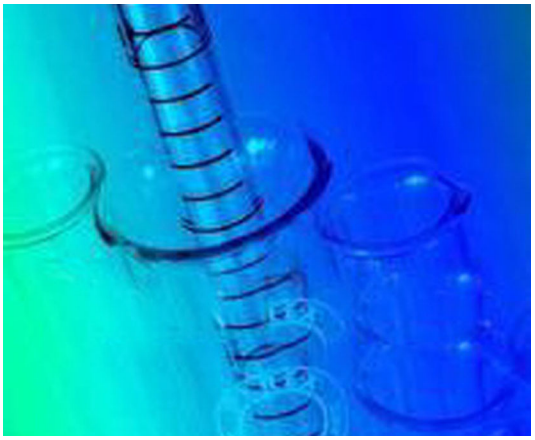
Binders for Brazing

QPAC®25 & QPAC®40



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, amorphous thermoplastic polymers with low glass transition temperatures.

QPAC is ideally suited for use as binders in brazing pastes and solutions. Here's why:

- QPAC is compatible with a variety of filler metals.
- QPAC's viscosities and molecular weights can be custom-tailored for specific solution or paste requirements.
- Both grades of QPAC are naturally "tacky" and their degrees of plasticity can be adjusted as necessary.
- Decomposition is complete through three phases: solid, liquid, and vapor.
- Upon decomposition, QPAC leaves very low ash residue with the complete burnout of carbon.
- QPAC decomposes completely between 250°C and 300°C, which can be as much as 100°C below the decomposition temperatures of other binders.

Properties of QPAC formulations:

QPAC® 25 - PEC - poly(ethylene carbonate)	
Density	1.42
Chemical formula	$[CH_2CH_2OCO_2]_n$ or $C_3H_4O_3$
Tensile strength	500 - 1,500 psi
Solubility	Methylene chloride, Chloroform, & 1,2-Dichloroethane
Tg	25°C

QPAC® 40 - PPC - poly(propylene carbonate)	
Density	1.26
Chemical formula	$[CH_3CHCH_2OCO_2]_n$ or $C_4H_6O_3$
Tensile strength	5,000 - 6,000 psi
Solubility	Methylene chloride, MEK, Acetone & Propylene carbonate
Tg	40°C

Other QPAC Binder Applications:

- Diamond Powder Bonding
- High Energy Capacitors
- Air Bag Inflator Propellants
- Thick Film Inks
- Die attach adhesives
- Ceramic Fiber Processing

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