

F. No. J-11011/466/2011-IA II (I)  
Government of India  
Ministry of Environment, Forest and Climate Change  
(I.A. Division)

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Dated 22<sup>nd</sup> January, 2016

To,

Shri A.K. Singh, President (Plant)  
M/s Hindustan Chemicals Company  
(Formerly known as Cyanides & Chemicals Company)  
GIDC Industrial Estate, P.O. Olpad - 394540  
Surat, Gujarat

E-mail: [hccolp@sify.com](mailto:hccolp@sify.com) ; Fax No.02621-221235:

**Subject :** Manufacturing of Sodium Cyanide & other Cyanide based products at plot no. 26-37, 54-57, 122, 143, Village Asnabad, Tehsil Olpad, District Surat, Gujarat by M/s Hindusthan Chemicals Company (Formerly known as M/s Cyanide & Chemicals Company)- Reg Environment Clearance.

**Ref.:** Your letter no. nil dated 29<sup>th</sup> January, 2013.

Sir,

Kindly refer your letter dated 29th January, 2013 alongwith project documents including Form I, Terms of References, Pre-feasibility Report, EIA/EMP Report alongwith Public Hearing Report and subsequent submission of additional information vide letters dated 24th December, 2013 and 17<sup>th</sup> December, 2014 regarding above mentioned project. PP vide letter no. HCC/Tech/17/RPS/264 dated 10<sup>th</sup> December, 2015 has submitted 'Zero' effluent discharged scheme for effluent treatment.

2.0 The Ministry of Environment, Forest and Climate Change has examined the application. It is noted that proposal is for manufacturing of Sodium Cyanide & other Cyanide based products at plot no. 26-37, 54-57, 122, 143, Village Asnabad, Tehsil Olpad, District Surat, Gujarat by M/s Hindusthan Chemicals Company (Formerly known as M/s Cyanide & Chemicals Company). Total plot area is 2,04,995 m<sup>2</sup> of which 15,963 sq.m will be used for expansion. Total cost of the proposed expansion project is Rs. 202.50 Crore. Out of which, Rs. 2.50 Crore and Rs. 1.25 Crore per annum are earmarked towards capital cost and recurring cost per annum for pollution control measures. River Tapi is flowing at a distance of 9.5 km. No national park/wildlife sanctuary/reserve forest is located within 10 km distance. Details of existing and proposed products will be as follows:

| S.N | Name of Products        | Production Capacity (MT/Annum) |          |       |
|-----|-------------------------|--------------------------------|----------|-------|
|     |                         | Existing                       | Proposed | Total |
| 1   | Hydrogen Cyanide        | 5100                           | --       | 5100  |
| 2   | Sodium Cyanide          | 6372                           | 15000    | 21372 |
| 3   | Potassium Cyanide       | 2000                           | -        |       |
| 4   | Sodium Ferro cyanide    | 1000                           | -        |       |
| 5   | Potassium Ferro cyanide |                                | -        |       |
| 6   | Diphenyl Guanidine      | 1260                           | -        |       |
| 7   | Sodium Dicyanide        | 300                            | -        |       |

