

Overview

Deuterium gas (D₂ or 2H₂) is used in the semiconductor industry for annealing processes. It is supplied as a cylinder to the point of use at the manufacturing facility. It is important that Deuterium is supplied, stored and used in accordance with the applicable laws.

Properties and Hazards of Deuterium



- ✓ It is a colorless, odorless, extremely flammable, compressed gas
- ✓ It burns with invisible flames
- ✓ It acts as an asphyxiant
- ✓ Ignition sources should be avoided

Personal Protective Equipment



Cylinder
Gloves



Safety
Glasses



Safety
Shoes

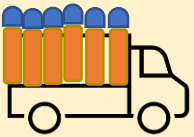


Safety
Hardhats



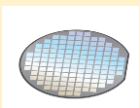
Coveralls
(Flame Retardant Clothing)

Transportation, Storage and Safe Point of Use



Transport

- ✓ Transport D₂ cylinders in designated dangerous goods trucks only
- ✓ Conduct road route risk assessment
- ✓ Ensure Transport Emergency Response Preparedness
- ✓ Practice cylinder handling best practices



D₂ storage /supply
Safe Point of Use

- ✓ Product hazard and safety training for all personnel involved
- ✓ Conduct design reviews for supply systems
- ✓ Adopt code of practices for design of D₂ supply systems
- ✓ Make operations and maintenance procedures available
- ✓ Conduct Risk Assessments for all tasks
- ✓ Make sure that Safety critical systems are installed
- ✓ Conduct customer screening to assure safe supply and use of product
- ✓ Ensure Emergency Response Preparedness
- ✓ Comply to Local regulation (where it applies)

Always refer to Safety Data Sheet for latest product handling safety information

References:

1. AIGA 043, Transport Security Guidelines www.asiaiga.org
2. AIGA 039, Road Transport and Product Delivery Emergency Preparedness www.asiaiga.org
3. AIGA 018, Safe Handling of Electronic Specialty Gases www.asiaiga.org

