

Form-VI

STATUS OF IMPLEMENTATION OF PWM RULES, 2016 FOR THE YEAR 2024-2025

Period of Reporting:

A	GENERAL INFORMATION	
1	Name of the State/UT:	Mizoram
2	Name & Address of SPCB/PCC	Mizoram Pollution Control Board MINECO, Khatla, Aizawl - 796001
3	Contact E-mail:	mizorampcb@gmail.com & mpcb@mizoram.gov.in
4	Contact Phone No.	
5	Details of Plastic Waste Management (State Level)	
	• Collection (MT)	6573.9542 MT
	• Segregation (MT)	Not available
	• Processing including recycling (MT)	132.97 MT
	• Disposal (MT)	Not available
B	MECHANISM OF PLASTIC WASTE MANAGEMENT	
1	Summary of the mechanisms put in place for management of plastic waste in your State/UT along with the details of agencies involved (Please attach the details)	Attach at Annexure I
2	Please attach details of infrastructure put in place for management of plastic waste generated in your State/UT	Attach at Annexure II
3	Total no. of MRF Facilities	3
(a)	No. of Mechanical MRF Facilities with capacity	1
(b)	No. of Manual MRF Facilities with capacity	2

C	PLASTIC WASTE GENERATION, COLLECTION, SEGREGATION & CHARACTERIZATION	
1	Total Numbers of the Urban Local Bodies (ULBs) in the area under jurisdiction	ULB : 2 (Aizawl Municipal Corporation & Lunglei Municipal Council) Urban Towns : 28 (Under UD&PA Deptt)
2	No. of ULBs who have submitted Annual Report	2 out of 2
3	Total Numbers of the Gram Panchayat (GPs) in the area under jurisdiction	There is no Gram Panchayat system in the State but Village Councils instead of GP. There are such 187 Village Councils in 28 Urban towns
4(a)	Total number of Panchayati Raj institution at District Level	Not available
4(b)	No. of Panchayati Raj institution at District Level who have submitted annual report	Not available
5	Please confirm that all GPs/ULBs have provided complete information in stipulated time as per format prescribed by CPCB (Yes/No)	Yes
6	Please provide no. of ULBs/GPs which have not submitted complete information within the stipulated time frame	Nil
7	Please provide total amount of EC levied on PRI at District Level / ULBs who have not submitted annual report as per prescribed timelines under the rules	Nil
8	Quantity of Plastic Waste generated (Tonnes) as per CPCB methodology (Cat I/Cat II/ Cat III/Cat IV/Cat V/ Others)	Cat I : 484.15763 Cat II : 468.34116 Cat III : 303.824922 Cat IV : 0.935638 Recyclable : 1556.931 Non – Recyclable : 3753.99
9	Quantity of Plastic Waste collected (Tonnes)	6573.9542
10	Plastic Waste Segregated (Tonnes)	1257.25935
11	Please confirm that all Local Bodies/ GPs have carried out Assessment of Plastic Waste Generation & Characterization as per methodology specified by CPCB (Yes/No)	Yes

12	Please upload Plastic Waste Characterization Report as per methodology specified by CPCB							Attach at Annexure III	
13	Please confirm that data validation and reconciliation for ULB and PRI at District Level has been done as per methodology specified by CPCB (Yes /No)							Yes	
D	EXTENDED PRODUCER RESPONSIBILITY IMPLEMENTATION								
1	Total Number of ULBs registered on EPR (To be auto fetched from EPR portal)							Nil	
2	Details of Plastic Waste Processors (To be auto fetched from EPR Portal)							Nil	
	Name	Type Recycler/ Coproductors / Waste to Energy/Waste to Oil/Road Making)	Registration No	Processing Capacity (TPA)					
				PW (Cat-I)	PW (Cat-II)	PW (Cat-III)	PW (Cat-IV)	PW (Cat-V)	Other
	Nil	Nil	N.A	N.A	N.A	N.A	N.A	N.A	N.A
3	Plastic Waste Processed through PWPs (TPA)								
	Type Recycler/ Coproductors / Waste to Energy/Waste to Oil/ Road Making)			PW (Cat-I)	PW (Cat-II)	PW (Cat-III)	PW (Cat-IV)	PW (Cat-V)	Other
	Nil			N.A	N.A	N.A	N.A	N.A	N.A
4	Audit & Levying of Environmental Compensation (EC) (To be auto fetched from the EPR Portal)								
(a)	No. of Entities (PIBOs/PWPs) audited							Nil	
(b)	No. of Entities (PIBOs/PWPs) found in violation							Nil	
(c)	EC levied on violating Entities (PIBOs/PWPs)							Nil	
E.	Implementation of ban imposed under Rule 4 including on identified single use plastic items, plastic carry bags having thickness less than 120 microns								
1	Total number of commercial establishments/Institutions and Hotspots in the area under jurisdiction								

