

DYHARD®

EVERY DAY, EVERYWHERE



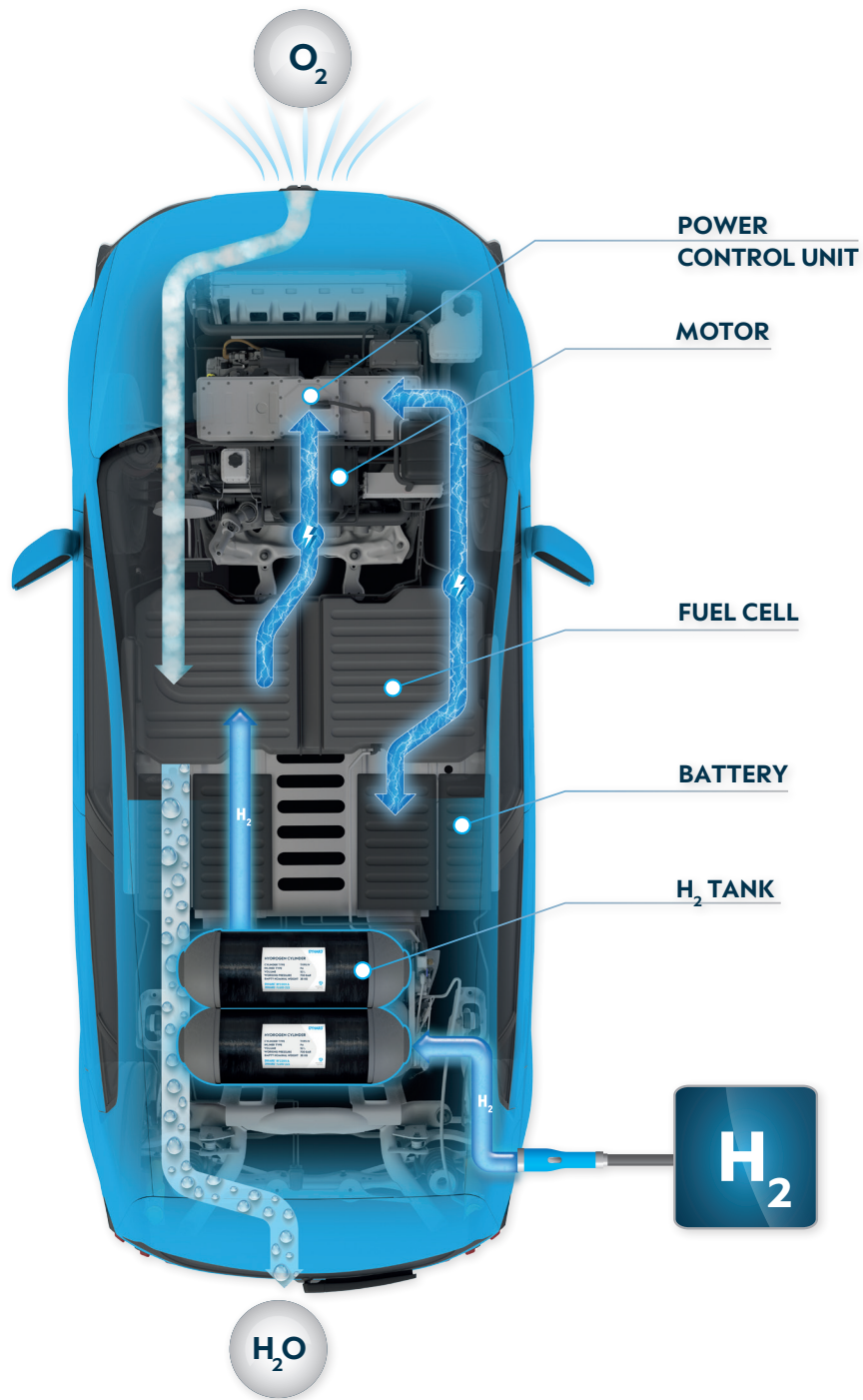
Product lines for Hydrogen Cylinder Manufacturing



