

# UBE

JAPANESE TECHNOLOGY

## UBE CO<sub>2</sub> Separator for biogas upgrading

Polyimide hollow fiber membranes for gas separation

### UBE membranes GREENIZE us

UBE started its basic research into materials for gas separation membranes in 1978. UBE extended its line-up of membranes and applications and installed the first UBE CO<sub>2</sub> Separator for purifying biogas in 1989.

Biogas is a renewable energy produced mainly from organic residues which can be energy crops, plant by-products, animal by-products, biowaste from households, etc., mainly comprising CH<sub>4</sub> and CO<sub>2</sub>. UBE's CO<sub>2</sub> Separator purifies the biogas, converting it into biomethane (CH<sub>4</sub>) and efficiently collecting CO<sub>2</sub>.

### Product Specification



Biomethane purified up to 99,5%



Thermal and Chemical resistance



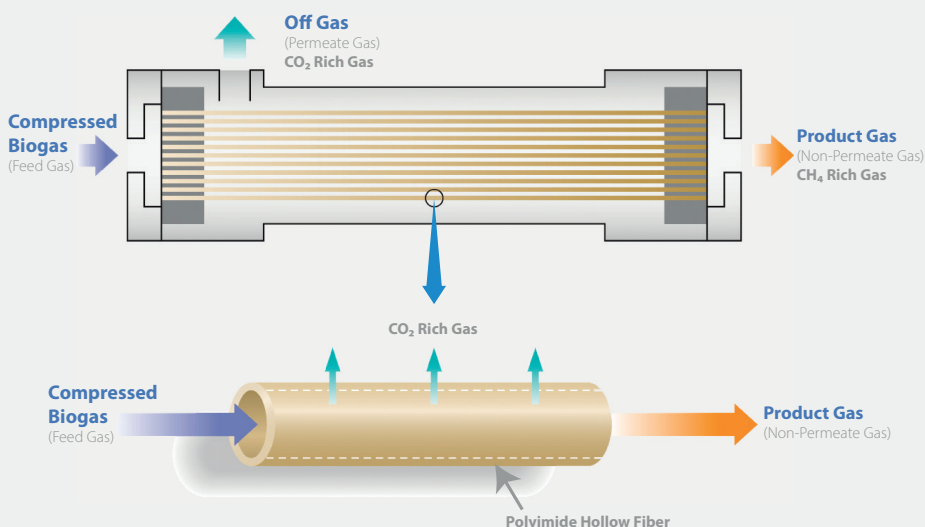
High selectivity, biomethane recovery up to 99,8%



Compact < Reduced amount of membranes



Low energy consumption



#### ★ UBE CO<sub>2</sub> Separator has superior productivity, selectivity & durability

UBE has extensive knowledge in polymer chemistry as a chemical company with long history, UBE infuses its CO<sub>2</sub> Separator with our latest polyimide technologies and produces from a monomer for polymerizing polyimide as the fiber membrane material.





#### ✓ Structure of UBE CO<sub>2</sub> Separator

UBE CO<sub>2</sub> Separator contains hollow fiber membranes. When compressed biogas flows into the hollow fibers, molecules with higher permeability rates for the membranes, such as CO<sub>2</sub>, H<sub>2</sub>O, O<sub>2</sub>, and H<sub>2</sub>S, pass through the membranes earlier than gases with lower permeability rates, such as CH<sub>4</sub>. The result of the differences in permeability rates is that highly purified CH<sub>4</sub> is obtained after passing through UBE CO<sub>2</sub> Separator.

*"Wings of technology and spirit of innovation."*

*Less waste for the earth,  
more energy for the future*

## UBE CO<sub>2</sub> Separator line up

	MODEL		Max. Operating Conditions	Weight (kg)	Dimensions (mm)
	HIGH PRODUCTIVITY	HIGH SELECTIVITY			
<b>HOUSING TYPES</b>	CO-C07F	CO-C07FS	60°C 14barg	4.2	
	CO-510F	CO-510FS	60°C 14barg	16	
<b>CARTRIDGE TYPES</b>	CC-1610NFH	CC-1610SEH	60°C 24barg	19	
	CO-810FC	CO-810FSC	60°C 24barg	23	

## Product Specification and Features

<b>Hollow Fiber</b>	<b>Polyimide Resin</b>
<b>Housing</b>	<b>Aluminum</b>
<b>Operating Pressure</b>	Housing type - Max. 1.4 MPaG Cartridge type - Max. 2.4 MPaG
<b>Operation Temperature</b>	<b>up to 60°C</b>
<b>H<sub>2</sub>S resistance up to 3 vol %</b>	



-  Long life
-  Resistant to high temperatures, chemicals and fluctuating operating conditions
-  Simple operation
-  Modular configuration & easy scale-up
-  No mechanicals moving parts & no maintenance required
-  Eco-friendly: water & chemical-free
-  Generation of dried, compressed biomethane
-  UBE CO<sub>2</sub> Separator has superior productivity, selectivity & durability