|       |  |      |      |      |
|-------|--|------|------|------|
| 8     | Mandelonitrile   | 2500 | -    |      |
| 9     | Heat Treatment Salt  | 720  | -    |      |
| 10    | <b>CYNOHYDRINES GROUP</b>  |      |      |      |
| i)    | Meta phenoxy Benzaldehyde Cyanohydrin (MPBAD Cyanohydrin))                 | 5000 |      |      |
| ii)   | Formaldehyde Cyanohydrin (Glycolonitrile)                                  |      |      |      |
| iii)  | Acetone Cyanohydrin  |      |      |      |
| iv)   | Methyl Ethyl Ketone Cyanohydrin  |      |      |      |
| v)    | Acetaldehyde Cyanohydrin (Lactonitrile)                                    |      |      |      |
| vi)   | Para Anisaldehyde Cyanohydrin  |      |      |      |
| vii)  | Cyclohexanone Cyanohydrin  |      |      |      |
| viii) | Methyl Propyl Ketone Cyanohydrin   |      |      |      |
| ix)   | Methyl Mercapto Butyronitrile (Methyl Mercapto Propanaldehyde Cyanohydrin) |      |      |      |
| x)    | Cyclo Pentanone Cyanohydrin  |      | 500  |      |
| xi)   | 2-Chloro Benzaldehyde Cyanohydrin (2-Chloro Mandelonitrile)                |      | 500  |      |
| xii)  | Ortho Toly Benzaldehyde Cyanohydrin (Ortho Toly Mandelonitrile)            |      | 100  |      |
|       | Total of Cyanohydrines Group   | 5000 | 2000 | 7000 |
| 11    | <b>NITRILES GROUP</b>  |      |      |      |
| i)    | Isophoron Nitrile  | 3000 |      |      |
| ii)   | Imino Diacetoneitrile  |      |      |      |
| iii)  | Succinonitrile   |      |      |      |
| iv)   | 3-Hydroxy Propionitrile  |      |      |      |
| v)    | Methyl Amino Acetonitrile Hydrochloride                                    |      |      |      |
| vi)   | Methylene Amino Aceto Nitrile (MAAN)                                       |      | 300  |      |
|       | Total of Nitriles Group  | 3000 | 300  | 3300 |
| 12    | <b>CYANIDE BASE PRODUCTS</b>   | 3500 | 6300 | 9800 |
| i)    | Sodium Cyano Acetate   | 3500 |      |      |
| ii)   | Cyanamide (Crystals & Aqueous Solution)                                    |      |      |      |
| iii)  | Para Anisaldehyde Cyanohydrin  |      |      |      |
| iv)   | DiorthoTolyl Guanidine (DOTG)  |      |      |      |
| v)    | Zinc Cyanide   |      | 300  |      |
| vi)   | Isophoron Diamine  |      | 6000 |      |
|       | Total of Cyanide based Products  | 3500 | 6300 | 9800 |
| 13    | N G based CPP  | 2 MW | --   | --   |
| 14    | Ammonia Sulphate (By-Product)  | 2649 | --   | --   |

3.0 Adequate stack height will be provided to gas fired boiler (4 Nos. x 3.5 TPH). All the gas from the process containing HCN will be incinerated in the incinerator. Scrubber and Stack of adequate height will be provided to incinerator. Bagfilter, water scrubber and stack of adequate height will be provided to heat treatment salt plant, ammonia absorption column to ammonium sulphate recovery plant and Cyclone separator to control particulate emissions. Total water requirement will be increased from 651.2 m<sup>3</sup>/day to 1105.2 m<sup>3</sup>/day after expansion. Out of which, fresh water requirement from Kakrapar Canal will be 605 m<sup>3</sup>/day and remaining water requirement will be met from recycled water 500 m<sup>3</sup>/day. Industrial effluent generation will be increased from 265.9 m<sup>3</sup>/day to 512 m<sup>3</sup>/day after expansion. Effluent will be segregated into high TDS/COD and Low COD/TDS effluent streams. High TDS/COD effluent stream will be evaporated in Multiple Effect Evaporator (MEE). Condensate will be treated in the condensate treatment unit. Low TDS/COD effluent stream will be treated in the effluent treatment plant (ETP) comprising primary, secondary and tertiary treatment ( Reverse Osmosis). Permeate will be reused/recycled for cooling tower make up. The proposed effluent treatment scheme for the existing unit as well as



proposed expansion is based on 'Zero effluent discharge'. Incinerator will be designed as per CPCB guidelines. ETP sludge, tar residues/distillate residues, spent resin, MEE salt will be sent to TSDF. Activated carbon, ferric hydroxide and iron sludge will be sent for incineration. Waste / used oil will be sold to authorized recyclers/re-processors.

4.0 Public hearing / consultation was exempted as per stage Section 7 (i), III Stage (3), Para (i)(b) of EIA Notification 2006.

5.0 All units producing technical grade pesticides are listed at S.N. 5(b) under category 'A' and appraised at Central level.

