





PRODUCT ID

Formula	$[\text{COOCH}_2\text{OCH}(\text{CH}_3)_x[\text{CH}_2\text{OCH}(\text{CH}_3)]_y\text{OH}$	CAS nr.	NA
Molecular weight (g/mol)	700 to 15 000	EC nr.	polymer

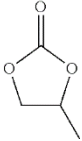
VISUAL CLASSIFICATIONS

Market	Energy requirement	Maturity	Price
			

KEY MARKET DATA

Market size (ton/year)	10 millions	
Product price (€/ton)	1500	
CO <sub>2</sub> uptake potential (ton/ton product)	0,2	
CO <sub>2</sub> uptake potential (ton/year)	2 millions	2,4 reference plants 0,2% capture target (1.05Gt/year)
State-of-the-art production technology	Alkoxylation between an alcohol and an epoxide, e.g., ethylene glycol and propylene oxide	

TECHNOLOGY ROUTE: POLYMERIZATION

TRL = 9	Example of commercial product: Covestro's Cardyon®	
Reactions		
<p>Starter + CO<sub>2</sub> + PO →</p> $\text{Starter} \left( \text{O} - \overset{\text{O}}{\parallel} - \text{O} - \underset{\text{H}_2}{\text{C}} - \underset{\text{CH}_3}{\text{CH}} \right)_x \left( \text{O} - \underset{\text{H}_2}{\text{C}} - \underset{\text{CH}_3}{\text{CH}} \right)_y \text{OH} +$ 		
Reaction conditions		
Temperature	100-150	°C
Pressure	5-50	Bar
Catalysts	Double metal cyanide (DMC)	
Reaction time	20	Minutes
Selectivity	94%	

For sources and definitions, please consult the original report at the [CEMCAP WEBSITE](#)

