



GIL-CDR/ENV/2023-24/ 321

01.09.2023

To,  
The Member Secretary,  
Jharkhand State Pollution Control Board,  
T.A. Bhawan, H.E.C. Complex,  
Ranchi-834004 (Jharkhand)

Sub: Environmental Statement 2022-23 of Grasim Industries Limited, Chemical Division, Rehla

Dear Sir,

This has reference to the captioned subject, we are herewith submitting the Environmental Statement of Grasim Industries Limited, Chemical Division, Rehla for the year 2022-23 dully filled in prescribed format.

We hope, you will find the same in order.

Thanking you,

Yours faithfully,

For Grasim Industries Limited,  
Chemical Division

  
(Ashok Kumar Gupta)  
Unit Head – Rehla,

Encl.: As above.

Cc:

1. Regional Officer, Jharkhand State Pollution Control Board, Tupudana Industrial Estate, Tupudana, Ranchi

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**FORM – V**

**Environmental Statement for the Financial year ending 31<sup>st</sup> March, 2023**

**PART - A**

1. Name and address of the owner/ occupier of Industry operation or process. : Mr. Ashok Kumar Gupta  
Unit Head, Grasim Industries Limited,  
Chemical Division, Rehla.  
P.O. Rehla – 822124  
Dist. Palamau (Jharkhand)
2. Industry Category : Red  
Primary : (STC Code)  
Secondary : (STC Code)
3. Production Capacity : Caustic Soda (Lye + Flakes) - 158472.96 MT  
Chlorine (Liquid + Gas) - 109441.13 MT  
Hydrochloric Acid - 32354.08 MT  
Dil. Sulphuric Acid - 3431.23 MT  
Sodium Hypochlorite - 24626 MT  
Compressed H<sub>2</sub> Gas - 1151770.81 NM<sup>3</sup>  
Aluminum Chloride - 16874 MT  
SBP - 18248 MT  
Electricity - 420597.16 MW
4. Year of establishment : 1984
5. Date of the last environmental statement Submitted : 23<sup>th</sup> September 2022

**PART – B**

**Water and Raw Material Consumption**

1. Water consumption m<sup>3</sup>/d : 2021-22                      2022-23  
Process                      1050 m<sup>3</sup>/D                      1388 m<sup>3</sup>/D  
Cooling                      3196 m<sup>3</sup>/D                      3808 m<sup>3</sup>/D  
Domestic                      802 m<sup>3</sup>/D                      818m<sup>3</sup>/D

Sl. N.	Name of Products	Fresh Process Water consumption per unit of product output	
		During the financial year 2021-2022	During the financial year 2022-2023
1	Caustic Soda	4.06 m <sup>3</sup> /T	3.46 m <sup>3</sup> /T
2	Electricity	2.95 m <sup>3</sup> /MW	2.82 m <sup>3</sup> /MW

Raw Material consumption:

Name of raw material	Name of Products	Consumption of raw material per unit of output	
		During the financial year 2021-2022	During the financial year 2022-2023
Common salt	Caustic soda	1584 Kg/MT	1561 Kg/MT
Soda Ash	Caustic soda	2.98 Kg/MT	8.6 Kg/MT
Barium Carbonate	Caustic soda	8.45 Kg/MT	0.76 Kg/MT
Sulphuric acid	Liquid Chlorine	24.12 Kg/MT	24.42 Kg/MT
Hyd. Lime 'A' grade	Bleaching Powder	749 Kg/MT	744.43 Kg/MT
Aluminum Ingot	Aluminum Chloride	205.27 Kg/MT	205.10 Kg/MT
Coal	Electricity	0.958 MT/MW	0.883 MT/MW

\* Industry may use Codes, if disclosing details of raw material would violate contractual obligations, otherwise all industries have to name the raw materials used.

