

# 315°C LOW VISCOSITY EPOXY

## Resists Electricity, Chemicals and Moisture

### 315°C- Duralco™ 4460

Duralco Low Viscosity Adhesives were formulated with Cotronics' unique, polymer system to provide the ultimate in high temperature chemical, electrical and moisture resistance. They have superior adhesion and can easily forms protective coatings, with 315°C service.

Duralco Epoxies offer high bond strength, high temp. stability, low moisture absorption and low shrinkage.

They are 100% solid systems.

User friendly.

No volatiles. Low odor. No VOC's.

Duralco 4460 low viscosity, liquid adhesive forms ultra-thin bond lines and is ideal for impregnating, coating and encapsulating.

4460 has the chemical, electrical and radiation resistance that is often required in the most critical applications.

This Unique Polymer System can be used up to 315°C after a heat cure at moderate temperatures.

#### Users Report:

##### Ultra Thin Bond Lines

- Transducers bonded with 0.0127mm of Duralco 4460 provided strengths of 2000 psi at 205°C.

##### Impregnates Fine Structures

- Used to impregnate composite cloths to form custom high temperature, high strength wave guides.
- Penetrates tightly wound wire coils for electronic high temperature applications.
- Successfully encapsulates induction coils for high temperature pressure sensors.
- Seals and protects cable end seals against corrosion and high heat.

**Applications Include:** bonding, sealing, encapsulating and protecting cable end seals, thermocouples, strain gauges, critical electronic components, electric heaters, flow meters, glass lined tanks, etc.

Duralco 4460 is Commonly found in aerospace, electronic, appliance, instrumentation and equipment applications.

#### Availability:

Cat #	Description	Temp.
Duralco 4460-1.....	Pint Trial Kit.....	315°C
Duralco 4460-2.....	Gallon Kit.....	315°C

#### Pre-Measured Kits

Each Unit Contains: 1 jar of resin, 1 syringe of hardener and 1 mixing stick. (see page 19 for details)

EE 4460-10	...10 Epox-Eez	10 gm units/box
EE 4460-25	...10 Epox-Eez	25 gm units/box

**Quantity Prices and Custom Formulations**

**Available on Request**



**4460 Fully Impregnates a High Temperature Coil**



**4460 Penetrates and Encapsulates a Tightly Wound Coil**



**4460 Coats. Moisture Proofs.**

Duralco™	Units	4460
<b>Maximum Temp</b>	<b>°C</b>	<b>315</b>
Components	Color	2-Amber
Mixed Viscosity	cps	1,600
Hardness	Shore 'D'	90
Tensile Strength	psi	10,300
Thermal Conductivity	Btu-in/ Hr. Ft <sup>2</sup> F	4
Thermal Expansion	10 <sup>-5</sup> /°C	5.4
Dielectric Strength	volts/mil.	500
Volume Resistivity	ohm-cm	10 <sup>14</sup>
Heat Distortion	°C	260
Elongation	%	5
Thermal Stability	% 1000 hrs. @ 200°C	0.10
Shrinkage	% max.	0.5
Moisture Absorption	% after 30 Days	0.1
Mix Ratio	R / H	100/80
Cure	Hr. @ 120°C	4

# 260°C ROOM TEMP CURING, LOW VISCOSITY EPOXY

## Bonds, Coats, Seals and Protects

### 260°C - DURALCO™ 4461

*Ultra Thin Bond Lines*

*Seals Porous Materials*

*Impregnates Fine Structures*

*Forms Protective Coatings*

Duralco Low Viscosity Adhesives are formulated with Cotronics' unique polymer system to provide the ultimate in high temperature chemical, electrical and moisture resistance.

They are user friendly, 100% solid formulations.

No volatiles. No VOC's. No harsh odors.

Duralco 4461 is a free flowing, liquid adhesive that is ideal for forming ultra thin bond lines, impregnating, coating and encapsulating applications.

Has excellent adhesion to metals, plastics, ceramics, glass, etc.

Cures at room temperature to provide chemical, solvent and corrosion resistance in any high temp. application.

Can be used up to 260°C as a protective coating for coils, filament windings, electronics, etc.

It is an ideal choice for high temperature applications in electronics, optics, instrumentation, etc.

#### Users Report:

Fiber Optic Cables consisting of 3,000 glass strands were encapsulated, and bonded, with 4461 in a 3.175mm stainless steel tube. The low viscosity of 4461 enabled full penetration in and around the fiber stands.

4461 Bonds optical components and protects them from moisture absorption and transmission.

4461 Pots a transformer for high temperature service.



**4461 Penetrates and Encapsulates  
A Semi-Conductor Device**



**4461 Bonds an Optical Component**



**4461 Potting a Transformer  
for High Temp. Use**

#### Availability:

Cat. No.	Description	Temp.
Duralco 4461-1.....	Pint Kit .....	260°C
Duralco 4461-2.....	Gallon Kit.....	260°C
Duralco 4461IP-1.....	Pint Kit .....	260°C
Duralco 4461IP-2.....	Gallon Kit.....	260°C

#### 4461SS, New, Slow Setting Version

*Ideal for large volume potting and casting applications.*

Duralco 4461SS-1.....	Pint Trial Kit.....	260°C
Duralco 4461SS-2.....	Gallon Kit.....	260°C

#### Pre-Measured Kits

*Each Unit Contains: 1 jar of resin, 1 syringe of hardener and 1 mixing stick. (See page 19 for details)*

EE4461-10.....	10 Epox-Eez 10gm units/box
EE4461-25.....	10 Epox-Eez 25gm units/box
EE4461IP-10.....	10 Epox-Eez 10gm units/box
EE4461IP-25.....	10 Epox-Eez 25gm units/box

Duralco™ Maximum Temp	4461 260°C	4461IP 260°C
Components - Color	2-Amber	2-Amber
Mixed Viscosity (cps)	3,600	4,800
Hardness (Shore D)	85-95	90
Tensile Strength (psi)	9,500	10,350
Thermal Conductivity (BTU-in/Hr. F <sup>2</sup> /F)	4	4
Thermal Expansion (10 <sup>-5</sup> /°C)	5.40	5.40
Dielectric Strength (volts/mil. )	450	425
Volume Resistivity (ohm-cm )	10 <sup>13</sup>	10 <sup>13</sup>
Heat Distortion (°C)	210	210
Elongation (%)	5	5
Thermal Stability (% 1000 hrs @ 200°C)	0.20	0.20
Shrinkage (% max.)	0.80	0.80
Moisture Absorption (% after 30 Days)	0.15	0.15
Mix Ratio (R/H)	100/17	100/25
Cure (Hr. @ R. T.)	16-24*	16-24*
Optimum properties post cure hrs. @ 120°C and hrs. @ 177°C	1 1	1 1

\* Cures can be accelerated with mild heat.