



To
The Environmental Engineer and In-charge,
West Bengal Pollution Control Board,
Haldia Regional Office
Raghunathchak, PO- Barghasipur, PS- Bhabanipur
Dist- Purba Medinipur, Pin- 721657

TSL/HMC/ENV/FY 24/0015
September 25, 2024



Sub: Environmental Statement for the Year 2023-24 for 1.6 MTPA Metallurgical Coke Plant at Patikhali, Haldia of Tata Steel Limited, Hooghly Metcoke Division.

Dear Sir,

We are enclosing the "Environmental Statement" duly filled in Form V, for the year 2023-2024 for 1.6 MTPA Metallurgical Coke Plant at Patikhali, Haldia of Tata Steel Limited, Hooghly Metcoke Division, For your kind consideration.

Yours faithfully,

For **Tata Steel Limited**

Mantu Patra
General Manager
Tata Steel Ltd., HMC Division, Haldia

Encl: a/a.

CC to :The Member Secretary, West Bengal pollution control Board, Paribesh Bhawan, 10A, Broadway Road, LA Block, Sector III, Bidhan Nagar, Kolkata, West Bengal-700106

TATA STEEL LIMITED

Hooghly Met Coke Division Patikhali P O Haldia OIL Refinery Purba Medinipur Haldia 721606
R O Bombay House 24 Homi Mody Street Fort Mumbai 400 001 India
CIN L27100MH1907PLC000260 TEL +91 7477795610 Email : gm.hmc@tatasteel.com



DTDC Express Limited
 Regd. Office: No-3, Victoria Road
 Bengaluru - 560047

ORIGIN

DEST.

POUCH NO.

DATE

24/9/24

Non Negotiable Consignment Note / Subject to Bengaluru Jurisdiction.

The consignment note is not a tax invoice. A tax invoice will be made available by DTDC or its channel partner as the case may be, upon request.

Download MyDTDC app



Available at select cities & pin codes



Download MyDTDC app



Available at select cities & pin codes

1 Sender's (Consignor) Name: _____ Ph: _____
 Company Name & Address: **TATA STEEL**
 City: _____ State: **HALDIA** PIN Code: _____
 Sender's GSTIN*: _____ *Where Applicable

2 Recipient's (Consignee) Name: _____ Ph: _____
 Company Name & Address: **WBPCB**
 City: **West Bengal** State: **Bengal** PIN Code: _____
 Recipient's GSTIN*: _____ *Where Applicable

3 Nature of consignment (✓) Dox Non-Dox Total Num Pcs: _____
 DIM 1: L cm X B cm X H cm X Pcs Actual Wt.: _____ kg
 DIM 2: L cm X B cm X H cm X Pcs Volumetric Wt.: _____ kg
 DIM 3: L cm X B cm X H cm X Pcs Chargeable Wt.: _____ kg

4 Description of Content: **Roll - 700180** Total Value of consignment for carriage / E-Way bill: **₹**

5 Paper Work Enclosures

6 Type of consignment (✓) Commercial Non Commercial
7 Value Added Services: SECURE PACK CN Expiry Date: _____

10 I/We declare that this consignment does not contain personal mail, cash, jewellery, contraband, illegal drugs, any prohibited items and commodities which can cause safety hazards while transporting

9	Charges	Amount (₹)
a)	Tariff (incl. of FSC+GST)	
b)	Value Added Service Charges	
c)	Risk Surcharge	
d)	Total amount (a+b+c)	

8 Mode (✓) Surface Air Cargo Express

Sender's Signature & Seal
 Date: _____ Time: _____ AM/PM
 I have read and understood terms & conditions printed overleaf of this consignment note and I agree to the same.

