



# Standing Guard Against Chemical Attack

## The **ANTICOR** Series

High Performance Chemical Resistant Resins For Chemical Industry

C'POL Innovations  
From



**CREST COMPOSITES & PLASTICS PVT. LTD.**

## STANDING GUARD AGAINST CHEMICAL ATTACK

**CREST COMPOSITES**, one of India's most respected and leading companies in the arena of composites and polymer resin technology, offers a wide and diverse range of exclusive and high quality solutions for resin applications.

The company has an established presence, both in the country and abroad, and are known as innovators. With extensive R&D operations as one of its key areas, **CREST COMPOSITES** is ideally positioned to develop unique tailor made products and solutions to meet user specific requirements and provide them with higher value.

Based in Kheda, Gujarat, **CREST COMPOSITES** has, in the last decade, been a pioneer in the areas of providing innovative and customized solutions and has been the path breaker of many original and distinctive products. Its long list of delighted customers is in itself a testimony to the company's commitment to quality and surpassing clients' objectives and expectations.

Keeping pace with a rapidly advancing world, **CREST COMPOSITES** has technical collaborations with internationally reputed premier resin manufacturers to ensure they are always updated with the latest and best in resin technology.

## Chemical Attack –

The omnipresent nemesis of process industries

One of the main problems faced by process industries as well as many other industries is corrosion of metal – mainly due to either handling of chemicals or due to a corrosive chemical environment.

Wherever metals are the basic material of construction, they are susceptible to chemical attack and the resulting corrosion eventually causes failure of the unit – whether it be equipment, machinery or storage and transport containers / vessels.

In many cases, special alloys have been used to overcome corrosion problems. However, other than being of limited durability, these are always a high cost option and prohibitive in many cases.

The urgent need for the chemical industry therefore, is to use alternate materials that would ensure –

- Resistance to chemical attack
- Long service life
- Value for money economics
- Environmental compliance

The chemical industry therefore, needs to zero down on a material of construction for equipment, pipes, ducting, grating, containers etc. that can withstand tough industrial & chemical environment and at the same time be cost effective.

## Fibreglass Reinforced Plastics (FRP)-

The answer to corrosion

Over the past few years, FRP has emerged as a highly viable material of choice. Its resistance, properties against a vast array of chemicals makes it an ideal material of construction for a wide range of use in chemical environment.

A few of the advantages of FRP –

- Resistance to chemical attack
- Light weight & Attractive appealing aesthetics
- Fire resistance, if required
- Ability to withstand high temperature
- Low Thermal conducting
- Electrically Non-conductive
- Low Maintenance
- Easy to assemble & install
- Low installation costs
- Long life performance
- Easily mouldable
- High strength

**CREST COMPOSITES** has carved a unique niche for itself in the world of composite resins, not just by being diligent, but also, by being distinctively different.



## THE ANTICOR Series – VITAL INGREDIENT TO COMBAT CORROSION

For ensuring the quality of the FRP chemical equipment, a critical parameter is the choice of unsaturated polyester resin / vinyl ester resins that forms the main matrix material in the FRP composition.

**CREST COMPOSITES** offers different families of resins to combat chemical corrosion. Extensive R&D and application oriented product development ensures that the **ANTICOR** Series are resistant to a broad band of chemicals and their attack.

The chemistry of steric hinderance, aromatic moiety, crystallinity modification etc is exploited completely to enable maximum resistance to a given chemical environment. Some of the different families of resins available in the **ANTICOR** series are discussed below –

### THE VINYL ESTER RANGE

These are ester derivations of Epoxy Resins based on Bisphenol-A, Novalac, and Cresols etc. and combine the advantages of both Epoxies and Polyesters - possessing higher flexibilities like Epoxies and ease of processing like Polyesters.


Depending on the chemistry, vinyl ester resins offer outstanding resistance to acids, alkalis, organic solvents at room and elevated temperatures. A brominated version with flame retardant properties is also available.

**Crest Composites offers the following products in its Vinyl Ester Range:**

- **C'POL-A701** : For Chemical Equipments where strong acids and bases are encountered and increased toughness is desired.
- **C'POL-A711** : Recommended as above but has higher HDT & even better chemical resistance than C'POL 701; reduced styrene emission.
- **C'POL-A731** : Excellent resistance to chemicals, solvents, oxidizing media, strong acids and bases; excellent high temperature properties.
- **C'POL-A751** : For equipment requiring corrosion resistance and toughness of Vinyl Ester Resin with excellent flame retardant properties.

