

**MEMBER SECRETARY  
SEIAA (GUJARAT)**



Government of Gujarat

**STATE LEVEL ENVIRONMENT  
IMPACT ASSESSMENT  
AUTHORITY  
GUJARAT**

**No. SEIAA/GUJ/EC/5(f)/102/2009**

**Date: 10 JUN 2010**

**R.P.A.D/Time Limit**

**Sub: Environment Clearance for new unit for manufacture Ethylene Oxide condensates i.e. Ethoxylated Tertiary Lauryl Alcohol [ETLA] and 2-Phenoxy Ethanol at Plot No 892, GIDC Jhagadia, Tal Jhagadia, Dist Bharuch by M/s Galaxy Surfactants Ltd.....in Category 5 (f) of Schedule annexed with EIA Notification dated 14/9/2006.**

Dear Sir,

This has reference to your application in Form-I, REIA, Risk Assessment Report, Disaster Management Plan and On Site Emergency Plan submitted to SEAC, seeking Environmental Clearance under Environment Impact Assessment Notification, 2006.

The proposal is for Environmental Clearance for manufacture Ethylene Oxide condensates i.e. Ethoxylated Tertiary Lauryl Alcohol [ETLA] and 2-Phenoxy Ethanol by M/s. Galaxy Surfactants Ltd, Plot No 892, GIDC Jhagadia, Tal Jhagadia, Dist Bharuch. The unit is located in notified industrial area of Jhagadia. The total cost of the proposed project would be Rs 63.5 crore and total land area will be 1,57,220.92 sq.m. The unit has applied for manufacturing of the following Products :-

**Products:**

Sr no	Products	Quantity (MT/year)
1	Ethoxylated Tertiary Lauryl Alcohol [ETLA]	37000
2	2-Phenoxy Ethanol	8000
<b>Total</b>		<b>45000</b>

The project activity is covered in 5(f) and is of 'B' Category. Since, the unit is located in the notified industrial area of Jhagadia, public consultation is not required as per paragraph 7(i) III. Stage (3) (d) – Public Consultation of EIA Notification, 2006.

The SEAC, Gujarat had recommended to the SEIAA, Gujarat, to grant the Environment Clearance to this project for the above-mentioned building development project. The proposal was considered by SEIAA, Gujarat in its meeting held on 08.06.2010 at Gandhinagar. Since the EIA/ EMP was found to be adequate and complete and the public consultation is not required for the project, the SEIAA 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:**

**A.1 WATER:**

1. Water consumption shall not exceed 213 m<sup>3</sup>/ day. No ground water shall be used for the project. Water supply for the project shall be sourced from GIDC water supply only.
2. The industrial wastewater generation from the project shall not exceed 45 m<sup>3</sup>/day. Generated wastewater shall be treated in the proposed effluent treatment plant as per the submitted treatability report to achieve zero discharge.
3. The treated effluent shall be reused again in boilers & cooling towers.
4. The unit shall strictly follow zero discharge. There shall be no discharge of effluent from the premises.
5. As proposed 60 % steam condensate shall be recovered from the boiler and reused back.
6. The unit shall continuously strive to reduce, recycle and reuse the generated waste water.
7. A proper logbook of the quality and quantity of various streams including the quantity recycled & reused shall be maintained and shall be furnished to the GPCB from time to time.

