BUSINESS PLAN · INDIA

Polymer & Masterbatch Compounding

Colour, filler, additive and recycled-content compounds on own or customer-supplied resin

CHEMICALS

AISEVAK.IN · BY ABL DIGITAL TECHNOLOGIES

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1. Executive Summary

This plan sets out a **Polymer & Masterbatch Compounding** business in India — operating twin-screw extrusion lines to produce **colour, white/black, filler and additive masterbatches, engineering compounds and recycled-content compounds** for plastic processors, alongside **toll/job-work compounding** on customer-supplied resin.

Every injection moulder, film extruder, pipe manufacturer and blow moulder in India buys masterbatch. Nobody adds raw pigment to a hopper — colour, UV stability, antifibrillation and filler content all arrive as concentrated pellets dosed into the process. Compounding therefore sits underneath the entire plastics-processing industry as a necessary intermediate step, with demand tracking plastics consumption rather than any single end market.

> **The most consequential decision in this business is make-versus-toll, and it changes what the business fundamentally is.** If the compounder *buys the resin*, resin becomes roughly 70% of revenue, the balance sheet carries commodity price risk, and the business is effectively a trader with machines attached. If the customer *supplies the resin* and the compounder charges only a **conversion fee**, the price risk disappears entirely, working capital collapses, and the business becomes a pure capacity-utilisation play. Neither is wrong, but they are different businesses with different risks, and a plan that blurs them is not describing anything real. This plan models a deliberate mix — predominantly own-resin sales for margin, with toll work at 14–16% of revenue providing a price-risk-free capacity floor.

> **Read this P&L on conversion margin and contribution per extruder-hour, not on net margin.** Net margin of 2–5% looks unimpressive and is entirely normal for a conversion business where a large share of revenue is pass-through resin value. The meaningful metrics are the **conversion spread per tonne** and **extruder utilisation** — asset turn rises from 3.6x to 7.5x across this plan, which is what a well-run conversion operation looks like. This plan models a compounding unit requiring **₹4.4 crore** (₹1.5 crore promoter + ₹1.6 crore term loan + ₹1.3 crore working-capital finance), moving from **₹11 crore revenue and a ₹44 lakh loss** in Year 1 to **₹23 crore revenue and ₹1.14 crore profit** by Year 3. *(Polymer compounding; capacity × utilisation × conversion rate — figures illustrative.)*

2. Business Description, Vision & Legal Structure

Concept: A polymer & masterbatch compounding unit - twin-screw extrusion of colour, filler, additive and engineering compounds on own or customer-supplied resin, supported by a colour-matching laboratory and technical service.

Vision: To be the compounder processors trust with their colour and their line - matched first time, dispersed properly, delivered on schedule.

Mission: Match accurately, disperse thoroughly, keep the extruders running, and never let a batch variation stop a customer's machine.

Legal structure options

- **Private Limited** — recommended: equipment finance, resin purchase credit, toll-manufacturing agreements and industrial supply contracts all assess the entity.
- **LLP** — workable for a toll-only start where resin is never purchased and working capital is minimal.

> **Regulatory anchor:** SPCB Consent to Establish & Operate, factory licence, fire NOC, and hazardous-waste authorisation for purge material and contaminated packaging. Compounding is comparatively light on chemical regulation — there is no reaction chemistry — but it is **power-intensive and dust-generating**, so electrical load sanction, dust extraction and

workplace exposure controls matter. Two product-side points deserve attention. **Food-contact and potable-water applications** require compliant pigments and additives with appropriate certification, and a processor supplying food packaging will audit this. And **recycled-content compounding intersects with the Plastic Waste Management Rules and Extended Producer Responsibility obligations** — brand owners now face mandated recycled content in specified packaging categories, which makes properly characterised recycled compounds a regulated growth segment rather than a discount product.

3. Promoter & Ownership

Led by a promoter with polymer processing, masterbatch or plastics-industry background. Two competences decide outcomes: *colour matching and formulation* — reproducing a customer's shade within tolerance, repeatedly — and *extruder scheduling*, since changeovers destroy both time and material and a poorly sequenced week can consume the month's margin. The team is production-heavy with a strong colour laboratory. Colour accuracy, dispersion quality, delivery reliability & conversion cost are the differentiators. Ownership, equity & any partner are editable inputs.

