ENGINEERED MATERIAL SOLUTIONS

COMPOSITE TECHNOLOGY DEVELOPMENT, INC.

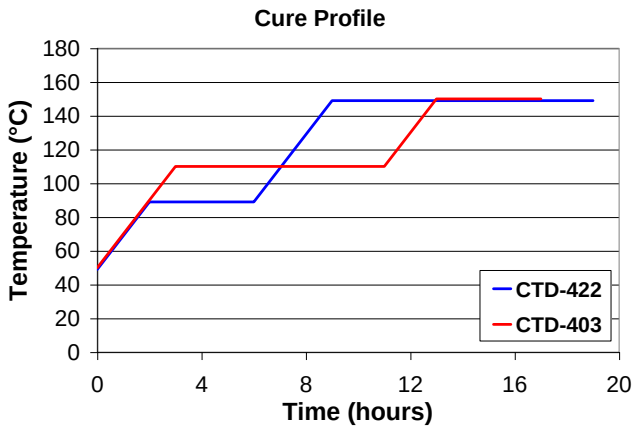
CTD-400 Series Cyanate Ester Resins

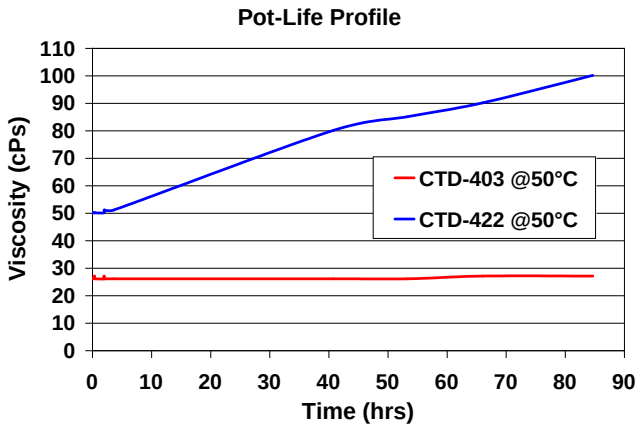
High Performance, Radiation-Resistant Polymers

- **Long pot life and low viscosity**
- **Dielectric breakdown strengths > 90 kV/mm at 77 K**
- **Excellent mechanical performance at cryogenic temperatures**

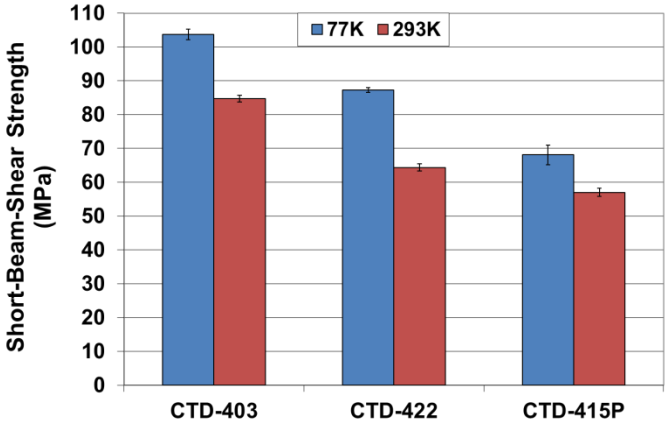
Processing Information

Material	CTD-403	CTD-422	CTD-415P
Processing	VPI	VPI	Hot-melt prepreg
Processing Temperature	30 – 50°C	30 – 50°C	80°C
Viscosity at Processing Temperature	25 – 75 cP	50 – 100 cP	1000 cP
Pot-Life at Processing Temperature	> 80 hours	> 48 hours	6 hours
Cure Cycle	8 hrs @ 110°C 4 hrs @ 150°C	4 hrs @ 90°C 6 hrs @ 150°C	4 hrs @ 190°C 6 hrs @ 245°C



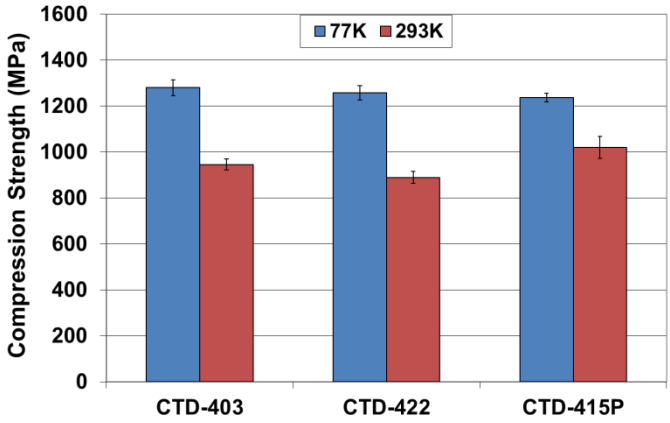


Compression and Shear Strength (w/ 50% Vf S2-glass)

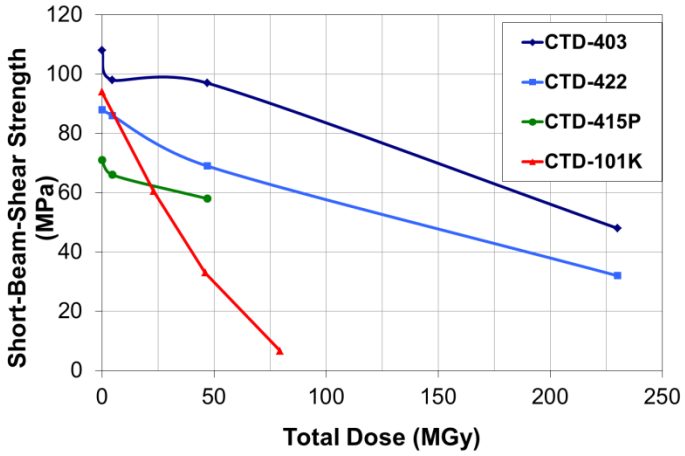


Offers excellent cryogenic shear strength along with higher temperature capability

Offers excellent cryogenic compression strength along with higher temperature capability



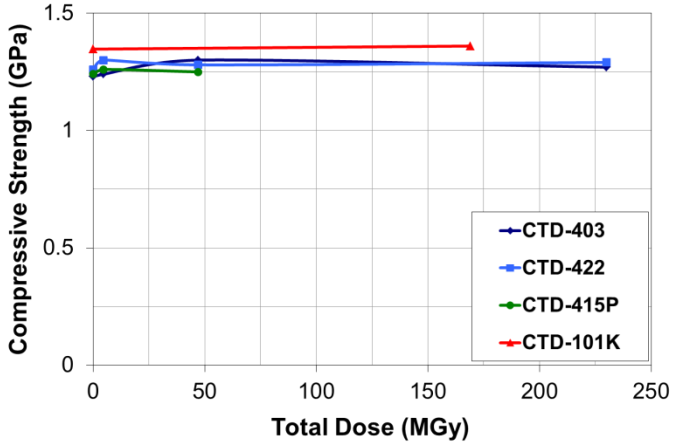
Performance after Gamma and Neutron Radiation Exposure



Excellent shear and compression performance after exposure to high levels of neutron and gamma radiation.

Insulation irradiations at Atomic Institute of Austrian Universities (ATI)

- TRIGA reactor at ATI (Vienna)
- 80% gamma, 20% neutron
- 340 K irradiation temperature



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