Above charges are inclusive of GST & other taxes if applicable
 Mode of Payment: Cash Card Wallet

Consignment Number: **D74308424**

11 Booking Branch / Franchisee Code: _____
12 Courier Signature: _____
 Relationship: _____
 Company Stamp & Signature: _____
 Ph No.: _____ Date: ____ / ____ / ____ Time: _____ AM/PM

Owner
Risk Surcharge
Carrier

**ENVIRONMENTAL STATEMENT
FOR THE YEAR 2023-24**

For

1.6 MTPA Metallurgical Coke Plant of Tata steel Hooghly Metcoke Division



**Tata steel Ltd. Hooghly Metcoke Division
Patikhali, Haldia
Dist- Purba Medinipur, West Bengal -721606**

ENVIRONMENTAL STATEMENT FORM-V

(See rule 14)

Environmental Statement for the financial year 2023-24 ending with 31st March

Tata Steel Limited
1.6 MTPA Metallurgical Coke Plant at Patikhali, Haldia
Dist- Purba Medinipur, West Bengal -721606

PART-A

i)	Name and address of the owner/ occupier of the industry, operation, or process	:	Mantu Patra General Manager Tata Steel HMC Division Patikhali, Haldia, Dist- Purba Medinipur, West Bengal -721606
ii)	Industry Category Primary/ (STC code) Secondary (STC code)	:	Large Scale Industry —
iii)	Production Capacity	:	1.6 MTPA Metallurgical Coke
iv)	Year of Establishment	:	December, 2007
v)	Date of Last Environmental /Audit Report submitted	:	26.09.2023

PART-B

WATER AND RAW MATERIAL CONSUMPTION

i)	Water Consumption in m³/day -	1312 m ³ /day	
	Process	:	
	Cooling	:	1297 m ³ /day} industrial
	Domestic	:	15 m ³ /day

Name of the products	Process water consumption per unit of products	
	During the Current Financial Year 2022-2023	During the Current Financial Year 2023-2024
Metallurgical Coke	0.375 cum/ton of Coke	0.298/ton of Coke

ii) Raw material consumption:

Name of Raw Material	Name of the Products	Consumption of raw material per unit of output (MT/ TGC)	
		During the Current Financial Year 2022-2023	During the Current Financial Year 2023-2024
Coking Coal	Metallurgical Coke	1.34	1.34
		Coal/Coke= (2143946/1601742)	Coal/Coke= (2139215/1599990)

PART-C

POLLUTION DISCHARGED TO ENVIRONMENT/ UNIT OF OUTPUT
(PARAMETERS AS SPECIFIED IN THE CONSENT ISSUED)

Pollutants	Quantity of pollutants discharged (mass/day)	Concentrations of pollutants in discharges (mass/volume)	Percentage of variation from prescribed standards with reasons*
	Kg/day	mg/Nm ³	
a) Water	There is no discharge of effluent. ZLD is maintained.		
b) Air			
1	Chimney 1AB		
PM	83.71	21.80	-52.71
SO ₂	1193.59	310.79	-60.49
NOx	725.73	188.96	-59.97
2	Chimney 1CD		
PM	86.73	23.08	-57.24
SO ₂	1121.23	298.37	-64.23
NOx	675.13	179.66	-64.97
3	Chimney 2AB		
PM	85.56	21.86	-55.27
SO ₂	1139.34	303.27	-57.37
NOx	702.80	187.07	-59.25
4	Chimney 2 CD		
PM	101.51	26.77	-51.61
SO ₂	1206.15	318.07	-61.30
NOx	739.53	195.02	-63.28
5	Chimney 3 AB		
PM	78.38	21.56	-52.84
SO ₂	1128.71	310.46	-59.98
NOx	663.48	182.49	-60.93
6	Chimney 3 CD		
PM	80.30	21.37	-54.61
SO ₂	1130.06	300.75	-62.93
NOx	662.21	176.24	-65.08
7	Chimney 4 AB		
PM	92.09	24.57	-53.27
SO ₂	1174.36	313.35	-61.81
NOx	680.69	181.63	-64.03
8	Chimney 4 CD		
PM	86.45	22.65	-58.48
SO ₂	1194.07	312.85	-63.79
NOx	652.06	170.84	-65.50