(a)	• Commercial establishments : Malls, Cinema Halls, Airports, Railway Stations, Metro Stations				115
(b)	• Institutions: Schools, Colleges, Office Complex etc.				797
2	Total No of Inspections (Data Auto fetched from SUP Compliance Monitoring Portal)				324 (Note: Inspections data are found to be uploaded to the portal but the details on number of inspections cannot be viewed. However, based on the report submitted in hard copy, the total no. of inspection is 342).
3	Total No of Commercial Establishment and hotspots closed for SUP Ban Violation				Nil
4	Total No. of Industries inspected (Data Auto fetched from SUP Compliance Monitoring Portal)				Not Applicable as Industries Producing banned SUPs are already closed down.
5	Total no. of industries closed for manufacturing banned SUP items				Nil
6	Total Fine imposed (Rs.) (Data Auto-fetched from SUP Compliance Monitoring Portal)				Rs. 2,70,865/- (As reported at Sl. No. 2 above the amount of fines imposed is from the report submitted in hard copy).
7	Quantity of Banned SUP seized(Tons) (Data Auto-fetched from SUP Compliance Monitoring Portal)				2.071 T
8	Total No of Commercial establishment and hotspot made SUP free				Nil
9	Details of mode of disposal of seized SUP				
	Qty of SUP Seized (T)		Mode of Disposal (Recycling/ WtE/ WtO/ Co-processing/ roadmaking)		Name & Address of the Plastic Waste Processor
	2.071 T		-		-
10	Details of Entities producing Alternatives including compostable plastics				2
	Details of Entities producing Alternatives				
	Sl. No.	Name of Entity	SUP Alternative produced	Production Capacity (TPA)	Address

	1.	Ransam ZS Industry	Compostable garbage bags & carry bags	182.500	Thuampui Vengthar, Aizawl, Mizoram
	2.	R&K Industry	Compostable garbage bags & carry bags	18.250	College Veng, Aizawl , Mizoram
11	No of Complaints received on SUP grievance App (Data Auto-fetched from SUP Grievance redressal app)				Nil
12	No of Complaints resolved (Data Auto-fetched from SUP Grievance redressal app)				Nil
F	Enforcement of Plastic Waste Management Rules				
1	Details of Registered Plastic Raw Material Manufacturing Units				
	Total No		Capacity:	Product Manufactured	
	Nil		N.A	N.A	
2	Details of Registered PWP (Non- packaging) Processing Facilities				
	Total No		Capacity:	Product Manufactured	
	Nil		N.A	N.A	
3	Details of Unregistered Manufacturing or Recycling Units (in residential or unapproved areas).			Nil	
	Total No		Capacity:	Product Manufactured	
	Nil		N.A	N.A	
4	No. of ULBs which have framed bye-laws			8	
5	No. of violations & action taken on non-compliance of provisions of PWM Rules, 2016, as amended, 2018 (Rule 12)			Banned SUPs were seized from 324 shops, fines were imposed & challan issued	
6	Total no. of violations (Burning/ Littering/non-registration and other non-compliance)			Banned SUPs were seized from 324shops	
7	Action Taken (Fine Imposed / Closures issued)			Fines were imposed on shops selling banned SUPs	

ANNEXURE – I

SUMMARY OF THE MECHANISMS PUT IN PLACE FOR MANAGEMENT OF PLASTIC WASTE IN MIZORAM ALONG WITH DETAILS OF AGENCIES INVOLVED

Plastic waste are segregated at source, collected and directly transferred to Wastes Treatment Facility. There are no intermediate storage facilities in the State except one in Commercial area. However, as there is neither Cement plant nor recycler of plastic waste, majority of plastic waste collected are shredded, baled and stored for recycle through EPR obligation and for co-incineration in Dalmia Cement plant in Meghalaya with which an MoU has been signed for disposal of plastic waste. Meanwhile, the EPRO and the cement plants has certain targets beyond which transportation of waste at times is not possible, thereby resulting into storage of baled waste in the Material Recovery Facility. Plastic waste are also used for construction of road. The State Government is in the process of developing Plastic Waste Management Center or rather A Material Recovery Facility at Industrial Growth Center, Luangmual, Aizawl.

Some local firms like Know waste, Waste Tech & Bio – Energy which has linkage with registered recyclers are the most popular agencies which involves with Plastic Waste Management. Women Self Help Group has an active participation in management of plastic waste. Milk Pouch are re used for plates, plastic bags/sheets are stripped and woven to more rigid bag



Pic: Bags woven from plastic waste

ANNEXURE - II

PLEASE ATTACH DETAILS OF INFRASTRUCTURE PUT IN PLACE FOR MANAGEMENT OF PLASTIC WASTE GENERATED IN MIZORAM

The only infrastructure for management of Plastic waste in the State are Shedder and baling machine. Below are such infrastructure in Rural areas in ULBs the same type of machines with higher capacities are used.





