



SAMRAT POLY RESINS

Manufacturer of Coating & Composite Resins · Doraha, Ludhiana, Punjab, India

SAFETY DATA SHEET

Doc. Ref: SPR-SDS-GCR · Rev. 01 · Issue Date: 5 August 2026

GP CLEAR RESIN

General-Purpose Unsaturated Polyester Resin · Orthophthalic · Crystal-Clear, High-Gloss

GP Clear Resin is a general-purpose clear unsaturated polyester resin solution — an orthophthalic unsaturated polyester resin in styrene monomer — engineered for FRP moulding, laminates, castings, transparent/clear resin applications, and general composite manufacturing. It is supplied uncatalyzed and is intended for industrial and professional use only.

Not for use in food-contact, medical, pharmaceutical, or consumer applications unless specifically approved by the manufacturer.

SECTION 1: IDENTIFICATION

1.1 Product Identifier

Product Name	GP Clear Resin
Product Type	General purpose clear unsaturated polyester resin solution
Chemical Family	Orthophthalic unsaturated polyester resin in styrene monomer
Product Code / Internal Reference	GCR
SDS Document Reference	SPR-SDS-GCR, Rev. 01

1.2 Relevant Identified Uses and Uses Advised Against

- Recommended use: FRP moulding, laminates, castings, transparent/clear resin applications, and general composite applications — including water tanks, cooling towers, roofing sheets, door skins and panel lamination, hand lay-up and spray-up processes. For industrial/professional use only.
- Uses advised against: Food-contact, medical, pharmaceutical, or consumer applications unless specifically approved by the manufacturer; use as supplied without the correct catalyst (MEKP) and accelerator dosage; any use not confirmed with Samrat Poly Resins technical staff.

1.3 Details of the Supplier of the Safety Data Sheet

Company Name	Samrat Poly Resins
Registered Activity	Manufacturer of Coating & Composite Resins (ISO 9001:2015 certified)
Address	Oswal Road, Near GT Road, Doraha, Ludhiana — 141421, Punjab, India
GST No.	03ALBPS3446G1ZB
Website	samratpolyresins.in
Email	info@samratpolyresins.in

1.4 Emergency Telephone Number

Company Emergency Contact	+91 74638 81652
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**National Poison Information Centre
(India)**1800-116-117 (Toll-Free, 24x7) — National Poisons Information Centre, AIIMS
New Delhi

SECTION 2: HAZARD IDENTIFICATION

2.1 Classification of the Substance or Mixture (GHS)

Hazard Class	Category	H-Statement
Flammable liquids	Category 3	H226 — Flammable liquid and vapour
Acute toxicity — inhalation	Category 4	H332 — Harmful if inhaled
Skin irritation	Category 2	H315 — Causes skin irritation
Eye irritation	Category 2	H319 — Causes serious eye irritation
Specific target organ toxicity — single exposure	Category 3 (respiratory tract irritation)	H335 — May cause respiratory irritation
Specific target organ toxicity — repeated exposure	Category 1	H372 — Causes damage to organs through prolonged or repeated exposure
Reproductive toxicity	Category 2	H361d — Suspected of damaging the unborn child
Aspiration hazard	Category 1	H304 — May be fatal if swallowed and enters airways
Hazardous to the aquatic environment — chronic	Category 3	H412 — Harmful to aquatic life with long-lasting effects

2.2 Label Elements

Signal Word	DANGER
Pictograms	GHS02 (Flame), GHS07 (Exclamation Mark), GHS08 (Health Hazard)
Hazard Statements	H226, H304, H315, H319, H332, H335, H361d, H372, H412
Precautionary Statements — Prevention	P210, P233, P240, P241, P242, P243, P261, P264, P271, P280
Precautionary Statements — Response	P303+P361+P353, P304+P340, P305+P351+P338, P312, P321, P332+P313, P337+P313, P370+P378
Precautionary Statements — Storage	P403+P235, P405
Precautionary Statements — Disposal	P501

