ANULON®

Wonder Material of Tomorrow

PLASTIC ABHIYANTA

(AN ISO 9001-2008 COMPANY)

THE ORGANISATION

PLASTIC ABHIYANTA, a renowned house of Engineering Thermoplastics, began its journey way back in 1977. It was based on the solid track laid by the Late R.D. Maheshwari, five decades ago and strengthened by his son, the Late Ghanshyam Maheshwari, who were the leading lights in the Thermoplastic industry within and outside India.

Plastic technology is characterized by accelerating development of materials for specific applications. Selecting the correct material for an application is paramount. Consideration must be given to all aspects, viz., mechanical, thermal, chemical and electrical needs. In addition, environmental factors, such as, UV resistance, toxicity and water absorption are to be given due attention. Lastly, price limitation for the intended applications is an important factor.

With expertise gained through years of innovation, Plastic Abhiyanta develops technical plastics tailored to individual customer needs. These special products help our clients increase productivity and reduce costs.

Plastic Abhiyanta is proud to have a performance graph continuously renewing and developing itself with the aim to maintain optimum quality. The company offers highest quality products and services by making use of the latest production technologies available in the world.

Today, we have come a long way, catering to the ever growing needs of Machinable Engineering Plastics both in semi finished stock profiles and finished products. The organisation has the largest market share in Eastern India. The company shall continue to render high quality products and services to its customers by making new additions to its product range. In this brochure we present an overview of our **ANULON** range of Engineering Plastics. A brief description is intended to emphasize their respective properties.

ANULON-114 Polyamide (PA-6) is a most versatile Engineering Thermoplastic processed from very high viscosity raw material. Anulon-114, having high impact strength and toughness along with very good mechanical properties, has made it suitable for replacement of conventional metal components and parts. The low coefficient of friction against ferrous and non-ferrous metals is most ideal for bushes, gears and bearings. It gives trouble-free service with minimum maintenance even without external lubrication. It has unique dampening properties which reduce noise pollution in plants and machinery.

ANULON 114 M Grade extruded PA6 with controlled percentage of Molybdenum Di-Sulphide (MOS2) increases slip bearing properties, stiffness and wear resistance.

Availability

Rounds, Rectangular & Square Bars, Tubings, Machined, Moulded & Fabricated components.

Applications

Bearing Bushes, Bearing Blocks, Bottle infected stars, Chain sprockets, Conveyor links, Rollers, Cams, Gears, Guide Bushes, Picking Cones, Pulleys, etc.

ANULON-115 Cast Polyamide (PA-6) offers extremely good wear resistance coupled with high tensile strength and modulus of elasticity. It has qualities of impact resistance, high heat distortion temperature, resists wear abrasion, and vibration. In addition, **ANULON-115** is impervious to a wide variety of chemicals, alkali dilues, acids and oxidizing agents.

An important quality is its relatively lighter weight (approximately 1/8th the weight of bronze, 1/7th the weight of steel, and half the weight of aluminum) which reduces both inertial and static loads and eases handling of large components during maintenance or replacement procedures. It has balanced mechanical properties and its exceptional machinability makes it the ideal material for a wide range of applications.

ANULON-115 Oil Grade is a highly crystalline modification of Cast Polymide. It has been specially designed for sliding application through the addition of oil, solid lubricants and stabilizers. The lubricants and additives impregnated in the material provide continuous lubrication throughout the total lifetime of the component. Compared to the standard Cast Polyamide, a 50% reduction of the coefficient of sliding friction can be achieved, leading to less friction heat and thus to enhance significantly higher load bearing capacity.

Availability

Rounds, Sheet, Hollow sections, Blocks, Custom casting and non standard sizes on requirement.

Applications

Bushes, Friction Bearing Blocks, Conveyor Screws, Rollers, Cams, Gears, Gear Racks, Liners, Slipper Pads, Guide shoe bushes, Saddles, etc.

ANULON-140 Polyoxymethylene **(POM)** represents on ideal combination of strength, rigidity and toughness. It has exceptional resistance to tensile and flexural stress due to its highly crystalline polymer structure, highest among various thermoplastics. It has the ability to function over a broad temperature range for long period. Its smooth hard surface is ideal for use in parts subjected to sliding friction. Good dimensional stability and particularly good fatigue resistance as well as exceptional machinability, make **ANULON-140** a versatile engineering material even for complex components with high demands on surface quality.

