



# Epoxy Composite Solutions



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# Company Introduction



## PTT Global Chemical Public Company Limited



PTT Global Chemical Public Company Limited, or GC, Thailand's largest integrated petrochemical and refining business and a leading corporation in the Asia-Pacific region, both in size and product variety. GC has a combined olefins and aromatics capacity of 11.28 million tons/year. We committed to creating chemical innovations for a better future. We strongly support technological advances that meet today's lifestyles through products that span several sectors including automobiles, construction, medical products, electric and electronic equipment, agricultural products, environmentally friendly, and safe consumer products that benefit society and improve consumer satisfaction.

[www.pttgcgroup.com](http://www.pttgcgroup.com)

## PTT Phenol Company Limited



PTT Phenol Company Limited, or PPCL, is a subsidiary of PTT Global Chemical Company Limited (GC), Thailand's largest and Asia's leading integrated petroleum refining and petrochemical company. PTT Phenol is a sole producer of Phenol and Acetone in Thailand which committed to offer high quality of products and services to customers on global level.

PTT Phenol vision is "To be a leading phenol chain solution provider in Asia through innovation and sustainability"

## Solution Creation Company Limited



Solution Creation Company Limited, or SUN, a subsidiary of PTT Global Chemical Public Company Limited (GC), is a distributor of polymer compound which are high density polyethylene (HDPE), linear low density polyethylene (LLDPE), polypropylene (PP) and polystyrene (PS) compound including bioplastics and bioplastics compound.

## GC Logistics Solutions Company Limited



GC Logistics Solutions Company Limited, or GCL, a subsidiary of PTT Global Chemical Public Company Limited (GC). GCL is full logistics service for chemical business and other products. The services is including silo, bagging & packing, warehouse management, transportation, freight forwarding, and customs clearance etc. We are committed to strengthen our client's competitive advantage though high quality services, advanced technology and competitive cost.

[www.gc-logistic.com](http://www.gc-logistic.com)





# Product Introduction

## Business Trends

Epoxy resin is a thermosetting polymer formed by copolymerization of an epoxide with another compound having two hydroxyl groups. These resins are known for their enhanced performance in numerous industrial applications, owing to properties such as corrosion resistance, high thermal stability, superior mechanical strength, notable toughness, prolonged durability, resistance to chemical & moisture, and superior adhesion. Thus, epoxy resins majorly find their application across paints & coatings, adhesives, composites, and electronic encapsulation industries.

Epoxy composite business segments are divided into 3 main applications which are construction, sport equipment and electrical.

## Value Chain



### Applicator / Converter

#### Benefit to Applicators / Converter :

With our local sourcing supply, raw material shipment is shorter delivering time comparing to importing from oversea. Moreover, applicator and converter have a benefit from reliable supply due to domestically secured feedstock. Finally, applicator and converter get a prompt technical support from GC.

### End user

#### Benefit to End user:

End users benefit from quality end-product which manufactured from raw material that meet standard. Moreover, as bio-friendly raw material is less harmful to nature, end users would be a part to consume environmental friendly product which save the global environment. Overall, environmentally friendly products will result in sustainable business in long run.



## How to Handling and Storage

### Handling

- Avoid Temperatures of 100°F (≈ 40°C) or above.
- In accordance with good industrial practice, handle with care and avoid unnecessary personal contact.
- Use with adequate ventilation. Avoid breathing dust, vapor, mist or gas.
- Avoid contact with eyes, skin and clothing.
- Avoid ingestion and inhalation. Avoid prolonged or repeated exposure.
- Avoid physical damage to the container.
- Container is not designed to contain pressure.
- Do not use pressure to empty container or it may rupture with explosive forces.
- Empty containers remain product residue, (liquid and/or vapor), and can be dangerous.
- Ground and bond containers with transferring material.
- Take necessary action to avoid static electricity discharge.
- No smoking, eating and drinking water at workplace.

### Storage

- Store container in a cool, dry and well-ventilated air under the roof place.
- Away from incompatible substances and strong oxidizing agents.
- Store in tightly closed container.
- Do not store at elevated temperatures.
- Keep away from sources of ignition.
- Container, which are opened must be carefully released and kept upright to prevent leakage.
- Avoid storing product in a direct sunlight for extended periods of time.
- Keep out of reach of children.

## GRADE Selection

Properties	Test Method	Grade Lapox AR-101	Grade E211-S	Grade H431-T*	Grade H441-T*	Grade H6141-S**
Viscosity at 25oC (cP)	ASTM D2196	11,000 - 14,000	750 - 850	75 - 150	150 - 250	450 - 550
Density (g/cm3)	ASTM D1475	1.15 - 1.16	1.12 - 1.13	1.20 - 1.22	1.20 - 1.22	1.15 - 1.16
Gardener color	ASTM D1544-04	1	1	< 8	< 8	< 1
Curing time (min)	Customer STD. method	-	-	-	-	52 - 55
Curing time at 150°C (min)	Customer STD. method	-	-	10.30 - 11.30	7.30 - 8.30	-
Business Segment		Construction & Electrical	Sport Equipment	Electrical	Construction	Sport Equipment

\* Mixing with Lapox AR-101 = 100:85 w/w

\*\* Mixing with E211-S = 100:57 w/w