PROJECT REPORT

OF

BIODEGRADABLE PLASTIC PELLETS

PURPOSE OF THE DOCUMENT

This particular pre-feasibility is regarding Biodegradable Plastic Pellets manufacturing unit.

The objective of the pre-feasibility report is primarily to facilitate potential entrepreneurs in project identification for investment and in order to serve his objective; the document covers various aspects of the project concept development, start-up, marketing, finance and management.

[We can modify the project capacity and project cost as per your requirement. We can also prepare project report on any subject as per your requirement.]

SAMADHAN

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PROJECT AT GLANCE

1	**Name of Proprietor/Director**	XXXXXXXX	
2	**Firm Name**	XXXXXXXX	
3	**Registered Address**	XXXXXXXX	
4	**Nature of Activity**	XXXXXXXX	
5	**Category of Applicant**	XXXXXXXX	
6	**Location of Unit**	XXXXXXXX	
7	**Cost of Project**	24.78	Rs. In Lakhs
8	**Means of Finance**		
i)	**Own Contribution**	2.48	Rs. In Lakhs
ii)	**Term Loan**	15.30	Rs. In Lakhs
iii)	**Working Capital**	7.00	Rs. In Lakhs
9	**Debt Service Coverage Ratio**	3.06	
10	**Break Even Point**	0.23	
11	**Power Requiremnet**	20	KW
12	**Employment**	8	Persons
13	**Major Raw Materials**	Plasticizer such as Glycerol, Ethelyne Glycol, Polyglycerol, Urea, Citric acid, Polyvinyle Alcohol etc.	

14 Details of Cost of Project & Means of Finance

Cost of Project

Particulars	**Amount in Lacs**
Land	Owned/Leased
Building & Civil Work	Owned/Leased
Plant & Machinery	15.50
Furniture & Fixture	0.50
Other Misc Assets	1.00
Working Capital Requirement	7.78
Total	**24.78**

Means of Finance

Particulars	**Amount in Lacs**
Own Contribution	2.48
Term Loan	15.30
Working capital Loan	7.00
Total	**24.78**

1. INTRODUCTION

The term “Biodegradable” refers to anything or substances that can be degraded by the natural forces and micro-organisms and Bio-degradable plastics refer to those plastics that can be decomposed by the micro-organisms and also natural factors such as rain, sunlight, etc. and these plastics broaden the options for waste management treatment options over traditional plastics. The most favorable disposable options for these plastics are the municipal composting areas instead of the landfills. Hence, the biodegradable plastics can make significant contributions to material recovery options, reduction of landfill, and utilization of the natural resources.

Fig.: Biodegradable PLA pellets

The global production capacity of the biodegradable plastic pellets reached around 5.64 million tons in 2019. Polylactic Acid (PLA) based is probably the most well-known biodegradable plastic but besides that there are about 20 groups of biodegradable plastic polymers. Of these 20 known biodegradable plastic groups, only 3 types are produced commercially and those include (i) Starch blends (ii) PLA; and (iii) Polybutylene based polymers which includes Polybutyl Succinate (PBS) and Polybutylene Adipate

Terephthalate (PBAT) which are both fossil fuel based. In 2012, the two most influential commercial biodegradable and bio-based polymers were the Polylactic Acid (PLA) and Starch-based polymers accounting respectively for about 47 % and 41 % of the total biodegradable polymer consumption.

PLA (Polylactic Acid) is a potential and popular polymer material. It is also called "Polylactide" and can be produced by the fermentation of renewable sources such as Corn, Cassava, Potato, and Sugarcane. Other feedstock that have been researched and explored include Cellulosic Materials, Agricultural Byproducts, and even greenhouse gases such as Carbon dioxide and Methane. But that technology is still under development and agricultural by-products set to remain as the main feedstock for starch blends and PLA in the near future. PLA has excellent properties as compared to aliphatic polyesters such as high mechanical strength, high modulus, biodegradability, biocompatibility, bioabsorbability, transparency, and low toxicity. Because of its excellent properties, PLA has shown potential applications in different sectors such as agricultural films, biomedical devices, packaging, and automotive industries. Although PLA is a bio-degradable polymer, but its complete degradation may take several years. As of 2019, production capacity of PLA was approximately 290 thousand tons.