Availability

Rounds, Blocks, Sheets, Machined, Moulded & Fabricated components.

Applications

Gears, Bearing, Cam shafts, Rubbing plates, Slides, Reels & Guide Rollers, Gear Racks, Bushings, Rollers, Pulleys, Rotchets, Bobbins, Conveyor chain housings, etc.

ANULON-118 Polyurethane **(PU)** component possess outstanding engineering properties for industrial applications. The inherent strength and ingrained superiority of **ANULON-118** makes it most appropriate for demanding industrial (Mechanical, Chemical, Thermal & Electrical) applications. Its high coefficient of friction leads to versatile applications in frictional drives. Its good electrical and thermal properties, resistance to chemical media and wide working temperature range give additional characteristics to its application. Its excellent abrasion resistance together with very high impact and tensile strength and tough tear strength make **ANULON-118** versatile for engineering applications. Depending upon the application, it can be formulated to exhibit low or high resilience and wide range of hardness. **ANULON-118** can be extruded, moulded or cast to desired shapes depending upon configuration of the shape, size and applications.

Availability

Rounds, Sheets, Square Bars, Blocks, Trolley Wheels, Rollers, Tubings, Machined, Moulded & Fabricated components.

Applications

Centricleaner Nozzles, Castor wheels, Skate wheels, Clamping pad, Chopper Cots, Vibrating screens, Spring Pads, Shock absorbers, Rollers, Printing Rollers, Liners, Buckets, Seals, etc.

ANULON-94 Ultra High Molecular-weight Polythelene (UHMWPE) has polymer chains 10 to 20 times longer than High Density Polyethylene. The longer chains (higher molecular weight) give major advantages in toughness, abrasion resistance and freedom from stress cracking. **ANULON-94** shares the lubricity, chemical resistance and excellent electrical properties of conventional HDPE. It has several extra-ordinary properties, particularly abrasion resistance (ten times better than carbon steel) and suitable for extremely low temperature applications (-250oC to 90oC); even colder than liquid nitrogen. In the food processing indusry, its self lubricating properties and resistance to boiling water are exploited. It complies with FDA requirements for handling food, water and pharmaceuticals. Many uses are based on its noise and shock absorbing properties. In mining industry, **ANULON-94** is used as liners in chutes and hoppers due to its excellent abrasion and chemical resistance.

Availability

Rounds, Rectangulars, Square Bars, Blocks, Sheets, Trolley wheels, Machined, Moulded & Fabricated components.

Applications

Hopper & Chute liners, Wear plates, Strips, Centricleaner Nozzles, Suction Box Covers, Rollers, Impellers, Guides, Screens, etc.

ANULON-122 Polycarbonate is known throughout the world for its toughness, transparency and shatter resistant characteristics. **ANULON-122** can be used for many applications and it makes unique contribution towards special needs, such as, safety, transparency, light weight and better inflammability standards all combined into one and at the same time it achieves better sound and thermal insulation, ensuring very low maintenance cost. Thus, the toughest glazing material the world has ever experienced.

Availability

Sheets, Tubes, Rounds, Machined, Thermoformed Moulded & Fabricated components.

Applications

Instrument panel covers, Safety & Security glazings, Housings, Sinages, Domes, Visors, etc.

ANULON-120 Polymethyl Methacrylate (PMMA) commonly known as Acrylic due to its high clarify (92% light transmission) and toughness is widely used for various optical applications, such as, transparent covers, domes, level indicators, gauge glass, laboratory apparatus, test jigs etc. **ANULON-120** is chosen for many applications because of a unique combination of properties, such as, crystal clarify, good surface hardness, exceptional weatherability, chemical and environmental resistance, and excellent mechanical stability. It exhibits low electrical conductivity and good arc resistance and dielectric strength.

Availability

Sheets, Blocks, Tubes, Rounds, Moulded, Machined & Fabricated components.

Applications

Covers, Decorative Bars, Domes, Test jigs, Tanks, Gauge glass, Instrument panels, Housings, Laboratory equipments, etc.

ANULON-220 Polytetrafluroethylene (PTFE) popularly known as Teflon is an inert, non-toxic material well known for its remarkable properties, such as, self lubrication, non adherence, non-inflammability and immunity to chemicals or solvents. Its dielectric constant and loss factor are low and stable across a wide temperature and frequency range. Impact strength is high but tensile strength, wear resistance and creep resistance are low in comparison with other engineering plastics. Glass, bronze, carbon and graphite are added to improve specific mechanical properties to suit individual application. Its coefficient of friction is lower than almost any other material. Having excellent thermal properties, it has a wide working temperature range from – 80oC to 250oC.

