

**Chemplast Sanmar Limited**  
**PVC Division Semmankuppam Village**  
**Cuddalore, Tamil Nadu**

**Compliance Report for Environmental Clearance No.J-11011/364/2011-I.A.II (I)**  
**dated 18 Dec 2012**

A. Specific conditions

S.No	Specific Conditions	Status
i	The unit shall be carried out trend analysis (considering base year 2004) w.r.t air and water pollution in commensurate with EC earlier issued and submitted to the Ministry's Regional Office.	Trend analysis with respect to air and water pollution is being submitted to Ministry's Regional office. The last report was submitted in June 2012.
ii	Compliance to all the environmental conditions stipulated in the environmental clearance letter No.No.J-11011/180/2004-I.A.II (I) dated 28 November 2005 and No.J-11011/180/2004-I.A.II (I) dated 2 June 2011 shall be satisfactorily implemented.	All the conditions stipulated by the Ministry of Environment and Forest are implemented.
iii	The process emissions (SO <sub>2</sub> , NO <sub>x</sub> , HC (Methane & Non-methane) and VCM from various units shall conform to the standards prescribed under the Environment (Protection) rules, 1986 or Norms stipulated by the Tamil Nadu Pollution Control Board (TNPCB) whichever is stringent. At no time, the emission levels shall go beyond the stipulated standards. In the event of failure of pollution control system(s) 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.	The gaseous emissions ((SO <sub>2</sub> , NO <sub>x</sub> , HC (Methane & Non-methane) and VCM from various process units are within the limits. Incase of failure of pollution control system, the unit will not be started until the control measures are rectified to achieve the desired efficiency. All monitoring equipments are connected with Emergency DG power.
iv	Continuous ambient air quality monitoring stations for (PM <sub>10</sub> , PM <sub>2.5</sub> , VCM, NO <sub>x</sub> , CO, HC (Methane & Non-methane)) shall be set up in consultation with CPCB/TNPCB. Unit shall follow CPCB/MoEF calibration protocol for the calibration of continuous stack as well as ambient air quality monitoring analyzer installed in all stations. Data of stack monitoring and ambient air shall be displayed on web as well as outside the premises at prominent place for public viewing. 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 TNPCB.	Online Ambient Air Quality Monitoring station is installed as per revised standards and all the real time data is connected to Care Air Centre of TNPCB, Chennai.  Calibration protocol is followed as per CPCB/MoEF guidelines.  Display arrangement is in place for parameters like PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , NO <sub>x</sub> , and VCM in ambient air as well as stack emissions like SPM, SO <sub>x</sub> and Nox. This is displayed at the factory entrance.  The consolidated average value is also uploaded in the company website.

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v	Ambient air quality data shall be collected as per NAAQES standards notified by the ministry on 16 September 2009 and trend analysis w.r.t past monitoring results shall also be carried out. Adequate measures based on the trend analysis shall be taken to improve the ambient air quality in the project area.	Ambient air quality trend analysis is being carried out with respect to past monitoring results.  The consolidated average value is also uploaded in the company website.
vi	Monitoring of fugitive emissions shall be carried out as per the guidelines of CPCB by fugitive emission detectors and reports shall be submitted to the Ministry's Regional Office at Bangalore.	Fugitive emission monitoring is being carried out as per CPCB guidelines through NABL/MoEF approved lab on quarterly basis and report is being submitted to the Ministry's Regional Office on regular basis.
vii	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 and 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. The emissions shall conform to the limits stipulated by the TNPCB.	All the control measures recommended in the EIA/EMP report have been implemented and monitoring is being carried out on a continuous basis.  In dryer plant, multi cyclone followed by water scrubber is installed and maintained.  Water sprinkler system installed in the coal handling area to control fugitive emission in the work place.  Fugitive emission monitoring is being done through NABL accredited lab on a monthly basis and report is being submitted to TNPCB.
viii	Fugitive emissions of HC and VCM from product storage tank yards etc, must be regularly monitored. Sensors for detecting HC and VCM leakage shall also be provided at strategic locations. Leak detection and repair program shall be implemented to control HC/VOC & VCM emissions. Work zone monitoring shall be carried out near the storage tanks besides monitoring of HC/VOC and VCMs in the work zone.	The maximum GLC of VCM in ambient air is less than 0.4 ppb (v). Online Gas Chromatogram is used to monitor the GLC in work place in 10 locations. The results are below detectable limits (BDL). The detection limit of GC is 0.01ppb.  Online GC is connected to Care Air Centre, Chennai office. Records are available with us for verification.  As per ECVM charter Leak detection and repair (LDAR) program is undertaken every year through MoEF approved lab.
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.	Adequate stack height provided in the Emergency DG sets as per CPCB standards. Acoustic enclosure is provided to mitigate noise pollution.