2.3 Other Hazards

- The flash point (31–34°C) sits inside the manufacturer's recommended storage temperature range (30–35°C). Storage and handling areas must be treated as flammable-liquid environments at all times — see Section 7.
- Vapour is heavier than air and can travel along floors/low points to a source of ignition and flash back.
- Uncatalyzed resin can undergo hazardous, self-accelerating exothermic polymerization if contaminated with peroxides (including its own hardener, MEKP), strong oxidizers, or exposed to excessive heat — this can lead to container rupture or fire, independent of any external ignition source.
- This resin is supplied uncatalyzed. Hazards of the catalysed (MEKP + accelerator) system in use are materially different and are NOT covered by this SDS — see the separate MEKP Hardener SDS.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

GP Clear Resin is a mixture. It is supplied as a single-pack, uncatalyzed resin; MEKP hardener and cobalt accelerator are added separately by the customer at the point of use and are outside the scope of this SDS.

Component	CAS No.	EC No.	Concentration (% w/w)	Classification / Hazard Role
Unsaturated polyester resin / polyester oligomer	Not assigned / polymer of variable composition	Not applicable	60–67% (balance to 100% from confirmed styrene range)	Not separately classified as the main hazard driver in this mixture
Styrene monomer	100-42-5	202-851-5	33–40%	Flam. Liq. 3 (H226); Acute Tox. 4 (H332); Skin Irrit. 2 (H315); Eye Irrit. 2 (H319); STOT SE 3 (H335); STOT RE 1 (H372); Repr. 2 (H361d); Asp. Tox. 1 (H304); Aquatic Chronic 3 (H412). Main contributor to inhalation, irritation, reproductive, aspiration, and chronic exposure hazards in this mixture.
Polymerisation inhibitor package	Proprietary / not disclosed	Proprietary / not disclosed	<0.1%	Proprietary inhibitor package, used to prevent premature polymerisation during storage. Identity and exact concentration are retained as proprietary manufacturer information.

SECTION 4: FIRST-AID MEASURES

4.1 Description of First-Aid Measures

Eye Contact	Immediately flush eyes with plenty of clean water for at least 15 minutes, holding eyelids open. Remove contact lenses if present and easy to do. Get medical attention if irritation persists.
Skin Contact	Remove contaminated clothing and shoes immediately. Wash affected skin thoroughly with soap and water. If irritation, redness, or a burning sensation develops, seek medical attention.
Inhalation	Move the affected person to fresh air immediately. Keep at rest in a position comfortable for breathing. If breathing is difficult, give oxygen if trained personnel and equipment are available. Seek medical attention if symptoms (dizziness, headache, nausea) persist.
Ingestion	Do NOT induce vomiting — risk of aspiration into the lungs (chemical pneumonitis). Rinse mouth with water if the person is conscious. Seek immediate medical attention. Never give anything by mouth to an unconscious person.

4.2 Most Important Symptoms and Effects, Acute and Delayed

- Eye/skin: redness, irritation, itching; prolonged or repeated contact may cause drying or cracking of skin.
- Inhalation (at elevated vapour concentrations): headache, dizziness, drowsiness, nausea, and irritation of the nose and throat; high concentrations may cause central nervous system depression / narcosis.
- Ingestion/aspiration: risk of chemical pneumonitis if aspirated into the lungs during swallowing or vomiting.

4.3 Notes to Physician

Treat symptomatically. There is no specific antidote. Aspiration of this material during ingestion or vomiting can cause chemical pneumonitis, which may be fatal — treating physicians should be made aware of this risk. Do not induce vomiting.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing Media

- Suitable: Foam, dry chemical powder, carbon dioxide (CO₂), water spray/fog (for cooling containers and knocking down vapour).
- Not suitable: Do not use a direct/solid water jet — it can spread burning material and is ineffective on flammable-liquid fires.

5.2 Special Hazards Arising from the Substance or Mixture

- Flammable liquid; vapours may form explosive mixtures with air. Vapour is heavier than air, may travel along the ground to a distant ignition source and flash back.
- Under fire conditions, uncontrolled exothermic polymerization of the resin can occur, potentially leading to violent rupture of closed containers/drums.
- Hazardous combustion products: carbon monoxide, carbon dioxide, irritating fumes, and styrene vapours.