Pic: Baling machine at ULB

ANNEXURE - III

STANDARD OPERATING PROCEDURE FOR ASSESSMENT & CHARACTERIZATION OF PLASTIC WASTE IN AIZAWL MUNICIPAL CORPORATION AREA						
Generation point						
Vehicle Load No.	Sorting Sample Size (Kg)	Total PW (kg)	Category 1 PW (Kg)	Category 2 PW (Kg)	Category 3 PW (Kg)	Category 4 PW (Kg)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	130	9.359	5.108	2.144	2.101	0.031
2	125	8.425	2.542	2.147	2.341	0.026
3	130	10.015	3.388	1.121	2.258	0.047
4	125	9.458	2.289	2.254	2.241	0.032
5	130	10.255	5.522	2.251	2.852	0.041
6	125	11.651	4.369	1.223	2.674	0.022
7	125	10.235	5.991	1.257	2.428	0.041
8	130	9.125	5.479	1.227	2.652	0.025
9	125	10.471	4.684	2.281	2.472	0.064
10	115	9.257	5.568	2.274	3.365	0.033
11	115	10.845	5.612	1.232	2.411	0.074
12	130	11.478	3.897	1.202	2.322	0.055
13	115	8.956	4.369	2.255	2.756	0.027
14	125	9.256	4.741	2.211	2.457	0.019
15	115	8.587	5.669	2.185	2.754	0.033
16	130	11.502	4.471	1.244	2.653	0.028
17	125	9.525	5.325	1.285	2.417	0.047
18	115	9.895	3.847	2.263	2.829	0.036
19	120	10.687	5.476	2.272	2.367	0.025
20	125	8.752	5.579	1.249	2.416	0.011
21	115	9.55	2.984	1.247	3.527	0.044
	$\Sigma (2) =$	$\Sigma (3) =$	$\Sigma (4) =$	$\Sigma (5) =$	$\Sigma (6) =$	$\Sigma (7) =$
TOTAL	2590	207.284	96.91	36.824	54.293	0.761

Disposal point						
Vehicle Load No.	Sorting Sample Size (Kg)	Total PW (kg)	Category 1 PW (Kg)	Category 2 PW (Kg)	Category 3 PW (Kg)	Category 4 PW (Kg)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	130	12.825	4.294	2.121	3.542	0.043
2	132	13.639	5.346	2.114	2.632	0.028
3	125	14.427	5.221	1.241	3.528	0.041
4	115	15.732	4.443	2.124	3.189	0.063
5	130	14.417	4.241	1.114	2.547	0.024
6	110	15.218	3.221	1.152	3.523	0.075
7	130	13.475	5.285	2.142	3.412	0.032
8	125	15.282	5.211	2.117	2.211	0.089
9	132	13.741	4.251	1.174	2.852	0.017
10	130	15.527	4.236	2.123	2.398	0.055
11	125	15.324	3.274	2.148	2.259	0.032
12	124	13.246	3.246	1.181	2.247	0.047
13	119	14.879	4.462	2.132	3.391	0.023
14	124	12.656	5.247	1.187	3.179	0.047
15	134	14.482	4.263	2.142	3.528	0.082
16	126	14.693	5.752	2.137	2.724	0.024
17	132	13.914	4.243	2.122	3.259	0.036
18	137	13.213	5.144	1.174	2.326	0.023
19	132	14.336	5.147	2.103	3.421	0.174
20	130	14.474	4.241	2.108	2.547	0.131
21	112	15.635	3.223	1.189	2.635	0.074
22	100	14.147	5.101	1.185	3.417	0.021
23	137	14.252	4.141	2.134	2.323	0.054
24	132	13.758	5.114	1.184	2.124	0.022
	$\Sigma (2) =$	$\Sigma (3) =$	$\Sigma (4) =$	$\Sigma (5) =$	$\Sigma (6) =$	$\Sigma (7) =$
Total	3023	343.292	108.347	41.548	69.214	1.257