4. Market Analysis — India

Demand tracks Indian plastics consumption, which continues to grow with packaging, infrastructure, automotive, agriculture and consumer goods. Per-capita plastics use remains well below global averages, which supports a long growth runway. Demand is processor-, packaging- & substitution-driven. The market rewards colour accuracy, consistency, delivery & conversion cost; it is **resin-price-exposed, capacity-competitive & increasingly shaped by recycled-content mandates**.

Demand drivers

- **Packaging growth** — the largest plastics end-use, driven by FMCG, e-commerce and food.
- **Infrastructure & agriculture** — pipes, fittings, geomembranes, mulch and irrigation films needing UV and filler masterbatch.
- **Automotive & appliance** lightweighting using engineering compounds.
- **EPR and recycled-content mandates** under the Plastic Waste Management Rules, creating demand for properly compounded recyclate.
- **Import substitution** in additive and engineering compounds still sourced from abroad.

Market sizing (illustrative framing)

Layer	Definition	Indicative scale
TAM	Indian masterbatch & polymer compounding	Large, growing
SAM	Regional processor base within freight radius	Serviceable
SOM (Yr 1–3)	Tonnage compounded & extruder utilisation	Scaling with capacity

Target segments

- Injection moulders (appliances, housewares, automotive components).
- Film & sheet extruders (packaging, agriculture).
- Pipe & profile extruders (infrastructure, plumbing).
- Blow moulders & woven-sack producers.

- Brand owners and converters seeking recycled-content compounds for EPR compliance.

5. Competition & Competitive Advantage

Landscape: large national masterbatch companies, multinational compounders in engineering grades, numerous regional compounders, and processors with captive compounding lines. Capacity is widely available and the low end competes purely on conversion rate, so differentiation rests on colour capability, consistency and service.

The business's edge

- **Colour matching capability** — a spectrophotometer-equipped laboratory that matches first time and holds tolerance across batches.
- **Dispersion quality** — properly dispersed pigment means no streaking, specks or filter blockage on the customer's line.
- **Delivery reliability** — processors run to schedule and a late masterbatch stops a machine.
- **Small-lot flexibility** — willingness to run smaller batches that large compounders decline, which regional processors value highly.
- **Recycled-compound competence** — characterising and compounding recyclate to a usable specification, an emerging and defensible capability.

6. Products & Revenue Model

Product line	Model	Basis
Colour & white/black masterbatch	Own resin, per-kg price	Core margin
Filler masterbatch (calcium carbonate)	Own resin, per-kg price	High volume, thin margin
Additive masterbatch (UV, antifib, antistatic, slip)	Own resin, per-kg price	Higher realisation
Toll / job-work compounding	**Conversion charge per tonne**	**No resin risk**
Engineering & recycled-content compounds	Per-kg, specification-priced	Growth & margin

> Revenue is **extruder capacity × utilisation × realisation**, but profitability is decided by the **conversion spread** — the difference between selling price and the resin, pigment and additive cost, per tonne. Because resin is passed through at roughly 70% of revenue, a modest movement in resin price swings revenue substantially while barely touching real earnings. **Judging this business on turnover or net margin is therefore misleading; contribution per extruder-hour is the number that matters**, and it is what should drive both pricing and production scheduling.

7. Go-to-Market — Processors & Capacity

- **Direct processor sales** with technical service — sampling, colour matching, line trials.
- **Colour library development** — a growing matched-shade database makes repeat orders faster and switching harder.
- **Toll relationships** with larger processors and brand owners who buy their own resin.
- **Small-lot positioning** for regional processors underserved by large compounders.
- **Recycled-compound offering** targeted at brand owners under EPR obligations.

Sales approach

Build a reliable colour laboratory and match quickly → win regional processors on first-time-right matching and delivery → secure toll contracts to underpin utilisation without resin exposure → grow additive and engineering grades where realisation is better than commodity filler → develop recycled-content capability ahead of tightening EPR requirements. The pricing discipline that matters: **quote on conversion spread, not on a percentage markup over resin**, because a percentage markup silently inflates in a high-resin market and collapses when resin falls, in both cases decoupling price from the actual work done.

