



The Start

Riviera Polymers Private Limited was envisaged in 1982. The organisation had to become a mark to reckon with in manufacture of Colour and Additive Concentrates and Special Thermoplastic Compounds. Two decades on, we are living as 'Brand Riviera' and remain front-runner manufacturer of high quality Masterbatches and Speciality Thermoplastic Compounds in India. The long drive over two decades has come thru manifold phases. It's been a constant introspection to come better and with the indispensable 'MORE' every time we went for a new search.

The Heritage of Excellence: Quality at the Heart of Everything

'What Next'...many a times and for years, for that every reason of evolution and for that every purpose we came into for...the search within never ended. Riviera Polymers just like every value driven organisation subscribes to a culture. The culture that inculcates and communicates Quality, Improvement, Research and measurable benefits. Riviera puts lot of emphasis on bettering every move as posted earlier.

Every glance and observation at plant extends our message of attempting a new perfection. The plant is endowed with world's most renowned blending & dispersion plant from Japan. And to further this, a Quality Control lab in technical Consultancy with CIPET, Ahmedabad (a top authority in Thermoplastic testing technology in India.) is in place.

The lab meets every contemporary call in technology and the closely knit family of Chemists, Engineers and other manpower add to the strength of the organisation.

Riviera and Research: Our Nexus with Our DNA

What better way to comment on our Research and its place in our organisations. We meet our vision thru the years spent and dedicated in Research. It's an absolute 'MUST' that has to pave new vistas and better floors for our progress and performance. Product research is a business of challenges for us.

The industry and the world demands cutting edge solutions and product expectations must yield results. Polymers and plastic applications being element applications, they must help companies break free. Riviera products are made thru a diligent exercise harnessing the fine tuned equations of cost optimisation and value addition.

The ultimate parameters on quality control and production technology assure the finest output.

The foreword integration thru excellent distribution system across the country assures integrated management exercise and prove a model in customer service. The substantial contribution in our research initiatives has brought our customers unflinching dependability, efficiency and compatibility.

Brand Riviera Vision

The time belongs to innovators and we are doing every possible bit to establish a vision that corresponds to future. Undertaking challenges to achieve a new feat of excellence in everything we do... be it manufacturing, systems, processes, customer service and the like.

Brand Riviera should live as the integral organ for our every customer and for that every application warranting 'a-better-than-before' performance. We live this vision and every dawn only adds to the precision.

The Riviera Balance: Business Equation of a different kind

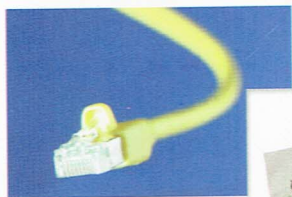
More is Less for More !!!

More the Riviera More the Returns

With every other percentage of Riviera compound you add, it's a new equation you reach as you fine tune your cost constraints and redefine the returns. And of course along comes a new Avatar, the unexpected form, still just what you expected. Moreover, you can always find your best match across a multihued spectrum.



Welcome to Brand Riviera and conjure up a new Dimension.



THERMOPLASTICS MASTERBATCHES / COMPOUNDS

Requirement of properties are different for different application. The applications are numerous but the number of plastics is limited. Moreover, many applications today require a unique combination of properties and demand very high performance. The existing plastics alone often cannot meet this high performance. One approach to high performance would be to develop new polymeric molecules. But it is not economical to develop a new plastic for every application because development of a new plastic requires a lot of time and money. A more rational, economical and practical approach is to modify / reinforce the existing plastic to achieve specific high performance properties. The methods for creating a plastic with balanced properties at acceptable costs are -

- (i) Polymer Blending and alloying of existing plastics.
- (ii) Addition of Lubricants, Plasticizers, Stabilizers, Fillers, Reinforcing and Modifying Agents etc.

The technique of compounding polymers with other polymers, chemical additives, inorganic fillers and reinforcing fibres has given an effective tool to tailor-make materials for achieving specific balance combinations of Physical Properties, processing characteristics and cost. It is this flexibility of property manipulation that is mainly responsible for the diversity of applications of polymeric materials. Hence recently the major thrust of the material development efforts has been in the area of thermoplastic compounding with additives. Some of the key areas of modified / reinforced thermoplastic compoundings are :

A. CHEMICAL ADDITIVES

U.V. Stabilizers, Heat Stabilizers, Antioxidants, Flame Retardants, Antistatics, Slip agents, Antislip Agents, Antifogging Agents, Antiblocking Agents, Foaming Agents, Processing Aids etc. Apart from this, many other Chemical additives are used like Cling Agents, Metal de-activators, optical brighteners, Plasticizers, coupling agents, cross-linking agents, impact modifiers, lubricants, emulsifiers and so on.

B. MINERAL FILLERS / EXTENDERS

The traditional use of fillers and extenders has been for reducing the amount of expensive resins needed to make a functional part. Now it is also used for physical property modification and improvement.