The initial production of the biodegradable polymers started in the Europe, the US, and Japan but the production was soon shifted to different parts of Asia due to the low cost of the raw materials and the convenience of feedstock acquisition. Many companies have emerged in China, India, and Thailand that are financed by the local investors and also companies from the global north.

In the recent years, the development of the biodegradable plastics from natural renewable sources such as Crop wastes and Agricultural wastes has received increasing attention. If properly managed, this would reduce their environmental impact upon disposal and, also, it would be economically beneficial.

2. PRODUCT DESCRIPTION

2.1 PRODUCT USES

There are various areas of applications of the PLA plastics pellets:

1. Some of the most common areas of application are the manufacture of plastic films, plastic bottles, plastic bags, etc.
2. Secondly, a lot of biodegradable medical devices are made from the PLA plastic pellets (e.g. screws, pins, rods, and plates that are expected to biodegrade within 6-12 months).
3. PLA constricts under heat and hence suitable for use as a shrink wrap material.
4. The ease with which Polylactic Acid melts allows for some interesting applications in 3D printing.

2.2 RAW MATERIAL REQUIREMENT

The raw materials required for the production of PLA pellets are "Crops and Crop resides". While the direct sources of the sugar and starch such as corn, wheat, rice, etc. are termed as the "First-Generation" raw material, the Crop residues are termed as the "Second-Generation" raw materials.

The raw materials are fermented by the bacteria of the *Lactobacillus* genus such as *Lactobacillus delbrueckii*, *L. amylophilus*, *L. bulgaricus* and *L. leichmanni*.

After the Polylactic acid has been prepared, it is mixed with a number of other substances depending on the purpose of the usage of the pellets. These include:

- Plasticizer such as Glycerol, Ethylene Glycol, Polyglycerol, etc. (2 – 30) %
- Flexibility agent like Urea, Citric Acid, Polyvinyl Alcohol. (10 – 40) %
- Binder such as Stearic acid, glycerol monostearate, montmorillonite, etc. (3 – 13) %
- Hydrophobic agent (0.1 – 5) %
- Emulsifier (0.1 – 5) %

2.3 MANUFACTURING PROCESS

There are a number of steps for the formation of PLA which include 1) Direct Condensation Polymerization, 2) Azeotropic Dehydrative Condensation, and 3) polymerization through "lactic acid formation". Currently, direct condensation and polymerization through lactic acid formation are the most used production techniques:

2.3.1 The process begins with the procuring of the raw materials from the agricultural fields. This can be sugarcane, corn, wheat, rice, or any other source of starch. If they are seeds then screened properly and then dried in

the oven. They are then chopped into fine pieces or ground into fine particle in a Hammer mill for a higher surface area and better fermentation process. If they are juicy crops then they are crushed in the Milling machine.

2.3.2 The starch/ sugar present in the crops are then converted to simple sugar acids (lactic acid). The starch/ sugar of the crops is first converted to glucose by either Acidic or Enzyme hydrolysis. The glucose formed can either be "Crystallized" or used as the liquid concentrate for the conversion to the Lactic Acid.

2.3.3 The next step takes place in the Fermentation Tank. The pH and the temperature of the medium are kept in control. The pH ranges from 5.4 – 6.4, while the temperature ranges from 38 – 42 °C. This is an aerobic "Homofermentative reaction", so the process takes in the presence of oxygenin fermentation tanks. In this process, 100 g of glucose produced can give riseto 90 g of Lactic Acid.

Glycolysis is the first step in this conversion where the glucose is converted into different intermediates and then gets converted to Lactate. Lactic acid is the final product of the hydrolysis of glucose.

2.3.4 After the formation of the Lactic acid, the resultant solution is then transferredfrom the Fermentation tank to the acidifying tank, where the solution is acidified and then it is filtered. The filtrate is then purified. The purification of lactic acid is a difficult process because of the low volatility and the high solubility is water. To overcome these problems, lactic acid is converted to its ester by reacting it with an alcohol to give the "Lactate Ester". The lactateester is purified by distillation, and then hydrolyzed to obtain pure lactic acid.