6.0 The proposal was considered by the Expert Appraisal Committee (Industry) in its meetings held during 16<sup>th</sup> – 17<sup>th</sup> February, 2012, 16<sup>th</sup> – 17<sup>th</sup> May, 2013 and 19<sup>th</sup>-20<sup>th</sup> December, 2013 respectively. Project Proponent and the EIA Consultant namely M/s Eco-Chem Sales & Services, have presented EIA / EMP report as per the TOR. EAC has found the EIA / EMP Report and additional information to be satisfactory and in full consonance with the presented TORs. The Committee recommended the proposal for environmental clearance.

7.0 Based on the information submitted by the project proponent, the Ministry of Environment and Forests hereby accords environmental clearance to above project under the provisions of EIA Notification dated 14<sup>th</sup> September 2006, subject to the compliance of the following Specific and General Conditions:

**A. SPECIFIC CONDITIONS:**

- i) National Emission Standards for Pesticide Manufacturing and Formulation Industry issued by the Ministry vide G.S.R. 46(E) dated 3<sup>rd</sup> February, 2006 and amended time to time shall be followed by the unit.
- ii) Adequate stack height shall be provided to gas fired boilers.
- iii) All the gas from the process containing HCN shall be incinerated in the incinerator. Scrubber and Stack of adequate height shall be provided to incinerator. Bagfilter, water scrubber and stack of adequate height shall be provided to heat treatment salt plant, ammonia absorption column to ammonium sulphate recovery plant and Cyclone separator to control particulate emissions. Efficiency of pollution control device shall be monitored regularly and maintained properly. Scrubbers vent shall be provided with on-line detection and alarm system to indicate higher than permissible value of controlled parameters. At no time, the emission levels shall go beyond the prescribed standards. The system should be interlocked with the pollution control equipments so that in case of any increase in pollutants beyond permissible limits, plant should be automatically stopped.
- iv) In plant control measures for checking fugitive emissions from all the vulnerable sources shall be provided. Fugitive emissions shall be controlled by providing closed storage, closed handling & conveyance of chemicals/materials, multi cyclone separator and water sprinkling system. Dust suppression system including water sprinkling system shall be provided at loading and unloading areas to control dust emissions. Fugitive emissions in the work zone environment, product, raw materials storage area etc. shall be regularly monitored and records maintained. The emissions shall conform to the limits stipulated by the GPCB.
- v) For further control of fugitive emissions, following steps shall be followed :
  - i. Closed handling system shall be provided for chemicals.



- ii. Reflux condenser shall be provided over reactor.
- iii. System of leak detection and repair of pump/pipeline based on preventive maintenance.
- iv. The acids shall be taken from storage tanks to reactors through closed pipeline. Storage tanks shall be vented through trap receiver and condenser operated on chilled water.
- v. Cathodic protection shall be provided to the underground solvent storage tanks.
- vi) A proper Leak Detection And Repair (LDAR) Program for pesticide industry shall be prepared and implemented as per CPCB guidelines. Focus shall be given for prevention of fugitive emissions for which preventive maintenance of pumps, valves, pipelines are required. Proper maintenance of mechanical seals of pumps and valves shall be given. A preventive maintenance schedule for each unit shall be prepared and adhered to.
- vii) Continuous monitoring system for HCN, chlorine, HCl and NH<sub>3</sub> as well as VOCs, shall be installed at all important places/areas. Effective measures shall be taken immediately, when monitoring results indicate above the permissible limits. All necessary steps should be taken for monitoring of HCN, chlorine, HCl and NH<sub>3</sub> as well as VOCs in the proposed plant.
- viii) Alarm for chlorine leakage if any in the liquid chlorine storage area shall be provided alongwith automatic start of the scrubbing system.
- ix) The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution.
- x) Ambient air quality data shall be collected as per NAAQES standards notified by the Ministry vide G.S.R. No. 826(E) dated 16<sup>th</sup> September, 2009. The levels of PM<sub>2.5</sub>, PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub>, CO and VOC shall be monitored in the ambient air and displayed at a convenient location near the main gate of the company and at important public places. The company shall upload the results of monitored data on its website and shall update the same periodically. It shall simultaneously be sent to the Regional office of MOEF, the respective Zonal office of CPCB and GPCB.
- xi) Solvent management shall be carried out as follows :
  - i. Chilled brine circulation system shall be provided to condensate solvent vapors and reduce solvent losses. It shall be ensured that solvent recovery should not be less than 95%.
  - ii. Reactor and solvent handling pump shall have mechanical seals to prevent leakages.
  - iii. The condensers shall be provided with sufficient HTA and residence time so as to achieve more than 95% recovery
  - iv. Solvents shall be stored in a separate space specified with all safety measures.
  - v. Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done.
  - vi. Entire plant shall be flame proof. The solvent storage tanks should be provided with breather valve to prevent losses.
- xii) Total water requirement from Kakrapar Canal shall not exceed 600.3 m<sup>3</sup>/day after expansion in effect of ZLD scheme submitted by PP and prior permission should be obtained from the Competent Authority.