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x	Total fresh water requirement from desalination plant after expansion shall not exceed 2040 m <sup>3</sup> /day and prior permission shall be obtained from the competent authority.	Water requirement met through Desalination plant and recycle water from Zero Liquid Discharge Plant (ZLD).  Average fresh water requirement is 1688 KL /day.
xi	Industrial effluent generation shall not exceed 2810 m <sup>3</sup> /day. Effluent shall be treated in effluent treatment plant and treated water will be passed through reverse osmosis. Treated effluent will be recycled / reused within factory premises. The RO rejects shall be sent to MEE for evaporation. Sewage shall be treated in STP. Water quality of treated effluent shall meet the norms prescribed by CPCB/SPCB.	We have installed a Zero Liquid Discharge (ZLD) plant comprising of a comprehensive pre-treatment, double stage RO and Multiple effect evaporators. The total effluent is treated through ZLD and completely recycled to the process.  Average effluent generation for period of Oct-16 to Mar-17 is 1834 KL /day.
xii	As proposed, no effluent shall be discharged outside the factory premises and Zero water concept shall be followed.	No effluent is being discharged.  We have installed a Zero Liquid Discharge (ZLD) plant comprising of a comprehensive pre-treatment, double stage RO and Multiple effect evaporators. The capacity of ZLD is 3450 KL/Day for treatment of effluent. The total effluent is treated through ZLD and completely recycled to the process.
xiii	The project authorities must strictly comply with the rules and regulation with regard to handling and disposal of Hazardous Waste (Management, Handling and Trans Boundary Movement) Rules, 2008 wherever applicable. Authorization from the State Pollution Control Board must be obtained for collections / treatment / storage / disposal of hazardous wastes.	TNPCB issued Hazardous waste authorization No.16HRC6581200 dated 21.12.2016 under Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 for Generation, Collection, storage and Transportation and Disposal of hazardous waste.  As per TNPCB direction hazardous waste is being sent to TSDF site, Gummudipondi for safe disposal. Waste Oil/Used oil is sold to TNPCB authorized recycler.
xiv	The company shall strictly follow all the recommendation mentioned in the Charter on Corporate Responsibility for Environmental Protection (CREP).	Corporate Responsibility for Environmental Protection (CREP) recommendation for Petrochemical sector is implemented and monitoring is being done on regular basis.
xv	As proposed, ETP sludge, evaporation salts, desalination plant sludge and non-polymerized residue (PVC lumps) shall be disposed off to the TSDF. Used oil/spent oil shall be sent to the authorised recyclers/re-processors.	ETP sludge, evaporation salts, desalination plant sludge and non-polymerized residue (PVC lumps) are being sent to TSDF site, Gummudipondi for safe disposal.  Used/spent oil is sold to TNPCB authorized recyclers/re-processors.