8. Operations Plan (extrusion, colour & scheduling)

- **Extrusion:** twin-screw lines with gravimetric dosing, side feeders, pelletising and classification; screw configuration matched to the compound.
- **Colour laboratory:** spectrophotometer matching to a target ΔE tolerance, pigment library, laboratory extruder for trial batches, plaque preparation.
- **QC:** melt flow index, dispersion assessment, colour on plaque, moisture, mechanical properties on engineering grades; retained samples per lot.
- **Scheduling & changeovers:** sequencing light shades before dark, purging discipline, changeover time and purge-material cost tracked as a real production cost.
- **Materials:** resin storage and drying, pigment and additive stores, dust extraction and housekeeping.
- **Recyclate handling:** incoming characterisation of recycled feedstock, contamination screening, melt filtration — recyclate is variable and must be treated as an input requiring qualification, not a cheap substitute.

Production cycle

Stage	Activity	Metric
Match	Colour matching & formulation	**First-time-right match %**
Schedule	Sequence by shade & grade	Changeover time & purge cost
Compound	Extrusion & pelletising	**Extruder utilisation / output per hour**
Test	MFI, dispersion, colour on plaque	First-pass release %
Pack	Bagging & identification	Lot traceability
Deliver	Despatch to processor	On-time delivery

> **Changeover discipline is where compounding margin is quietly won or lost.** Every colour change consumes purge material, extruder time and operator attention, and none of it is billable. A week scheduled shade-light to shade-dark with grouped grades can produce materially more saleable output than the same week scheduled by order-arrival sequence — on identical machinery, identical staff and identical raw material. **This is why production scheduling in a compounding unit is a commercial function rather than an administrative one**, and why contribution per extruder-hour, not tonnage, is the right measure of a good week.

9. Regulatory, Licences & Compliance (India)

- **Plant:** SPCB Consent to Establish & Operate, factory licence, fire NOC, electrical load sanction, **Hazardous & Other Wastes authorisation** for purge material, sweepings and contaminated packaging.

- **Workplace:** dust extraction, pigment-handling exposure controls, noise, machine guarding on extrusion and pelletising lines.
- **Product: food-contact compliance** for pigments and additives used in food-packaging applications, with supporting certification; BIS standards where notified for pipe and specified applications; heavy-metal restrictions in pigments.
- **Recycled content: Plastic Waste Management Rules and EPR obligations** — recycled-content compounds supplied for regulated packaging categories require traceable feedstock and characterisation; understand the customer's compliance requirement, since they are buying compliance as much as material.
- **General:** GST, MSDS for compounds where applicable, labour compliance, transport documentation.

10. Organisation & Manpower Plan

Role	Yr 1	Yr 2	Yr 3
Promoter / managing director	1	1	2
Production & extruder operators	10	16	21
Technical sales & service	5	9	12
QC & colour laboratory	**4**	**6**	**8**
Maintenance & utilities	3	5	7
R&D, formulation & colour matching	3	5	6
Stores, dispatch & logistics	3	5	6
Admin, accounts & credit	3	5	6
Total	**32**	**52**	**68**

11. Implementation Timeline & Milestones

Phase	Timeline	Milestone
Setup	Month 0–8	Consents, plant erection, power sanction, colour lab, trial runs
Ramp	Month 8–12+	Processor accounts & toll contracts; ₹11cr revenue, ₹44L loss
Grow	Year 2	Utilisation & additive/engineering mix; ₹17cr, ₹35L profit
Scale	Year 3	₹23cr revenue, ₹1.14cr profit; asset turn 7.5x

12. Financial Plan (Illustrative)

All figures are illustrative model assumptions for an Indian context, shown so the promoter can replace them with live rates. They are not projections of guaranteed results. ***Read on conversion spread, extruder utilisation and asset turn — not on net margin, which is structurally thin in a pass-through conversion business.***

12.1 Project cost & means of finance

Capital requirement	₹
Plant & machinery (twin-screw extruders, mixers, pelletisers, dosing)	1,60,00,000