Almost all fillers and extenders have a variety of effects on thermoplastic resins like:

- | | | |
|----------------------------------|---|--|
| a) Increase flexural modulus | b) Reduce tensile strength | c) Increase dimensional stability and reduce creep |
| d) Improve thermal conductivity | e) Increase heat deflection temperature | f) Increase melt viscosity |
| g) Improve electrical properties | h) Improve processing | i) Extend resin |

A large selection of fillers and extenders is available.

Most Commonly used are

- Talc • Mica • Antimony Oxide • Kaolinite • Aluminium Trihydrate • Carbon Black • Metal Powders
- Feldspar • Starch • Ferrite Powder • Silica • Calcium Meta-Silicate • Wood Flour • Solid or Hollow glass spheres

Selection of Fillers

The primary objective for the usage of fillers is cost reduction and property improvement is considered as a bonus. Once the economical aspects are clear, the final choice of the filler could have been made on the basis of certain effects in the plastic composition.

C. REINFORCING FIBRES

Like mineral fillers, Fibres are also used for improvement and reinforcement of physical properties of thermoplastics. Most commonly used are:

- | | | | |
|-----------------|--------------------------------|-----------------------------|-------------------|
| a) Aramid | b) Carbon | c) Glass | d) Asbestos |
| e) Wollastonite | f) Hybrids of the above fibres | g) Carbon graphite filament | h) Boron filament |

Glass fibre is the only reinforcement agent readily available in India.

NOTE This is not a technical literature but only a short resume on "Additives available for compounding with Thermoplastics". Technical literature on specific product range will be made available on request.



MASTERBATCHES

These are predispersed Colour / Additives concentrates available in different thermoplastics base and in different concentration of Colourants / Additives as per the requirements and applications.

While manufacture of Masterbatches, concentration & selection of Colourants, Additives and Carrier Resins is very critical. It needs careful study of its own properties, processing conditions, end use requirements and matrix material. So Masterbatches are manufactured according to customers applications and end use requirements of the plastics. These selections are summarized as follows :

1. SELECTION OF COLOURANTS

Colourants can be classified as organic and inorganics. Pigments vary considerably in their properties. Suitability of pigment in a particular polymeric material would depend upon its own properties vis-à-vis

- 1) Processing conditions like — (a) Temperature (b) Environment (c) Ingredients
- 2) End use requirements of the Plastic like — (a) Light fastness (b) Resistance to Chemicals (c) Toxicity & Conductivity etc.

2. SELECTION OF ADDITIVE / FILLER

Like Colourants, many other types of additives / fillers can be perfectly added / dispersed to modify / reinforce certain properties of the plastic according to its applications & requirements. The most common additive / fillers are Talc, Calcium Carbonate, Mica CMS, Stabilizers, Antistatic Agents, Slip Agents, Anti-slip Agents, Anti-blocking Agents, Foaming Agents, Flame-retardants, UV Stabilizers and so on.

3. SELECTION OF CARRIER RESINS

Suitability of base polymeric material depends upon the matrix like PVC, Polyolefines, Styrene Polymers, Acrylic, Polyester, Polyurethane, Nylon, Poly Carbonate, Polyacetal, Polysulfone, Elastomers, Glass / Mineral / Additive filled resin and so on. It also depends upon its processing methods like extrusion of Single / Multilayer film, Cable, Pipe, Monofilament, Multi-filament, Strapping, Lamination, Insulation, Profiles etc. and moulding like injection, Blow, Stretch Blow, Compression, Rotational etc.

Careful selection of the proper carrier resin is vital. It should be the same as the matrix resin or closely equivalent to the matrix resin. It may be of slightly easier flow characteristics than the matrix resins. It is sometimes possible to utilize carrier resins other than that of the matrix provided a slight loss of physical properties can be tolerated.

Some so-called universal concentrates are currently being offered. The term universal is a misnomer, because no one carrier is acceptable for the entire range of thermoplastic resins. Better terminology is 'broad use' or 'multipurpose concentrates' which are compatible with a group of resins.

4. FORMS AVAILABLE

Colour Masterbatches can be provided in particle size ranging from fine powder to the normal 1/8 inch pellet. The smaller sizes might promote more accurate and efficient incorporation of the concentrate, but there can be problems such as shifting or separation due to static electricity. A pellet size somewhat smaller than that of the matrix resin is preferred. This will increase the ratio of available colour particles to Natural pellets, with a minimum of other problems.

5. ABOUT OUR PRODUCT

RIVIERA is manufacturing Mineral filled Masterbatches specially for PP/HDPE woven fabrics & Sacks application. It is specially tailored to gain maximum efficiency in each customer's application while at the same time giving him the lowest possible cost. However it can be used for other applications also due to its compatibility with Polyolefin group of resins like LLDPE, LDPE, MDPE, HDPE, HM etc.

For careful selection and more detail, please refer Product Brochure - "Antifab / Filler Masterbatches"

We welcome your requests for Concentrates to satisfy your special needs. Concentrates based on carrier resins other than Polyolefin can on request be developed and supplied as per customer's application. Our organization is technically flexible and will be pleased to work with you in creating new, innovative products. In fact, we are a manufacturing laboratory set up to react quickly to customer requests no matter how exotic. Field engineering help is always available.