- xiii) Industrial effluent generation should not exceed 512 m<sup>3</sup>/day. Effluent will be segregated into high TDS/COD and Low COD/TDS effluent streams. High TDS/COD effluent stream will be evaporated in Multiple Effect Evaporator (MEE). Condensate will be treated in the condensate treatment unit. Low TDS/COD effluent stream will be treated in the effluent treatment plant (ETP) comprising primary, secondary and tertiary treatment (Reverse Osmosis). Permeate will be reused/recycled for cooling tower make up. The proposed effluent treatment scheme for the existing unit as well as proposed expansion is based on 'Zero effluent discharge'. Water quality of treated effluent should meet the norms prescribed by CPCB/SPCB.
- xiv) 'Zero' effluent discharge shall be adopted and no effluent shall be discharged outside the premises.
- xv) Automatic /online monitoring system (24x7 monitoring devices) for flow measurement and relevant pollutants in the treatment system to be installed. The data to be made available to the respective SPCB and in the Company's website.
- xvi) Process effluent/any wastewater shall not be allowed to mix with storm water. Storm water drain shall be passed through guard pond.
- xvii) Incinerator should be designed as per CPCB guidelines. SO<sub>2</sub>, NO<sub>x</sub>, HCN, HCl and CO emissions shall be monitored in the stack regularly.
- xviii) Hazardous chemicals shall be stored in tanks in tank farms, drums, carboys etc. Flame arresters shall be provided on tank farm. Solvent transfer shall be by pumps.
- xix) The company shall obtain Authorization for collection, storage and disposal of hazardous waste under the Hazardous Waste (Management, Handling and Trans-Boundary Movement) Rules, 2008 and amended as on date for management of Hazardous wastes and prior permission from GPCB shall be obtained for disposal of solid / hazardous waste in the TSDF. Measures shall be taken for fire fighting facilities in case of emergency. Membership of TSDF for hazardous waste disposal shall be obtained.
- xx) As proposed, ETP sludge, incineration ash and evaporation residue shall be sent to TSDF site. High calorific value waste such as spent organic shall be sent to cement factory/incinerated.
- xxi) The Company shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 11989 as amended in October, 1994 and January, 2000. All Transportation of Hazardous Chemicals shall be as per the Motor Vehicle Act (MVA), 1989.
- xxii) The company shall undertake following waste minimization measures :-
- Metering and control of quantities of active ingredients to minimize waste.
  - Reuse of by-products from the process as raw materials or as raw material substitutes in other processes.
  - Use of automated filling to minimize spillage.
  - Use of Close Feed system into batch reactors.
  - Venting equipment through vapour recovery system.
  - Use of high pressure hoses for equipment clearing to reduce wastewater generation.
- xxiii) The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Fire fighting system shall be as per the norms.