5.3 Advice for Fire-Fighters

- Evacuate the area and fight fire from a safe, protected distance where possible.
- Wear full protective clothing and a self-contained breathing apparatus (SCBA) with a full face-piece operated in positive-pressure mode.
- Cool fire-exposed closed containers/drums with water spray from a safe distance to prevent pressure build-up and rupture.
- Contain fire-fighting water run-off; prevent it from entering drains, watercourses, or soil.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

- Remove all sources of ignition (naked flames, sparks, hot surfaces, static discharge, electrical equipment) in and around the spill area.
- Ventilate the area, especially low-lying and enclosed spaces where vapour can accumulate. Use non-sparking tools.
- Wear appropriate PPE as described in Section 8 before attempting clean-up.

6.2 Environmental Precautions

- Prevent entry into drains, sewers, watercourses, or soil. Dike/bund the spill if it is safe to do so.
- Notify the relevant Pollution Control Board and site EHS personnel for any spill that reaches, or is likely to reach, a drain or waterway.

6.3 Methods and Material for Containment and Cleaning Up

- Small spills: Absorb with an inert material such as sand, earth, or vermiculite. Sweep/scoop into a suitable, labelled, closed container for disposal.
- Large spills: Dike the area to prevent spreading; pump into salvage containers using non-sparking, explosion-proof equipment where vapour concentrations warrant it.
- Do not allow contaminated absorbent to accumulate in a confined pile — bulk resin-soaked absorbent can self-heat and undergo exothermic polymerization.
- Dispose of collected material according to local regulations — see Section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for Safe Handling

- Handle only in well-ventilated areas, or use local exhaust ventilation at hand lay-up/spray-up stations to control vapour concentration below occupational exposure limits (see Section 8).
- Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking.
- Bond and ground containers and transfer equipment when transferring resin between drums/tanks to control static electricity, particularly for bulk transfer.
- Keep this uncatalyzed resin strictly separate from MEKP, other peroxides, and strong oxidizing agents until the intended point-of-use mixing step, unless intentionally used together under controlled processing conditions. Never return catalyzed/mixed material to the bulk container.
- Avoid prolonged or repeated skin and eye contact; use the PPE specified in Section 8.

7.2 Conditions for Safe Storage, Including Any Incompatibilities

FLAMMABLE LIQUID STORAGE — MANDATORY CONTROLS

Recommended storage temperature (30–35°C) and flash point (31–34°C) overlap. Storage and handling areas MUST be treated as flammable-liquid storage areas at all times, without exception:
Cool, dry, well-ventilated storage · No open flames · No smoking · No sparks · Explosion-proof electrical fittings where required · Proper grounding/bonding · Avoid direct sunlight and heat accumulation · Keep containers tightly closed · Store away from oxidisers, acids, bases, amines, peroxides, and polymerisation catalysts unless intentionally used under controlled processing conditions.

Storage Temperature	30–35°C (per manufacturer TDS). Avoid direct sunlight and localized heat sources; excessive temperature shortens shelf life and increases self-polymerization risk.
Shelf Life	3 months in 225 kg drum / 2 months in PET packaging (per TDS) from date of manufacture, under recommended storage conditions.
Storage Area	Cool, dry, well-ventilated area, away from direct sunlight and ignition sources. Bund/contain to capture leaks. Store as a flammable liquid (Category 3) in accordance with MSIHC 1989 (see Section 15).
Incompatible Materials	Peroxides and other free-radical initiators (incl. MEKP), strong oxidizing agents, strong acids and bases, amines, reducing agents — keep segregated unless intentionally used under controlled processing conditions.
Packaging Material	225 kg mild-steel/HDPE-lined drum as supplied. Keep containers tightly closed when not in use.