2.3.5 Polymerization of the Lactic acid can be done by three steps as mentioned earlier at the start of this section. Out of those steps, Direct Polycondensationis the most opted step to carry out the conversation.

2.3.6 The process starts with the conversion of the Lactic acid to Oligo-Lactic Acidat 200 – 250 °C for a period of 6 – 8 hours, the Oligo-Lactic Acid is then converted to Lactide by the cyclization reaction. The lactide formed is purified by distillation and crystallization process to get pure Lactide.

Finally the Lactide is converted to Polylactic acid at 200 – 250 °C after 48 hours and this takes place after being fed to a series of loop and plug-flow reactors.

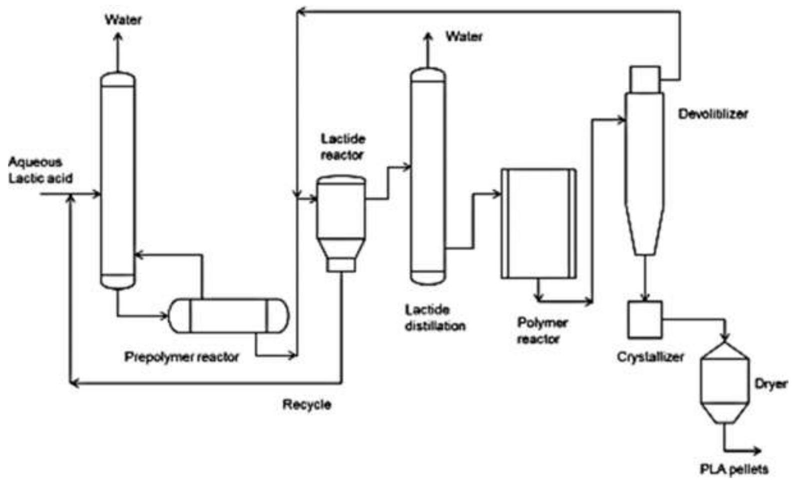
At temperatures above 260 °C, the cyclization reactions starts resulting in the formation of the "Lactide" while at temperatures lower than 200 °C, the amount of water formed is high and this can degrade the quality of the product formed, hence an optimum temperature is very important for the Polycondensation process. The water formed must be continuously removed with the help of a vacuum system.

2.3.7 After the formation of the PLA, the remaining volatile components in the medium are separated using the degassing the PLA melt.

2.3.8 After the separation, different components are mixed with the PLA melt that includes the plasticizers, binder, flexibility agent, emulsifying agents, and colorants in a static mixer.

2.3.9 The mixture is sent through to the Pelletizer to convert the melt into pellets. After they have been pelletized, the PLA pellets are extracted from the pelletizer and then allowed to solidify. They are then sent for the quality check to see if all the properties are okay. They are then filled in plastic bagsas per the capacity required, weighed, and stored in the storage area.

Fig.: Schematic diagram of the manufacturing process.



3. PROJECT COMPONENTS

3.1 Land /Civil Work

An area of almost 3000 – 3500 square feet would be required to set up Biodegradable Plastic Pellets Manufacturing plant. This space would be required for raw materials storage mainly, production, packaging, storage of finished goods, and administrative work.

We have not considered the cost of Land purchase & Building Civil work in the project. It is assumed that land & building will be on rent & approx. rental of the same will be Rs. 30,000 to 40,000 per month.

3.2 Plant & Machinery

The following machineries would be required for the manufacture of the Biodegradable Plastic Pellets:

3.2.1 Milling machine for converting the raw materials into a paste form. The material to be milled is fed through hopper, for dry materials, a Hammer millcan be used while for the wet materials, the Pulping machine can be used. Price of the Hammer mill is Rs. 50, 000 – Rs. 2, 00, 000 depending upon thecapacity, while that for the Pulping machine is about Rs. 25, 000 – Rs. 1, 50,000.

Fig.: Hammer Mill.