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xvi	Proper utilization of fly ash shall be ensured as per fly ash notification, 1999 as amendment in 2009. The fly ash from boiler shall be sold to brick manufactures/cement plant.	Fly ash is being collected in dedicated silo and being sold to brick manufacturing unit.
xvii	Fly ash shall be stored separately as per CPCB guidelines so that it shall not adversely affect the air quality, becoming air borne by wind or water regime during rainy season by flowing along with the storm water. Direct exposure of workers to fly ash and dust shall be avoided.	Dedicated fly ash silo designed and installed as per CPCB guidelines for collection of fly ash from boiler unit. Hence there is no exposure of workers to fly ash.
xviii	The company shall strictly comply with the rules and guidelines under Manufacture Storage and import of Hazardous Chemicals (MSIHC) rules, 1989 as amended time to time. All transportation of Hazardous Chemicals shall be as per the motor vehicle act (MVA), 1989.	Hazardous chemicals are handled as per the guidelines of Manufacture Storage and import of Hazardous Chemicals (MSIHC) rules, 1989 as amended time to time.  Necessary approval from Factory Inspectorate/ Chief Controller of Explosives is in place and periodically renewed as per the requirement.
xix	The company shall undertake following waste minimization measures: a. Metering and control of quantities of active ingredients to minimize waster. b. Reuse of by-products from the process as raw materials or as raw material substitutes in other processes. c. Use of automated filling to minimize spillage. d. Use of close feed system into batch reactors. e. Venting equipment through vapour recovery system. f. Use of high-pressure hoses for equipment clearing to reduce waste water generation.	a. Dedicated meters are installed in various places to minimize water usage. b. Automatic filling to minimize the spillage of PVC. c. High-pressure water is used for reactor cleaning (300 bar pressure). d. Vent Gas Absorption (VGA) unit installed to recover the VCM. e. The total effluent is treated through ZLD plant and completely recycled to the process.
xx	The company shall take necessary measures to prevent fire hazards, containing oil spill and soil remediation as needed. At place of ground flaring, the overhead flaring stack with knockout drums shall be installed to minimize gaseous emissions during flaring.	Fire protection equipment like fire hydrant, Medium Velocity Sprinklers with deluge system, fire extinguisher and smoke detector are installed as per guidelines of NFPA.  Oil spill kit 5 no's available at site for any emergency purpose.
xxi	To prevent fire and explosion at oil and gas facility, potential ignition sources shall be kept to a minimum and adequate separation distance between potential ignition sources and flammable material should be in place.	Minimum safe distance between chemical/flammable materials to ignition source is ensured to prevent fire and explosion.

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xxii	Company shall prepare project specific environmental manual and a copy shall be made available at the project site for the compliance.	Project specific environmental manual prepared by Jacobs Engineering is available at site.  Environment Management System (ISO 14001) manual available at site.
xxiii	All the recommendations mentioned in the rapid risk assessment report, disaster management plan and safety guidelines shall be implemented.	All the recommendation mentioned in the rapid risk assessment report, disaster management plan and safety guidelines have been implemented.
xxiv	Company shall adopt Corporate Environment Policy as per the ministry's O.M.NO.J-11013/41/2006-IA.II(I) dated 26 April 2011 and implemented.	Company adopts a Corporate Environmental Policy as per the guidelines of MoEF.  ISO-14001 system certified for the unit by TUV-SUD India.
xxv	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	Occupational health surveillance is being done on regular basis and records are maintained as per Factories Act.
xxvi	Green belt shall be developed in 33% of plot area to mitigate the effects of fugitive emissions all around the plant as per CPCB guidelines in consultation with the local DFO.	Green belt developed in 33% of the total plot area. More than 35,000 trees are available  Advice from DFO, Cuddalore obtained for choosing the species for implementation.
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.	Not applicable, since construction work already completed. Hence no impact on the surrounding environment.
<b>B</b>	<b>GENERAL CONDITIONS:</b>	
i	The project authorities shall strictly adhere to the stipulations made by the Tamil Nadu Pollution Control Board.	All the conditions stipulated by Tamil Nadu Pollution Control Board have been implemented during project execution.

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.	Noted for action.
iii	The locations of ambient air quality monitoring stations shall be decided in consultation with the State Pollution Control Board (SPCB) and it shall be ensured that at least one stations is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.	Online ambient air quality monitoring station is installed as per revised standards and all the data is connected online to Care Air Centre, TNPCB Chennai office.
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 viz, 75 dBA (day time) and 70 dBA (night time).	<p>Noise level in and around the plant is maintained well within the standard of 75 dB in day and 70 dB in night time.</p> <p>Appropriate acoustic hoods are provided on high noise generation equipment/area.</p> <p>Ambient noise level monitoring is being carried out on monthly basis and results are within the stipulated limits.</p> <p>TNPCB monitors the noise level once in six months and results are within the limits.</p>
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.	Rainwater harvesting system is implemented. Roof top rain water is collected and used for recharging.
vi	Training shall be imparted to all employees on safety and health aspects of chemicals handling, pre-employment and routing periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.	<p>Training programmes are conducted on a regular basis for employees and contractor workers.</p> <p>Pre-employment/ regular medical examinations are being conducted for employees once in six months.</p>
vii	Usage of Personnel Protection Equipments (PPEs) by all employees / workers shall be ensured.	Usage of Personnel protective equipment by all employees is ensured.
viii	The company shall also comply with all the environmental protection measures and safeguards proposed in the documents submitted to the ministry. All the recommendations made in the EIA/EMP in respect of environmental management,	All risk mitigation measures recommended in the Environmental Management Plan and Risk analysis report (prepared by Kadam Environmental Consultants) January 2012 have been implemented.