Sweet box (Kg)	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.00	0.001
Invitation Cards(Kg)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.000
Cigarette Packets (Kg)	0	0	3	0.3	0.9	0	0.3	1.36	3.5	0.7	0	4.3	4.8	1.6	0.8	0.3	0	0.1	0.3	0.1	1.7	24.06	0.009
<120 microns (Kg)	10.9	5	10.3	12.55	15	25.33	5.55	28.1	18.22	22.7	26.5	25.74	26	17.1	20.1	10.4	15	20.85	28.2	30.1	20.2	393.84	0.150
<50microns (Kg)	5	6.5	6.6	11.65	19.5	23.85	6.6	11.3	5.3	24.3	11.5	20.65	10.5	14.2	11.1	13.1	24.1	14.95	6.6	15.1	17.2	260.10	0.099
Plastics flags (Kg)	0	4.6	0	0	0	0	0	0	0	0	0	0	0	0.4	0	0	0.02	0	0	0	0.8	5.82	0.002
PVC banners <100um . (Kg)	0	0	1	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.10	0.000
Polystyrene for decoration (Kg)	0.4	2	3	0	0.2	1.2	0.12	0	0	0.6	0.5	0.2	0	0	0.2	0	0	0	0	0	0.4	8.82	0.003
	21.90	31.20	38.70	28.56	47.20	60.40	25.60	49.36	35.76	52.30	45.80	55.60	48.80	37.70	42.60	35.10	45.56	41.50	39.20	50.40	47.10	860.86	0.328

Plastic Waste characterization (Single Use Plastic) - Disposal Point

Vehicle Load No.	Vehicle Load No.1	Vehicle Load No.2	Vehicle Load No.3	Vehicle Load No.4	Vehicle Load No.5	Vehicle Load No.6	Vehicle Load No.7	Vehicle Load No.8	Vehicle Load No.9	Vehicle Load No.10	Vehicle Load No.11	Vehicle Load No.12	Vehicle Load No.13	Vehicle Load No.14	Vehicle Load No.15	Vehicle Load No.16	Vehicle Load No.17	Vehicle Load No.18	Vehicle Load No.19	Vehicle Load No.20	Vehicle Load No.21	Vehicle Load No.22	Vehicle Load No.23	Vehicle Load No.24	Total	Average Kg/kg of Waste	
Sorting sample size (Kg)	114	152	117	147	105	163	117	126	130	116	150	160	150	117	150	160	116	120	113	140	165	130	130	156	3144		
Plastic waste (Kg)	40.1	38.7	40.3	52.2	50.6	45.1	44.9	42.8	47.6	36.4	65.3	57.5	48.6	48.8	55.9	57.3	50	50.8	38.6	35.6	45.5	40.8	48.7	33.6	1115.7	0.35487	
SUPs																											
Earbuds (Kg)	0.6	0.2	0.3	0.1	0.3	0.2	0.1	0.2	0.3	0	0	0	0	0.6	0.3	0.2	0.1	0.3	0.2	0.1	0.2	0.1	0.2	0.3	2.83	0.0009	
Balloons (Kg)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0.1	0.000031	
Candy (kg)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Ice Cream (Kg)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Straws (Kg)	0.3	0	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.9	0.000286	
Plates (Kg)	0	0	0	0	0	0	0	0	0	0	0.4	0.2	0.3	0.1	0.5	1.1	0.1	0.5	0.6	0.6	1.5	0.5	0.3	0.2	5.82	0.00185	
Cups (Kg)	0.8	1.2	0.8	1.6	0.8	0.5	0.3	0.2	0	0	1.7	0.3	0.1	0.2	0.2	0.1	0.1	0.3	0.2	0.1	0	0	0	0	7.7	0.002449	
Glass (Kg)	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.5	0.000477	
Forks (Kg)	0.5	2.1	0.9	0.1	0.1	0.6	0.4	0.1	1.5	0.5	0.6	0.2	0	0	0	0.3	0.2	0.1	0.3	0	0	0	0	0	15.3	0.00486	
Spoons (Kg)	0.3	1.1	0.1	0.3	0.6	0.3	0.2	0.3	0.7	0.3	0.2	0.3	0	0	0	0	0	0	0	0	0	0	0	0	2.9	0.000922	
Knives (Kg)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Trays (Kg)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3	0.2	0.6	0.00019	
Sweet box (Kg)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Invitation Cards(Kg)	0	0	0	0	0	0	0	0	0	0.3	0	0	0	0	0	0	0	0.1	0	0	0	0	0.4	0.2	1	0.00031	

Cigarette Packets (Kg)	4.5	0	0.1	0.2	0.2	0.1	0.2	0.1	0	1.6	0.8	0.2	2.6	1.3	1.6	1.5	1.3	0	1.3	1.7	26.5	20	28.4	26.1	118.4	0.03765
<120 microns (Kg)	20.2	24	20.4	28.4	25.6	22.8	23.6	23.5	28.1	21.3	33.5	29.2	24.9	35.1	32.2	28.4	24.7	25.5	26	25.1	17.3	20	19.1	6.6	585.5	0.18622
<50micro ns (Kg)	11.3	10.1	17.1	21.2	23	20.5	20.1	18.4	17	12.4	28.1	27.1	20.1	11.5	21	24.2	23.5	24	10	8	0	0	0	0	368.6	0.11723
Plastics flags (Kg)	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0	0	0	0	0	0	0	0	0	0	0	0.3	0.00009
PVC banners <100um. (Kg)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Polystyre ne for decoratio n (Kg)	0.1	0	0	0.3	0	0.1	0	0	0	0	0	0	0.3	0	0	0.1	0	0	0	0	0	0.1	0	0	1	0.00031
	40.1	38.7	40.3	52.2	50.6	45.1	44.9	42.8	47.6	36.4	65.3	57.5	48.6	48.8	55.9	55.9	50	50.8	38.6	35.6	45.5	40.8	48.7	33.6	1111.6	0.35378