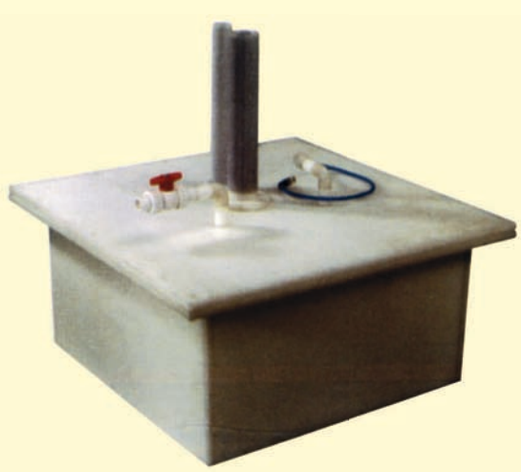
Availability

Sheets, Rounds, Bushings, Square & Rectangular bars, Tubings, Machined components.

Applications

Seals, Washers, Gaskets, 'O' Rings, Bushings, Packings, Coatings, etc.

ANULON-92 Polypropylene possesses the most valuable property which is its versatility. It can be tailored to many fabrication methods, such as, welding, machining, bonding and thermoforming for wide range of applications in chemical process pollution control, effluent handling equipment, food & beverage industries etc. to name a few. Due to its typical features, such as, lowest specific weight, high tolerance to impact and abrasion, excellent chemical resistance at elevated temperatures, UV resistance, non-adherence, non-toxic and moderate cost, **ANULON-92** is an ideal material. **ANULON-92 GL** (Glass Lined) Sheets retain the general characteristics of Polypropylene. When laminated with woven polypropylene and fibre glass fabric on one side, it is used for lining of tanks and vessels and for reinforcement with FRP.



Availability

Sheets, Rounds, Pipes, Pipe fittings, Valves, Welding Rods, Machined, Moulded & Fabricated items.

Applications

Tank linings, Pickling tanks, Covers, Ducts, Scrubbers, Fume absorbers, Cutting boards, Flush drain covers, packings, etc.

ANULON-98 High Density Polyethylene (HDPE) is a highly crystalline, nonpolar thermoplastic polyolefin. It is highly resistant to most household and industrial chemicals; thus **ANULON-98** pipes, pipe fittings, valves and tanks are used for transportation and storage of such chemicals. It does not absorb moisture and provides good water vapor barrier, which makes it useful in lining applications.

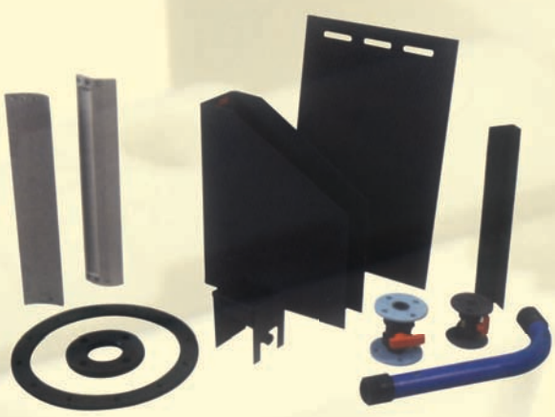
Availability

Sheets, Rounds, Pipes, Pipe fittings, Valves Machined, Moulded & Fabricated components.

Applications

Chemical process tank linings, Valves, Mainfold, Stars, Scrubbers, etc.

ANULON-145 Polyvinylchloride (PVC) is the most versatile of all plastics because of its inherent chemical resistance, high rigidity, flame retardance, good tensile strength, weatherability and density make Anulon-145 useful in a variety of industries. It has excellent resistance to many acids, alkalis, plating solutions, paper and pulp making chemicals, alcohols, glycols, amines, chlorinated solvents etc. Low thermal and electrical conductivity levels enhance safety performance in industrial environment. End use properties range from high rigidity needed for sheet to rubber like flexibility in soft **ANULON-145 S** sheets. Its excellent properties backed by wide processing techniques make it suitable for various industrial applications.



Availability

Sheets, Rounds, Pipe, Pipe fittings, Valves, Gasket Sheets, Strip curtains, Machined & Fabricated components.