PART-D

HAZARDOUS WASTES

**(AS SPECIFIED UNDER HAZARDOUS WASTES (MANAGEMENT,
HANDLING AND TRANS BOUNDARY MOVEMENT RULES, 2016)**

Hazardous Wastes	Total Quantity (Kg)			
	During the Current Financial Year 2022-2023		During the Current Financial Year 2023-2024	
1. From Process	Generation	Sold/Disposed off	Generation	Sold/Disposed off
Used or spent oil (Schedules-I Stream-5.1)	3.876 T	2.04 T	3.062 T	5.508 T
Empty barrels /containers/liners contaminated with hazardous chemicals/ wastes (Schedules-I Stream-33.1)	1.08 T	1.476 T	1.042T	0.99 T
Contaminated cotton rags or other cleaning materials (Schedules-I Stream-33.2)	0.8 T	0.357 T	0.736T	1.24T
Waste Ceramic Waste (Schedule II Class C)	-	-	133.148T	133.148T

PART-E

SOLID WASTE

Sl. No.	Solid waste	Total Quantity (Kg)	
		During the previous financial year 2022-23	During the current financial year 2023-24
a.	From process	3256000kg (Swamp Breeze)	1251000kg (Swamp Breeze)
b.	From Pollution Control facilities	-	-
c.	1)Quantity recycled/reutilised within the unit	-	-
	2) Sold	8656830 kg (Swamp Breeze)	4699950kg (Swamp Breeze)
	3) Disposed	Nil	Nil

PART-F

Please specify the characteristics (in terms of concentration and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

Hazardous/ Solid Wastes	Characteristics	Method of disposal
Cotton contaminated with Oil & Grease	<i>Analysis report attached as Annexure I</i>	Disposed through TSDF of West Bengal Waste Management Ltd. (of M/s Ramky), Purba Medinipur, Haldia, WB.
Waste Ceramic		

PART-G

Impact of the pollution control measures taken on conservation of natural resources and consequently on the cost of production.

- For collection of roof water from buildings (like ADM building / Store / Laboratory / pump house etc.) during monsoon, a storm water pond of capacity 6500 cum (approx.) has been developed. The roof water from all the buildings are collected through common storm water drain in the storm water pond. The water is used for coke quenching and other purposes like gardening, road dust suppression, water sprinkling system etc. Necessary arrangements of pipelines (3 KM) and pumps (4 Nos.) have been made for effective utilization of storm water.
- 1 No. of Mechanised road sweeping machine are deployed to maintain housekeeping of plant roads.
- Water sprinkling for road dust suppression is done through truck mounted water tanker.
- A vertical garden has been developed in side plant premises.
- Approx 4000 sq.mtre garden has been developed in side plant.
- A biodiversity study has been conducted in core & buffer zone around HMC division.
- Renewal of ISO 14001:2015, ISO 45001: 2018 and ISO 9001:2018 certification done in Jun'2022 and certification is valid for 3 years.

PART-H

Additional measures/investment proposal for environmental protection including abatement of pollution.

- Greenery development programme will continue in the year 2024.
- The pollution abatement measure taken like minimise spillage, maximum utilisation/ reuse of spillage; reduction of burning loss by optimising the carbonisation process; maximise power generation; arresting all kind of leakages in the oven to obtain maximum flue gas temperature etc.

PART-I

MISCELLANEOUS:

Any other particulars in respect of environmental protection and abatement of pollution.

- Nearly 18.50 Ha. area is being considered as Green belt. As on date, total 27500 number of trees are surviving, and total Green Belt area is approximately 26% of the total 72.5 Ha plant area.
- 42000 sq. meter of garden landscape are being maintained inside plant.
- World Environment Day (5th June 2024) has been celebrated among the employees.
- To maintain housekeeping of plant roads, mechanised road sweeping machines is operated.
- Regular Environmental Monitoring is carried out.
- One No. of Online AAQM station is in operation along with Digital Display Board.
- 08 nos. of CEMS in all the stacks are in operation.
- In FY 2024, 270 kg of e-wastes disposed through M/s E- Waste Recyclers India , Plot no. E 50, UPSIDC, Industrial Area, kosi Kotwan, Mathura, 281403
- In FY 2024, 15.41 Kgs of Biomedical wastes generated in plant's First Aid centre were segregated & collected at source and disposed through West Bengal Waste Management limited Haldia.