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8. The unit shall provide metering facility at the inlet and outlet of the ETP as well as the recycling / reuse lines etc and maintain records for the same.
9. Proper housekeeping shall be adopted to prevent spillages and contaminated surface run off going to storm water drains.
10. Domestic waste water 10 m<sup>3</sup>/day shall be treated along with the industrial effluent in the proposed ETP.
11. NG shall be used as fuel @ 13440 m<sup>3</sup>/ day in the boiler & thermic fluid heater. As undertaken minimum stack height of 35 m shall be provided.
12. High efficiency scrubbers shall be provided as APCM for scrubbing the emissions from EO storage vent and Ethoxylation Reactor vent which shall be operated at optimum efficiency.
13. In case, the parameters are not achieved, the unit shall upgrade the APCM and install additional facilities in consultation with the Gujarat Pollution Control Board.
14. The applicant shall obtain performance guarantee for the proposed APCM and shall also carry out third party monitoring with respect to the design, fabrication and efficiency and efficacy of the provided air pollution control equipments through credible institutes like NPC, LDCE or any other institute of repute.
15. Measures shall be taken to reduce the process vapors emissions as far as possible. Use of toxic solvents shall be minimum. All venting equipment shall have vapour recovery system.
16. All the reactions shall be under closed condition. Vents shall open to the atmosphere through water cooled and chilled vent condensers. All charging of raw materials to the reaction vessel shall be done by metering pumps.
17. Gaseous emission at workplaces shall be controlled and kept below the limits prescribed by the Factories Act and Rules. Their records shall be maintained.
18. The gaseous emissions and particulate matter from various process units shall conform to the standards prescribed by GPCB. At no time, the emission levels shall go beyond the stipulated standards. In the event of failure of pollution control system adopted by the unit, the respective unit shall not be restarted until the control measures are rectified to achieve the prescribed standards.
19. The ambient air quality shall be monitored in and around the project area, and the location of ambient air quality monitoring stations shall be reviewed in consultation with the GPCB and additional stations shall be installed, if required in the downwind directions as well as where maximum ground level concentrations are anticipated.
20. Odour Management Plan shall be implemented for control & minimization of odour nuisance during operational phase due to handling, storage, use of phenol and other derivatives. Also following control measures shall be undertaken for effective prevention of odours.
  - Use of sanitation biocides to minimize the growth of aerobic /anaerobic micro-organisms.
  - Steaming of major pipe lines.
  - Proper cleaning of drains as well as regular use of bleaching powder in the drains to avoid growth of sulphur decomposing micro-organisms.
  - Provision of nozzles, sprayers and atomizers for spraying ultra-fine particles of water or odour removal chemicals along the boundary lines of area sources to suppress odours.

#### **A.3 SOLID / HAZARDOUS WASTE and MATERIALS:**

21. The unit shall strictly comply with the rules and regulations with regards to handing and disposal of Hazardous waste in accordance with the Hazardous Wastes (Management, Handling and Transboundary Movement) Rules 2008. Authorization from the GPCB must be obtained for collection / treatment /storage /disposal of hazardous wastes.
22. Hazardous waste before appropriate disposal shall be packed and stored in hazardous waste storage area facility with pucca bottom and leachate collection facility. Proper logbook shall be maintained for this purpose and shall be furnished to the GPCB from time to time.
23. The discarded containers/drums/bags/liners shall be sold only to the registered recyclers after decontamination.
24. Used oil / waste oil shall be sold only to the registered recyclers as per the Authorization of the GPCB.
25. The project management shall strictly comply with the provisions made in Manufacture Storage and Impact of Hazardous Chemicals Rules 1989 as amended in 2000 for handling of hazardous chemicals. Necessary approvals from the Govt Authorities shall be obtained before commissioning of the project, if applicable.
26. All Transportation of Hazardous Chemicals shall be as per the Motor Vehicle Act & Rules.
27. All transporting routes within the factory premise shall have paved roads to minimize splashes and spillages.