	risk mitigation measures and public hearing relating to the project shall be implemented.	
ix	The company shall undertake all relevant measures for improving the socio-economic conditions of the surrounding area. CSR activities shall be undertaken by involving local villages and administration.	<p>Several community development initiatives covering children education, infrastructure development and rural health development are being carried out under Corporate Social Responsibility (CSR) at Cuddalore Plant.</p> <ol style="list-style-type: none"> <li>Rural health centers are functioning in Semmankuppam, Nochikadu and Chitrapettai villages.</li> <li>Education aid for school children studying at Chitrapettai Village.</li> <li>Infrastructure facility for evening study centre at Poondiyankuppam Village.</li> <li>Infrastructure facility for nearby schools.</li> </ol>
x	The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment.	<p>Several eco-development measures are being carried out in nearby villages for the overall improvement of the environment.</p> <ol style="list-style-type: none"> <li>Supply of saplings to nearby schools.</li> <li>Construction of individual toilets in Chitrapettai village to improve hygiene conditions.</li> </ol>
xi	A separate Environmental Management Cell equipped with full fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.	Environmental Monitoring Cell is established with sufficient technical staff. Well-equipped laboratory is in place to carry out the Environmental Management and Monitoring functions.
xii	As proposed, the company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the conditions stipulated by the Ministry of Environment and Forest as well as the statement 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.	<p>About 95 Crores of capital (Total capital: Rs 600 Crores) is used for the installation of Desalination, ZLD plant, Vent gas absorption and safety facilities like fire protection system, High Integrity safety system for process.</p> <p>Annual cost for the operation and maintenance of environment system, safety systems and towards implementation of the stipulated conditions by regulating authorities is around Rs.3.20 crores for the period of 2016-2017.</p> <p>The fund allotted to environmental management/pollution control is not diverted for any other purpose.</p>

xiii	A copy of the clearance letter shall be sent by the project proponent to concerned panchayat, Zila Parisad/Municipal Corporation, Urban local body and the local NGO, if any from who suggestions/representations, if any were received while processing the proposal.	Copy of the clearance forwarded to the concerned Panchayat, Zila Parisad / Municipal Corporation.
xiv	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 email) to the respective Regional Office of MoEF, the respective Zonal Office of CPCB and the TN Pollution Control Board. A copy of Environmental Clearance and six monthly compliance status reports shall be posted on the website of the company.	Environmental Compliance status report is being sent semi annually to Regional Office, MoEF Bangalore both in hard copies as well as by email.  Environmental Clearance copy and Compliance status report is uploaded in the company website.
xv	The environmental statement for each financial year ending 31 <sup>st</sup> March in Form V as is mandated shall be submitted to the concerned State 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 respective Regional Offices of MoEF by email.	Environmental Statement for each financial year is being submitted to Tamil Nadu Pollution Control Board.  Last environment statement was submitted on September 26, 2016.  Compliance report and Form V is being sent to Regional Office, MoEF Bangalore and the same published in the company website.
xvi	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 <a href="http://www.moef.nic.in">www.moef.nic.in</a> . 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.	Environment clearance details were published within seven days of receipt of clearance letter in local news papers that are widely circulated in the vernacular language.  Copy of the advertisement was already forwarded to Regional Office, Bangalore vide letter dated 20.05.2013.
xvii	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.	Consent to Establish obtained from Tamil Nadu Pollution Control Board for PVC Plant expansion from 2,26,000 TPA to 3,00,000 TPA on 05 April 2013.  Establishment work completed on 22 July 2013.  Consent to Operate obtained from Tamil Nadu Pollution Control Board (TNPCB) for PVC Plant expansion from



		<p>2,26,000 TPA to 3,00,000 TPA under Water Act vide consent order No.20906 dated 17.09.2013 and Air Act vide consent order No.17945 dated 17.09.2013, which is valid upto 31.03.2014.</p> <p>Subsequently the Consent order for the operation of the plant under Air &amp; Water Act is being renewed from time to time. Unit is having a valid consent to operate upto 31.03.2017.</p>
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