Assessment of Plastic Waste by AMC

GENERATION POINTS

Quantity of PW Generation

$$\begin{aligned} Q1 &= \frac{\sum \text{Col. 3}}{\sum \text{Col. 2}} & \text{OR} & Q1 = \frac{\sum \text{Row 1b}}{\sum \text{Row 1a}} \\ &= \frac{207.284}{2590} \\ &= \mathbf{0.080} \end{aligned}$$

$$\text{Quantity of Mixed Waste generated (TPA)} = \mathbf{Q} = \mathbf{65272.950}$$

$$\text{Quantity of Plastic Waste generated (TPA) (Qt)} = \mathbf{Q1 * Q} = \mathbf{5223.953}$$

$$\text{Considering quantity of Mixed Waste Generated in Town (TPA) (Q)} = 65272.95 \text{ TPA}$$

$$5223.944316$$

Quantity of Plastic Packaging Waste Generation

$$\begin{aligned} Q2 &= \frac{\sum (\text{Col. 4}) + \sum (\text{Col. 5}) + \sum (\text{Col. 6}) + \sum (\text{Col. 7})}{\sum \text{Col. 2}} \\ &= \frac{188.79}{2590.00} \\ &= \mathbf{0.073} \end{aligned}$$

$$\text{Quantity of Mixed Waste generated (TPA)} = \mathbf{Q} = \mathbf{65272.950}$$

$$\text{Quantity of Plastic Waste generated (TPA) (Qpack)} = \mathbf{Q2 * Q} = \mathbf{4757.818}$$

Quantity of Other (Non-Packaging Waste) Generation

$$\begin{aligned} Q_{\text{other}} &= Q_t - Q_{\text{pack}} \\ &= 466.135 \end{aligned}$$

Quantity of Plastic waste Utilised/Processed

$$\begin{aligned} Q_{\text{utilised/processed}} &= Q_t - Q_{\text{td}} \\ &= \mathbf{77.594} \end{aligned}$$

Assessment of Plastic Waste by AMC

DISPOSAL POINTS

Quantity of PW Disposed

$$\begin{aligned} Q1d &= \frac{\sum \text{Col. 3}}{\sum \text{Col. 2}} \quad \text{OR} \quad Q1 = \frac{\sum \text{Row 1b}}{\sum \text{Row 1a}} \\ &= \frac{343.292}{3023} \quad 343.2919 \\ &= \mathbf{0.114} \quad 0.11356 \end{aligned}$$

$$\text{Quantity of Mixed Waste disposed (TPA)} = \mathbf{Qd} = \mathbf{45318.400}$$

$$\text{Quantity of Plastic Waste disposed (TPA) (Qtd)} = \mathbf{Q1d * Qd} = \mathbf{5146.359}$$

$$\text{Considering quantity of Mixed Waste Generated in Town (TPA) (Q)} = 45318.40 \text{ TPA}$$

Quantity of Plastic Packaging Waste Disposed

$$\begin{aligned} Q2d &= \frac{\sum (\text{Col. 4}) + \sum (\text{Col. 5}) + \sum (\text{Col. 6}) + \sum (\text{Col. 7})}{\sum \text{Col. 2}} \\ &= \frac{220.37}{3023.00} \\ &= \mathbf{0.073} \end{aligned}$$

$$\text{Quantity of Mixed Waste disposed (TPA)} = \mathbf{Qd} = \mathbf{45318.400}$$

$$\text{Quantity of Plastic Waste disposed (TPA) (Qpack d)} = \mathbf{Q2d * Qd} = \mathbf{3303.551}$$

Quantity of Other (Non-Packaging Waste) Generation

$$\begin{aligned} Q_{\text{other d}} &= Q_{\text{td}} - Q_{\text{pack d}} \\ &= \mathbf{1842.808} \end{aligned}$$

Assessment of Plastic Waste by AMC

GENERATION POINTS

Quantity of SUP Waste Generation

$$Q3 = \frac{\sum \text{Row 2a.....7c}}{\sum \text{Row 1a}}$$

$$= \frac{207.28}{2627.00}$$

$$= 0.07890522$$

$$\text{Quantity of Mixed Waste Generated (TPA)} = Q = 65272.95$$

$$\text{Quantity of SUP Waste Generated (TPA) (Qsup)} = Q3 * Q = 5150.376158$$

Considering quantity of Mixed Waste Generated in Town (TPA) (Q) = 65272.95 tons per annum

