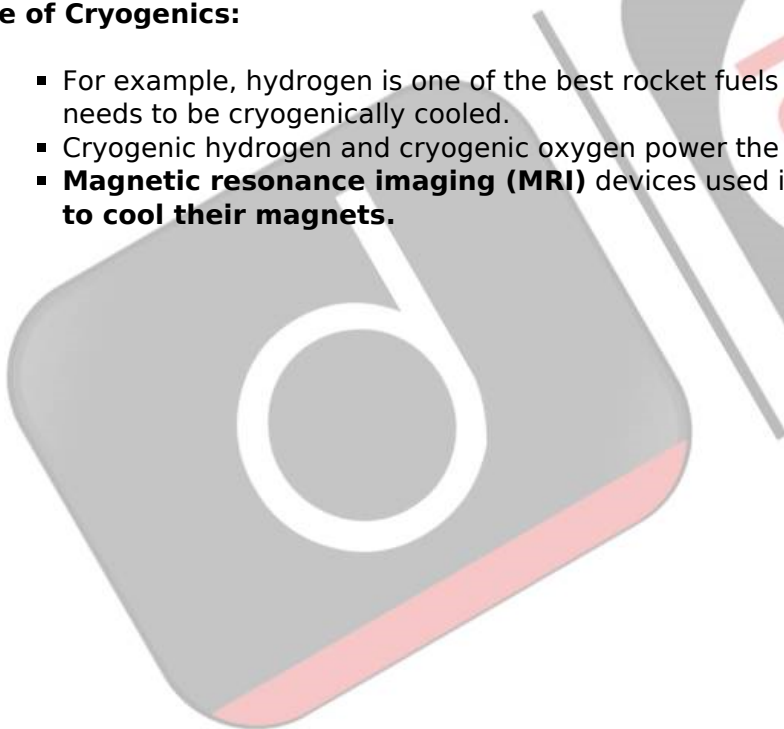
Cryogenics is defined as the science of materials at temperatures below negative 153 degrees Celsius. It deals with extremely **low temperatures where common gases like hydrogen, nitrogen, and air become liquid.**

- **Cryogenics**, typically uses **helium and nitrogen as the cryogenic fluid**, the thing that cools a substance.
 - **Nitrogen** has a boiling point of **negative 196 degrees C** and **helium** has a **negative 269 degrees C**. Below these temperatures **they are liquid.**
 - **These liquids** need to be stored in **vacuum flasks** or they could **leak and damage their surroundings.**

Use of Cryogenics:

- For example, hydrogen is one of the best rocket fuels but it can only be used as a liquid, so it needs to be cryogenically cooled.
- Cryogenic hydrogen and cryogenic oxygen power the **third stage of [ISRO's LVM-3 rocket.](#)**
- **Magnetic resonance imaging (MRI)** devices used in medical diagnostics use **cryogenic fluids to cool their magnets.**

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Read more: [3D Printed Cryogenic Engine and Space Sector Privatisation](https://www.drishtiias.com/printpdf/cryogenics)

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