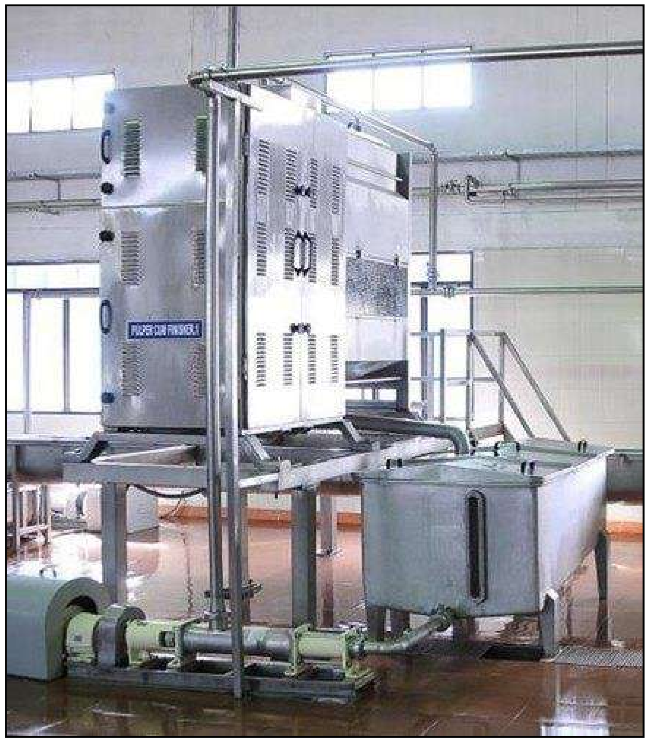


Fig.: Pulping machine

<u>3.2.2</u> Industrial mixing vessels made of Stainless steel or any other non-reactive material. These are required for the preparation of the acid solution for the acidic hydrolysis and also for the preparation of the solution before the conversion of starch to glucose. The cost of the machines can be somewhere between Rs. 30, 000 – Rs. 2, 00, 000 depending upon the capacities.

Fig.: Mixing tanks

3.2.3 Fermentation vessels for the conversion of the glucose to lactic acid. They should be controlled by a PLC system. The price can be upto Rs. 10 lakhs.

Fig.: Industrial fermentation system

3.2.4 Jacketed reaction vessel for the conversion of the synthesized Lactic acid into lactate. As lactate is an ester, and esters decompose at high temperatures, so a constant supply of water is a must during the reaction. Cost of the machine is around Rs. 30, 000 – Rs. 1 lakh depending on the capacity.

Fig.: Jacketed reaction vessel

3.2.5 Vacuum Crystallizer, they use a condenser with a booster to maintain a vacuum inside the crystallizer body. The feed slurry is first heated in a heat exchanger, then pumped to the main body of the crystallizer. Vaporization occurs at the top surface of the slurry, while nucleation occurs near the bottomof the crystallizer body. The price can be around Rs. 3 lakhs – Rs. 5 lakhs.

Fig.: Vacuum Crystallizer

3.2.6 Polymerization reactor with a stirrer made from Stainless steel (SS 304). In these vessels whose capacities can be upto 10, 000 L, the lactic acid is converted Oligo-Lactic Acid.

The Oligo-Lactic acid is then converted to the Lactide form in another reactor which is purified in the Crystallizer equipment, mentioned above.

The price can range from Rs. 1 Lakh to Rs. 5 Lakhs.

Fig.: polymerization reactor

3.2.7 SMR (Static Mixer Reactor) or the Plug flow reactor for the conversion of the Oligolactic acid to the lactide and finally to Polylactic acid. These reactorsare used to perform the Polymerization reaction without the use of catalysts. Under the conditions inside the reactor, all the materials processed through the reactor must have same residence time.

The cost of the material is Rs. 1 lakh for the capacity of upto 10, 000 L of reactants.

Fig.: plug flow reactor

3.2.8 Vacuum degasser. These machines are used to remove the volatile gaseous matter from the liquid or the melt. Degassers primarily function by one of two basic operating principles: negative pressure (vacuum) and atmosphericdegassing. In both cases, fluid is fed through a series of baffles or dispersion plates whereas fluid surface area is increased, allowing the entrained gas to separate either naturally or by the assistance of a vacuum pump.

Price can start from Rs. 2 lakhs and go upto Rs. 10 lakhs.