DISPOSAL POINTS

Quantity of SUP Waste at Disposal

$$Q3d = \frac{\sum \text{Row 2a.....7c}}{\sum \text{Row 1a}}$$

$$= \frac{343.29}{3144.00}$$

$$= 0.10918957$$

$$\text{Quantity of Mixed Waste Disposed (TPA)} = Qd = 45318.40$$

$$\text{Quantity of SUP Waste Disposed (TPA) (Qsup)d} = Q3d * Qd = 4948.296493$$

Considering quantity of Mixed Waste Generated in Town (TPA) (Q) = 45318.40 tons per annum

**STANDARD OPERATING
PROCEDURE FOR ASSESSMENT &
CHARACTERIZATION OF PLASTIC
WASTE IN LUNGLEI MUNICIPAL
AREA**

**STANDARD OPERATING PROCEDURE FOR ASSESSMENT & CHARACTERIZATION OF PLASTIC WASTE IN
LUNGLEI MUNICIPAL AREA**

Generation point

	Sorting Sample Size	Total PW	Category 1 PW	Category 2 PW	Category 3 PW	Category 4 PW
	(Kg)	(Kg)	(Kg)	(Kg)	(Kg)	(Kg)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	100	53.75	9.60	14.20	15.00	0.00
2	100	33.10	5.00	3.00	12.00	0.00
3	100	20.10	15.00	2.00	1.00	0.00
4	100	38.00	11.00	14.00	9.00	0.00
5	100	9.50	1.80	4.00	1.00	0.00
6	100	8.00	1.80	4.00	1.00	0.00
7	100	8.50	2.90	2.00	1.70	0.00
8	100	7.00	2.50	1.50	1.50	0.00
9	100	9.00	1.90	3.50	0.50	0.00
10	100	5.00	0.70	0.30	0.30	0.00
	$\Sigma (2) =$	$\Sigma (3) =$	$\Sigma (4) =$	$\Sigma (5) =$	$\Sigma (6) =$	$\Sigma (7) =$
Total	1000	191.95	52.20	48.50	43.00	0.00

Plastic Waste Characterization (Plastic Packaging Category Wise) : <u>Disposal point</u>						
	Sorting Sample Size	Total PW	Category 1 PW	Category 2 PW	Category 3 PW	Category 4 PW
	(Kg)	(Kg)	(Kg)	(Kg)	(Kg)	(Kg)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	100	11.00	3.70	6.00	0.70	0.00
2	100	9.60	1.30	6.00	2.00	0.00
3	100	15.00	1.50	4.50	8.00	0.00
4	100	9.00	3.00	5.00	1.00	0.00
	$\Sigma (2) =$	$\Sigma (3) =$	$\Sigma (4) =$	$\Sigma (5) =$	$\Sigma (6) =$	$\Sigma (7) =$
Total	400	44.60	9.50	21.50	11.70	0.00

Assessment of Plastic Waste by Lunglei Municipal Council

GENERATION POINTS

Quantity of PW Generation

$$\begin{aligned} Q1 &= \frac{\sum \text{Col. 3}}{\sum \text{Col. 2}} & \text{OR} & \quad Q1 = \frac{\sum \text{Row 1b}}{\sum \text{Row 1a}} \\ &= \frac{191.95}{1000} \\ &= \mathbf{0.19195} \end{aligned}$$

$$\begin{aligned} \text{Quantity of Mixed Waste generated (TPA)} &= \mathbf{Q} = \mathbf{6970.36} \\ \text{Quantity of Plastic Waste generated (TPA) (Qt)} &= \mathbf{Q1 * Q} = \mathbf{1337.960} \end{aligned}$$

Considering quantity of Mixed Waste Generated in Town (TPA)
(Q) = 6970.36 tons per annum

Quantity of Plastic Packaging Waste Generation

$$\begin{aligned} Q2 &= \frac{\sum (\text{Col. 4}) + \sum (\text{Col. 5}) + \sum (\text{Col. 6}) + \sum (\text{Col. 7})}{\sum \text{Col. 2}} \\ &= \frac{143.70}{1000.00} \\ &= \mathbf{0.1437} \end{aligned}$$

$$\begin{aligned} \text{Quantity of Mixed Waste generated (TPA)} &= \mathbf{Q} = \mathbf{6970.36} \\ \text{Quantity of Plastic Waste generated (TPA)} &= \mathbf{Q2 * Q} = \mathbf{1001.640} \\ \text{(Qpack)} & \end{aligned}$$

Quantity of Other (Non-Packaging Waste) Generation

$$\begin{aligned} Q_{\text{other}} &= Q_t - Q_{\text{pack}} \\ &= \mathbf{336.320} \end{aligned}$$

