Plastics for Hydrogen Energy Production, Transportation, and Storage

BENEFITS OF PLASTIC:

Plastics with the following characteristics are often specified for hydrogen energy applications.

- Low hydrogen permeability for sealing performance
- Low friction to minimize actuation torque
- Resistance to degradation from KOH
- Lightweight for portable machinery
- Machinability to complex shapes
- Broad operating temperature range
- Resistance to creep and stress relaxation

Engineering materials to meet your needs

Curbell Plastics offers a wide range of plastic materials to address the unique performance requirements of hydrogen energy production, transportation, and storage. These demanding applications involve cryogenic temperatures, high pressures, and exposure to harsh chemicals. We have materials that offer, low hydrogen permeability, chemical resistance, and durability under thermal cycling.

Plastics are widely used in a variety of hydrogen energy applications including valve seals, electrolyzer components, storage tanks, fuel cell components, mechanical fasteners, and thermal insulators.

Material selection, expert advice

"We had a hydrogen electrolyzer application that required resistance to potassium hydroxide at elevated temperatures. Curbell collaborated with us to identify a plastic material that could withstand the chemical environment and maintain performance over time."

– Curbell Customer Feedback

TYPICAL APPLICATIONS:

- Electrolyzer frames, insulation plates, and end plates
- Valve seals and seats
- Gaskets
- Fuel cell spacers, frames, and end plates
- Storage tanks
- Pipe and fittings
- Electrical insulators
- Thermal insulators
- Mechanical fasteners made from threaded thermoset composites
- Piston rings
- Bearings
- Compressor seals
- Cages for roller bearings

COMMON MATERIALS:

- Acetal
- CPVC
- DuPont™ Vespel® Polyimide
- Durostone® high performance thermoset composites
- ECTFE (Halar®)
- G10/FR-4 Glass Epoxy
- Glass-filled PEEK
- Glass-filled PPS
- HDPE
- Ketron™ CR-D
- Ketron™ CR-S
- Noryl® PPO
- Nylon
- PCTFE
- PEEK
- Polyethylene
- Polypropylene
- PPS
- PPSU (Radel® R)
- PSU (Polysulfone)
- PTFE
- PVC
- PVDF
- UHMW
- Ultem® PEI
- Victrex CT™ 100
- Victrex CT™ 200

CURBELL PLASTICS

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