Sustainability



ISO 9001, 45001, 14001

WEST BENGAL WASTE MANAGEMENT LTD.

(A Division of Re Sustainability Limited)

J.L. No. : 103, Mouza : Purba Srikrishnapur, P.S.: Sutahata, Haldia-721635
 Dist. : Purba Midnapore, State : West Bengal, T : 03224-278238/39, Fax : 278240
 E-mail : laboratorywbwml@resustainability.com
 CIN : U90002WB2004PLC098219

**LABORATORY
TEST REPORT**

Name and Address of the Client : M/s Tata Steel Ltd. (Hooghly Metcoke Division)
 Patikhali, P.O Haldia Oil Refinery, Haldia Purba Medinipore- 721606

Sample / Product description : Hazardous Waste.
 Sample Description : Cotton contaminated with oil & Grease.
 Sample Collected by : WBWML Laboratory.
 Sample quantity : 500 gm.
 Sampling Date and Method : 9th May'2023, Grab (WBWML/SOP/LAB/101)
 Sample Received date : 11th May'2023
 Sample Registration No. and Date : WBWML/CA/23-110, 15th May'2023
 Sample Receipt Condition : Sample recd. in plastic pouch.
 Analysis Starting Date : 15th May'2023
 Analysis Completion & Report Date : 22th May'2023
 Date of report validity : 21st May'2025
 Sub-contracting of Analysis : None

TEST RESULT.

Sl. no.	Parameter	Unit	Method	Observation / Result	Std. for Secure Landfill Disposal / Limits as per schedule II of HWM Rules 2016.
1	Physical State	-	Visual observation	Dry solid	-
2	Color	-	Visual observation	Black	-
3	Texture	-	Visual observation	Pieces	-
4	Reactive Cyanide	mg/kg	SW-846 : Ch. 7 (7.3.3), 9014	< 1.00	-
5	Reactive Sulfide	mg/kg	SW-846 : Ch. 7 (7.3.4), 9034	< 5.00	-
6	Cyanide – Total	mg/kg	SW-846 : 9010B, 9014	< 1.00	-
7	Cyanide – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 4500-CN ⁻ C SW-846 : 9014	< 0.05	< 2.0
8	Fluoride – Total	mg/kg	Std. Methods : 4500-F ⁻ B, D	< 1.00	-
9	Fluoride – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 4500F ⁻ B, D	< 1.00	< 50.0
10	Nitrate – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 4500-NO ₃ ⁻ E	< 0.10	< 30.0
11	Ammonia – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 4500-NH ₃ B, C	< 5.00	< 1000.0
12	Arsenic – Total	mg/kg	SW-846 : 3050B Std.Methods:3500-As B :2017	< 1.00	-
13	Arsenic – WLT	mg/L	DIN : 38414 Part 4 (S4) Std.Methods:3500-As B :2017	< 0.10	< 1.0
14	Phenol – WLT	mg/L	DIN : 38414 Part 4 (S4) SW-846 : 9065	< 1.00	< 100.0
15	Mercury – Total	mg/kg	SW-846 : 7471A Std. Methods : 3112 B :2017	NA	-
16	Mercury – WLT	mg/L	DIN : 38414 Part 4 (S4) SW-846 : 7470A Std. Methods : 3112 B :2017	NA	< 0.10

Regd. Office : Jindal Towers, Block 'A', 4th Floor, 21/1A/3, Darga Road, Kolkata-700017

Tel.: 9679999112 Fax: (91) 033 2289 2529, E-mail : wbwml@resustainability.com



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TC-7471

WEST BENGAL WASTE MANAGEMENT LTD.