Quantity of Plastic waste Utilised/Processed

$$\begin{aligned} \text{Utilised/processed} &= \mathbf{Q_t - Q_{td}} \\ &= \mathbf{919.835} \end{aligned}$$

Assessment of Plastic Waste by Lunglei Municipal Council

DISPOSAL POINTS

Quantity of PW Disposed

$$\begin{aligned} Q_{1d} &= \frac{\sum \text{Col. 3}}{\sum \text{Col. 2}} \quad \text{OR} \quad Q_1 = \frac{\sum \text{Row 1b}}{\sum \text{Row 1a}} \\ &= \frac{44.6}{400} \\ &= \mathbf{0.1115} \end{aligned}$$

$$\text{Quantity of Mixed Waste disposed (TPA)} = Q_d = 3750.00$$

$$\text{Quantity of Plastic Waste disposed (TPA) (Qtd)} = Q_{1d} * Q_d = 418.125$$

$$\text{Considering quantity of Mixed Waste Generated in Town (TPA) (Q)} = 3750 \text{ tons per annum}$$

Quantity of Plastic Packaging Waste Disposed

$$\begin{aligned} Q_{2d} &= \frac{\sum (\text{Col. 4}) + \sum (\text{Col. 5}) + \sum (\text{Col. 6}) + \sum (\text{Col. 7})}{\sum \text{Col. 2}} \\ &= \frac{42.70}{400.00} \\ &= \mathbf{0.10675} \end{aligned}$$

$$\text{Quantity of Mixed Waste disposed (TPA)} = Q_d = 3750.00$$

$$\text{Quantity of Plastic Waste disposed (TPA) (Qpack d)} = Q_{2d} * Q_d = 400.313$$

Quantity of Other (Non-Packaging Waste) Generation

$$\begin{aligned} Q_{\text{other d}} &= Q_{td} - Q_{\text{pack d}} \\ &= \mathbf{17.812} \end{aligned}$$

Plastic Waste characterization (Single Use Plastic) - Generation Point															
			Vehicle Load No.	Vehicle Load No.1	Vehicle Load No.2	Vehicle Load No.3	Vehicle Load No.4	Vehicle Load No.5	Vehicle Load No.6	Vehicle Load No.7	Vehicle Load No.8	Vehicle Load No.9	Vehicle Load No.10	Total	Average Kg/kg of Waste
		a	Sorting sample size (Kg)	100	100	100	100	100	100	100	100	100	100	1000.00	
		b	Plastic waste (Kg)	53.75	33.1	20.1	38	9.5	8	8.5	7	9	5	191.95	0.19195
			SUPs												
		a	Earbuds (Kg)	0.3	0.02	0.05	0.06	0.1	0.04	0.02	0.03	0.01	0.02	0.65	0.00065
		b	Balloons (Kg)											0.00	0.00000
		c	Candy (kg)				0.08		0.05					0.13	0.00013
		d	Ice Cream (Kg)				0.05							0.05	0.00005
		e	Straws (Kg)	0.08	0.05	0.08		0.03	0.02	0.04	0.01			0.31	0.00031
		a	Plates (Kg)				0.01							0.01	0.00001
		b	Cups (Kg)	3	4	1	1	0.6	0.5	0.9	0.9	0.5	0.5	12.90	0.01290
		c	Glass (Kg)											0.00	0.00000
		d	Forks (Kg)	0.02			0.05	0.02	0.01	0.02			0.01	0.13	0.00013
		e	Spoons (Kg)	0.2		0.05	0.02	0.1	0.12	0.06		0.04		0.59	0.00059
		f	Knives (Kg)											0.00	0.00000
		g	Trays (Kg)											0.00	0.00000
		a	Sweet box (Kg)											0.00	0.00000
		b	Invitation Cards(Kg)											0.00	0.00000
		c	Ciggratte Packets (Kg)	0.4	0.4	0.5	0.3	0.6			0.4	0.6	0.8	4.00	0.00400

5	Carry bags	a	<120 microns (Kg)	3.1	0.5	3	3	1	4	2.5	1.5	0.4	0.3	19.30	0.01930
6	Plastic sheets	b	<50microns (Kg)	2	1	2.7	1.9	1	2.1	1.4	0.8	0.08	0.06	13.04	0.01304
		a	Plastics flags (Kg)											0.00	0.00000
		b	PVC banners <100um. (Kg)											0.00	0.00000
		c	Polystyrene for decoration (Kg)			0.7								0.70	0.00070
				9.1	5.97	8.08	6.47	3.45	6.84	4.94	3.64	1.63	1.69	51.81	0.05181

