

# DMS Formation

Creative engineering for *quality teaching*

An educational package for discovering the complete hydrogen chain.

At the heart of the system is the Clearpak electrochemical cell, transparent and removable.



photovoltaic panel

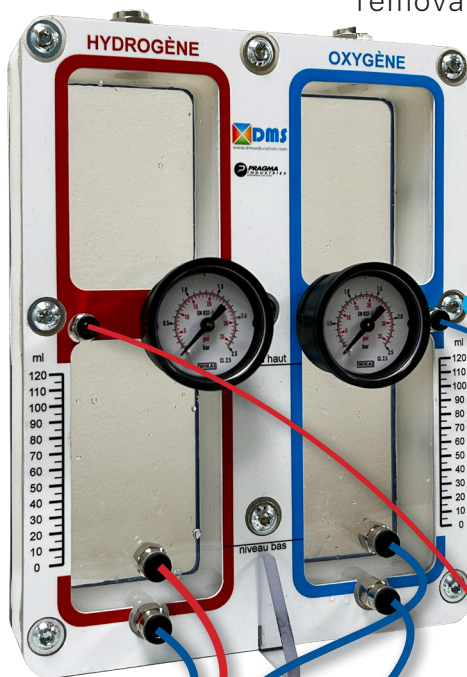
or

laboratory supplies

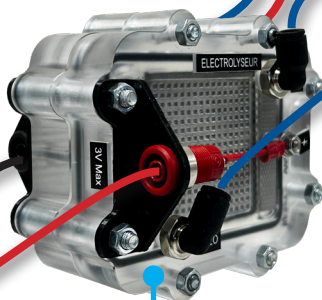
(protected against tampering)



Storage case included

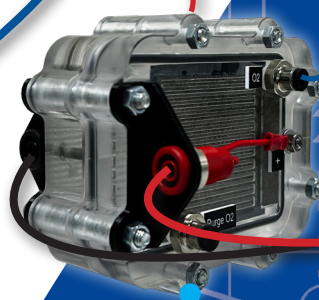


Phase separator  
with pressure indicator



Electrolyzer

- transparent bodies
- 12W / 4A at 3V



Closed-cathode

25cm<sup>2</sup> active surface  
transparent bodies  
5W/10A at 0.5V7



Expenses

HYDROGEN  
EDUCATION KIT :  
**ENERGY PACK**  
**CHAIN**



# DESCRIPTION

## Possible experiments

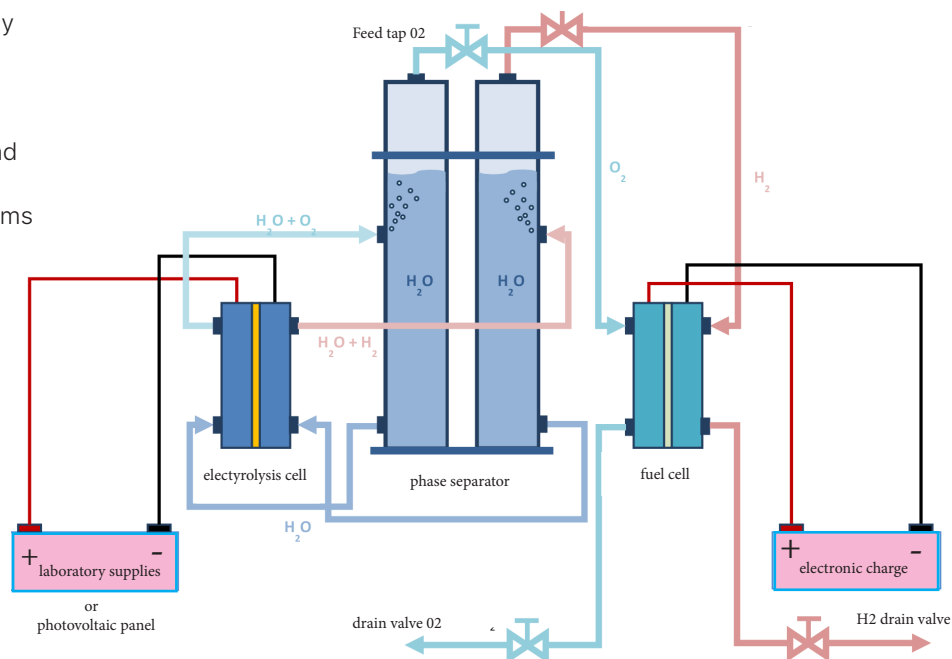
- Assemble the fuel cell, electrolyzer circuit and electrical circuit
- Understand how an electrolyzer of an electrolyzer
- Understand how a fuel cell works
- Draw the characteristic curves of a fuel cell
- Draw electrolyzer characteristic curves
- Understand energy conversion and energy yield calculation
- Measure the effect of the catalyst on fuel cell performance
- Observe and analyze water production and discharge
- Extend energy analysis to complete systems (renewable energy storage)

## Main features :

The "Chain-Energy" pack enables you to study hydrogen as an energy storage medium, from production to conversion in a fuel cell. The kit contains an electrolyzer and its power supply to produce hydrogen and oxygen. The gases produced are stored in a double tank before being consumed and converted back into electricity by the fuel cell.

The electrolyzer's power supply can be replaced by solar panels to create a completely renewable energy chain. An electric motor can also be used to replace the load for a practical demonstration.

Specifications	
Active surface	25 cm <sup>2</sup>
Electrolyser power	Max.30W /10A at 3V
Battery power	Max. 7W /15A at 0.4V
H <sub>2</sub> /O <sub>2</sub> storage capacity	2 x 120 mL
Max. pressure of buffer tank	0 - 2.5 barg
Electrolysis cell	Column channels
Cell channel type	single coil
Laboratory power supply charging mode	Voltage range (0 - 15V) Current range (0 - 10A)
Battery charge control mode	Constant voltage (0 - 1.2V) Constant current (0 - 20A)



## Supplements

### ClearPak cell with multi-coil channels

Product code CPK 103

Complete Clear Pak cell with 5-coil gas distribution channels. Supplied with current collectors, gaskets, polycarbonate compression plate, screws and gas connection. Membrane Electrode Assembly (EME) not included.



### ClearPak cell with parallel channels

Product code CPK 104

Complete ClearPak cell with parallel gas distribution channels. Supplied with current collectors, gaskets, polycarbonate compression plates, screws, gas connections. Membrane electrode assembly (EME) not included.



### ClearPak cell with interlaced channels

Product code CPK 105

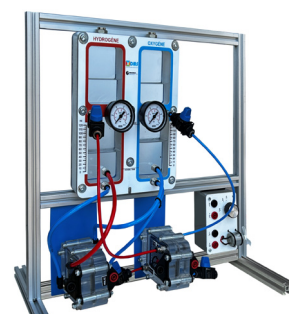
Complete ClearPak cell with interlaced gas distribution channels. Supplied with current collectors, gaskets, polycarbonate compression plates, screws, gas connections. Membrane electrode assembly (EME) not included.



## TO ORDER

The «Pack Energy Chain» teaching system is available as part numbers

- The reference [SIDD7050](#) includes system, accessories and accompanying documentation.
- The reference [SIDD7055](#) for a kit of 2 multi-coil cells, [SIDD7056](#) for a kit of 2 parallel-ribbed cells and [SIDD7057](#) for a kit of 2 interlaced ribbed cells.
- The reference [SIDD7054](#) includes "current clamp" add-on.
- The reference [SIDD7059](#) includes additional power supply by photovoltaic panel.
- The reference [SIDD7050](#) includes mounting frame (not mandatory).



non-binding document



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