alzchem
group

DYHARD®

Fluid system for hydrogen cylinder in FCEV

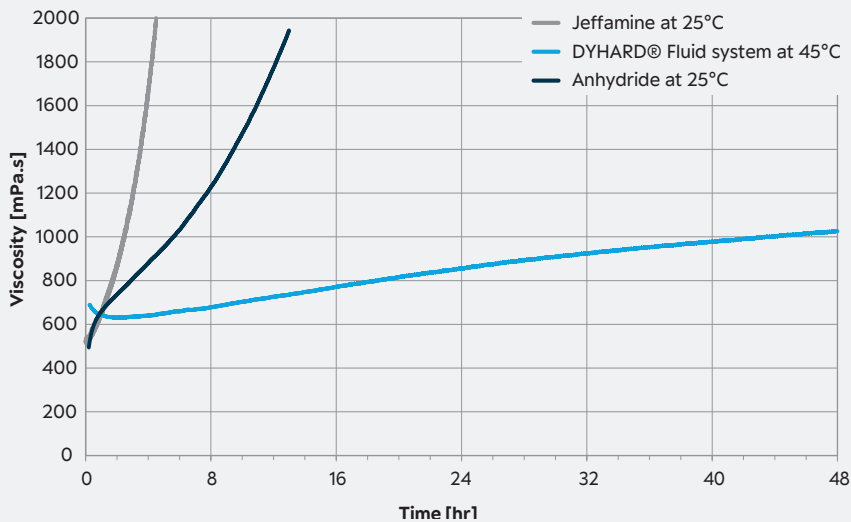


Your Benefits

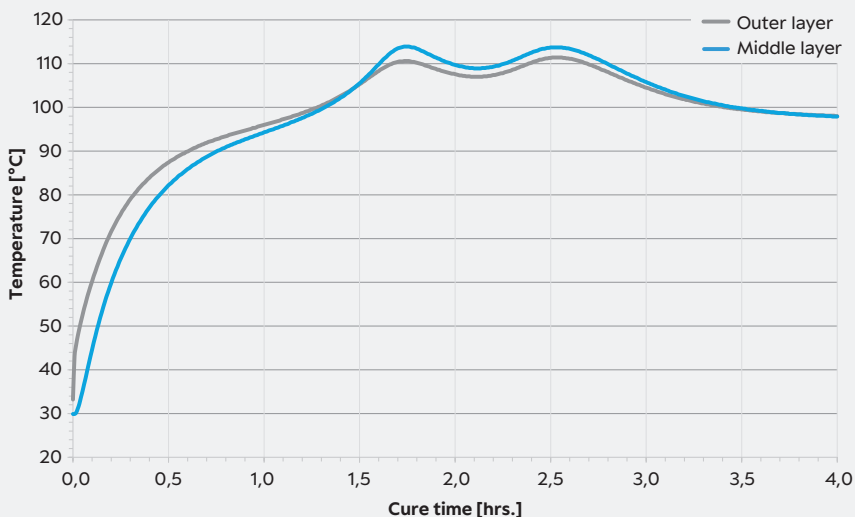
- Extreme long pot life
- Continuous winding operation
- Increased productivity, higher profitability
- Consistent viscosity in summer and winter
- Reduction of cleaning time and resin waste
- Excellent mechanical properties
- Low enthalpy



DYHARD® Fluid system based on:
DYHARD® RF2200: DGEBA resin
DYHARD® Fluid 222: Latent liquid curing agent



**VISCOSITY VERSUS TIME
 COMPARISON: DYHARD® FLUID
 SYSTEM AT 45°C VERSUS
 COMPETITIVE ANHYDRIDE AND
 JEFFAMINE SYSTEMS AT 25°C**



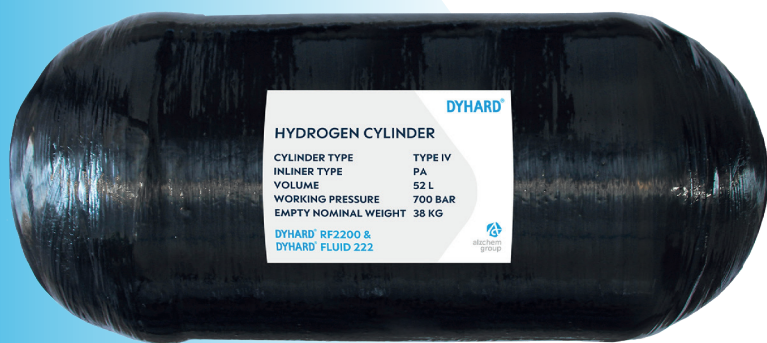
**TEMPERATURE PROFILE IN 20 MM
 LAMINATE CURED AT 95 °C**

Rapid cure at elevated temperatures depending on:

- Cylinder type & size
- Fill pressure
- Laminate thickness
- Temperature resistance of the inliner

Laminate Thickness	Cure Temperature
10 mm	3 hrs. @ 100 °C
20 mm	4 hrs. @ 95 °C
30 mm	6 hrs. @ 90 °C
40 mm	8 hrs. @ 85 °C

PRODUCT Line	PRODUCTS	FILAMENT WINDING	
		WET FIBER WINDING	TOWPREG
DYHARD® SYS-Line	DYHARD® RF2200	✓	-
	DYHARD® Fluid 222	✓	-
DYHARD® CU-Line	DYHARD® 100S	-	✓
	DYHARD® 100SF	-	✓
DYHARD® MB-Line	DYHARD® D50EP	-	✓
	DYHARD® DF50EP	-	✓
DYHARD® CAT-Line Urons	DYHARD® UR400	-	✓
	DYHARD® UR500	-	✓
DYHARD® LI-Line	DYHARD® Fluid 111	-	✓



04/2025 | © Alzchem Trostberg GmbH | This information is based upon our present knowledge and experience and is intended to provide general guidance about our products and their uses. Alzchem assumes no liability for such information, including its suitability for a particular use of the product, or that such use is infringing the intellectual property rights of others. | Image credit: iStock, Traminio / AdobeStock, Patrick Daxenbichler

Alzchem Trostberg GmbH
 Dr.-Albert-Frank-Straße 32
 83308 Trostberg, Germany
 T +49 8621 86-3402
 dyhard.sales@alzchem.com

Alzchem LLC
 1000 Parkwood Circle SE,
 Suite 320
 Atlanta, GA 30339,
 USA
 T +1 770 910 7719

Alzchem Shanghai Co., Ltd.
 Unit 501-5, Building C3,
 No. 700 Yishan Road,
 Xuhui district,
 Shanghai 200233, CHINA
 T +86 21 5424 9788 0



alzchem.com