*Detailed specifications of all products are available on request.*

Modified versions of Vinyl ester resins for filament winding, resin transfer moulding (RTM), primer application are also available.



Behind every successful FRP is an effective and correct resin.

### THE ISOPHTHALIC / TEREPHTHALIC RANGE

UPR manufactured using Purified Isophthalic acid possess excellent resistance to water and host of corrosive chemicals such as dilute acids, petroleum products and salt solutions. Terephthalic acid based resin exhibits similar chemical resistance performance but are distinctive in possessing higher HDT.

To impart maximum chemical resistance, some of the products are manufactured by a two stage azeotropic process using higher versions of glycol and low unsaturation concentration.

Some of the products in the ISO/TER range are as under.

- **C'POL-A301** : Recommended for resistance to water & host of corrosive chemicals such as dilute acids and salt solutions.
- **C'POL-A331** : Recommended for corrosion resistance application as above.
- **C'POL-A361** : Recommended for superior hydrolytic stability, chemical resistance and higher HDT requirement.
- **C'POL-A231** : Recommended for corrosion resistance to water, dilute acids and salt solutions.
- **C'POL-A241** : Recommended for superior hydrolytic stability, chemical resistance and higher HDT requirements.

*Detailed specifications of all products are available on request.*

### BISPHENOL POLYESTER

Improved chemical resistance can be obtained by the use of aromatic diols such as propoxylated bisphenol A in place of conventional diol. Similar to vinyl ester resins, they offer outstanding resistance to acids and alkalies at room and elevated temperatures.

The **ANTICOR** series has the following resin in the above category.

- **C'POL-A601** : Recommended for equipments where strong acids and bases are encountered, especially in chlor-alkali industry.

## Innovation and product development – The R&D Focus

Recognising corrosion and damage due to chemical attack as a major issue being faced by industry, **CREST COMPOSITES** has made this as one of its focus areas. With a background of extensive research and understanding customers' requirements, the company's **C'POL** range is ideally suited to combat corrosion.

**Crest Composites** has always been driven by a basic philosophy – to go beyond producing and selling run-of-the-mill products and to move up the value chain by providing innovative and customised solutions and answers to customer requirements. Basic research is being done on development of high performance vinyl and polyester resin to combat extreme conditions in the chemical industry.

**Product development and solutions** always being in the spotlight, **CREST COMPOSITES** has extensive **R&D operations** – one of the key areas of the Company. The state of the art R&D facilities with its team of committed and competent experts from the field of polymers and resins, form the hub of the Company's operations and focus on developing –

Exclusive tailor made products and solutions to meet user specific requirements.  
Unique and new products that would provide higher value to the user.

### DICYCLOPENTADIENE (DCPD) MODIFIED POLYESTER RESIN

In DCPD resin, the end groups are predominantly DCPD molecules with residual unsaturation in the cyclopentyl ring that does not participate in the addition reaction. The cyclic hydrocarbon contributes to low volume shrinkage, better corrosion resistance, moisture resistance, high temperature performance and reduced monomer emission.

**CREST COMPOSITES** offers the following DCPD modified resin in the **ANTICOR** series.

- **C'POL-A631**: Recommended for superior resistance to water, dilute acids, salt solutions at room and elevated temperature.

### The End User Industries Spectrum

**Crest Composites'** C'POL range and its **ANTICOR** series of chemical resistant grades have been and is a preferred choice of the chemical industry since 1995. Some of the most prestigious chemical and process industries of India have specified C'POL resins for their applications and rely on **CREST COMPOSITES** to provide the fundamental quality they require. C'POL resins are being successfully used for a diverse range of applications by a wide spectrum of end users in the chemical industry–

- Caustic-chlorine
- Viscose
- Metal refinery
- Paper and pulp
- Petrochemicals
- Industrial Waste Treatment
- Pollution Control
- Pharmaceutical
- Dyes & Intermediates
- Fertilizers
- General Chemical Process Industries
- Food & Beverages (Food Grade)

*A partial list of our esteemed clients and partners is available on request.*



**CREST COMPOSITES &  
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