(A Division of Re Sustainability Limited)

J.L. No. : 103, Mouza : Purba Srikrishnapur, P.S.: Sutahata, Haldia-721635
 Dist. : Purba Midnapore, State : West Bengal, T : 03224-278238/39, Fax : 278240
 E-mail : laboratorywbwml@resustainability.com
 CIN : U90002WB2004PLC098219

LABORATORY**(Recognized by WBPCB)**

ISO 9001, 45001, 14001

ULR – TC747123000000181P

TEST REPORT

Name and Address of the Client : M/s Tata Steel Ltd. (Hooghly Metcoke Division)
 Patikhali, P.O Haldia Oil Refinery, Haldia Purba Medinipore- 721606

Sample / Product description : Hazardous Waste.
 Sample Description : Cotton contaminated with oil & Grease..
 Sample Collected by : WBVML Laboratory.
 Sample quantity : 500 gm.
 Sampling Date and Method : 9th May'2023, Grab (WBVML/SOP/LAB/101)
 Sample Received date : 11th May'2023
 Sample Registration No. and Date : WBVML/CA/23-110, 15th May'2023
 Sample Receipt Condition : Sample recd. in plastic pouch.
 Analysis Starting Date : 15th May'2023
 Analysis Completion & Report Date : 22th May'2023
 Date of report validity : 21th May'2025
 Sub-contracting of Analysis : None

TEST RESULT

Sl. no.	Parameter	Unit	Method	Observation / Result	Std. for Secure Landfill Disposal / Limits as per schedule II of HWM Rules 2016.
1	Bulk Density	gm/cc	ASTM Std. : D 5057 – 10	0.48	–
2	Paint Filter Liquid Test	–	SW-846 : 9095 A	NA	Pass
3	pH (at 25.0°C)	–	USEPA 1998, SW-846 : 9045C	7.08	4.0-12.0
4	Calorific Value	kcal/kg	IS : 1350 (Part II) – 1975 (RA 2010)	7670	< 2500.0
5	Flash Point	°C	USEPA 1998, SW-846 : 1020A	> 60	> 60.0
6	Loss on Drying at 103-105 °C	% (w/w)	Std. Methods : 2540 G : 2017	2.67	–
7	Loss on Ignition at 550 °C (Dry Basis)	% (w/w)	Std. Methods : 2540 G : 2017	99.85	< 20.0 (non biodegradables) < 5.0 (biodegradables)
8	Water Soluble Organics	% (w/w)	DIN : 38414 Part 4 (S4) Std. Methods : 2540 E : 2017	2.65	< 10.0
9	Oil and Grease (As n-Hexane Extractable)	% (w/w)	USEPA 1998, SW-846 : 9071A	3.21	< 4.0
10	Cadmium – Total	mg/kg	USEPA 1998, SW-846 : 7000 B	< 1.00	–
11	Cadmium – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 3111 B : 2017	< 0.02	< 0.20
12	Cadmium – TCLP	mg/L	USEPA 1998, SW-846 : 1311 Std. Methods : 3111 B : 2017	< 0.02	< 1.00
13	Chromium – Total	mg/kg	USEPA 1998, SW-846 : 7000 B	35.83	–
14	Chromium – TCLP	mg/L	USEPA 1998, SW-846 : 1311 Std. Methods : 3111 B : 2017	< 0.20	< 5.0

Discipline: Chemical

Group: Pollution & Environment

Sl. no.	Parameter	Unit	Method	Observation / Result	Std. for Secure Landfill Disposal / Limits as per schedule II of HWM Rules 2016.
15	Chromium (VI) – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 3500-Cr B :2017	0.24	< 0.50
16	Copper – Total	mg/kg	USEPA 1998, SW-846 :7000 B	46.15	–
17	Copper – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 3111 B :2017	< 0.20	< 10.0
18	Lead – Total	mg/kg	USEPA 1998, SW-846 :7000 B	22.28	–
19	Lead – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 3111 B :2017	0.21	< 2.0
20	Lead – TCLP	mg/L	USEPA 1998, SW-846 : 1311 Std. Methods : 3111 B :2017	0.33	< 5.0
21	Nickel – Total	mg/kg	SW-846 : 3050B, 7000 B	< 1.00	–
22	Nickel – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 3111 B :2017	< 0.04	< 3.0
23	Zinc – Total	mg/kg	USEPA 1998, SW-846 :7000 B	113.36	–
24	Zinc – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 3111 B :2017	0.43	< 10.0
25	Manganese - Total	mg/kg	USEPA 1998, SW-846 :7000 B	< 1.00	–
26	Manganese - WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 3111 B :2017	< 0.20	< 10.0
27	Vanadium – Total	mg/kg	USEPA 1998, SW-846 :7000 B	NA	–
28	Vanadium – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 3111 B :2017	NA	< 0.20

Note:

Instruments used – pH meter, BCM, Flash point tester, Hot air oven, Muffle furnace, Water bath, Soxhlet apparatus, AAS.