Fig.: Vacuum degassing system

3.2.9 Pelletizer machine. Underwater pelletizers are probably the most versatile equipment for a wide viscosity range, higher outputs, and pellet size capability. They operate with the die face and rotating cutter fully immersed in water. The produced pellets are carried away with water for further cooling in transit, to the dewatering, screening, and drying equipment.

Fig.: Underwater pelletizer

3.2.10 Plastic pellets packaging machine. The hopper of the machine is filled with the pellets and the pellets drop in the plastics in the fixed amounts and the sealed. This process should be PLC controlled for the exact weighing of the pellets in all the packets.

Fig.: Pellet packing machine

3.2.11 Heat exchanger machines for the various condensing processes during crystallization. The price of the machine can be in the range of Rs. 1 Lakh – Rs. 5 lakh depending upon the capacity.

Fig.: heat exchanger

3.2.12 Centrifugal pumps for the transfer of the liquids from one reactor vessel to another and also for the crystallization processes. Price can start from Rs. 30,000 and go upto Rs. 2 lakhs.

Fig.: Centrifugal pumps

4. LICENSE & APPROVALS

To start the biodegradable plastic pellets manufacturing process the different licenses and registrations from the different authorities regarding the area and machineries must be obtained initially. These laws vary from one state to the other. Besides them, the other certificates that must be obtained are:

1. MSME Udyam Online registration
2. The GST (Goods and Service Tax) certification.
3. A “No-objection Certificate” from the Pollution Control Board.
4. A “No-objection Certificate” from the Fire Board.
5. Labour license.
6. Trademark (optional)

PROJECTED BALANCE SHEET					**(in Lacs)**
PARTICULARS	**1st year**	**2nd year**	**3rd year**	**4th year**	**5th year**
Liabilities					
Capital					
Opening Balance		3.82	6.17	10.70	15.90
Add:- Own Capital	2.48				
Add:- Retained Profit	3.84	5.85	9.53	12.20	14.95
Less:- Drawings	2.50	3.50	5.00	7.00	10.00
Closing Balance	3.82	6.17	10.70	15.90	20.84
Term Loan	13.60	10.20	6.80	3.40	-
Working Capital Limit	7.00	7.00	7.00	7.00	7.00
Sundry Creditors	2.81	3.39	3.99	4.62	5.29
Provisions & Other Liabilities	1.00	1.00	1.20	1.44	1.73
TOTAL :	**28.23**	**27.75**	**29.69**	**32.36**	**34.86**
Assets					
Fixed Assets (Gross)	17.00	17.00	17.00	17.00	17.00
Gross Depriciation	2.53	4.67	6.50	8.06	9.38
Net Fixed Assets	**14.48**	**12.33**	**10.50**	**8.94**	**7.62**
Current Assets					
Sundry Debtors	4.06	5.11	6.02	6.98	7.98
Stock in Hand	6.87	8.49	10.01	11.60	13.27
Cash and Bank	1.32	0.82	1.16	2.73	2.99
Loans and advances	1.50	1.00	2.00	2.10	3.00
TOTAL :	**28.23**	**27.75**	**29.69**	**32.36**	**34.86**