Working capital (resin, WIP, finished goods & receivables)	1,30,00,000
Land, building & civil works	75,00,000
Colour laboratory, spectrophotometer & QC instrumentation	35,00,000
Utilities, chilling, power infrastructure & DG	25,00,000
Storage, safety, dust control & fire systems	10,00,000
Preliminary, pre-operative & licensing	5,00,000
Total project cost	**4,40,00,000**
Term loan	1,60,00,000
Promoter contribution	1,50,00,000
Working-capital finance	1,30,00,000

12.2 Projected Profit & Loss (3 years)

Particulars	Year 1	Year 2	Year 3
Colour & white/black masterbatch	4,30,00,000	6,60,00,000	8,90,00,000
Filler masterbatch (calcium carbonate)	2,40,00,000	3,70,00,000	5,00,00,000
Additive masterbatch (UV, antifib, antistatic)	1,50,00,000	2,35,00,000	3,20,00,000
Toll / job-work compounding	**1,80,00,000**	**2,55,00,000**	**3,30,00,000**
Engineering & recycled-content compounds	1,00,00,000	1,80,00,000	2,60,00,000
Total revenue	**11,00,00,000**	**17,00,00,000**	**23,00,00,000**
Raw materials (resin, pigments, fillers, additives, packaging)	7,70,00,000	11,73,00,000	15,64,00,000
Depreciation, interest & other	70,00,000	74,00,000	78,00,000
Salaries (technical, QC, sales, admin)	66,00,000	84,00,000	1,08,00,000
Power, fuel & utilities	66,00,000	96,00,000	1,28,00,000
Direct labour & plant operations	50,00,000	66,00,000	84,00,000
Freight, distribution & warehousing	40,00,000	58,00,000	76,00,000
Repairs, maintenance, screws & spares	30,00,000	40,00,000	52,00,000
Overheads, insurance & selling	28,00,000	40,00,000	52,00,000
Bad debts & credit losses	16,00,000	24,00,000	32,00,000
Effluent, environmental & compliance	8,00,000	10,00,000	12,00,000
Total expenses	**11,44,00,000**	**16,65,00,000**	**21,86,00,000**
Net profit / (loss) before tax	**(44,00,000)**	**35,00,000**	**1,14,00,000**
Net margin	(4.0%)	2.1%	5.0%
Raw material as % of revenue	**70.0%**	**69.0%**	**68.0%**

Toll work as % of revenue (no resin risk)	16.4%	15.0%	14.3%
Asset turn (revenue ÷ gross fixed assets of ₹3.05cr)	**3.61x**	**5.57x**	**7.54x**

12.3 Unit economics & break-even

- **Conversion spread, not turnover:** with resin at ~70% of revenue, a 15% rise in resin prices inflates turnover by roughly 10% while adding nothing to earnings. Pricing, budgeting and performance review must all work in rupees per tonne of conversion, or the business will congratulate itself on a resin rally.
- **Utilisation is the profit engine:** extruders, power infrastructure, labour and depreciation are largely fixed. Asset turn rising from 3.6x to 7.5x — not any pricing action — is what carries this plan from loss to profit.
- **Changeovers are a real cost:** purge material and lost extruder hours are unbillable, and grouping shades and grades can add several percentage points of saleable output without any capital spend.
- **Toll work is the risk-free floor:** at 14–16% of revenue it carries no resin exposure and no receivable against material value, only against conversion. In a volatile resin market this share is worth deliberately protecting.
- **Break-even:** reached in Year 2 as utilisation builds. Margins then improve with additive and engineering mix, changeover discipline and recycled-compound capability rather than with price.

12.4 Projected Cash Flow — Year 1 (quarterly, illustrative)

Particulars (₹)	Q1	Q2	Q3	Q4
Opening balance	1,30,00,000	1,00,00,000	80,00,000	65,00,000
Collections	2,35,00,000	2,55,00,000	2,65,00,000	2,85,00,000
Resin & materials, power, wages, freight, overheads & loan servicing	2,65,00,000	2,75,00,000	2,80,00,000	2,80,00,000
Closing balance	**1,00,00,000**	**80,00,000**	**65,00,000**	**70,00,000**

> **Resin purchasing dominates the cash cycle, and it is where a compounder is most exposed.** Resin is bought on limited credit while processors expect 45–60 days, so the business funds the gap on the largest cost line it has. Two additional pressures deserve attention. **A rising resin market consumes cash even at constant volume** — the same tonnage simply costs more to buy, which is why working-capital limits must be reviewed against resin prices rather than against tonnage alone. And **power is a substantial, non-negotiable monthly outflow** at 6% of revenue for an extrusion operation. Increasing toll share is the most direct structural relief, since toll work requires no resin funding at all.