CPCB – Central Pollution Control Board

WLT – Water Leaching Test

TCLP – Toxicity Characteristics Leaching Procedure

ASTM – American Society for Testing and Materials

IS – Indian Standard

SW 846 – Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, USEPA, May 1997

Std. Methods – Standard Methods for the Examination of Water & Wastewater, 23rd Edition, APHA/AWWA/WEF, 2017

DIN : 38414 Part 4 (S4) – German Standard Procedure for Water, Wastewater, and Sediment Testing-Group S (Sludge and Sediment);

Determination of Leachability (S4), 1984

NA – Not Analyzed, ND – Not Detected


The comprehensive analysis report refers only to the 'as received' sample of waste

The relevance vis-à-vis applicability of the report solely relates to the category no. as per the latest Hazardous Waste Rules as or as would be assigned by the concerned statutory authority

The report cannot be produced in part or in full without the permission of West Bengal Waste Management Limited

--END OF THE TEST REPORT--


(Chemist – Lab.)
Checked by


Tarun Kumar Middya
(Lab. – Manager)
Authorized Signatory

WEST BENGAL WASTE MANAGEMENT LTD.

(A Division of Re Sustainability Limited)

J.L. No. : 103, Mouza : Purba Srikrishnapur, P.S.: Sutahata, Haldia-721635
Dist. : Purba Midnapore, State : West Bengal, T : 03224-278238/39, Fax : 278240
E-mail : laboratorywbwml@resustainability.com
CIN : U90002WB2004PLC098219

LABORATORY



Sustainability



ISO 9001, 45001, 14001

Date – 13th June'2023

To
M/s Tata Steel Ltd. (HMC Div.)
Patikhali, P.O.- Haldia Oil Refinery, Haldia, Purba Medinipur- 721606.

Sub. – Hazardous waste disposal pathway.

Sir / Madam

As per the comprehensive analysis done for hazardous waste characterization, the respective disposal pathways directed by Central Pollution Control Board 'Guidelines for proper functioning and upkeep of disposal sites – HAZWAMS/32/2005-2006', would be as follows–

1) **Waste ceramic blanket:**


Comprehensive analysis report CAR – RE/WBWML/CA/23-120, 13th June'2023

Disposal pathway – **Direct Landfill (Secured Engineer Landfill).**

Any variation(s) in hazardous waste characteristics, if observed upon receipt of the same for disposal will be informed to you and the disposal pathway may change accordingly.

Along with this letter we are enclosing customer feedback form for your valuable feedback on the quality of our Laboratory Services, it will help us to Improvement in our Quality Systems. Requesting you please fill it and send us along with your office seal.

Regards,


Tarun Kumar Middya
(Manager – Lab.)
Authorized Signatory

CAR-23 120 Tata Steel Ltd. (HMC Div.) - Waste ceramic blanket

Regd. Office : Jindal Towers, Block 'A', 4th Floor, 21/1A/3, Darga Road, Kolkata-700017

Tel.: 9679999112 Fax: (91) 033 2289 2529, E-mail : wbwml@resustainability.com

resustainability.com

TEST REPORT NO: RE/WBWML/CA/23-120

Discipline: Chemical
Group: Pollution & Environment

WBWML/GF/LAB-310



Sustainability



TC-7471

ULR - TC747123000000227P

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LABORATORY
(Recognized by WBPCB)



ISO 9001, 45001, 14001

TEST REPORT

Name and Address of the Client : M/s Tata Steel Ltd. (HMC Div.)
Patikhali, P.O.- Haldia Oil Refinery, Haldia, Purba Medinipur- 721606.