PROJECTED PROFITABILITY STATEMENT					(in Lacs)
PARTICULARS	**1st year**	**2nd year**	**3rd year**	**4th year**	**5th year**
Capacity Utilisation %	**30%**	**35%**	**40%**	**45%**	**50%**
SALES					
BIODEGRADABLE PLASTIC PELLETS	81.23	102.17	120.44	139.62	159.70
Total	**81.23**	**102.17**	**120.44**	**139.62**	**159.70**
COST OF SALES					
Raw material cost	56.25	67.73	79.80	92.48	105.75
Electricity Expenses	1.15	1.61	1.84	2.07	2.30
Depreciation	2.53	2.15	1.83	1.56	1.32
Wages & labour	6.24	6.86	7.55	8.31	9.14
Repair & maintenance	0.81	1.02	1.20	1.40	1.60
Consumables	2.44	3.06	3.61	4.19	4.79
Packaging cost	1.62	2.04	2.41	2.79	3.19
Cost of Production	71.04	84.48	98.25	112.79	128.10
Add: Opening Stock	-	4.06	5.11	6.02	6.98
Less: Closing Stock	4.06	5.11	6.02	6.98	7.98
Cost of Sales	66.98	83.43	97.33	111.83	127.09
GROSS PROFIT	**14.25**	**18.73**	**23.11**	**27.79**	**32.60**
GROSS PROFIT RATIO	**17.54%**	**18.33%**	**19.19%**	**19.90%**	**20.42%**
Salary to Staff	3.12	3.59	4.13	4.75	5.46
Interest on Term Loan	1.50	2.21	0.95	0.58	0.20
Interest on working Capital	0.77	0.77	0.77	0.77	0.77
Rent	4.20	4.41	4.63	4.86	5.11
Selling & Administration Expenses	0.81	1.53	1.81	2.09	2.40
TOTAL	**10.41**	**12.51**	**12.28**	**13.05**	**13.93**
NET PROFIT	3.84	6.22	10.82	14.74	18.67
Taxation	-	0.37	1.29	2.55	3.73
PROFIT (After Tax)	**3.84**	**5.85**	**9.53**	**12.20**	**14.95**
NET PROFIT RATIO	**4.73%**	**5.73%**	**7.92%**	**8.73%**	**9.36%**

PROJECTED CASH FLOW STATEMENT					(in Lacs)
PARTICULARS	**1st year**	**2nd year**	**3rd year**	**4th year**	**5th year**
SOURCES OF FUND					
Own Margin	2.48				
Net Profit	3.84	6.22	10.82	14.74	18.67
Depriciation & Exp. W/off	2.53	2.15	1.83	1.56	1.32
Increase in Cash Credit	7.00	-	-	-	-
Increase In Term Loan	15.30	-	-	-	-
Increase in Creditors	2.81	0.57	0.60	0.63	0.66
Increase in Provisions & Other liabilities	1.00	-	0.20	0.24	0.29
TOTAL :	**34.95**	**8.94**	**13.46**	**17.17**	**20.95**
APPLICATION OF FUND					
Increase in Fixed Assets	17.00				
Increase in Stock	6.87	1.62	1.52	1.59	1.67
Increase in Debtors	4.06	1.05	0.91	0.96	1.00
Increase in loans and advances	1.50	- 0.50	1.00	0.10	0.90
Repayment of Term Loan	1.70	3.40	3.40	3.40	3.40
Drawings	2.50	3.50	5.00	7.00	10.00
Taxation	-	0.37	1.29	2.55	3.73
TOTAL :	**33.64**	**9.44**	**13.12**	**15.60**	**20.70**
Opening Cash & Bank Balance	-	1.32	0.82	1.16	2.73
Add : Surplus	1.32	-0.50	0.33	1.57	0.25
Closing Cash & Bank Balance	**1.32**	**0.82**	**1.16**	**2.73**	**2.99**

CALCULATION OF D.S.C.R					
PARTICULARS	**1st year**	**2nd year**	**3rd year**	**4th year**	**5th year**
CASH ACCRUALS	6.36	8.00	11.36	13.75	16.27
Interest on Term Loan	1.50	2.21	0.95	0.58	0.20
Total	7.87	10.21	12.31	14.33	16.47
REPAYMENT					
Instalment of Term Loan	1.70	3.40	3.40	3.40	3.40
Interest on Term Loan	1.50	2.21	0.95	0.58	0.20
Total	3.20	5.61	4.35	3.98	3.60
DEBT SERVICE COVERAGE RATIO	**2.46**	**1.82**	**2.83**	**3.60**	**4.57**
AVERAGE D.S.C.R.					**3.06**

