

QPAC® Poly (Alkylene Carbonate)**Product Overview:**

Poly(alkylene carbonates) are synthesized through the polymerization of carbon dioxide and epoxides. The products of their combustion are carbon dioxide and water vapor, which are non-toxic, non-flammable, and environmentally safe. They burn cleanly in any environment, oxidizing or inert. They are colorless, organic polymers with low glass transition temperatures.



Pelletized QPAC 40

Poly(alkylene carbonates) are uniquely suited for use as direct pore formers.

Here's why:

- QPAC decomposes completely by 300°C in any environment.
- Upon decomposition, QPAC leaves very low ash residue with the complete burn-out of carbon.
- QPAC is available in a range of molecular weights. Standard QPAC has a range of 220,000 - 300,000 Mw.
- QPACs are amorphous thermoplastics.
- QPAC will solubilize completely and homogeneously to form a true solution.
- QPAC is available in many forms, including fine powder, granulate, pellets, solution, and water-based emulsions.
- QPACs have excellent film-forming and coating capabilities.

Applications for QPAC Pore Formers

- Ceramic Thin Films
- Mesoporous Carbon Composites
- Mortars, Concrete and Artificial Stone
- Titanium Structures
- Thermoplastic Films and Stock Shapes
- Foams and Tapes

Properties of QPAC Grades**QPAC® 25 - PEC - poly(ethylene carbonate)**

Density	1.42
Chemical formula	$[\text{CH}_2\text{CH}_2\text{OCO}_2]_n$ or $\text{C}_3\text{H}_4\text{O}_3$
Heat of combustion	3,753 cal/gram
Solubility	Methylene chloride, Chloroform, and 1,2 Dichloroethane
Tg	25°C

QPAC® 40 - PPC - poly(propylene carbonate)

Density	1.26
Chemical formula	$[\text{CH}_3\text{CHCH}_2\text{OCO}_2]_n$ or $\text{C}_4\text{H}_6\text{O}_3$
Heat of combustion	4,266 cal/gram
Solubility	Propylene carbonate, Methylene chloride, and Acetone
Tg	40°C

100 Interchange Boulevard ♦ Newark, DE 19711 ♦ USA
 (302) 452-6607 ♦ Fax (302) 452-6610
 contact: Sugianto Hanggodo
 email: sugiantohanggodo@empowermaterials.com
 www.empowermaterials.com