

# CRESTAPOL<sup>®</sup> 1080

## Introduction

Crestapol 1080 is a tough, flexible, unsaturated urethane acrylate in styrene monomer. It is an excellent base for the formulation of high performance, impact resistant adhesives, and is compatible with most unsaturated polyesters.

## Formulation

Crestapol 1080 has been formulated to give an adequate working time when cured with Catalyst M (Butanox M50) and Accelerator E. Curing should not be carried out at temperatures below 15°C. The resin and workshop should both be at, or above, this temperature.

## Pot Life

Crestapol 1080 has a typical pot life of 50 mins at 25°C with 2% Catalyst M (Butanox M50) and 4% Accelerator E.

## Applications

Crestapol 1080 is extremely versatile, and will cure to a highly adherent, impact absorbing polymer. It can be formulated into adhesives and sealants for FRP (fibre reinforced polyesters), metal and ceramic substrates. It is particularly good where high impact resistance is required. Crestapol 1080 can be added to unsaturated polyester resins to improve flexibility, adhesion and impact resistance. (For further details see Technical leaflet No. 315.)

## Additives

Crestapol 1080 has a high tolerance for fillers such as carbonates, talc, mica and barytes. It can be pigmented with an addition of up to 5% of Crystic Pigment Pastes.

## Physical Data – Uncured

Test methods as in BS2782 1980.

Property	Unit	Liquid Resin
Viscosity at 25°C	Poise	9
Specific Gravity at 25°C		1.04
Volatile Content	%	40
Appearance		Clear
Stability in The Dark at 20°C	Months	6
Geltime at 25°C Using 2% Catalyst M (Butanox M50) and 4% Accelerator E	Minutes	50

## Physical Data – Cured

Property	Unit	Cured Resin (Unfilled Casting)
Hardness	Shore D	65
Ultimate Tensile Strength	MPa	25
Sealant Modulus at 3% Elongation	MPa	>150
Elongation at Break	%	120
Gardner Impact Strength	Kg/cm	>200

## Storage

Crestapol 1080 should be stored in the dark in suitable, closed containers. It is recommended that the storage temperature should be less than 20°C where practical, but should not exceed 30°C. Ideally, containers should be opened only immediately prior to use.

**N.B.** Extended storage at low temperatures may cause Crestapol 1080 to crystallise out of solution. Warming for a short time above 35°C will bring it back into solution.

**Packaging**

Crestapol 1080 is supplied in 25Kg and 200Kg containers.

**Health and Safety**

See separate Material Safety Data Sheet.

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# APPLICATION & PERFORMANCE OF CRESTAPOL<sup>®</sup> 1080 / POLYESTER RESIN BLENDS

## Addition to Polyester

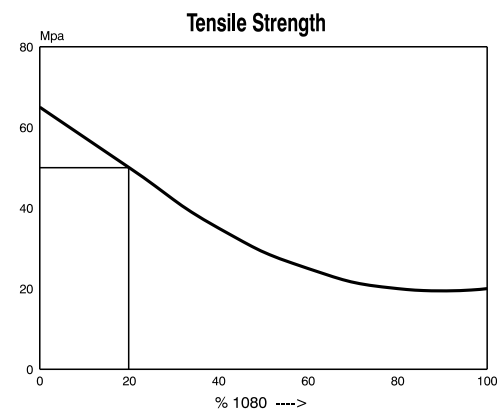
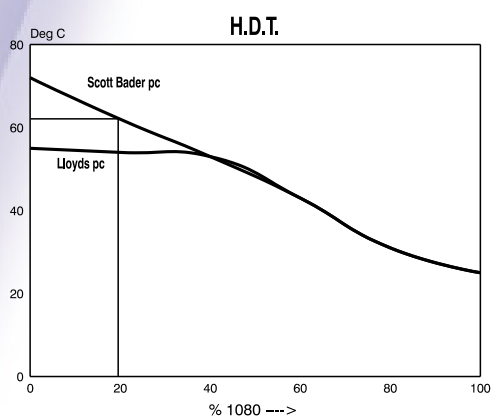
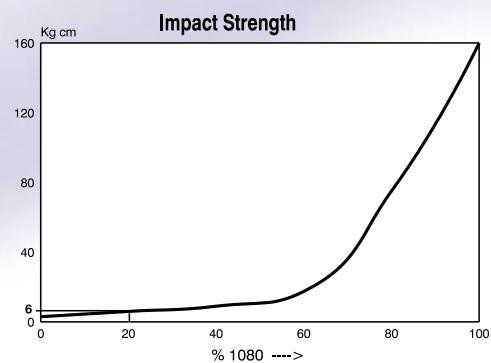
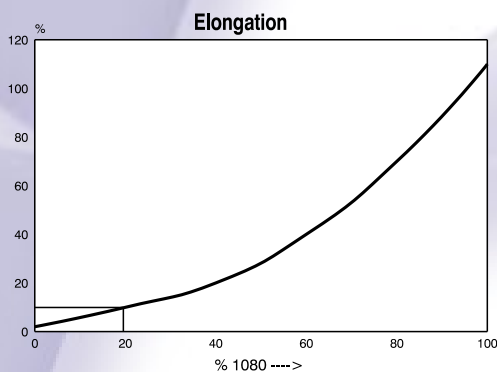
Crestapol 1080 can be blended with most unsaturated polyester resins at 10% to 90% addition levels (see performance graphs overleaf). Typically 20% Crestapol 1080 is used to give significant improvement to flexibility and impact resistance whilst maintaining acceptable HDT and tensile properties. Note: If a high level of unaccelerated Crestapol 1080 is added to cobalt pre-accelerated polyester resin an addition of cobalt accelerator may be required to maintain gel/cure characteristics.

## Applications

Crestapol/polyester blends have many commercial uses, in a variety of market areas, including:-

- In filled, casting applications, to reduce cracking and impact damage, especially with intricate mouldings, thus giving a reduction in reject rate.
- As an abrasion resistant liner to pipes.
- In GRP sheeting to reduce stress cracking on manufacture and improved impact performance in use.
- To improve stress/corrosion performance in filament wound pipes.
- In the construction of high performance marine craft from aramid fibre where high power to weight ratio is required.
- To give additional bonding when laminating onto cured FRP.
- Behind the gelcoat to give improved reverse impact performance.

The following graphs illustrate the effect on cast properties, of Crestapol 1080 additions to an isophthalic polyester. Typically a 20% addition gives a three-fold increase in elongation and impact strength.



**Note:** Lloyds post-cure = 16 hrs at 40°C  
Scott Bader post-cure = 5 hrs at 80°C, 3 hrs at 120°C

In summary, a tougher resin system can be produced by blending Crestapol 1080 with unsaturated polyester resin.

Technical Leaflet No. 315.1

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