REPAYMENT SCHEDULE OF TERM LOAN							
					Interest		11.00%
Year	Particulars	Amount	Addition	Total	Interest	Repayment	Closing Balance
ist	Opening Balance	-					
	1st month		15.30	15.30	-	-	15.30
	2nd month	15.30	-	15.30	0.14	-	15.30
	3rd month	15.30	-	15.30	0.14	-	15.30
	4th month	15.30	-	15.30	0.14	-	15.30
	5th month	15.30	-	15.30	0.14	-	15.30
	6th month	15.30	-	15.30	0.14	-	15.30
	7th month	15.30	-	15.30	0.14	0.28	15.02
	8th month	15.02	-	15.02	0.14	0.28	14.73
	9th month	14.73	-	14.73	0.14	0.28	14.45
	10th month	14.45	-	14.45	0.13	0.28	14.17
	11th month	14.17	-	14.17	0.13	0.28	13.88
	12th month	13.88	-	13.88	0.13	0.28	13.60
					1.50	**1.70**	
2nd	Opening Balance						
	1st month	13.60	-	13.60	0.12	0.28	13.32
	2nd month	13.32	-	13.32	0.12	0.28	13.03
	3rd month	13.03	-	13.03	0.12	0.28	12.75
	4th month	12.75	-	12.75	0.12	0.28	12.47
	5th month	12.47	-	12.47	0.11	0.28	12.18
	6th month	12.18	-	12.18	1.00	0.28	11.90
	7th month	11.90	-	11.90	0.11	0.28	11.62
	8th month	11.62	-	11.62	0.11	0.28	11.33
	9th month	11.33	-	11.33	0.10	0.28	11.05
	10th month	11.05	-	11.05	0.10	0.28	10.77
	11th month	10.77	-	10.77	0.10	0.28	10.48
	12th month	10.48	-	10.48	0.10	0.28	10.20
					2.21	**3.40**	
3rd	Opening Balance						
	1st month	10.20	-	10.20	0.09	0.28	9.92
	2nd month	9.92	-	9.92	0.09	0.28	9.63
	3rd month	9.63	-	9.63	0.09	0.28	9.35
	4th month	9.35	-	9.35	0.09	0.28	9.07
	5th month	9.07	-	9.07	0.08	0.28	8.78
	6th month	8.78	-	8.78	0.08	0.28	8.50
	7th month	8.50	-	8.50	0.08	0.28	8.22
	8th month	8.22	-	8.22	0.08	0.28	7.93
	9th month	7.93	-	7.93	0.07	0.28	7.65
	10th month	7.65	-	7.65	0.07	0.28	7.37
	11th month	7.37	-	7.37	0.07	0.28	7.08
	12th month	7.08	-	7.08	0.06	0.28	6.80
					0.95	**3.40**	

4th	Opening Balance						
	1st month	6.80	-	6.80	0.06	0.28	6.52
	2nd month	6.52	-	6.52	0.06	0.28	6.23
	3rd month	6.23	-	6.23	0.06	0.28	5.95
	4th month	5.95	-	5.95	0.05	0.28	5.67
	5th month	5.67	-	5.67	0.05	0.28	5.38
	6th month	5.38	-	5.38	0.05	0.28	5.10
	7th month	5.10	-	5.10	0.05	0.28	4.82
	8th month	4.82	-	4.82	0.04	0.28	4.53
	9th month	4.53	-	4.53	0.04	0.28	4.25
	10th month	4.25	-	4.25	0.04	0.28	3.97
	11th month	3.97	-	3.97	0.04	0.28	3.68
	12th month	3.68	-	3.68	0.03	0.28	3.40
					0.58	**3.40**	
5th	Opening Balance						
	1st month	3.40	-	3.40	0.03	0.28	3.12
	2nd month	3.12	-	3.12	0.03	0.28	2.83
	3rd month	2.83	-	2.83	0.03	0.28	2.55
	4th month	2.55	-	2.55	0.02	0.28	2.27
	5th month	2.27	-	2.27	0.02	0.28	1.98
	6th month	1.98	-	1.98	0.02	0.28	1.70
	7th month	1.70	-	1.70	0.02	0.28	1.42
	8th month	1.42	-	1.42	0.01	0.28	1.13
	9th month	1.13	-	1.13	0.01	0.28	0.85
	10th month	0.85	-	0.85	0.01	0.28	0.57
	11th month	0.57	-	0.57	0.01	0.28	0.28
	12th month	0.28	-	0.28	0.00	0.28	-
					0.20	**3.40**	

DOOR TO DOOR	60	MONTHS
MORATORIUM PERIOD	6	MONTHS
REPAYMENT PERIOD	54	MONTHS

SAMADHAN

Nurturing Dreams - Innovative Solutions

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