Sample / Product description : Hazardous Waste.
Sample Description : Waste ceramic blanket.
Sample Collected by : WBWML Laboratory.
Sample quantity : 500 gm.
Sampling Date and Method : 6th June'2023, Grab (WBWML/SOP/LAB/101)
Sample Received date : 6th June'2023
Sample Registration No. and Date : WBWML/CA/23-120, 6th June'2023
Sample Receipt Condition : Sample recd. in plastic pouch.
Analysis Starting Date : 6th June'2023
Analysis Completion & Report Date : 13th June'2023
Date of report validity : 12th June'2025
Sub-contracting of Analysis : None

TEST RESULT

Sl. no.	Parameter	Unit	Method	Observation / Result	Std. for Secure Landfill Disposal / Limits as per schedule II of HWM Rules 2016.
1	Bulk Density	gm/cc	ASTM Std : D 5057 - 10	0.27	-
2	Paint Filter Liquid Test	-	SW-846 : 9095 A	NA	Pass
3	pH (at 25.0°C)	-	USEPA 1998, SW-846 : 9045C	7.70	4.0-12.0
4	Calorific Value	kcal/kg	IS : 1350 (Part II) - 1975 (RA 2010)	< 250	< 2500.0
5	Flash Point	°C	USEPA 1998, SW-846 : 1020A	> 60	> 60.0
6	Loss on Drying at 103-105 °C	% (w/w)	Std. Methods : 2540 G : 2017	0.34	-
7	Loss on Ignition at 550 °C (Dry Basis)	% (w/w)	Std. Methods : 2540 G : 2017	2.69	< 20.0 (non biodegradables) < 5.0 (biodegradables)
8	Water Soluble Organics	% (w/w)	DIN : 38414 Part 4 (S4) Std. Methods : 2540 E : 2017	0.44	< 10.0
9	Oil and Grease (As n-Hexane Extractable)	% (w/w)	USEPA 1998, SW-846 : 9071A	< 1.00	< 4.0
10	Cadmium - Total	mg/kg	USEPA 1998, SW-846 : 7000 B	2.39	-
11	Cadmium - WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 3111 B : 2017	< 0.02	< 0.20
12	Cadmium - TCLP	mg/L	USEPA 1998, SW-846 : 1311 Std. Methods : 3111 B : 2017	< 0.02	< 1.00
13	Chromium - Total	mg/kg	USEPA 1998, SW-846 : 7000 B	9.33	-
14	Chromium - TCLP	mg/L	USEPA 1998, SW-846 : 1311 Std. Methods : 3111 B : 2017	< 0.20	< 5.0

Discipline: Chemical

Group: Pollution & Environment

Sl. no.	Parameter	Unit	Method	Observation / Result	Std. for Secure Landfill Disposal / Limits as per schedule II of HWM Rules 2016.
15	Chromium (VI) – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods: 3500-Cr B :2017	< 0.20	< 0.50
16	Copper – Total	mg/kg	USEPA 1998, SW-846 :7000 B	7.59	–
17	Copper – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 3111 B :2017	< 0.20	< 10.0
18	Lead – Total	mg/kg	USEPA 1998, SW-846 :7000 B	39.24	–
19	Lead – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 3111 B :2017	< 0.20	< 2.0
20	Lead – TCLP	mg/L	USEPA 1998, SW-846 : 1311 Std. Methods : 3111 B :2017	< 0.20	< 5.0
21	Nickel – Total	mg/kg	SW-846 : 3050B, 7000 B	< 1.00	–
22	Nickel – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 3111 B :2017	< 0.04	< 3.0
23	Zinc – Total	mg/kg	USEPA 1998, SW-846 :7000 B	5.88	–
24	Zinc – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 3111 B :2017	0.01	< 10.0
25	Manganese - Total	mg/kg	USEPA 1998, SW-846 :7000 B	< 1.00	–
26	Manganese - WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 3111 B :2017	< 0.20	< 10.0
27	Vanadium – Total	mg/kg	USEPA 1998, SW-846 :7000 B	NA	–
28	Vanadium – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 3111 B :2017	NA	< 0.20

Note:

Instruments used – pH meter, BCM, Flash point tester, Hot air oven, Muffle furnace, Water bath, Soxhlet apparatus, AAS.