Plastic Waste characterization (Single Use Plastic) - Disposal Point

			Vehicle Load No.	Vehicle Load No.1	Vehicle Load No.2	Vehicle Load No.3	Vehicle Load No.4	Total	Average Kg/kg of Waste
		a	Sorting sample size (Kg)	100	100	100	100	400	90.00
		b	Plastic waste (Kg)	11	9.6	15	9	44.6	11.150
			SUPs						
		a	Earbuds (Kg)	0.02	0.04	0.1	0.06	0.22	0.00061
		b	Balloons (Kg)					0	0.00000
		c	Candy (kg)					0	0.00000
		d	Ice Cream (Kg)	0.04	0.08	0.07	0.1	0.29	0.00081
		e	Straws (Kg)	0.02	0.06	0.04	0.03	0.15	0.00042
		a	Plates (Kg)	0.05	0.06	0.1	0.03	0.24	0.00067
		b	Cups (Kg)	1.5	2	2.1	1.6	7.2	0.02000
		c	Glass (Kg)					0	0.00000
		d	Forks (Kg)					0	0.00000
		e	Spoons (Kg)	0.1	0.04	0.02	0.1	0.26	0.00072
		f	Knives (Kg)					0	0.00000
		g	Trays (Kg)					0	0.00000
		a	Sweet box (Kg)					0	0.00000

		b	Invitation Cards(Kg)					0	0.00000
		c	Ciggratte Packets (Kg)	0.1	0.5	0.7	0.3	1.6	0.00444
5	Carry bags	a	<120 microns (Kg)	3	1	3	1	8	0.02222
6	Plastic sheets	b	<50microns (Kg)	1	0.3	2	0.6	3.9	0.01083
		a	Plastics flags (Kg)					0	0.00000
		b	PVC banners <100um. (Kg)					0	0.00000
		c	Polystyrene for decoration (Kg)					0	0.00000
				5.83	4.08	8.13	3.82	21.86	0.05465

Assessment of Plastic Waste by Lunglei Municipal Council

GENERATION POINTS

Quantity of SUP Waste Generation

$$Q3 = \frac{\sum \text{Row } 2a.....7c}{\sum \text{Row } 1a}$$

$$= \frac{51.81}{1000.00}$$

$$= 0.05181$$

$$\text{Quantity of Mixed Waste Generated (TPA)} = Q = 6970.36$$

$$\text{Quantity of SUP Waste Generated (TPA) (Qsup)} = Q3 * Q = 361.134352$$

$$\text{Considering quantity of Mixed Waste Generated in Town (TPA) (Q)} = 6205 \text{ tons per annum}$$

DISPOSAL POINTS

Quantity of SUP Waste at Disposal

$$Q3d = \frac{\sum \text{Row } 2a.....7c}{\sum \text{Row } 1a}$$

$$= \frac{21.86}{400.00}$$

$$= 0.05465$$

Quantity of Mixed Waste Disposed (TPA) = **Qd** = **3750.00**

Quantity of SUP Waste Disposed (TPA) (**Qsup**)d = **Q3d * Qd** = **204.9375**

Considering quantity of Mixed Waste Generated in Town (TPA) (Q) = 3750 tons per annum

Assessment and Characterization of PW Data

The SPCBs/PCCs shall carryout Assessment and Characterization of PW Data in their respective State/UT as per format given in **Table 5**

Sl. No	Local Body	Total Plastic Waste generated	Qty of SUP in PW generated QSUP	Qty of Plastic Packaging in PW generated	Qty of Other PW (Non-Packaging PW)	Qty of plastic waste disposed	Qty of Plastic Packaging in PW disposed	Qty of SUP waste disposed	Qty of Plastic waste processed
		QTstate (TPA)	QSUPstate (TPA)	Qpackstate (TPA)	Waste generated Qotherstate (TPA)	QDstate (TPA)	QDpackstate (TPA)	QDSUPstate (TPA)	Qprocess (TPA)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	AMC	5223.953	5150.376	4757.818	466.135	5146.359	1842.808	3303.551	77.594
2	LMC	1337.960	361.134	1001.640	336.320	418.125	400.313	204.938	919.835
TOTAL		6561.913	5511.511	5759.458	802.455	5564.484	2243.121	3508.488	997.429

Validation of PW data reported by Local Bodies

The SPCBs/PCCs shall validate the PW data as per the format given in Table 5

Validation of PW Data

Sl. No.	Item	Remarks
1	Total No. of Local Bodies in State/ UT	2
2	Number of Local Bodies which have confirmed adoption of CPCB Assessment & Characterization Methodology	2
3	No. of Local bodies in which SPCB/PCC joined the Assessment for confirmation of Point (2) above	2
4	No. of Local Bodies in which SPCB/PCC joined the Assessment for confirmation of Point (2) above	2
5	Number of Local Bodies in which of Quantity Plastic waste reported was verified by SPCB/PCC.	2
6	Number of Local Bodies in compliance as per Point (5) above	2
7	Number of complying Local Bodies as per Point (5) above, in which reported data was reconciled by SPCB/PCC	2