7.3 Specific End Use(s)

Manufacture of FRP composite products via hand lay-up, spray-up, and moulding processes; laminates and castings. Refer to the product TDS (SPR-TDS-GCR) for recommended catalyst/accelerator dosage and processing parameters.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control Parameters — Occupational Exposure Limits (Styrene, the major volatile component)

Source	TWA	STEL / Ceiling	Basis
ACGIH (USA)	TLV-TWA 10 ppm	TLV-STEL 20 ppm	Threshold Limit Value; Ototoxicant and A3 notations
NIOSH REL (USA)	50 ppm (215 mg/m³)	ST 100 ppm (425 mg/m³)	Recommended Exposure Limit
OSHA PEL (USA)	100 ppm	Ceiling 200 ppm / Peak 600 ppm	29 CFR 1910.1000 Table Z-2
India — Factories Act 1948, Second Schedule	50 ppm (215 mg/m³)	STEL 100 ppm (425 mg/m³)	Statutory limit under §41-F

8.2 Exposure Controls

- Engineering controls: Local exhaust ventilation at resin-handling, mixing, spraying, laminating, and bulk-transfer stations. Ensure general workplace ventilation keeps vapour concentrations below the applicable OEL.
- Eye/face protection: Chemical splash goggles.
- Hand protection: Nitrile gloves or other chemically resistant gloves suited to styrene/polyester resin systems (e.g. PVA or Viton for prolonged or repeated contact).
- Body protection: Antistatic protective clothing.
- Respiratory protection: Organic vapour respirator where ventilation is inadequate to keep exposure below the OEL, or for confined-space or high-concentration work.
- General hygiene: Do not eat, drink, or smoke while handling. Wash hands and exposed skin before breaks and at the end of the shift. Launder or discard resin-contaminated clothing before reuse.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear liquid
Odour	Sweet, aromatic styrene-like odour
Odour Threshold	0.04–0.32 ppm, based on styrene component data
pH	Not applicable — non-aqueous organic resin solution
Melting / Freezing Point	Not applicable to mixture; styrene component freezing point approx. -31°C
Initial Boiling Point / Range	Approx. 145°C, based on styrene volatile component
Flash Point	31–34°C, manufacturer/chemist-confirmed closed-cup value
Evaporation Rate	Approx. 0.5 (n-butyl acetate = 1), based on styrene component / comparable resin-solution data
Flammability	Flammable liquid and vapour
Lower Explosive Limit	Approx. 1.1% v/v, based on styrene component data
Upper Explosive Limit	Approx. 6.1–7.0% v/v, based on styrene component data
Vapour Pressure	Approx. 4.5–6.4 mmHg at 20°C, based on styrene / comparable resin-solution data
Vapour Density (air = 1)	Approx. 3.6, based on styrene component data
Relative Density / Specific Gravity	Approx. 1.08–1.15 g/cm ³ , manufacturer-reviewed typical value/range for this resin system
Solubility in Water	Insoluble / very slightly soluble
Solubility in Organic Solvents	Soluble / miscible in compatible organic solvents and styrene
Partition Coefficient (log K_{ow})	Approx. 2.96, based on styrene component data
Auto-Ignition Temperature	Approx. 490°C, based on styrene component data
Decomposition Temperature	Not normally applicable under recommended storage and handling; hazardous decomposition may occur under fire, excessive heat, or uncontrolled polymerisation conditions
Viscosity	350–450 cPs, as per TDS/manufacturer specification
VOC Content	Approx. 33–40% w/w, based on styrene content of the uncured product
Explosive Properties	Not classified as explosive; hazardous exothermic polymerization possible under contamination/heat — see Section 10
Oxidizing Properties	Not classified as oxidizing

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Not reactive under normal handling and storage conditions when kept away from peroxides, strong oxidizers, and excess heat. Can undergo hazardous, self-accelerating exothermic polymerization if contaminated or overheated.

10.2 Chemical Stability

Stable under recommended storage and handling conditions. May polymerise if exposed to heat, direct sunlight, contamination, peroxides, oxidisers, or inhibitor depletion.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization can occur if the resin is contaminated with peroxides (including its own MEKP hardener), strong oxidizing agents, or exposed to excessive heat without adequate inhibitor protection. This reaction is exothermic and, in a confined or bulk quantity, can self-accelerate to the point of container rupture or fire.