Applications

Tanks, Tank linings, Scrubbers, Ductings, Covers, Fume absorbers, Strips, Panel covers, Housings, Curtains, etc.

ANULON-178 Polyvinylidene Fluoride (PVDF) is a high molecular weight polymer. **ANULON-178** has greater strength, wear resistance and creep resistance than PTFE and some other fluropolymers. It has excellent resistant properties against most chemicals and solvents, including oxidizers, such as, liquid bromine and bromine salt solutions. It is weather-resistant and does not support combustion in air. It has a high dielectric constant and a high loss factor relative to other fluoroplastics. The service temperatures extend from – 40oC to 150oC depending on specific requirements.

Availability

Sheets, Rounds, Tubes, Pipes, Pipe Fittings, Valves, Fabricated and moulded components.

Applications

Chemical process equipments, Tank linings, etc.

ANULON-138 Polyetheretherketone (PEEK) is a semi-crystalline thermoplastic with excellent slip properties and very good mechanical properties, even under thermal stress, in combination with excellent resistance to chemicals. The high continuous working temperature rounds off the profile of this high-performance plastic and makes it virtually the appropriate material for highly stressed parts.

Availability

Sheets, Rounds, Machined, moulded and fabricated components.

Applications

Gears, Friction bearings, Bobbins, Piston rings, etc.

FABRICATION

MACHINING : We have extensive machining facilities to shape all types of thermoplastics. The machined components are made as per customers' drawings, specification or sample under expert supervision for high accuracy and precision.

WELDING : Some thermoplastics can be welded to make different types of industrial products like tanks, ducts, scrubbers, piping and other complicated shapes to give maximum varieties of fabricated items. The welding facility includes hot air welding, hot plate welding, ultrasonic welding, extrusion welding.

THERMOFORMING : Most of the thermoplastics can be thermoformed by pressure forming, drape forming, vacuum forming and blow forming to achieve most complex shapes. Thermoforming is done from flat sheet of Acrylic, PP, HIPS, ABS and PC. We undertake all types of thermoforming jobs as per customers' requirement.

PROCESSING

EXTRUSION : Thermoplastics can be extruded to different profiles. We have extrusion facility to manufacture profiles like round, square and rectangular bars, pipes, tubings and other profiles. The said profiles are extruded in different Thermoplastic materials like Polyamide, Polypropylene, Polyethylene, Polyacetal, Acrylic etc.

INJECTION MOULDING : Thermoplastic can be injection-moulded to desired shapes & sizes. We have injection moulding facility to mould industrial components to any shape & size, weight scaling from 5grms to 2500grms. These components can be moulded in different thermoplastics as per customers' specification or sample.

CASTING : Some thermoplastics like Polyamide, Acrylic & Polyurethane can also be given shape by casting process. We have facility for casting such polymers, which offers greater flexibility because of the limitless size and shape of casting. The shape and size with longer volume and weight, which cannot be produced by injection moulding or extrusion process, can be made by casting process.

USER INDUSTRIES

Aerospace	Nuclear
Agriculture	Oceanography
Aluminium	Paper & Pulp
Automobile	Petrochemicals
Cement	Pharmaceuticals
Chemical	Railways
Construction	Refractories
Dairy	Refineries
Defence	Refrigeration
Distilleries	Research & Development
Engineering	Shipping
Electrical	Solar
Fertilizers	Steel
Food & Beverages	Sugar
Food Processing Plant	Tea
Jute	Textiles
Marine	Thermal
Mining	Timber

QUALITY POLICY

WE IN PLASTIC ABHIYANTA INDIVIDUALLY AND COLLECTIVELY ARE COMMITTED FOR THE PROCUREMENT, PROCESSING AND SUPPLYING OF ENGINEERING PLASTIC MATERIAL/PRODUCT IN SEMI FINISH/FINISH CONDITION AS PER STANDARD/CUSTOMER'S SPECIFICATION.

QUALITY MANAGEMENT SYSTEM, OBJECTIVES, SHALL BE PERIODICALLY REVIEWED FOR CONTINUING SUITABILITY AND CONTINUAL IMPROVEMENT OF PROCESS AND PRODUCT.

ALL PERSONNEL OF ORGANIZATION SHALL STRIVE TO ACHIEVE PROGRAMMES OF CONTINUAL IMPROVEMENT FOR QUALITY AND IN-TIME DELIVERY.

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