



ultra light composite cylinders



PRODUCT – DESIGN AND FEATURES

Ultralight SAFER® composite gas cylinders feature a PET liner reinforced with carbon and Kevlar® aramid fibres.

The cylinders provide high mechanical strength and resistance to high pressure and impact.

An external protective epoxy resin layer provides protection against extrinsic factors and easy cleaning.

Use of both the PET liner and the Kevlar® fibres has allowed Techplast to greatly reduce the cylinder weight - even by 65% compared to commonly used standard steel cylinders. Improved cylinder strength is an additional advantage.

PET features high barrier properties to guarantee safe gas storage (e.g. oxygen) in SAFER® gas cylinders. The liner protects the cylinder against reaction with gas thus preventing corrosion.

The gases stored in the cylinders are kept clean and user safe. The cylinders are the perfect solution for rescue teams, medical rescue teams and divers.



PRODUCT FEATURES

Use of the highest quality materials (e.g. Kevlar® fibres and PET liners) provides the following SAFER® cylinder properties:

- **Comfort** – significant reduction of cylinder weight for easy use in rescue operations for fast and comfortable movement in hazardous areas.
- **Lightweight** – SAFER® cylinders are more than three times lighter than the steel cylinders which is a major advantage for storage of industrial gases. It allows gas cylinder handling without the use of heavy lifting equipment.
- **High resistance to gas temperature changes** inside the cylinder (gas does not heat since the materials used are non-conductive).
- **Gas purity inside the cylinder** – no hazard to user health
- **Electrical insulation ensures** the fire fighters' safety.
- **Resistance to impact and abrasion** (transport, storage and delivery).
- **Good gas barrier properties** (e.g. oxygen)
- **Smooth and easy to maintain surfaces.**



Lightweight SAFER® gas cylinders can be used in rescue operations where reduced equipment weight is of an advantage. Verified effective back and neck protection.



PET liner is an excellent thermal insulator. The gas inside the cylinder does not heat and the rescuers do not breathe warm air.



PET liner protects the cylinder against reaction with gas thus preventing corrosion. The gases stored in the cylinders are kept clean and user safe.



Made with the highest quality materials, SAFER® gas cylinders provide excellent electrical insulation and protection against electric shock.



KEVLAR® INNOVATION AWARD

DuPont™ oraz Kevlar® są zastrzeżonymi znakami handlowymi lub znakami handlowymi firmy DuPont bądź jej spółek

The company has been awarded the Kevlar® Innovation Award 2012 by DuPont™ for its high quality and innovative products.

LEADING TECHNOLOGY

SAFER® are manufactured and tested using automated, computer controlled processes. Continuous reinvestment in the plant and the equipment ensures that our cylinders are manufactured and tested in accordance with the most technologically advanced processes available. Automatic data acquisition allows full traceability of materials used and the effective monitoring of critical process parameters.

All products are TÜV certified. The cylinders are manufactured to PN-EN 12245:2009 and meet all the requirements and specifications for use in breathing apparatus, storage of different gases: air, oxygen, nitrogen and carbon dioxide.



WIDE RANGE OF PRODUCTS

Techplast offers full range of 300 bar composite gas cylinders. The cylinders are available in 1.2L to 9L sizes. The technology and the research works allowed the development of products with the service life of 15, 20 and 30 years. 6.8L and 9.0L size cylinders are also available in NLL version.

PRODUCT	WEIGHT	DIAMETER	LENGTH	WORKING PRESSURE	SCREW THREAD	SERVICE LIFE (Years)			WARRANTY (months)
						20	30	NLL	
2.0L	1.10 kg	116 mm	321 mm	300 bar	M18 x 1,5	x			24
3.0L	1.60 kg	116 mm	445 mm	300 bar	M18 x 1,5	x			24
4.3L	2.20 kg	116 mm	586 mm	300 bar	M18 x 1,5	x			24
4.7L	2.40 kg	158 mm	400 mm	300 bar	M18 x 1,5	x	x	x	24
6.8L	2.80 kg	158 mm	526 mm	300 bar	M18 x 1,5	x	x	x	24
6.9L	2.80 kg	158 mm	526 mm	300 bar	M18 x 1,5	x	x	x	24
7.0L	2.80 kg	158 mm	526 mm	300 bar	M18 x 1,5	x	x	x	24
9.0L	3.80 kg	174 mm	576 mm	300 bar	M18 x 1,5	x	x	x	24

PERMEABILITY

CONDITIONS: TEMPERATURE 25°C
PRESSURE: 1 BAR
PERMEABILITY: 100%

GAS	PET (POLYETHYLENE TEREPHTHALATE ~100% AMORPHOUS)	HDPE (HIGH DENSITY POLYETHYLENE)	LDPE (LOW DENSITY POLYETHYLENE)	PVC (POLYVINYL CHLORIDE)	[m³stp/m³] x [m²/s]	
					[m³stp/m³]	[m²/s]
CO2	80 * 10 ⁻¹⁵	3500 * 10 ⁻¹⁵	9400 * 10 ⁻¹⁵	120 * 10 ⁻¹⁵		
O2	51 * 10 ⁻¹⁵	780 * 10 ⁻¹⁵	2300 * 10 ⁻¹⁵	35 * 10 ⁻¹⁵		
N2	3,6 * 10 ⁻¹⁵	230 * 10 ⁻¹⁵	640 * 10 ⁻¹⁵	8,7 * 10 ⁻¹⁵		
H2	640 * 10 ⁻¹⁵	1900 * 10 ⁻¹⁵	7600 * 10 ⁻¹⁵	1300 * 10 ⁻¹⁵		
CO2	200 * 10 ⁻¹²	6800 * 10 ⁻¹²	18000 * 10 ⁻¹²	240 * 10 ⁻¹²		
O2	72 * 10 ⁻¹²	1100 * 10 ⁻¹²	3200 * 10 ⁻¹²	49 * 10 ⁻¹²		
N2	4,4 * 10 ⁻¹²	280 * 10 ⁻¹²	790 * 10 ⁻¹²	11 * 10 ⁻¹²		
H2	57 * 10 ⁻¹²	170 * 10 ⁻¹²	680 * 10 ⁻¹²	120 * 10 ⁻¹²		



www.safercylinders.net

Techplast Sp. z o.o.
Wieprz 267, 34-122 Wieprz
Poland