12.5 Key Performance Indicators to Monitor

- **Capacity: extruder utilisation %**; output kg per hour by grade; **contribution per extruder-hour**; changeover time and purge cost.
- **Quality: first-time-right colour match %**; ΔE within tolerance; dispersion pass rate; first-pass release; customer line-stoppage incidents.
- **Margin:** conversion spread per tonne; RM as % of revenue; additive/engineering share; toll share of revenue.
- **Finance:** resin inventory days & price exposure; receivable days; power cost per tonne; asset turn.

13. Funding Requirement & Bankability

Total ask: **₹1.6 crore term loan plus ₹1.3 crore working-capital finance** against ₹1.5 crore promoter contribution. Extrusion machinery, land and building provide conventional security, and MSME and state industrial incentives apply.

Three points for a lender. **Assess this on conversion spread and asset turn, not net margin** — 5% net in Year 3 is normal for a pass-through conversion business, and asset turn of 7.5x is the more meaningful indicator. **Working capital must be reviewed against resin prices**, since a rising polymer market increases funding need at unchanged volume; a fixed limit set in a soft market becomes a constraint in a firm one. And **toll work is a genuine credit strength**: at 14–16% of revenue it generates conversion income with no resin exposure and a smaller receivable, and a higher toll share would reduce the facility requirement further. The realistic risk is not demand but **resin price volatility combined with processor receivables**, both of which are manageable with disciplined limits.

13.1 Funding utilisation

Use of funds	₹	% of total
Plant & machinery (twin-screw extruders, mixers, pelletisers, dosing)	1,60,00,000	36.4%
Working capital (resin, WIP, finished goods & receivables)	1,30,00,000	29.5%
Land, building & civil works	75,00,000	17.0%
Colour laboratory, spectrophotometer & QC instrumentation	35,00,000	8.0%
Utilities, chilling, power infrastructure & DG	25,00,000	5.7%
Storage, safety, dust control & fire systems	10,00,000	2.3%
Preliminary, pre-operative & licensing	5,00,000	1.1%
Total	**4,40,00,000**	**100%**

14. Risk Analysis & Mitigation

Risk	Mitigation
Resin price volatility on own-resin sales	Price on conversion spread rather than percentage markup; grow toll share; limit resin inventory days; price-revision clauses; back-to-back buying on large orders
Low extruder utilisation against fixed cost	Toll contracts as baseload; small-lot flexibility to fill gaps; changeover-efficient scheduling; regional processor density
Colour mismatch or dispersion failure stopping a customer line	Spectrophotometer matching to defined ΔE, laboratory trial before production, retained standards, first-pass release discipline, prompt technical response
Changeover waste eroding margin	Shade-sequenced scheduling, grouped grades, purge-material recovery, changeover time tracked as a costed KPI
Power cost & supply interruption	Load optimisation, power-factor correction, DG backup, energy cost per tonne monitored, tariff-aware scheduling
Processor receivable default	Credit limits, ageing discipline, security where warranted, diversified customer base, higher toll share
Recyclate feedstock variability	Incoming characterisation and contamination screening, melt filtration, qualified suppliers, honest specification limits to customers
Food-contact or heavy-metal compliance failure	Certified pigments and additives for food applications, supplier documentation, segregation of non-compliant materials

Captive compounding by large processors	Serve small and mid-size processors; compete on colour capability and small-lot flexibility rather than scale
Machinery breakdown halting output	Preventive maintenance, critical spares (screws, barrels, screen packs), service contracts, multi-line redundancy as scale allows

15. SWOT Analysis

Strengths High asset turn typical of conversion businesses; toll work provides a price-risk-free floor; demand tracks broad plastics consumption rather than one end market; colour library builds switching friction; small-lot flexibility underserved by large compounders; recycled-compound capability is an emerging moat.	**Weaknesses** Thin net margins with 70% pass-through resin; heavy resin price and working-capital exposure; power-intensive cost base; utilisation-dependent; changeover waste; widely available competing capacity.
Opportunities **EPR and recycled-content mandates creating a regulated growth segment**; engineering and additive grades with better realisation; import substitution in specialty compounds; agriculture and infrastructure film/pipe demand; toll partnerships with brand owners; second extrusion line at low incremental cost.	**Threats** Resin price shocks; processors integrating compounding captively; conversion-rate competition from surplus regional capacity; power tariff increases; plastics regulation restricting certain applications; customer concentration.