#### **A.4 SAFETY & HEALTH:**

28. Stringent safety measures shall be provided for the storage & handling of Ethylene Oxide, Phenol and



- other hazardous chemicals within the premises.
29. Storage of ethylene oxide and the conveyance pipeline shall conform to CCoE approved design & drawings. All installations shall be flame proof.
  30. Necessary flameproof fittings shall be provided in the manufacturing plant.
  31. Proper ventilation shall be provided in the work area.
  32. Storage and use of toxic chemicals shall be minimized to the extent possible and all necessary precautions shall be taken to mitigate the risk generated out of it.
  33. During material transfer, spillages shall be avoided and garland drain be constructed to avoid mixing of accidental spillages with domestic waste and storm water drain.
  34. Acids shall be stored in MSRL tanks for safety purpose. Storage of hazardous chemicals shall be in multiple small capacity tanks / containers instead of one single large capacity tank to reduce the risk.
  35. Provision of alarms with interlocking DCS system shall be made to control run away reaction.
  36. All venting equipment shall have vapour recovery system. All the pumps and other equipments where there is a likelihood of leakages shall be provided with Leak Detections and Repair (LDAR) system. Provision for immediate isolation of such equipment in case of a leakage shall also be made. The detector sensitivity shall be in ppm levels.
  37. All the storage tanks shall be fitted with appropriate controls to avoid any leakages. Close handling system for chemicals shall be provided. Double mechanical seals shall be provided for pumps /agitators for reactors for reduction of fugitive emissions and leakages. Solvent traps shall be installed wherever necessary.
  38. Personal Protective Equipment shall be provided to workers and its usage shall be ensured and supervised.
  39. First Aid Box and required Antidotes for the chemicals used in the unit shall be made readily available in adequate quantity at all the times.
  40. Training shall be given to all workers on safety and health aspects of handling chemicals.
  41. Occupational health surveillance of the workers shall be carried out on a regular basis and records shall be maintained as per the Factories Act 1948 and Gujarat Factories Rules 1963. Pre-employment and periodical medical examination for all workers shall be undertaken as per statutory requirement.
  42. The project management shall strictly comply with the provisions made in Manufacture Storage and Impact of Hazardous Chemicals Rules 1989 as amended in 2000 for handling of hazardous chemicals. Necessary approvals from the Govt Authorities shall be obtained before commissioning of the project, if applicable.
  43. All Transportation of Hazardous Chemicals shall be as per the Motor Vehicle Act & Rules.
  44. Hazardous materials storage shall be at an isolated designated location, bund/dyke walls shall be provided for storage tanks for Hazardous Chemicals.
  45. All transporting routes within the factory premise shall have paved roads to minimize splashes and spillages.
  46. The project management shall prepare a detailed Disaster Management Plan (DMP) for the project as per the guidelines from Directorate of Industrial Safety and Health. Detailed DMP prepared shall be implemented to bring down risk involved / hazards / accidents as low as reasonably practicable.

#### **A.5 NOISE:**

47. To minimize the noise pollution the following noise control measures shall be implemented:
  - ✓ Selection of any new plant equipment shall be made with specification of low noise levels.
  - ✓ Manufacturers / suppliers of major noise generating machines / equipments like air compressors, feeder pumps, turbine generators, etc. shall be instructed to make required design modifications wherever possible before supply and installation to mitigate the noise generation and to comply with the national / international regulatory norms with respect to noise generation for individual units
  - ✓ Regular maintenance of machinery and vehicles shall be undertaken to reduce the noise impact.
  - ✓ Noise suppression measures such as enclosures, buffers and / or protective measures shall be provided.
  - ✓ Employees shall be provided with ear protection measures like earplugs or earmuffs.
  - ✓ Proper oiling, lubrication and preventive maintenance shall be carried out of the machineries and equipments to reduce noise generation.
  - ✓ Construction equipment generating minimum noise and vibration shall be chosen.
  - ✓ Ear plugs and/muffs shall be made compulsory for the construction workers working near the noise generating activities / machines / equipment.
  - ✓ Vehicles and construction equipment with internal combustion engines without proper silencer shall not be allowed to operate.
  - ✓ Construction equipment meeting the norms specified by EP Act, 1986 shall only be used.



- ✓ Noise control equipment and baffling shall be employed on generators especially when they are operated near the residential and sensitive areas.
  - ✓ Noise levels shall be reduced by the use of adequate mufflers on all motorized equipment.
48. The overall noise level in and around the plant area shall be kept well within the prescribed standards by providing noise control measures including acoustic insulation, hoods, silencers, enclosures vibration dampers etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under the Environment (Protection) Act and Rules. Workplace noise levels for workers shall be as per the Factories Act and Rules.
  49. Audiometric tests shall be conducted regularly for the employees working close to the high noise sources and their records maintained.