10.4 Conditions to Avoid

- Heat, sparks, open flames, and other ignition sources.
- Direct sunlight and prolonged storage above the recommended storage temperature.
- Oxidising agents, acids, bases, amines, peroxides, and incompatible catalysts, unless intentionally used under controlled processing conditions.

10.5 Incompatible Materials

Peroxides and other free-radical initiators, strong oxidizing agents, strong acids and bases, amines, reducing agents, and metal driers/accelerators other than those intentionally formulated into the cure system.

10.6 Hazardous Decomposition Products

Under fire, excessive heat, or uncontrolled polymerisation, this product may generate carbon oxides, irritating fumes, and styrene vapour.

SECTION 11: TOXICOLOGICAL INFORMATION

Toxicological effects associated with this product are primarily attributed to its styrene content, the major hazardous/volatile component. Component-based data is presented below.

11.1 Information on Toxicological Effects

Acute Toxicity — Oral (rat)	LD50 approx. 2,650 mg/kg, based on styrene component data
Acute Toxicity — Inhalation (rat, 4h)	LC50 approx. 12,000 ppm, based on styrene component data
Skin Corrosion / Irritation	Causes skin irritation, based on styrene component data
Serious Eye Damage / Irritation	Causes serious eye irritation; may cause lachrymation at elevated vapour concentrations, based on styrene component data
Respiratory / Skin Sensitisation	No sensitisation classification identified for the styrene component or in comparable resin systems reviewed
Germ Cell Mutagenicity	Styrene mutagenicity data is mixed/inconclusive in published sources; no mutagenicity classification applied
Carcinogenicity	Styrene is classified by IARC as Group 2B (possibly carcinogenic to humans) and by ACGIH as A3 (confirmed animal carcinogen, unknown relevance to humans)
Reproductive Toxicity	Category 2 (H361d, suspected of damaging the unborn child), based on styrene component classification
STOT — Single Exposure	May cause respiratory tract irritation and CNS effects (headache, dizziness, drowsiness) at elevated vapour concentrations
STOT — Repeated Exposure	May cause damage to organs (central nervous system, upper respiratory tract) through prolonged or repeated exposure, based on styrene component data
Aspiration Hazard	May be fatal if swallowed and enters airways (risk of chemical pneumonitis), based on styrene component data

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Fish	LC50 (96h) approx. 25–65 mg/L, based on styrene component data
Aquatic Invertebrates	EC50 (48h) approx. 23 mg/L, based on styrene component data
General	Harmful to aquatic life depending on exposure and concentration. Avoid release to drains, soil, and water bodies.

12.2 Persistence and Degradability

The product, as a complete uncured resin mixture, is not expected to be readily biodegradable. The cured (fully polymerized) resin is expected to be inert and largely insoluble.

12.3–12.6 Bioaccumulative Potential, Mobility, Other Adverse Effects

A formal PBT/vPvB assessment has not been performed for the mixture. Do not release to the environment; see Section 6.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods

- Do not discharge uncured resin, resin-contaminated waste, or rinse water into drains, sewers, or watercourses.
- Dispose of uncured/off-spec resin and resin-contaminated absorbent as hazardous waste through an authorised hazardous-waste handler, in accordance with the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 (India) and applicable State Pollution Control Board requirements.
- Fully cured (polymerized) FRP scrap is generally treated as inert solid waste; confirm current requirements with the relevant State Pollution Control Board.
- Empty containers/drums may retain product residue and flammable vapour. Do not cut, weld, drill, or apply heat to empty containers. Handle, store, and dispose of empty containers as hazardous waste unless certified as cleaned, or return to an authorised drum-reconditioner.
- Do not allow large quantities of contaminated absorbent to accumulate in a confined pile — bulk resin-soaked material can self-heat; spread thin or place in a suitable open/ventilated hazardous-waste container.