**PART – C**

**Pollution discharge to environment/unit of output (Parameter as specified in the consent issued)**

Pollution	Quantity of pollutants discharged (mass/day)	Concentration of pollutants in discharges (mass/volume)	Percentage of variation from prescribed standard with reasons
A) Water	Achieving Zero Liquid Discharge		
B) Ambient Air	-	PM10- 70 µg/m <sup>3</sup> PM2.5- 38 µg/m <sup>3</sup> Sulphur Dioxide – 07.33 µg/m <sup>3</sup> Nitrogen Dioxide- 15.45 µg/m <sup>3</sup>	Within permissible limits
C) Stack Emission	-	<u>Stack 1</u> Particulate Matter- 53.75 mg/Nm <sup>3</sup> <u>Stack 2</u> Particulate Matter- 44.75 mg/Nm <sup>3</sup>	

**PART – D**

**Hazardous Wastes -As specified under Hazardous and other Wastes (Management and Transboundary movement) Rules, 2016**

	Hazardous Wastes	During the financial year 2021-2022	During the financial year 2022-2023
A	1. Burnt Oil. (to authorized recycler)	3.57 MT	4.41 MT
	2. Hazardous and Other Waste Disposed (to Adityapur Waste Management Pvt. Ltd., Saraikela)	16154.8 MT ** (**inclusive of Stored waste disposal)	17311.37 MT ** (**inclusive of Stored waste disposal)

**PART – E**

**Solid Wastes**

		Total Quantity	
	Non Hazardous solid wastes	During the financial year 2021-2022	During the financial year 2022-2023
A	From process 1. Fly Ash from Power Plant	133089.78 MT	162272.48 MT
B	Quantity recycled or re-utilized 1. Fly Ash (Brick Plant, NHAI & Project)	55281.74 MT	52114.56 MT
C	Disposed Quantity 1. Fly Ash (to cement Industry)	77688.32 MT	110275.64 MT

**PART – F**

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

Waste Name	Composition	Disposal Method
ETP Sludge	LOD (w/w)- 24.69 % LOI (w/w)- 7.79 % Water soluble Organics (w/w)- 0.28 % Nitrate (WLT)- <0.10 mg/L Ammonia (WLT)- <5.00 mg/L Cyanide (WLT)- <0.05 mg/L Lead (TCLP)- 2.05 mg/L Chromium (TCLP)- <0.20 mg/L Mercury (WLT)- NA	Safe disposal at Common Hazardous Waste Treatment Storage & Disposal Facility (M/s Adityapur Waste Management Pvt Ltd)
MEE+ATFD	LOD (w/w)- 10.17 % LOI (w/w)- 12.24 % Phosphate as PO <sub>4</sub> - 6.08 mg/kg Reactive Cyanide as HCN- <1.0 mg/kg Reactive Sulphide as H <sub>2</sub> S- <10.0 mg/kg Nitrate (TCLP)- ND Nickle as NI (TCLP)- 1.61 mg/L Zinc as Zn (TCLP)- 0.96 mg/L Hexavalent Chromium (TCLP)- <0.1 mg/L	Safe disposal at Common Hazardous Waste Treatment Storage & Disposal Facility (M/s Adityapur Waste Management Pvt Ltd)
Brine Sludge	Moisture- 35 % Silica- 22 % BaSO <sub>4</sub> - 7 % NaCl- 9 % CaCO <sub>3</sub> - 16 % Mg(OH) <sub>2</sub> - 9 %	Safe disposal at Common Hazardous Waste Treatment Storage & Disposal Facility

## PART – G

### **Impact of the Pollution abatement measures taken on conservation of natural resources and on the cost of production.**