#### **A.6 ENERGY CONSERVATION:**

50. The project proponent shall install energy efficient devices and appliances conforming to the Bureau of Energy Efficiency norms.
51. The energy audit shall be conducted at regular intervals and the recommendations of the audit report shall be implemented.
52. The project proponent shall implement the application of solar energy which shall be utilized as solar lighting for illumination of common areas, lighting of internal roads and passages in addition to utilization of solar water heating systems.
53. The transformers and motors shall have minimum efficiency of 85 %.
54. Energy conservation measures shall include use of electronic lighting system, use of CFL tubes to minimize energy use, use of programmable timers for pumping system and lighting, water level controllers for water pumps, centralized cooling etc. Automatic timer control of parking & street lights shall be installed.
55. Energy saving practices as follows shall be practiced:-
  - Condensate shall be recovered and shall be sent back to boiler.
  - Economizers shall be provided to utilize heat.
  - Constant monitoring of energy consumption and defining targets for energy conservation.
  - Adjusting the settings and illumination levels to ensure minimum energy used for desired comfort level.
  - Condensate shall be recovered and shall be sent back to boiler.
  - Proper temp controls shall be provided to reduce load on heating systems.
  - Use of solar cells for lighting.
  - Use of solar water heater for boiler feed, canteen & washing area.
  - Proper load factor shall be maintained by the unit.
  - Provision of day light roof to utilize maximum natural light in the production plant instead of electrical lighting.
  - Use of electronic ballast to save energy.
  - Automatic switching system for lighting and water tank pumping system shall be used.
  - To the maximum extent possible and technically feasible, energy efficient equipment like motors, pumps, air conditioning systems shall be selected.
  - Gravity flow shall be preferred wherever possible to save pumping energy.
  - Promoting awareness on energy conservation.
  - Training staff on methods of energy conservation and to be vigilant for the same.

#### **A.7 WASTE MINIMIZATION & CLEANER PRODUCTION:**

56. The unit shall undertake the Cleaner Production Assessment study through a reputed institute / organization and shall form a CP team in the company. The recommendations thereof along with the compliance shall be furnished to the GPCB. The CP assessment study shall focus on increasing the productivity, reducing the resource consumption and reducing the raw material consumption as well as avoiding or minimizing the waste streams. It shall also focus on reduce, reuse and recycle concepts also.
57. The unit shall undertake following waste minimization measures:
  - a) Metering and control of quantities of active ingredients to minimize waste.
  - b) Reuse of by-products from the process as raw materials or as raw materials substitutes in other process.
  - c) Use of automated and close filling to minimize spillages.
  - d) Use of close feed system into batch reactors.
  - e) Venting equipment through vapour recovery system.
  - f) Use of high pressure hoses for equipment cleaning to reduce wastewater generation.

#### **A.8 GREEN BELT:**

58. The unit shall develop green belt within premises as per the CPCB guidelines. The unit shall also tie up



with local agencies like gram panchayat, schools, social forest office etc. for necessary plantation and maintenance of 3000 trees in a phased manner in 3 years at available open land in nearby gram panchayat, schools or any such areas and submit an action plan for plantation and its compliance to the GPCB. Native and fast growing species shall be planted.

59. Drip irrigation system shall be used for the lawns and other green area including tree plantation.
60. Use of low-volume, low-angle sprinklers shall be implemented for lawn areas.
61. The unit shall become a member of the society constituted / to be constituted in Jhagadia for greening of the estate and shall contribute appropriately for this cause.