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- xxiv) Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.
- xxv) As proposed, green belt over 33 % of the total project area should be developed within plant premises with at least 10 meter wide green belt on all sides along the periphery of the project area, in downward direction, and along road sides etc. Selection of plant species shall be as per the CPCB guidelines in consultation with the DFO.
- xxvi) The company shall make the arrangement for protection of possible fire and explosion hazards during manufacturing process in material handling.
- xxvii) Provision shall be made for the housing for the construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile sewage treatment plant, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structure to be removed after the completion of the project. All the construction wastes shall be managed so that there is no impact on the surrounding environment.
- xxviii) At least 2.5 % of the total cost of the project should be earmarked towards the Enterprise Social Commitment (ESC) based on local needs and action plan with financial and physical breakup/details should be prepared and submitted to the Ministry's Regional Office of MoEF&CC. Implementation of such program should be ensured accordingly in a time bound manner.

**B. GENERAL CONDITIONS:**

- i. The project authorities must strictly adhere to the stipulations made by the Gujarat Pollution Control Board (GPCB), State Government and any other statutory authority.
- ii. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests. In case of deviations or alterations in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.
- iii. The locations of ambient air quality monitoring stations shall be decided in consultation with the Gujarat Pollution Control Board (GPCB) and it shall be ensured that at least one station is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.
- iv. The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under Environment (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).
- v. The Company shall harvest rainwater from the roof-tops of the buildings and storm water drains to recharge the ground water and use the same water for the process activities of the project to conserve fresh water.
- vi. During transfer of materials, spillages shall be avoided and garland drains be constructed to avoid mixing of accidental spillages with domestic wastewater and storm water drains.
- vii. Usage of Personnel Protection Equipments by all employees/ workers shall be ensured.



- viii. Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.
- ix. The company shall also comply with all the environmental protection measures and safeguards proposed in the project report submitted to the Ministry. All the recommendations made in the EIA/EMP in respect of environmental management, risk mitigation measures and public hearing relating to the project shall be implemented.
- x. The company shall undertake CSR activities and all relevant measures for improving the socio-economic conditions of the surrounding area.
- xi. The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment.
- xii. A separate Environmental Management Cell equipped with full fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.
- xiii. The company shall earmark sufficient funds for recurring cost per annum to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so earmarked for environment management/ pollution control measures shall not be diverted for any other purpose.
- xiv. A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, ZilaParisad/Municipal Corporation, Urban local Body and the local NGO, if any, from who suggestions/ representations, if any, were received while processing the proposal.
- xv. The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF, the respective Zonal Office of CPCB and the Gujarat Pollution Control Board. A copy of Environmental Clearance and six monthly compliance status report shall be posted on the website of the company.
- xvi. The environmental statement for each financial year ending 31<sup>st</sup> March in Form-V as is mandated shall be submitted to the Gujarat Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the Bhopal Regional Offices of MoEF by e-mail.
- xvii. The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB/Committee and may also be seen at Website of the Ministry at <http://envfor.nic.in>. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the

locality concerned and a copy of the same shall be forwarded to the concerned Regional Office of the Ministry.

- xviii. The project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of the project.
- 8.0 The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
- 9.0 The Ministry reserves the right to stipulate additional conditions, if found necessary. The company in a time bound manner will implement these conditions.
- 10.0 The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, Air (Prevention & Control of Water Pollution) Act, 1981, the Environment (Protection) Act, 1986 Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2008 and the Public Liability Insurance Act, 1991 along with their amendments and rules.

  
(Lalit Bokolia)  
Additional Director

**Copy to :-**

1. The Principal Secretary, Environment Department, Government of Maharashtra, 15th Floor, New Administrative Building, Mantralaya, Mumbai - 400 032
2. The Chief Conservator of Forests (Central), Kendriya Paryavaran Bhavan, Link Road No.3, Bhopal-462016.
3. The Chairman, Central Pollution Control Board Parivesh Bhavan, CBD-cum-Office Complex, East Arjun Nagar, New Delhi - 110 032.
4. The Chairman, Maharashtra Pollution Control Board, Kalpataru Point, 3<sup>rd</sup> and 4<sup>th</sup> floor, Opp. Cine Planet, Sion Circle, Mumbai-400 022.
5. Monitoring Cell, Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhavan, Jor Bagh Road, New Delhi.
6. Guard File/Monitoring File/Record File.

  
(Lalit Bokolia)  
Additional Director