Following measure has been taken so far-

Sl. No.	Action Taken	Impacts on conservation of natural resources & others
1	<p>Effluent Reduction &amp; Recycling Facility</p> <ul style="list-style-type: none"> <li>- We are utilizing Caustic Concentrator process condensate for feed caustic dilution</li> <li>- Entire brine ion exchange backwash volume back to brine dilution</li> <li>- Ensuring ZLD &amp; utilization of waste water in a close circuit.</li> </ul>	<ul style="list-style-type: none"> <li>-Reduction in specific water consumption</li> <li>-Safeguarding the natural water bodies by ensuring ZLD and utilization of waste water.</li> </ul>
2	<p>Power &amp; Steam Saving Efforts</p> <ul style="list-style-type: none"> <li>- New electrical chiller erection and commissioning done resulting saving of 40 TPD of steam.</li> <li>- Remembring of Electrolyser-B has been completed resulting 10KWH/Ton of power saving</li> <li>-Insulation provided on Buffer Tank, Tank D80 &amp; polish brine tank and reduce the steam consumption 12 TPD.</li> <li>- VFD has been installed in CMF Buffer Pump B resulting 1200KWH/Day of power saving</li> <li>-Revamping and installation &amp; commissioning of Chlorine Compressor-F which resulted to contribute power saving of 3000Kwh/Day</li> </ul>	<p>Direct saving of coal consumption, ultimately reduction of environment pollution. As burning coal, produces a number of gaseous by-products, including carbon dioxide, nitrogen oxide, sulphur dioxide and methane gas, all of which contribute to global climate change.</p>
3	<p>Safe &amp; Secure disposal of waste</p> <ul style="list-style-type: none"> <li>- Further utilization of contaminated bags, while shifting MEE+ATFD salt to CHWTSDF</li> <li>- Timely Disposal of Hazardous Waste at TSDF</li> <li>- Timely Reutilization / Disposal of Ash in Cement Industry &amp; Project site</li> </ul>	<ul style="list-style-type: none"> <li>-Prevented the use of virgin packaging material. Hence reduced the generation of Plastic Waste</li> <li>-Prevention from spillage, while transportation of waste material for its final disposal</li> <li>-Reduce/minimize the chance of environment pollution</li> </ul>
4	<p>Emission Control &amp; monitoring</p> <ul style="list-style-type: none"> <li>-Continual upgradation in APCD</li> <li>-In all available stacks, installation &amp; connectivity of OCEMS with JSPCB &amp; CPCB server</li> </ul>	<ul style="list-style-type: none"> <li>-Prevention from pollutant discharge in atmosphere</li> <li>-Regular monitoring helps, to sustain healthy environment</li> </ul>
5	<p>Material Handling, Reduction in Fugitive emissions &amp; use of clean fuel</p> <ul style="list-style-type: none"> <li>-Proper upkeep of storage yard for our raw materials (i.e. Salt &amp; Coal)</li> </ul>	<ul style="list-style-type: none"> <li>-Maintaining good quality of ambient air</li> <li>-Forward Step, to Reduce GHG emission and Plastic</li> </ul>

	<p>-Transportation of salt in Railway Containers &amp; phase out the use plastic bags.</p> <p>-Absorbing HCL fumes (which emits during Road Tankers filling), in a scrubbing tower in soft water. This scrubbed water containing dilute HCL is used for Commercial grade HCL production.</p> <p>-Using clean fuel Hydrogen instead of LDO for Caustic Flakes production</p> <p>-Installation of Dust extraction system/ Static Sprinklers/ Defogging system</p>	<p>Pollution.</p> <p>-Saves Production Cost</p>
6	<p>Greenbelt development</p> <p>-Planted saplings inside &amp; outside of Plant premises</p>	<p>-Reduce the heat wave effect, Conserve biodiversity, retention of soil moisture and moderation of micro climate</p>

### PART- H

#### **Additional measures/investment proposal for environmental protection abatement of pollution, prevention of pollution.**

Upgradation & enhancement in the capacity of existing pollution control equipment's & water treatment facilities. Introduction of new intermediate product project for the utilization of chlorine (generated as a by-product).

### PART - I

#### **Any other particulars for improving the quality of the environment –**

Continuous efforts are being made to develop greeneries inside & outside of the plant to improve environmental quality. Monitoring of the effluent and pollutants are being carried out periodically and the corrective steps are taken immediately. As a preventive step to conserve the water resources, Water Reservoir are being constructed & Rain water harvesting system are being installed at various locations.

For, Grasim Industries Limited,  
Chemical Division, Rehla



(Ashok Kumar Gupta)  
Unit Head