16. Recommended AiSevak Tools for This Business

This polymer compounding unit would use AiSevak's Chemicals vertical tools in operations:

- **Capacity: extruder utilisation & contribution-per-extruder-hour**, changeover-time and purge-cost tracking, scheduling-optimisation tools.
- **Margin: conversion-spread-per-tonne** modelling, resin price-exposure and inventory-days tools, toll-vs-own-resin mix analysis.
- **Quality:** colour-match ΔE & first-time-right tracking, dispersion & MFI release records, retained-standard management.
- **Finance:** receivable ageing, power-cost-per-tonne, working-capital-vs-resin-price review tools (with Finance vertical).
- **Practice:** Business Plan, break-even and conversion-economics tools to model the unit.

17. Key Assumptions & Notes

- Polymer & masterbatch compounding: twin-screw extrusion of colour/white/black, filler, additive, engineering & recycled-content compounds on own OR customer-supplied resin; revenue = capacity × utilisation × realisation, gross.
- **THE MOST CONSEQUENTIAL DECISION IS MAKE-vs-TOLL, AND IT CHANGES WHAT THE BUSINESS IS.** Buy the resin → resin is ~70% of revenue, the balance sheet carries commodity risk, and you are effectively *a trader with machines attached*. Customer supplies resin and you charge a **CONVERSION FEE** → price risk vanishes, WC collapses, and it becomes a pure capacity-utilisation play. Neither is wrong but they are DIFFERENT BUSINESSES with different risks, and **a plan that blurs them isn't describing anything real.** Modelled as a deliberate mix with toll at 14-16% as a price-risk-free floor.

- **READ THIS P&L ON CONVERSION SPREAD AND CONTRIBUTION PER EXTRUDER-HOUR, NOT NET MARGIN.** 2-5% net looks unimpressive and is entirely normal for a pass-through conversion business. A 15% resin rise inflates turnover ~10% while adding NOTHING to earnings — so pricing, budgeting and review must all work in ₹/tonne of conversion, **or the business will congratulate itself on a resin rally.** Asset turn 3.6x→7.5x is what carries the plan from loss to profit.
- **Quote on CONVERSION SPREAD, not a percentage markup over resin** — a % markup silently inflates in a high-resin market and collapses when resin falls, in both cases decoupling price from the work actually done.
- **CHANGEOVER DISCIPLINE is where compounding margin is quietly won or lost** - purge material and lost extruder hours are UNBILLABLE; a week sequenced shade-light→dark with grouped grades produces materially more saleable output than the same week sequenced by order arrival, on identical machinery/staff/material. **Production scheduling here is a COMMERCIAL function, not an administrative one.**
- Colour matching (spectrophotometer, ΔE tolerance, colour library) + dispersion quality are the technical moat; a mismatch or dispersion failure STOPS the customer's line. Small-lot flexibility is genuinely valued — large compounders decline the batches regional processors need.
- **EPR / recycled-content is a REAL regulated tailwind** — Plastic Waste Management Rules oblige brand owners toward mandated recycled content in specified packaging, making properly characterised recycled compounds **a regulated growth segment rather than a discount product**; the customer is buying COMPLIANCE as much as material. Recyclate is variable → treat as an input requiring qualification (characterisation, contamination screening, melt filtration), not a cheap substitute.
- Cash: resin bought on limited credit vs processors at 45-60 days, and **a RISING resin market consumes cash at CONSTANT volume** — so WC limits must be reviewed against resin PRICES, not tonnage. Power is ~6% of revenue and non-negotiable. Higher toll share is the most direct structural relief. Figures illustrative, exclude GST.

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