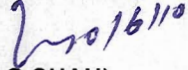
#### **A.9 OTHER CONDITIONS:**

62. In the event of failure of any pollution control system adopted by the unit, the unit shall be safely closed down and shall not be restarted until the desired efficiency of the control equipment has been achieved.
63. A separate Environment Management Cell equipped with full fledged laboratory facilities shall be set up to carry out the Environment Management and Monitoring functions.
64. The unit shall undertake eco-developmental measures including community welfare program most useful in the project area for the overall improvement of the environment. The eco-development plan shall be submitted to GPCB within three months of receipt of the EC.
65. The project management shall ensure that unit complies with all the environment protection measures, risk mitigation measures and safeguards recommended in the REIA / EMP / Risk Assessment report as well as proposed by them.
66. The unit shall develop rain water harvesting structures to harvest the run off water for recharge of ground water. Also harvesting of surface as well as rainwater from the rooftops of the building proposed in the project shall be undertaken and the same water shall be used for the various activities of the projects to conserve fresh water.
67. The company shall strictly follow all the recommendations mentioned in the Charter on Corporate Responsibility for Environment Protection (CREP) published by the Central Pollution Control Board, as may be applicable.
68. Pucca flooring / impervious layer shall be provided in the work areas, chemical storage areas and chemical handling areas to minimize soil contamination.
69. Leakages from the pipes, pumps, shall be minimal and if occurs, shall be arrested promptly.
70. The project proponent shall also comply with any additional condition that may be imposed by the SEAC or the SEIAA or any other competent authority for the purpose of the environmental protection and management.
71. At no time, the emissions shall exceed the prescribed limits. In the event of failure of any pollution control system adopted by the unit, the unit shall be immediately put out of operation and shall not be restarted until the desired efficiency has been achieved.
72. The project management shall also comply with all the environment protection measures, risk mitigation measures and safeguards recommended in the EIA / EMP report as well as other proposals made by them.
73. No further expansion or modifications in the plant shall be carried out without prior approval of the MoEF/ SEIAA, as the case may be. In case of deviations or alterations in the project proposal from those submitted to MoEF/ SEIAA/ SEAC for clearance, a fresh reference shall be made to the SEIAA/ SEAC to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.
74. The project authorities shall earmark adequate funds to implement the conditions stipulated by SEIAA as well as GPCB along with the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purpose.
75. The applicant shall inform the public that the project has been accorded environmental clearance by the SEIAA and that the copies of the clearance letter are available with the GPCB and may also be seen at the Website of SEIAA/ SEAC/ GPCB. This shall be advertised within seven days from the date of the clearance letter, in at least two local newspapers that are widely circulated in the region, one of which shall be in the Gujarati language and the other in English. A copy each of the same shall be forwarded to the concerned Regional Office of the Ministry.
76. It shall be mandatory for the project management to submit half-yearly compliance report in respect of the stipulated prior environmental clearance terms and conditions in hard and soft copies to the regulatory authority concerned, on 1st June and 1st December of each calendar year.
77. The project authorities shall also adhere to the stipulations made by the Gujarat Pollution Control Board.
78. The project authorities shall inform the GPCB, Regional Office of MoEF and SEIAA about the date of financial closure and final approval of the project by the concerned authorities and the date of start of the project.

79. The SEIAA may revoke or suspend the clearance, if implementation of any of the above conditions is not found satisfactory.
80. The company in a time bound manner shall implement these conditions. The SEIAA reserves the right to stipulate additional conditions, if the same is found necessary. The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act 1986, Hazardous Wastes (Management Handling and Transboundary) Rules, 2008 and the Public Liability Insurance Act, 1991 along with their amendments and rules.
81. This Environmental Clearance is valid for five years from the date of issue.

With regards,

Yours sincerely,



(R.G.SHAH)

Member Secretary

Issued to:

✓  
M/s Galaxy Surfactants Ltd,  
Plot No 892,  
GIDC Jhagadia,  
Tal Jhagadia,  
Dist Bharuch,

Copy to:-

1. The Secretary, Department of Environment and Forests, Govt. of Gujarat, Secretariat, Gandhinagar-382010.
2. The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD -cum-Office Complex, East Arjun Nagar, New Delhi-110032
3. The Chief Conservator of Forests (Central), Ministry of Environment & Forests, Regional Office (WZ), E-5, Arera Colony, Link Road-3, Bhopal-462016, MP
4. Monitoring Cell, Ministry of Environment and Forests, Paryavaran Bhavan, CGO Complex, New Delhi-110003.
5. The Member Secretary, Gujarat Pollution Control Board, Paryavaran Bhavan, Sector-10 A, Gandhinagar-382010.
6. Select File.

✓  
(R.G.SHAH)

Member Secretary