SECTION 14: TRANSPORT INFORMATION

UN Number	UN 1866
UN Proper Shipping Name	RESIN SOLUTION, flammable
Transport Hazard Class(es)	Class 3 — Flammable liquid
Packing Group	III
Environmental Hazards / Marine Pollutant	Not expected to be classified as a marine pollutant based on available component data
Special Precautions for User	Keep away from heat, sparks, open flames, hot surfaces, oxidising agents, and sources of ignition. Transport in tightly closed, approved containers, upright and secured against movement.
Transport in Bulk (Annex II MARPOL/IBC Code)	Not applicable — product transported in 225 kg drums, not in bulk
India — Road Transport	Subject to the Central Motor Vehicles Rules, 1989 (Class 3, Flammable Liquid)

As with all dangerous goods shipments, the shipper is responsible for verifying classification, packaging, marking, and documentation against the dangerous-goods regulations current at the time and mode of each shipment.

SECTION 15: REGULATORY INFORMATION

15.1 India

- Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 (MSIHC), under the Environment (Protection) Act, 1986 — GP Clear Resin falls into the Rules' 'highly flammable liquid' band (flash point $\leq 60^{\circ}\text{C}$ but $> 23^{\circ}\text{C}$). Schedule 1–3 applicability depends on quantities held on site.
- Occupational exposure limits for styrene under the Factories Act 1948, Second Schedule (§41-F) — see Section 8.
- Factories Act, 1948 and applicable State Factory Rules — workplace exposure limits, storage, and safety provisions for hazardous substances, including flammable-liquid handling and storage requirements.
- Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 — governs disposal (see Section 13).
- India has not formally adopted the GHS for workplace chemical classification; this 16-section GHS-format SDS in English follows generally accepted practice.
- Users must comply with all applicable local, state, national, and transport regulations.

15.2 International Reference (where this product or its components may be exported/shipped)

- Styrene (CAS 100-42-5) is an actively listed substance on the US TSCA Inventory and is registered under EU REACH; it carries a harmonised CLP classification broadly consistent with Section 2 of this SDS.
- For US shipments: OSHA Hazard Communication Standard, 29 CFR 1910.1200, applies to labelling and SDS format.
- For EU shipments: Regulation (EC) No. 1272/2008 (CLP) and Regulation (EC) No. 1907/2006 (REACH) apply.

SECTION 16: OTHER INFORMATION

Full Text of Hazard (H) and Precautionary (P) Statements Referenced in Sections 2 and 3

- H226 — Flammable liquid and vapour
- H304 — May be fatal if swallowed and enters airways
- H315 — Causes skin irritation
- H319 — Causes serious eye irritation
- H332 — Harmful if inhaled
- H335 — May cause respiratory irritation
- H361d — Suspected of damaging the unborn child
- H372 — Causes damage to organs through prolonged or repeated exposure
- H412 — Harmful to aquatic life with long-lasting effects

Abbreviations

ACGIH = American Conference of Governmental Industrial Hygienists · CAS = Chemical Abstracts Service · CLP = Classification, Labelling and Packaging Regulation (EU) · GHS = Globally Harmonized System of Classification and Labelling of Chemicals · IARC = International Agency for Research on Cancer · LC50/LD50 = Lethal Concentration/Dose, 50% · MSIHC = Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 · NIOSH = National Institute for Occupational Safety and Health · OEL = Occupational Exposure Limit · OSHA = Occupational Safety and Health Administration · PEL = Permissible Exposure Limit · REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals · REL = Recommended Exposure Limit · SDS = Safety Data Sheet · STEL = Short-Term Exposure Limit · STOT RE/SE = Specific Target Organ Toxicity, Repeated/Single Exposure · TLV = Threshold Limit Value · TWA = Time-Weighted Average · UPR = Unsaturated Polyester Resin.

Revision Information

SDS Version / Revision No.	01
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Prepared By	Samrat Poly Resins / Regulatory Department
Reason for Issue	Initial official issue

This SDS has been prepared based on available technical data, manufacturer/chemist-reviewed product information, component hazard data, and applicable safety references. The information is provided for safe handling, storage, transport, use, and disposal of the product. Values shown are typical for this resin system and are believed accurate;

users are responsible for confirming suitability for their specific application and for compliance with current regulations at the time of use.