

Recycling of Nylon & Engineering Plastics

Recycling of engineering plastics presents an excellent economic opportunity due their high price value as compared to commodity plastics. Reduction in carbon footprint, greenhouse gas emission and resource saving are an added benefit. Thirdly regulatory pressure on companies to partly use recycled content in their end products bodes well for the plastics recycling industry. Engineering plastics include high performance polymers like Polyamides (PA) or nylon, Polycarbonate (PC), Polybutylene terephthalate (PBT), Polyethylene terephthalate (PET), Acrylonitrile butadiene styrene (ABS), Polyetheretherketone (PEEK), Polyoxymethylene (POM).

We are a leading Technical & Project Consultancy organization in the field of recycling of plastics and rubber. We have expertise in the recycling of both commodity as well as engineering plastics. The undersigned is an expert in the field with industry experience in different fields for more than 25 years. He has worked in Reliance Industries (Hazira, Surat) and IndoRama Synthetics in the past. We have worked on various recycling projects in India and foreign countries.

Recycling of Nylon particularly presents an excellent economic opportunity due to its high price value and wide global availability. There are various waste streams for nylon recovery (please see the list below). The proposed project envisages recycling of waste nylon 6 and 66 grades into recycled compound that finds end application in different sectors like automotive components, industrial & electrical components, white goods, consumer goods etc.

Recycled nylon compound pellets customized for varied end applications can be produced like heat stabilized, lubricated, impact modified, mineral filler added, glass fiber added compound. **The main sources of waste nylon are given below that are widely available and supplied from Europe and North America.**

- Post-consumer shredded nylon carpet backing
- Nylon 6 and 66 tyre cord fabric – scrap & off grade
- Nylon 6 and 66 filament yarn – scrap & off grade
- Automotive airbag scrap (used)
- Nylon fishing net scrap
- Production scrap, start-up lumps & agglomerates
- PA 11 & 12 cable scrap

As a first step we can prepare a Techno Economic Project Feasibility Report enabling you to make an informed business decision, arrange project finance from lenders and statutory clearances from Govt. departments. Typical contents of such a report are given below.

- 1.0 Why recycling of scrap nylon makes economic sense?
 - 1.1 Value added up-cycled nylon compounds
- 2.0 Suggested production capacity & project parameters
- 3.0 Manufacturing Process & Technology
- 4.0 Production Flow Diagram
- 5.0 Plant & Machinery with basic specifications and indicative prices
- 6.0 Quality Control & Testing Lab with basic specifications and indicative prices
- 7.0 Utilities & Support facility with basic specifications and indicative prices
- 8.0 Estimated Project Cost
- 9.0 Manpower Requirement & Cost
- 10.0 Typical Product Cost (raw material & additive cost, production cost, overheads)
- 11.0 Estimated Turnover, Profitability & Project Payback Period
- 12.0 Working Capital requirement
- 13.0 Machinery Suppliers List
- 14.0 Different End Applications and Key Market Segments
- 15.0 Finished Product and Raw Material Guiding Specifications & Testing Standards
 - 15.1 Product costing and pricing
- 16.0 Factory Area & Building requirement
- 17.0 Market Scenario (virgin & recycled nylon consumption, market potential, growth prospects, competitive scenario)

Once you decide to go ahead with the project we can assist you completely for the project implementation i.e. Selection & Sourcing of equipment, Plant layout design, Processing know-how, Commissioning & Trial running of plant, Quality Control & Testing systems, Market intelligence, sourcing of raw material, target markets & end use segments and technical product qualification.

Best regards,

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Glass filled black nylon 6 compound