CPCB – Central Pollution Control Board

WLT – Water Leaching Test

TCLP – Toxicity Characteristics Leaching Procedure

ASTM – American Society for Testing and Materials

IS – Indian Standard

SW 846 – Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, USEPA, May 1997

Std. Methods – Standard Methods for the Examination of Water & Wastewater, 23rd Edition, APHA/AWWA/WEF, 2017

DIN : 38414 Part 4 (S4) – German Standard Procedure for Water, Wastewater, and Sediment Testing-Group S (Sludge and Sediment), Determination of Leachability (S4), 1984


NA – Not Analyzed, ND – Not Detected

The comprehensive analysis report refers only to the 'as received' sample of waste

The relevance vis-à-vis applicability of the report solely relates to the category no. as per the latest Hazardous Waste Rules as or as would be assigned by the concerned statutory authority

The report cannot be produced in part or in full without the permission of West Bengal Waste Management Limited

--END OF THE TEST REPORT--


(Chemist – Lab.)
Checked by


Tarun Kumar Middya
(Lab. – Manager)
Authorized Signatory



Sustainability

WEST BENGAL WASTE MANAGEMENT LTD.

(A Division of Re Sustainability Limited)

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CIN : U90002WB2004PLC098219



ISO 9001, 45001, 14001

LABORATORY TEST REPORT

Name and Address of the Client	:	M/s Tata Steel Ltd. (HMC Div.) Patikhali, P.O.- Haldia Oil Refinery, Haldia, Purba Medinipur- 721606.
Sample / Product description	:	Hazardous Waste.
Sample Description	:	Waste ceramic blanket.
Sample Collected by	:	WBWML Laboratory.
Sample quantity	:	500 gm.
Sampling Date and Method	:	6 th June'2023, Grab (WBWML/SOP/LAB/101)
Sample Received date	:	6 th June'2023
Sample Registration No. and Date	:	WBWML/CA/23-120, 6 th June'2023
Sample Receipt Condition	:	Sample recd. in plastic pouch.
Analysis Starting Date	:	6 th June'2023
Analysis Completion & Report Date	:	13 th June'2023
Date of report validity	:	12 th June'2025
Sub-contracting of Analysis	:	None

TEST RESULT

Sl. no.	Parameter	Unit	Method	Observation / Result	Std. for Secure Landfill Disposal / Limits as per schedule II of HWM Rules 2016.
1	Physical State	-	Visual observation	Dry solid	-
2	Color	-	Visual observation	Whitish grey	-
3	Texture	-	Visual observation	Pieces	-
4	Reactive Cyanide	mg/kg	SW-846 : Ch. 7 (7.3.3), 9014	< 1.00	-
5	Reactive Sulfide	mg/kg	SW-846 : Ch. 7 (7.3.4), 9034	< 5.00	-
6	Cyanide – Total	mg/kg	SW-846 : 9010B, 9014	< 1.00	-
7	Cyanide – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 4500-CN ⁻ C SW-846 : 9014	< 0.05	< 2.0
8	Fluoride – Total	mg/kg	Std. Methods : 4500-F ⁻ B, D	< 1.00	-
9	Fluoride – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 4500F ⁻ B, D	< 1.00	< 50.0
10	Nitrate – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 4500-NO ₃ ⁻ E	< 0.10	< 30.0
11	Ammonia – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods : 4500-NH ₃ B, C	< 5.00	< 1000.0
12	Arsenic – Total	mg/kg	SW-846 : 3050B Std. Methods:3500-As B :2017	< 1.00	-
13	Arsenic – WLT	mg/L	DIN : 38414 Part 4 (S4) Std. Methods:3500-As B :2017	< 0.10	< 1.0
14	Phenol – WLT	mg/L	DIN : 38414 Part 4 (S4) SW-846 : 9065	< 1.00	< 100.0
15	Mercury – Total	mg/kg	SW-846 : 7471A Std. Methods : 3112 B :2017	NA	-
16	Mercury – WLT	mg/L	DIN : 38414 Part 4 (S4) SW-846 : 7470A Std. Methods : 3112 B :2017	NA	< 0.10

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